TSG-RAN Meeting #27 **RP-050079**
Tokyo, Japan, 09-11 March 2005 **Agenda item 9.4**

Source: TSG-RAN WG2

Title: 25.331 CRs to Rel-6 on MBMS

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level	Workitem
25.331	2530	2	Rel-6	Miscellaneous MBMS corrections	F	6.4.0	6.5.0	R2-050747	MBMS-RAN
25.331	2536	1	Rel-6	MBMS Corrections to 25.331 ASN.1	F	6.4.0	6.5.0	R2-050748	MBMS-RAN

3GPP TSG-RAN2 Meeting #46
Scottsdale, U.S.A, 14th-18th February, 2005

Tdoc ⌘ R2-050747

CR-Form-v7

CHANGE REQUEST

⌘ **25.331** **CR** **2530** ⌘ **rev** **2** ⌘ Current version: **6.4.0** ⌘

*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 [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	Miscellaneous MBMS corrections
Source:	⌘	RAN WG2
Work item code:	⌘	MBMS-RAN
Date:	⌘	3/03/2005
Category:	⌘	**F**
Release:	⌘	REL-6

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: ⌘ There are several small errors in the MBMS message and procedural specification parts

Summary of change: ⌘ Besides several minor changes almost of editorial nature, the original version of this CR includes the following changes

- Within the IDT procedure specification, clarification is added that in case of failure of an RRC connection for MBMS (single attempt), UE-AS (RRC) initiates the RRC connection establishment rather than indicating failure to upper layers
- Within the MBMS NEIGHBOURING CELL P-T-M RB INFORMATION message, the MBMS transmission timing difference is added for the case of full L1 combining, only for the soft combining case
- For the MBMS GENERAL INFORMATION message, the message description is updated and the FFS is removed
- Within the MBMS CURRENT CELL P-T-M RB INFORMATION message, the IE L1- combining status is removed. The IE is only needed within the MBMS NEIGHBOURING CELL P-T-M RB INFORMATION message
- Within the MBMS MODIFIED SERVICES INFORMATION, the MBMS required UE action 'Acquire MCCH' is replaced by a new IE with the same functionality but not specified per service

Proposals merged in from other contributions

- The (duplicate) multiplicity value '1.. <maxMBMS-Freq>' used within the MBMS General Information message for IE MBMS preferred frequency information has been removed [R2-050088]
- The value range of IE MBMS logical channel identity has been changed to (1..15) to align with TS 25.321 [R2-050088]

- The session identity is specified to be a single octet [R2-050273]
- The triggering conditions for the modification request procedure have been extended to include other cases in which upper layers may request discontinuation of MBMS reception [R2-050158]
- The requirements concerning the order of acquiring MCCH and performing cell update has been reverted for the case the UE re- selects to an MBMS preferred frequency layer [R2-050281]
- The IE “RB information list” changed from MP to OP both within the current cell p-t-m RB info messages [R2-050005]
- The missing details of the following parameters have been added [R2-050019]: MBMS session identity, Mofication period, Repetition period, Access information period, Start and duration of a MTCH transmission, L1 combining cycle length and offset, start, duration and number of an L1 combining periods
- Within 8.6.4.9, clarification is provided that the OSD and DAR functionality is configured when the corresponding parameters are signalled [R2-050103]
- The value ranges of the following RLC parameters have been changed slightly [R2-050019]: Timer_DAR, Window size DAR, Window size OSSD
- In order to make OSD generally applicable, Timer_OSD has been introduced as a conditional parameter, not applicable in case of MCCH
- The MSCH configuration part is removed from the signalling optimisation ‘same configuration as current cell’ [R2-050063]
- The handling of the IE "MBMS short transmission ID" (section 8.6.9.8) is amended to reflect the case the UE can derive the MBMS service identity when received only the MBMS Modified Services Information message [R2-050105]
- It is clarified that if the service information received by the UE does not indicate the service is provided p-t-m anymore, the UE shall stop receiving the p-t-m radio bearer (8.7.2.4) [R2-050105]
- Clarification is added (in 8.7.4.3) that the UE shall perform the probability test for each activated service and that in case multiple services succeed this, only a single counting response is initiated [R2-050105]
- A new section is included within 8.6 for IE ‘Next scheduling period’ [R2-050071]
- In 8.7.1 further clarification is provided that MBMS control information comprises of MCCH and MSCH information [R2-050071]
- A new procedure section is added to cover the handling of the MBMS service scheduling procedure (8.7.7) [R2-050071]
- Within the MBMS SCHEDULING INFORMATION message the scheduling information is provided per session rather than per service (this was the only message including such a restriction). Furthermore, some additional clarification is provided for this message [R2-050071]

Proposals agreed during the R2#46 meeting

- Removal of the restrictions concerning the multiplexing options as well as some further restructuring of the messages, partly based on R2-050625
- Introduction of a choice between the Qoff and the HCS_OFF within the IE MBMS preferred frequency information 10.3.7.43a
- At message level, the need for the IE MBMS FLC applicability has been changed to OP
- Clarification concerning the handling of as well as renaming of the IE MBMS FLC applicability (R2-050626)
- The introduction of the signalling details for IE MBMS transmission time difference (R2-050545)
- The introduction of signalling support for the rake combining between neighbouring cells (R2-050648)

Corrections introduced in rev 1 of this CR

- The MBMS p-t-m RB information included in 10.3.9a.7a is changed to include a single RB while the multiplicity and the optionality are now reflected

		at the message level where these IEs are referenced (there used to be a double optionality), to align with the normal way this is done in RRC. Furthermore, several incorrect '>>>' markers have been removed • The message MBMS current cel p-t-m RB information message still included an IE named FACH carrying MTCH which has been renamed into TrCH information list, to align with the other cases (reflecting the decision on the multiplexing options) Corrections introduced in rev 2 of this CR • The layer 1combining information in the MBMS NEIGHBOURING CELL P-T-M RB INFORMATION message has been changed to better reflect the specific need for FDD and TDD. In the process, the need of IE Type of L1-combining is changed to MP for the FDD case, since it is always needed for FDD • The definition of IE L1 combining status used within IE MBMS p-t-m RB information has been changed to better reflect its need in case TrCh combining (TDD) • The default cycle length has been removed from the general information, because currently the L1 combining cycle length is always signalled since it is used to constrain the value range of the L1 combining period
Consequences if not approved:	⌘	The errors in the MBMS message and procedural specification parts remain

Clauses affected:	⌘				
Other specs affected:	⌘	Y / N ☐ / X	Other core specifications Test specifications O&M Specifications	⌘	(25.331 CR 2536rev1).
Other comments:	⌘	Agreed parts of contributions, other proposals and comments from several companies have also been merged in to this paper. This included companies including LG Electronics, Siemens, Panasonic, Motorola, Huawei Technologies, ZTE Corporation			

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.

8.1.8 Initial Direct transfer

Figure 8.1.8-1: Initial Direct transfer in the uplink, normal flow

8.1.8.1 General

The initial direct transfer procedure is used in the uplink to establish a signalling connection. It is also used to carry an initial upper layer (NAS) message over the radio interface.

8.1.8.2 Initiation of Initial direct transfer procedure in the UE

In the UE, the initial direct transfer procedure shall be initiated, when the upper layers request establishment of a signalling connection. This request also includes a request for the transfer of a NAS message.

Upon initiation of the initial direct transfer procedure the UE shall:

1> set the variable ESTABLISHMENT_CAUSE to the cause for establishment indicated by upper layers.

Upon initiation of the initial direct transfer procedure when the UE is in idle mode, the UE shall:

1> perform an RRC connection establishment procedure, according to subclause 8.1.3;

NOTE: If an RRC connection establishment is ongoing, this procedure continues unchanged, i.e. it is not interrupted. ~~When the ongoing RRC connection establishment fails, a new RRC establishment procedure is performed, possibly using a different cause value.~~

1> if the RRC connection establishment procedure was not successful:

2> If the establishment cause for the failed RRC connection establishment was set to “MBMS reception and a different cause value is stored in the variable ESTABLISHMENT_CAUSE”:

3> UE-AS (RRC) initiates a new RRC connection establishment procedure, using the establishment cause as contained in the variable ESTABLISHMENT_CAUSE

2> Otherwise:

3~~2~~> indicate failure to establish the signalling connection to upper layers and end the procedure.

1> when the RRC connection establishment procedure is completed successfully:

2> continue with the initial direct transfer procedure as below.

Upon initiation of the initial direct transfer procedure when the UE is in CELL_PCH or URA_PCH state, the UE shall:

1> perform a cell update procedure, according to subclause 8.3.1, using the cause "uplink data transmission";

1> when the cell update procedure completed successfully:

2> continue with the initial direct transfer procedure as below.

The UE shall, in the INITIAL DIRECT TRANSFER message:

1> set the IE "NAS message" as received from upper layers; and

1> set the IE "CN domain identity" as indicated by the upper layers; and

1> set the IE "Intra Domain NAS Node Selector" as follows:

2> derive the IE "Intra Domain NAS Node Selector" from TMSI/PMTSI, IMSI, or IMEI; and

2> provide the coding of the IE "Intra Domain NAS Node Selector" according to the following priorities:

1. derive the routing parameter for IDNNS from TMSI (CS domain) or PTMSI (PS domain) whenever a valid TMSI/PTMSI is available;

2. base the routing parameter for IDNNS on IMSI when no valid TMSI/PTMSI is available;

3. base the routing parameter for IDNNS on IMEI only if no (U)SIM is inserted in the UE.

1> if the initial direct transfer procedure is initiated in idle mode or connected mode but in a state which is not CELL_DCH state:

2> if the IE "Multiple PLMN List" is broadcast in the current serving cell:

3> set the IE “PLMN identity” to indicate the multiple PLMN chosen by the UE.

1> if the IE "Activated service list" within variable MBMS_ACTIVATED_SERVICES includes one or more MBMS services with the IE "Service type" set to "Multicast" and;

1> if the IE "CN domain identity" as indicated by the upper layers is set to "CS domain" and;

1> if the variable ESTABLISHED_SIGNALLING_CONNECTIONS does not include the CN domain identity 'PS domain':

2> include the IE "MBMS joined information";

2> include the IE "P-TMSI" within the IE "MBMS joined information" if a valid PTMSI is available.

1> if the variable ESTABLISHMENT_CAUSE_ is initialised:

2> set the IE "Establishment cause" to the value of the variable ESTABLISHMENT_CAUSE;

2> clear the variable ESTABLISHMENT_CAUSE.

1> calculate the START according to subclause 8.5.9 for the CN domain as set in the IE "CN Domain Identity"; and

1> include the calculated START value for that CN domain in the IE "START".

The UE shall:

1> transmit the INITIAL DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB3;

1> when the INITIAL DIRECT TRANSFER message has been submitted to lower layers for transmission:

2> confirm the establishment of a signalling connection to upper layers; and

2> add the signalling connection with the identity indicated by the IE "CN domain identity" in the variable ESTABLISHED_SIGNALLING_CONNECTIONS.

1> when the successful delivery of the INITIAL DIRECT TRANSFER message has been confirmed by RLC:

2> the procedure ends.

When not stated otherwise elsewhere, the UE may also initiate the initial direct transfer procedure when another procedure is ongoing, and in that case the state of the latter procedure shall not be affected.

A new signalling connection request may be received from upper layers during transition to idle mode. In those cases, from the time of the indication of release to upper layers until the UE has entered idle mode, any such upper layer request to establish a new signalling connection shall be queued. This request shall be processed after the UE has entered idle mode.

8.1.8.2a RLC re-establishment or inter-RAT change

If a re-establishment of the transmitting side of the RLC entity on signalling radio bearer RB3 occurs before the successful delivery of the INITIAL DIRECT TRANSFER message has been confirmed by RLC, the UE shall:

1> retransmit the INITIAL DIRECT TRANSFER message on the uplink DCCH using AM RLC on signalling radio bearer RB3.

If an Inter-RAT handover from UTRAN procedure occurs before the successful delivery of the INITIAL DIRECT TRANSFER message has been confirmed by RLC, for messages with the IE "CN domain identity" set to "CS domain", the UE shall:

1> retransmit the NAS message as specified in subclause 8.3.7.4.

8.1.8.2ab Inter-RAT handover from UTRAN to GERAN *Iu mode*

If an Inter-RAT handover from UTRAN to GERAN *Iu mode* occurs before the successful delivery of the INITIAL DIRECT TRANSFER message has been confirmed by RLC, for messages for all CN domains, the UE shall:

1> retransmit the NAS message as specified in subclause 8.3.7.4.

8.1.8.2b Abortion of signalling connection establishment

If the UE receives a request from upper layers to release (abort) the signalling connection for the CN domain for which the initial direct transfer procedure is ongoing, the UE shall:

1> if the UE has not yet entered UTRA RRC connected mode:

2> abort the RRC connection establishment procedure as specified in subclause 8.1.3;

the procedure ends.

8.1.8.3 Reception of INITIAL DIRECT TRANSFER message by the UTRAN

On reception of the INITIAL DIRECT TRANSFER message the NAS message should be routed using the IE "CN Domain Identity". UTRAN may also use the IE "Intra Domain NAS Node Selector" and the IE "PLMN identity" for routing among the CN nodes for the addressed CN domain.

If no signalling connection exists towards the chosen node, then a signalling connection is established.

When the UTRAN receives an INITIAL DIRECT TRANSFER message, it shall not affect the state of any other ongoing RRC procedures, when not stated otherwise elsewhere.

The UTRAN should:

1> set the START value for the CN domain indicated in the IE "CN domain identity" to the value of the IE "START".

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8.2.2.5a Rejection by the UE

If the UTRAN establishes one or more p-t-p radio bearer(s) for the transmission of a session of an MBMS service, identified by the IE "MBMS Session identity", for which upper layers indicate that it has already been received correctly, the UE shall:

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

2> include the IE "RRC transaction identifier";

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;

2> clear that entry; and

2> set the IE "failure cause" to "MBMS session already received correctly".

1> set the variable UNSUPPORTED_CONFIGURATION to FALSE;

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

1> the procedure ends.

If the UTRAN establishes one or more p-t-p radio bearer(s) for the transmission of a session of an MBMS service, which will inhibit reception of one or more MBMS services which according to upper layers are of higher priority, the UE may:

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

2> include the IE "RRC transaction identifier";

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;

2> clear that entry; and

2> set the IE "failure cause" to "Lower priority MBMS service".

1> set the variable UNSUPPORTED_CONFIGURATION to FALSE;

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

1> the procedure ends.

~~If the UTRAN establishes one or more p-t-p radio bearer(s) for the transmission of a session of an MBMS service, which will inhibit reception of one or more MBMS services which according to upper layers are of higher priority, the UE may:~~

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

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

~~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;~~

~~2> clear that entry; and~~

~~2> set the IE "failure cause" to "Lower priority MBMS service".~~

~~1> set the variable UNSUPPORTED_CONFIGURATION to FALSE;~~

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

~~1> the procedure ends.~~

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8.3.1.1 General

The URA update and cell update procedures serve several main purposes:

- to notify UTRAN after re-entering service area in the URA_PCH or CELL_PCH state;
- to notify UTRAN of an RLC unrecoverable error [16] on an AM RLC entity;
- to be used as a supervision mechanism in the CELL_FACH, CELL_PCH, or URA_PCH state by means of periodical update.

In addition, the URA update procedure also serves the following purpose:

- to retrieve a new URA identity after cell re-selection to a cell not belonging to the current URA assigned to the UE in URA_PCH state.

In addition, the cell update procedure also serves the following purposes:

- to update UTRAN with the current cell the UE is camping on after cell reselection;
- to act on a radio link failure in the CELL_DCH state;
- to act on the transmission failure of the UE CAPABILITY INFORMATION message;
- when triggered in the URA_PCH or CELL_PCH state, to notify UTRAN of a transition to the CELL_FACH state due to the reception of UTRAN originated paging or due to a request to transmit uplink data.
- to count the number of UEs in URA_PCH that are interested to receive an MBMS transmission~~.~~;
- when triggered in the URA_PCH state, to notify UTRAN of the UEs interest to receive an MBMS service.

The URA update and cell update procedures may:

1> include an update of mobility related information in the UE;

1> cause a state transition from the CELL_FACH state to the CELL_DCH, CELL_PCH or URA_PCH states or idle mode.

The cell update procedure may also include:

- a re-establish of AM RLC entities;
- a radio bearer release, radio bearer reconfiguration, transport channel reconfiguration or physical channel reconfiguration.

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8.5.26 Service prioritisation

The UE may perform the Service prioritisation procedure whenever it detects that it becomes incapable of receiving all services it is interested in as well as whenever there are changes concerning the subset of services that it has selected to receive. This may occur upon state transitions, service ~~establishment/~~ start, service ~~termination/~~ stop, service reconfiguration eg. transfer mode change and preferred frequency layer changes.

If the UE detects that it is incapable of receiving all services, the UE may:

1> request upper layers to prioritise the services;

1> if reception of the highest priority MBMS service is inhibited by one or more MBMS service(s) provided via a p-t-p radio bearer:

2> request UTRAN to terminate these MBMS service(s) using the MBMS MODIFICATION REQUEST message as specified in subclause 8.7.6.

NOTE: The termination of MBMS services is performed by RRC procedures, while clearing of non- MBMS services is performed by upper layers.

8.5.27 Preferred frequency layer selection

The UE shall perform the Preferred frequency layer selection procedure upon receiving the IE "MBMS Preferred frequency information".

The UE shall:

1> consider MBMS services, for which a preferred frequency layer is specified, to be available only on the concerned frequency;

1> consider MBMS services, for which no preferred frequency layer is specified, to be available on all frequencies;

1> consider that UTRAN will provide any non- MBMS services on all frequecies unless specified otherwise;

1> if based on the above, the UE detects that it is incapable of receiving all services:

2> perform the Service prioritisation procedure as specified in 8.5.26.

1> if more than one preferred frequency layer applies for the services included in variable MBMS_ACTIVATED_SERVICES:

2> select the preferred frequency of the service that upper layers indicate to have highest priority of the services for which a preferred frequency layer applies.

1> if only one preferred frequency layer applies for the services included in variable MBMS_ACTIVATED_SERVICES:

2> select that preferred frequency.

1> otherwise:

2> select the currently used frequency.

1> if the selected preferred frequency is different from the currently used frequency:

2> if the UE is in CELL_DCH:

3> request UTRAN to be moved to the preferred frequency by means of the MBMS MODIFICATION REQUEST message as specified in 8.7.6;

2> otherwise:

3> apply the cell-reselection procedure as described in [25.304], using the received "MBMS Preferred frequency information",

3> if the UE re-selects to a cell on the indicated preferred frequency:

~~4> apply the MCCH acquisition procedure, as specified in 8.7.2~~

4> if the UE is in CELL_FACH, CELL_PCH or URA_PCH:

5> act according to subclause 8.3.1.2.

4> apply the MCCH acquisition procedure, as specified in 8.7.2

8.6.4 Radio bearer information elements

8.6.4.9 RLC Info

Upon reception of the IE "RLC Info", the UE shall:

1> configure the transmitting and receiving RLC entities in the UE for that radio bearer accordingly;

1> if the IE "Polling info" is present in the IE "RLC info":

2> for each present IE in the IE "Polling info":

3> configure RLC to use the corresponding function according to the value of the IE.

2> for each absent IE in the IE "Polling info":

3> configure RLC to not use the corresponding function.

1> if the IE "Polling info" is absent:

2> configure RLC to not use the polling functionality.

1> if the IE "Downlink RLC STATUS info" is present in the IE "RLC info" (this IE is present for AM RLC):

2> for each present IE in the IE "Downlink RLC STATUS info":

3> configure RLC to use the corresponding function according to value of the IE.

2> for each absent IE in the IE "Downlink RLC STATUS info":

3> configure RLC to not use the corresponding function.

1> if the IE "Transmission RLC discard" is present:

2> configure the discard procedure in RLC according to the IE "Transmission RLC discard"

1> if the IE "Transmission RLC discard" is absent (only possible for TM RLC and UM RLC):

2> do not configure SDU discard in RLC.

1> if the IE "Downlink RLC mode" is present and is set to "AM RLC":

2> if IE "DL RLC PDU size" is not present:

3> determining the downlink RLC PDU size will be handled at RLC level as described in [16], without any configuration from RRC.

NOTE: The case where this mandatory IE is not present is meant to handle the interaction with a network using an earlier release of the specification.

2> else, if the IE "DL RLC PDU size" is present and no downlink RLC PDU size is currently set in the RLC entity:

3> configure the corresponding RLC entity with the downlink RLC PDU size.

2> else, if the IE "DL RLC PDU size" is present and its value is different from the one currently set in the RLC entity:

NOTE: The downlink RLC PDU size set in the RLC entity can either be explicitly configured or, in case no explicit configuration is provided, derived by the first received RLC PDU [16].

3> if the IE "one sided RLC re-establishment" is set to TRUE:

4> re-establish the receiving side of the corresponding RLC entity.

3> else:

4> re-establish the corresponding RLC entity.

3> configure the corresponding RLC entity with the new downlink RLC PDU size;

3> if the IE "Status" in the variable CIPHERING_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" for this radio bearer is set to "Started":

4> if the RLC re-establishment is caused by a CELL UPDATE CONFIRM:

5> if only the receiving side of the RLC entity was re-established:

6> set the HFN values for the corresponding RLC entity in downlink equal to the value of the IE "START" included in the latest transmitted CELL UPDATE message for this CN domain.

5> if the whole RLC entity was re-established:

6> set the HFN values for the corresponding RLC entity in uplink and downlink equal to the value of the IE "START" included in the latest transmitted CELL UPDATE message for this CN domain.

4> if the RLC re-establishment is caused by a reconfiguration message:

5> if only the receiving side of the RLC entity was re-established:

6> set the HFN values for the corresponding RLC entity in downlink equal to the value of the IE "START" that will be included in the reconfiguration complete message for this CN domain.

5> if the whole RLC entity was re-established:

6> set the HFN values for the corresponding RLC entity in uplink and downlink equal to the value of the IE "START" that will be included in the reconfiguration complete message for this CN domain.

1> if the IE "Downlink RLC mode" is present and is set to "UM RLC":

2> if the IE "DL UM RLC LI size" is not present:

3> configure the corresponding RLC entity with an LI size of 7 bits;

NOTE: The case where this mandatory IE is not present is meant to handle the interaction with a network using an earlier release of the specification.

2> else:

3> configure the corresponding RLC entity with the LI size indicated in the IE "DL UM RLC LI size".

2> if the IE "DL Duplication Avoidance and Reordering info" is present:

3> configure the corresponding RLC entity to use the UM duplication avoidance and reordering functionality.

2> if the IE "DL Out of sequence delivery info" is present:

3> configure the corresponding RLC entity to use the UM Out of sequence delivery functionality.

8.6.9 MBMS specific information elements

The UE shall perform the generic actions defined in this subclause only for the information elements corresponding with services that are included in variable MBMS_ACTIVATED_SERVICES.

8.6.9.1 Continue MCCH Reading

If the "Continue MCCH Reading " is included the UE shall:

1> if the IE "Continue MCCH reading " is set to 'TRUE':

2> continue receiving the MBMS MODIFIED SERVICES INFORMATION from MCCH in the next modification period and act upon it as specified in subclause 8.7.3.4.

8.6.9.2 ~~MBMS FLC applicability information~~MBMS PL Service Restriction Information

The UE shall:

1> if the IE "~~MBMS FLC applicability information~~MBMS PL Service Restriction Information" is not included; and

1> if the IE "RRC state indicator" is set to a value other than 'CELL_DCH':

2> apply the MBMS frequency layer convergence information provided within IE "MBMS preferred frequency information" in the indicated RRC state.

1> otherwise: (note for editor: style changed)

~~2> not apply the MBMS frequency layer convergence information provided within the IE "MBMS preferred frequency information" in the indicated RRC state;~~

2> apply the MBMS frequency layer convergence information provided within IE "MBMS preferred frequency information" in the indicated RRC state with the following modification.

~~2~~3> consider that UTRAN will not provide any non- MBMS services on the MBMS preferred frequencies;

NOTE: ~~2> if a~~As a result of ~~this~~the above modification~~,~~ the UE may be ~~detects that it is~~ incapable of receiving all services, in which case it should~~:~~

~~3>~~ perform the service prioritization procedure as specified in subclause 8.5.26.

8.6.9.3 MBMS L1 combining schedule

If the IE "MBMS L1 combining schedule" is included the UE may:

1> apply L1 combining between the concerned neighbouring cell's S-CCPCH and the corresponding current cell's S-CCPCH for the periods indicated by this IE.

8.6.9.4 MBMS Preferred frequency information

If the IE "MBMS Preferred frequency information" is included the UE shall:

1> perform the Preferred frequency layer selection procedure as specified in subclause 8.5.27.

8.6.9.4a MBMS Rake combinable group id

If the IE "MBMS Rake combinable group id" is included the UE may:

1> perform the Rake combining between neighbouring cells for which the same identity is indicated.

8.6.9.5 MBMS RB list released to change transfer mode

If the IE "MBMS RB list released to change transfer mode" is included the UE shall:

1> perform the service prioritisation procedure as specified in subclause 8.5.26, taking into account that the MBMS service(s) for which the radio bearers are released will be provided via p-t-m radio bearer(s).

8.6.9.6 MBMS Required UE action

If the IE "MBMS required UE action" is included the UE shall:

1> if the "MBMS required UE action" is set to 'None':

2> take no action with respect to this IE.

1> if the IE "MBMS required UE action" is set to 'Acquire counting info':

2> perform the MBMS counting procedure as specified in subclause 8.7.4;

NOTE: If upper layers indicate that an MBMS transmission has already been received correctly, the UE will continue as if the information about the concerned MBMS transmission was not included in the message. This implies that the UE does not respond to counting for a transmission already received correctly.

1> if the IE "MBMS required UE action" is set to 'Acquire PTM RB info':

2> continue acquiring the MBMS COMMON P-T-M RB INFORMATION, MBMS CURRENT CELL P-T-M RB INFORMATION and the MBMS NEIGHBOURING CELL P-T-M RB INFORMATION messages without delaying reading of MCCH until the next modification period and without stopping at the end of the modification period, in accordance with subclause 8.7.1.3

2> act upon the MBMS COMMON P-T-M RB INFORMATION, MBMS CURRENT CELL P-T-M RB INFORMATION and the MBMS NEIGHBOURING CELL P-T-M RB INFORMATION message, if received, in accordance with subclause 8.7.5;

1> if the IE "MBMS required UE action" is set to 'Establish PMM connection':

2> if the UE is in idle mode:

3> indicate to upper layers that action is required to receive the concerned MBMS service.

2> if the UE is in URA_PCH:

3> perform a cell update procedure with cause "MBMS reception" as specified in subclause 8.3.1.2.

1> if the IE "MBMS required UE action" is set to 'Release PTM RB:

2> stop receiving the concerned MBMS service and clear all service specific information applicable for the concerned service

~~1> if the "MBMS required UE action" is set to 'Acquire MCCH':~~

~~2> perform the MCCH acquisition procedure as specified in subclause 8.7.2.~~

8.6.9.6a MBMS re- acquire MCCH

If the UE receives the IE " MBMS re- acquire MCCH" with a value set to TRUE, the UE shall:

1> perform the MCCH acquisition procedure as specified in subclause 8.7.2.

8.6.9.7 MBMS Service transmissions info list

If the UE receives the IE "MBMS Service transmissions info list", the UE may:

1> discontinue reception of the S-CCPCH on which the IE was received, except for the service transmissions ~~periods~~ indicated by this IE for the concerned scheduling period.

8.6.9.8 MBMS Short transmission ID

If the IE "MBMS short transmission ID" is included the UE shall:

1> if the value of the "MBMS short transmission ID" is less than or equal to the number of services identified by the IE "Modified services list" included in the MBMS MODIFIED SERVICES INFORMATION message acquired in the same modification period as the one in which the "MBMS short transmission ID" is received:

2> consider the "MBMS short transmission ID" to be an index to the list of services contained in the IE "Modified services list" and apply the MBMS service identity specified for this entry;

1> otherwise:

2> compile a list of available MBMS services, as included in the MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION messages acquired in the same modification period as the one in which the "MBMS short transmission ID" is received:

3~~2~~> concatenate the services contained in IE "Modified services list" included in the MBMS MODIFIED SERVICES INFORMATION and the services contained in IE "Unmodified services list" included in the MBMS UNMODIFIED SERVICES INFORMATION:

2~~1~~> consider the 'MBMS short transmission ID' to be the index of the entry in the list of available services and apply the MBMS service identity specified for this entry.

8.6.9.9 MBMS Transmission identity

If the IE "MBMS transmission identity" is included the UE shall:

1> if upper layers indicate that the MBMS transmission has already been received correctly:

2> ignore the information about this MBMS transmission i.e. continue as if the information about the concerned MBMS transmission was not included in the message.

1> otherwise:

2> act upon the information about the concerned MBMS transmission as specified elsewhere.

8.6.9.9a MBMS transmission time difference

The IE "MBMS transmission time difference" indicates the time difference between the transmissions on the current and the neighbour cell i.e. indicating the TTIs that can be L1- combined. The UE shall

1> derive the parameter Neighbor_Start from the IE MBMS transmission time difference as follows:

MBMS transmission time difference = (Neighbor_Start / Max_TTI_Size) mod 4

where Neighbor_Start is the CFN of the first radio frame in a TTI on the neighbour cell that may be combined with the TTI on the current cell of which the CFN of the first radio frame equals 0 while Max_TTI_Size is the largest TTI size on the S-CCPCHs to be soft combined

1> In case of partial soft combining, derive the CFN of the first radio frame in a TTI on the neighbour cell that may be combined assuming the same time difference applies

The maximum delay between S-CCPCH clusters that the UE may combine is set by UE performance requirements.

NOTE: The MBMS transmission time difference is semi-static; it does not vary within or between L1 combining periods nor when full combining is used.

8.6.9.10 Next scheduling period

If the IE "Next scheduling period" is included the UE may:

1> discontinue reception of the S-CCPCH on which the IE was received for the number of scheduling periods indicated by this IE.

8.7 MBMS specific procedures

8.7.1 Reception of MBMS control information

8.7.1.1 General

The procedure for receiving MBMS control information is used by a UE to receive information from UTRAN concerning the way it provides MBMS services the UE has joined. The procedure applies to all UEs supporting MBMS, irrespective of its state (idle, URA_PCH, CELL_PCH, CELL_FACH and CELL_DCH).

Most MBMS control information is provided on the MCCH. The information on MCCH is transmitted using a fixed schedule, which is common for all services. ~~MBMS control~~ MCCH information other than MBMS ACCESS INFORMATION message is transmitted periodically based on a repetition period. This ~~MBMS control~~ MCCH information is repeated a configurable number of times with exactly the same content; the period in which the content of ~~MBMS control~~ MCCH information other than MBMS ACCESS INFORMATION message remains unchanged is called the modification period. MBMS ACCESS INFORMATION message may be transmitted more frequently, based on the Access Info period. The transmissions of MBMS ACCESS INFORMATION message within a modification period need not have exactly the same content (the value of some parameters eg. IE 'Access probability factor – Idle' may change). Nevertheless, the transmissions of MBMS ACCESS INFORMATION message within a modification period should concern the same MBMS service(s), although information for a service may be removed eg. upon completion of the counting for that service.

The general principles are illustrated in figure 8.7.1-1, in which different colours indicate potentially different content of the ~~MBMS control~~ MCCH information.

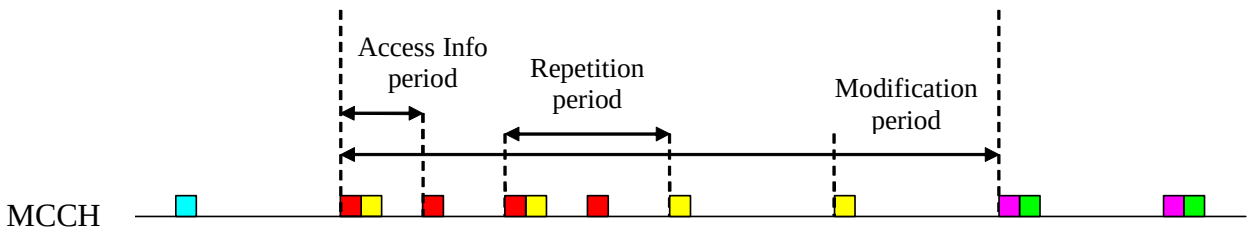

Figure 8.7.1-1: Scheduling of MCCH Information

For services provided via a p-t-m radio bearer scheduling information may be provided on an MSCH mapped on the same S-CCPCH as the p-t-m radio bearer(s). For some of the services provided p-t-m this scheduling information may be provided by signalling a MBMS SCHEDULING INFORMATION message at every scheduling period, while for others the MBMS SCHEDULING INFORMATION message ~~scheduling information~~ may be ~~provided~~ signalled less frequently i.e. after a multiple of the scheduling period. In general, the UE is neither required to acquire MSCH information nor to act on it.

In case the UE shall acquire MCCH information that is scheduled at the same time as MSCH information, the reception of the MCCH information shall take precedence.

In order to minimise the time the UE needs to read MCCH to acquire the required information, UTRAN should schedule the MCCH messages in a specific order ie. messages which content has changed compared to the previous modification period should be scheduled prior to messages which contents has not changed. More specifically, the UE may assume that UTRAN schedules the MCCH messages in the following order:

MBMS MODIFIED SERVICES INFORMATION,

followed by messages which content changed - in the following order: MBMS GENERAL INFORMATION, MBMS COMMON P-T-M RB INFORMATION, MBMS CURRENT CELL P-T-M RB INFORMATION, one or more MBMS NEIGHBOURING CELL P-T-M RB INFORMATION,

followed by messages which content did not change - in the following order: MBMS UNMODIFIED SERVICES INFORMATION, MBMS GENERAL INFORMATION, MBMS COMMON P-T-M RB INFORMATION, MBMS CURRENT CELL P-T-M RB INFORMATION, one or more MBMS NEIGHBOURING CELL P-T-M RB INFORMATION

8.7.1.2 Initiation

The requirements concerning which MBMS control information the UE shall acquire in the different cases is specified in other subclauses. This section specifies common requirements concerning the reception of MCCH information and MSCH information.

8.7.1.3 UE requirements on reading of MCCH information

When requested to acquire MBMS control information other than the MBMS ACCESS INFORMATION message , the UE shall:

1> if requested to start reading MCCH at the next modification period:

2> start reading MCCH at the beginning of the next modification period.

1> otherwise

2> start reading MCCH at the beginning of the next repetition period.

1> if requested to stop reading MCCH at the end of the modification period:

2> continue reading MCCH until the required MBMS control information is received or until the UE detects a TTI in which no MCCH information is transmitted, whichever is first;

2> continue reading MCCH in this manner at every subsequent repetition period, until the information is received correctly or until the end of the modification period.

1> otherwise:

2> continue reading MCCH until the required MBMS control information is received or until the UE detects a TTI in which no MCCH information is transmitted, whichever is first;

2> continue reading MCCH in this manner at every subsequent repetition period, until the information is received correctly.

NOTE 1: The UE may combine information received at different repetition periods within a modification period.

When requested to acquire the MBMS ACCESS INFORMATION message, the UE shall:

1> if requested to start reading MCCH at the next modification period:

2> start reading MCCH at the beginning of the next modification period.

1> otherwise:

2> start reading MCCH at the beginning of the next access info period.

1> continue reading MCCH in this manner at every subsequent access info period, until the message is received correctly or until the end of the modification period.

If the UE is CELL_DCH and has a compressed mode pattern that overlaps with the period in which it needs to read MCCH, the UE may temporarily refrain from receiving MCCH unless it is capable of simultaneous operation. If the UE is CELL_FACH and has a measurement occasion that overlaps with the period in which it needs to read MCCH, the UE may temporarily refrain from receiving MCCH unless it is capable of simultaneous operation. Likewise, in Idle mode as well as in CELL_PCH and URA_PCH states the UE may temporarily refrain from receiving MCCH if needed to fulfill the measurements performance requirements as specified in [4].

NOTE 2: The UTRAN should ensure that for each UE in CELL_FACH the assigned measurement occasions do not overlap constantly with the periodic MCCH transmissions.

8.7.1.4 UE requirements on reading of MSCH information

If the UE supports reception of MSCH, UE shall:

1> if the UE needs to acquire MCCH information that is transmitted at the same time as the MSCH information and the UE does not support simutaneous reception:

2> refrain from reading MSCH.

If the UE supports reception of MSCH, UE should:

1> start reading MSCH at the beginning of the next scheduling period;

1> continue reading MSCH until the required MBMS control information is received or until the UE detects a TTI in which no MSCH information is transmitted, whichever is first.

8.7.2 MCCH acquisition

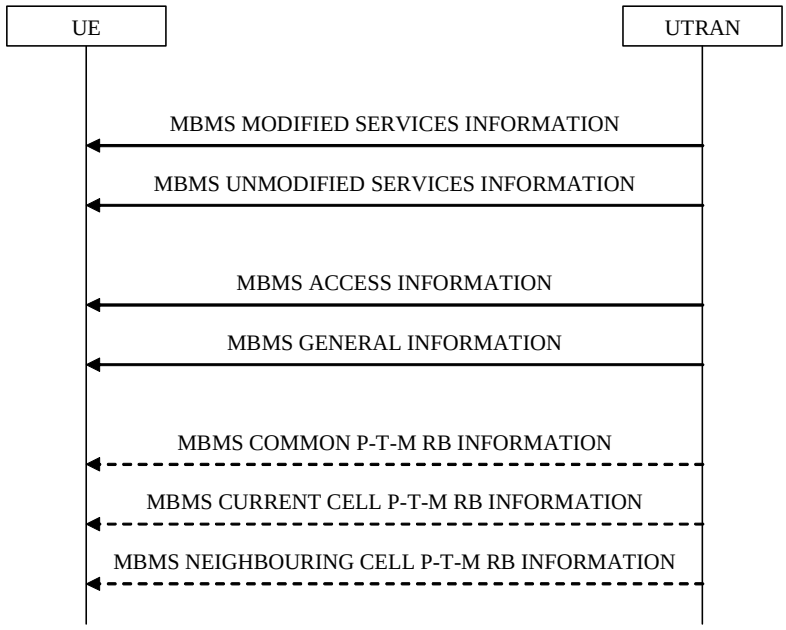

Figure 8.7.2-1: MCCH acquisition, normal

8.7.2.1 General

The UE applies the MCCH acquisition procedure to determine the MBMS services available in the cell and to initiate reception of the services that the UE has joined. The procedure applies to all UEs supporting MBMS, irrespective of ~~its~~ their state (idle, URA_PCH, CELL_PCH, CELL_FACH and CELL_DCH).

8.7.2.2 Initiation

The UE shall apply the MCCH acquisition procedure upon selecting (eg. upon power on) or re- selecting a cell supporting MBMS, upon change of MBMS controlling cell (eg. due to an active set update or hard handover), upon entrering UTRA from another RAT, upon release of a MBMS PTP RB for the purpose of changing transfer mode, upon return from loss of coverage and upon receiving an indication from upper layers that the set of activated services has changed.

8.7.2.3 MCCH information to be acquired by the UE

The UE shall detect the available MBMS services by acquiring the MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION messages without delaying reading of MCCH until the next modification period and without stopping at the end of the modification period, in accordance with subclause 8.7.1.3.

The UE shall immediately acquire the MBMS ACCESS INFORMATION and the MBMS GENERAL INFORMATION messages ie. it shall not delay reception of these messages until it has completed the acquisition of the MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION messages. Likewise, the UE should immediately acquire the MBMS CURRENT CELL P-T-M RB INFORMATION and MBMS NEIGHBOURING CELL P-T-M RB INFORMATION messages.

The UE shall continue acquiring the above messages until it has received a consistent set of MCCH information eg. both the MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION message should be acquired in the same modification period.

8.7.2.4 Reception of the MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION by the UE

Upon completing the reception of the MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION messages, the UE shall

1> act as follows for each of the services included in these messages provided that the service is included in variable MBMS_ACTIVATED_SERVICES and upper layers indicate that the session has not yet been received correctly (referred to as 'applicable services');

1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following;

1> if more than one preferred frequency applies for the applicable services:

2> delay acting upon the "MBMS Preferred frequency information" until after completing the MCCH acquisition;

2> act upon the "MBMS Preferred frequency information" as specified in 8.6.9.2 for the service(s) that upper layers indicate to have highest priority.

1> perform the service prioritisation procedure as specified in 8.5.26.

1> if the UE receives an MBMS service using a p-t-m radio bearer and the received messages does not contain an IE “MBMS required action” set to “Acquire PTM RB info” for that service then the UE shall:

2> Stop receiving the concerned MBMS service and clear all service specific information applicable for the concerned service.

8.7.2.5 Reception of the other MBMS messages by the UE

Upon receiving the MBMS ACCESS INFORMATION message, the UE shall act as specified in subclause 8.7.4.3.

Upon receiving the MBMS GENERAL INFORMATION message, the UE should store all relevant IEs included in this message. The UE shall also:

1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following.

Upon receiving the MBMS CURRENT CELL P-T-M RB INFORMATION and MBMS NEIGHBOURING CELL P-T-M RB INFORMATION messages, the UE shall act as specified in subclauses 8.7.5.3 and subclause 8.7.5.4 respectively.

The procedure ends.

8.7.3 MBMS Notification

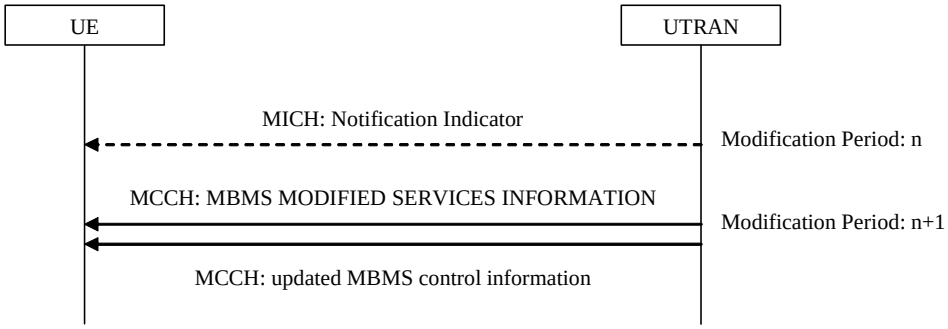

Figure 8.7.3-1: MBMS notification including notification on MICH

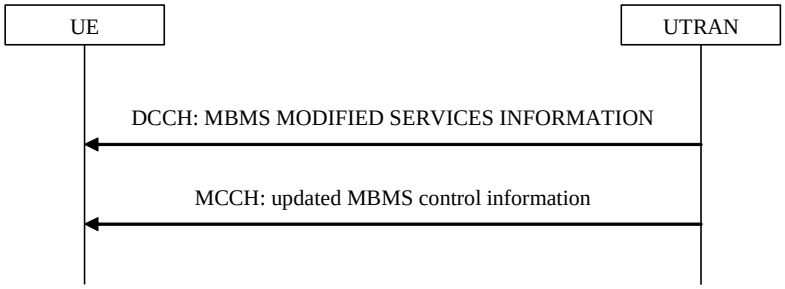

Figure 8.7.3-2: MBMS notification, dedicated

8.7.3.1 General

The MBMS notification procedure is used by the UE to respond to a notification provided by UTRAN, indicating a change applicable for one or more MBMS services the UE has joined. The procedure applies to all UEs supporting MBMS, irrespective of their state (idle and connected mode: URA_PCH, CELL_PCH, CELL_FACH and CELL_DCH). The actual notification mechanism to be used depends on the UE state.

8.7.3.2 Initiation

UTRAN initiates the notification procedure to inform UEs about a change applicable for one or more MBMS services available in a cell. Some types of MBMS service~~s~~ changes eg. the establishment of a p-t-m radio bearer, involve a modification of MCCH messages other than~~t~~ the MBMS MODIFIED SERVICES INFORMATION message.

NOTE 1: On MCCH, the MBMS MODIFIED SERVICES INFORMATION as well as the MBMS UNMODIFIED SERVICES INFORMATION messages ~~is~~ are signalled even if no services are contained in the message.

NOTE 2: A service remains in the MBMS MODIFIED SERVICES INFORMATION message until it enters a 'steady state', upon which it moves to the MBMS UNMODIFIED SERVICES INFORMATION message. In case counting is used, the service remains in the MBMS MODIFIED SERVICES INFORMATION message through the moment UTRAN has decided the transfer mode.

8.7.3.3 Receiving the MBMS Notification information

This case applies when UTRAN provides a notification indication on the MICH for the corresponding MBMS service.

8.7.3.3.1 Reception in case of notification on the MICH

A UE in idle mode, URA_PCH, CELL_PCH and CELL_FACH state that is not receiving an MBMS service provided via a p-t-m radio bearer shall monitor the MBMS notification Indicator Channel (MICH) as specified in [4]. If the UE detects a notification for one or more of the MBMS services included in the variable MBMS_ACTIVATED_SERVICES, the UE shall:

1> acquire the MBMS MODIFIED SERVICES INFORMATION message with delaying the reading of MCCH until the next modification period and with stopping at the end of the modification period, in accordance with subclause 8.7.1.3.

1> handle the MBMS MODIFIED SERVICES INFORMATION message as specified in subclause 8.7.3.4.

8.7.3.3.2 Reception when receiving an MBMS service provided p-t-m

A UE in idle mode, URA_PCH, CELL_PCH and CELL_FACH state that is receiving an MBMS service that is provided via a p-t-m radio bearer shall:

1> acquire the MBMS MODIFIED SERVICES INFORMATION message from MCCH at the start of every modification period, in accordance with subclause 8.7.1.3.

1> handle the MBMS MODIFIED SERVICES INFORMATION message as specified in subclause 8.7.3.4.

8.7.3.3.3 Reception via DCCH

Notification via DCCH is used to notify the UE about the start of a session for which a PL applies, to notify the UE about the establishment of a p-t-m radio bearer for a service for which a PL does not apply and to request a UE in PMM_idle state to establish a PMM connection to enable reception of a service provided via a p-t-p radio bearer.

Upon receiving the MBMS MODIFIED SERVICES INFORMATION message via DCCH, a UE in CELL_DCH shall:

1> handle the MBMS MODIFIED SERVICES INFORMATION message as specified in subclause 8.7.3.4.

8.7.3.4 UE action upon receiving MBMS MODIFIED SERVICES INFORMATION message

Upon receiving the MBMS MODIFIED SERVICES INFORMATION message, the UE shall~~:~~

~~1>~ act as follows for each of the services included in this messages provided that the service is included in variable MBMS_ACTIVATED_SERVICES and upper layers indicate that the session has not yet been received correctly (referred to as 'applicable services'):

1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following

1> if one or more ~~than one~~ preferred frequency applies for the applicable services:

2> delay acting upon the "MBMS Preferred frequency information" until after completing the MCCH acquisition;

2> act upon the "MBMS Preferred frequency information" as specified in 8.6.9.2 for the service(s) that upper layers indicate to have highest priority.

1> perform the service prioritisation procedure as specified in subclause 8.5.26;

1> if applicable, use a single MBMS MODIFICATION REQUEST to request ~~termination~~ release of radio bearers corresponding with~~of~~ lower priority MBMS services provided p-t-p and/ or to request a move to the preferred frequency as specified in subclause 8.5.26 and subclause 8.6.9.2 respectively;

1> The procedure ends.

8.7.3.5 UE fails to receive MBMS Notification information

If the UE fails to receive the MBMS MODIFIED SERVICES INFORMATION message within the current modification period, the UE shall:

1> Acquire the MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION messages without delaying reading of MCCH until the next modification period and with stopping at the end of ~~the~~ that modification period, in accordance with subclause 8.7.1.3.

1> act upon the received MBMS MODIFIED SERVICES INFORMATION and the MBMS UNMODIFIED SERVICES INFORMATION messages as specified in subclause 8.7.2.4

8.7.4 MBMS counting

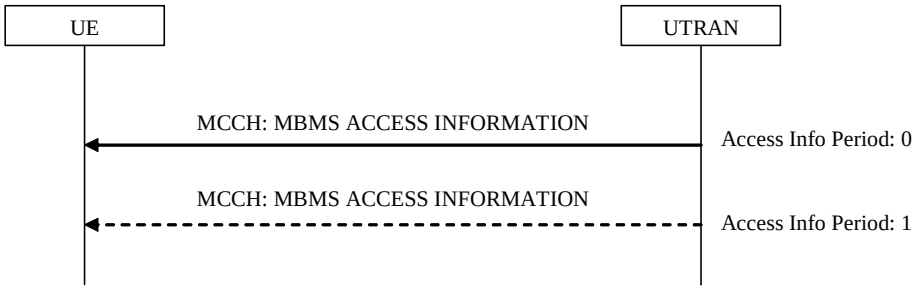

Figure 8.7.4-1: MBMS counting, normal

8.7.4.1 General

The MBMS counting procedure is used by the UE to inform UTRAN about its interest to receive an MBMS transmission. The procedure applies to UEs supporting MBMS that are in idle mode or in connected mode, URA_PCH state.

8.7.4.2 Initiation

The UE initiates the MBMS counting procedure for an MBMS transmission upon receiving an MBMS MODIFIED SERVICES or MBMS UNMODIFIED SERVICES message including IE "MBMS required UE action" with the value set to 'Acquire counting info'.

8.7.4.3 Reception of the MBMS ACCESS INFORMATION

The UE shall acquire the MBMS ACCESS INFORMATION message without delaying reading of MCCH until the next modification period in accordance with subclause 8.7.1.3. ~~The UE shall stop acquiring the MBMS ACCESS INFORMATION message at the end of the modification period, unless the message triggering the MBMS counting procedure included the IE "Continue MCCH reading" with a value set to TRUE.~~

The UE behaviour upon receiving an MBMS ACCESS INFORMATION message that is contained in more than one TTI is not specified.

Upon receiving the MBMS ACCESS INFORMATION message including ~~an~~ one or more MBMS service(s) it has joined, the UE shall for each service:

~~1> if the UE is in idle mode:~~

1~~2~~> draw a random number, "rand", uniformly distributed in the range: $0 \leq rand < 1$

1~~2~~> if the UE is in idle mode and~~if~~ 'rand' is lower than the value indicated by the IE 'Access probability factor-Idle' for the concerned service:

2~~3~~> indicate to upper layers that action is required to receive the concerned MBMS service;

2> if the above contition applies for more than one service, initiate a single indication to upper layers;

2~~3~~> the procedure ends.

1> if the UE is in URA_PCH state and 'rand' is lower than the value indicated by the IE 'Access probability factor-URA_PCH' for the concerned service:

2> initiate the cell update procedure with 'Cell update cause' set to "MBMS reception", in accordance with subclause 8.3.1;

2> if the above contition applies for more than one service, initiate a single cell update;

2> the procedure ends;

1~~2~~> otherwise:

2~~3~~> If the message triggering the MBMS counting procedure included the IE "Continue MCCH reading" with a value set to TRUE:

3> continue acquiring further MBMS ACCESS INFORMATION messages without delaying reading of MCCH until the next modification period and without stopping at the end of the modification period, in accordance with subclause 8.7.1.3.

2> otherwise:

3> continue acquiring further MBMS ACCESS INFORMATION messages without delaying reading of MCCH until the next modification period and with stopping at the end of the modification period, in accordance with subclause 8.7.1.3.

~~1> if the UE is in URA_PCH state:~~

~~2> draw a random number, "rand", uniformly distributed in the range: 0 ≤ rand < 1;~~

~~2> If 'rand' is lower than the value indicated by the IE 'Access probability factor-URA_PCH':~~

~~3> initiate the cell update procedure with 'Cell update cause' set to "MBMS reception", in accordance with subclause 8.3.1;~~

~~3> the procedure ends;~~

~~2> otherwise:~~

~~3> continue acquiring further MBMS ACCESS INFORMATION messages in the same manner as specified in the previous.~~

8.7.4.4 Termination of the MBMS counting procedure

If the UE detects that the MBMS ACCESS INFORMATION message is not provided at an access info period; OR

If the UE receives an MBMS ACCESS INFORMATION message not including an MBMS service the UE has joined~~-modification period~~, the UE shall:

1> terminate the MBMS counting procedure.

8.7.5 MBMS p-t-m radio bearer configuration

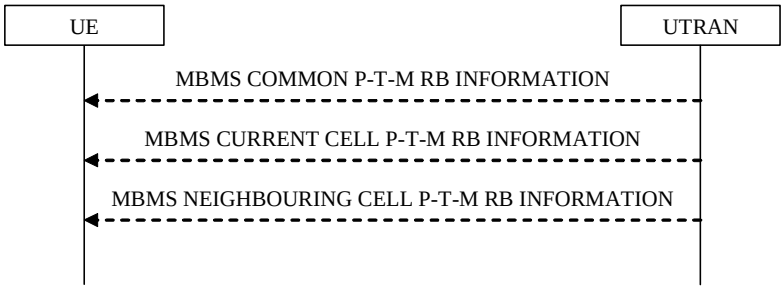

Figure 8.7.5-1: MBMS p-t-m radio bearer modification, normal

8.7.5.1 General

The MBMS p-t-m radio bearer configuration procedure is used by the UE to acquire the (modified) radio bearer configuration for one or more MBMS services the UE has joined. The procedure applies to all UEs supporting MBMS, irrespective of their state (idle and connected mode: URA_PCH, CELL_PCH, CELL_FACH and CELL_DCH).

8.7.5.2 Initiation

The UE applies the MBMS p-t-m radio bearer configuration procedure whenever it detects that one of the services it has joined is provided by means of a p-t-m radio bearerer. This may occur as part of the MCCH acquisition or the MBMS Notification procedure.

8.7.5.3 Reception of the MBMS PTM RB information

Upon completing the reception of the MBMS COMMON P-T-M RB INFORMATION and the MBMS CURRENT CELL P-T-M RB INFORMATION messages for an MBMS service it has joined, the UE shall:

1> if the UE is already receiving an MTCH and does not have the capability to receive the new service in addition:

2> the UE behaviour is undefined.

NOTE: In this case, the UE may request upper layers to prioritise the services and only receive the service(s) prioritised by upper layers.

1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following;

1> if the UE previously received the service by means of p-t-p radio bearers or;

1> if the UE previously received the service by means of a p-t-m radio bearer from a cell belonging to another MBMS cell group:

2> re- establish RLC;

2> re- initialise PDCP (FFS).

1> start or continue receiving the indicated p-t-m radio bearers depending on its UE capabilities.

The UE shall continue acquiring the above messages until it has received a consistent set of MCCH information ie. both the MBMS COMMON P-T-M RB INFORMATION and the MBMS CURRENT CELL P-T-M RB INFORMATION message should be acquired in the same modification period.

8.7.5.4 Reception of the MBMS Neighbour Cell PTM RB information

Upon receiving the MBMS NEIGHBOURING CELL P-T-M RB INFORMATION message for an MBMS service it has joined, the UE shall

1> use the indicated neighbouring cells, or a subset of them, for L1- or L2 combining;

1> start or continue receiving the indicated p-t-m radio bearers from the selected neighbouring cells depending on its UE capabilities, TBS.

The UE shall apply MBMS NEIGHBOURING CELL P-T-M RB INFORMATION only in combination with an MBMS COMMON P-T-M RB INFORMATION acquired in the same modification period.

8.7.6 MBMS modification request

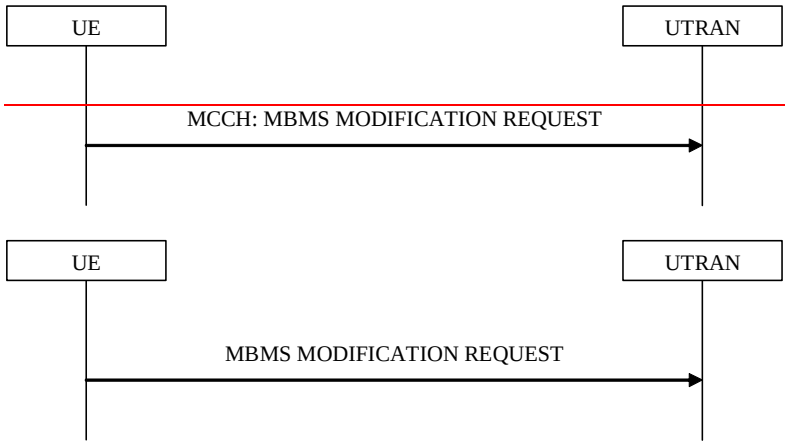

Figure 8.7.6-1: MBMS modification request, normal

8.7.6.1 General

The MBMS modification request procedure is used by the UE to request UTRAN to release the p-t-p radio bearers of ~~take some action to improve the UE's ability to receive~~ one or more ~~(prioritised)~~ MBMS services~~,~~ the UE is receiving ~~has joined~~. The procedure may also be used to request to be moved to a preferred frequency applicable for one or more (prioritised) MBMS services, the UE has joined. The procedure applies to all UEs supporting MBMS, that are in state CELL_DCH.

8.7.6.2 Initiation

The UE shall initiate the MBMS modification request ~~procedure~~ procedure in the following cases:

1> the preferred frequency applicable for the highest priority MBMS service is different from the currently used frequency;

1> ~~one or more lower priority MBMS service(s) provided via a p-t-p radio bearer~~ upper layers request to discontinue reception of an MBMS service provided via a p-t-p radio bearer e.g. because this inhibit~~(s)~~ reception of a higher priority service.

NOTE: The above case may occor upon receiving a dedicated notification or in other cases eg. a change of transfer mode from p-t-p to p-t-m for the UE's higest priority MBMS service.

The UE shall set the contents of the MBMS MODIFICATION REQUEST message as follows:

1> if the preferred frequency applicable for the highest priority MBMS service is different from the currently used frequency:

2> include the IE "MBMS preferred frequency request" and set it to the applicable preferred frequency;

1> if upper layers request to discontinue reception of an MBMS service provided via a p-t-p radio bearer~~if one or more lower priority MBMS service(s) provided via a p-t-mp radio bearer inhibit(s) reception of a higher priority service~~:

2> include the p-t-p radio bearers used for the corresponding ~~lower priority~~ MBMS services within the IE "MBMS RB list requested to be released".

8.7.6.3 Reception of a MBMS MODIFICATION REQUEST message by the UTRAN

Upon reception of a MBMS MODIFICATION REQUEST message, the UTRAN may take further action depending on the contents of the received message.

The procedure ends.

8.7.7 MBMS service scheduling

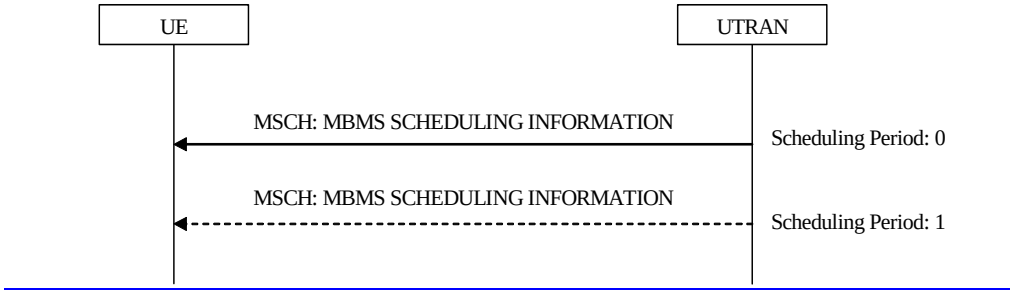

Figure 8.7.7-1: MBMS service scheduling, normal

8.7.7.1 General

The MBMS service scheduling procedure is used by the UE that is receiving one or more MBMS services that the UE has joined to acquire the MBMS scheduling information for the MBMS services. The procedure applies to all UEs that are receiving an MBMS service provided via a p-t-m radio bearer, irrespective of their state (idle and connected mode: URA_PCH, CELL_PCH, CELL_FACH and CELL_DCH).

8.7.7.2 Initiation

The UE may initiate the MBMS service scheduling procedure for any scheduling period of the concerned MBMS service while receiving an SCCPCH carrying an MBMS service.

8.7.7.3 Reception of the MBMS scheduling information

Upon receiving the MBMS SCHEDULING INFORMATION message, the UE should:

1> Act as follows for each of the services included in these messages provided that the service is included in variable MBMS_ACTIVATED_SERVICES

1> Act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following

The procedure ends.

10.2.8 CELL UPDATE CONFIRM

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

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
UE Information Elements					
U-RNTI	CV-*CCCH*		U-RNTI 10.3.3.47		
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36		
Integrity check info	CH		Integrity check info 10.3.3.16		
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing an SRNS relocation or a cell reselection from GERAN *Iu mode*	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	The UTRAN should not include this IE unless it is performing either an SRNS relocation or a cell reselection from GERAN *Iu mode*, and a change in ciphering algorithm.	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"	
New U-RNTI	OP		U-RNTI 10.3.3.47		
New C-RNTI	OP		C-RNTI 10.3.3.8		
New DSCH-RNTI	OP		DSCH-RNTI 10.3.3.9a		
New H-RNTI	OP		H-RNTI 10.3.3.14a		REL-5
New E-RNTI	OP		E-RNTI 10.3.3.10a		REL-6
RRC State Indicator	MP		RRC State Indicator 10.3.3.35a		
UTRAN DRX cycle length coefficient	OP		UTRAN DRX cycle length coefficient 10.3.3.49		
RLC re-establish indicator (RB2, RB3 and RB4)	MP		RLC re-establish indicator 10.3.3.35	Should not be set to TRUE if IE "Downlink counter synchronisation info" is included in message.	
RLC re-establish indicator (RB5 and upwards)	MP		RLC re-establish indicator 10.3.3.35	Should not be set to TRUE if IE "Downlink counter synchronisation info" is included in message.	
CN Information Elements					
CN Information info	OP		CN Information info 10.3.1.3		
UTRAN Information Elements					

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
URA identity	OP		URA identity 10.3.2.6		
RB information elements					
RB information to release list	OP	1 to <maxRB>			
>RB information to release	MP		RB information to release 10.3.4.19		
RB information to reconfigure list	OP	1 to <maxRB>			
>RB information to reconfigure	MP		RB information to reconfigure 10.3.4.18		
RB information to be affected list	OP	1 to <maxRB>			
>RB information to be affected	MP		RB information to be affected 10.3.4.17		
Downlink counter synchronisation info	OP				
>RB with PDCP information list	OP	1 to <maxRBallRABs>			
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	This IE is needed for each RB having PDCP in the case of lossless SRNS relocation	
	OP				REL-5
>>PDCP context relocation info	OP		PDCP context relocation info 10.3.4.1a	This IE is needed for each RB having PDCP and performing PDCP context relocation	REL-5
TrCH Information Elements					
Uplink transport channels					
UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24		
Deleted TrCH information list	OP	1 to <maxTrCH>			
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5		
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH>			
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2		
CHOICE *mode*	MP				

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
>FDD					
>>CPCH set ID	OP		CPCH set ID 10.3.5.3		
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxTrCH>			
>>>DRAC static information	MP		DRAC static information 10.3.5.7		
>TDD				(no data)	
Downlink transport channels					
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6		
Deleted TrCH information list	OP	1 to <maxTrCH>			
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4		
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH>			
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1		
PhyCH information elements					
Frequency info	OP		Frequency info 10.3.6.36		
Uplink radio resources					
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power	
CHOICE *channel requirement*	OP				
>Uplink DPCH info			Uplink DPCH info 10.3.6.88.		
>CPCH SET Info			CPCH SET Info 10.3.6.13		
E-DCH Info	OP		E-DCH Info 10.3.6.97		REL-6
Downlink radio resources					
CHOICE *mode*	MP				
>FDD					
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30		
>TDD				(no data)	
Downlink HS-PDSCH Information	OP		Downlink HS_PDSCH Information 10.3.6.23a		REL-5
Downlink information common for all radio links	OP		Downlink information		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			common for all radio links 10.3.6.24		
Downlink information per radio link list	OP	1 to <maxRL>		Send downlink information for each radio link to be set-up	
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27		
~~MBMS FLC applicability information~~MBMS PL Service Restriction Information	~~M~~OP		Enumerated (TRUE)~~MBMS FLC applicability information 10.3.9a.6~~	Absence means that on the MBMS Preferred Layer (PL) no restrictions apply concerning the use of non-MBMS services i.e. the PL is not congested	REL-6

Condition	Explanation
CCCH	This IE is mandatory present when CCCH is used and ciphering is not required and not needed otherwise.

10.2.16c INITIAL DIRECT TRANSFER

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

RLC-SAP: AM

Logical channel: DCCH

Direction: UE -> UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE information elements					
Integrity check info	CH		Integrity check info 10.3.3.16		
PLMN identity	OP		PLMN identity 10.3.1.11	This IE indicates the PLMN to which the UE requests the signalling connection to be established.	REL-6
CN information elements					
CN domain identity	MP		CN domain identity 10.3.1.1		
Intra Domain NAS Node Selector	MP		Intra Domain NAS Node Selector 10.3.1.6		
NAS message	MP		NAS message 10.3.1.8		
START	OP		START 10.3.3.38	START value to be used in the CN domain as indicated in the IE "CN domain identity". This IE shall always be present in this version of the protocol.	
Establishment cause	OP		Establishment cause 10.3.3.11		Rel-5
Measurement information elements					
Measured results on RACH	OP		Measured results on RACH 10.3.7.45		
MBMS joined information	OP			~~Included if the UE has joined one or more MBMS services~~	REL-6
>P-TMSI	OP		P-TMSI (GSM-MAP) 10.3.1.13	~~In case the UE is in PMM- Idle~~	REL-6

10.2.16e MBMS ACCESS INFORMATION

This message is transmitted periodically by UTRAN to inform UEs that have joined a particular MBMS service about the need to establish an RRC connection. While the message contents may change within a modification period, all occurances of the information within a modification period concern the same MBMS service(s).

Logical channel: MCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message type	MP		Message Type		REL-6
Service list	MP	1 to <maxMBMSservCount>			REL-6
>MBMS short transmission ID	MP		MBMS Short transmission identity 10.3.9a.10	Reference/ index to a transmission listed in the MBMS MODIFIED SERVICES INFORMATION or MBMS UNMODIFIED SERVICES INFORMATION	REL-6
>Access probability factor - Idle	MP		Integer (0 to 960 by step of 32, 1000)	Access probability factor for UEs in idle mode. The actual Access Probability (AP) is a function of the Access Probability Factor (APF): $AP(APF) = 2^{-(APF/100)}$	REL-6
>Access probability factor – URA_PCH	MD		Integer (0 to 960 by step of 32, 1000)	Access probability factor for UEs in URA_PCH. The actual Access Probability (AP) is a function of the Access Probability Factor (APF): $AP(APF) = 2^{-(APF/100)}$ Default value is the value included in IE "Access probability factor - Idle"	REL-6

10.2.16f MBMS COMMON P-T-M RB INFORMATION

This message is transmitted periodically by UTRAN to inform UEs about the p-t-m RB configuration information that may be common between different services, applicable in the current and/ or in neighbouring cells. The message contents does not change within a modification period.

Logical channel: MCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message type	MP		Message Type		REL-6
RB information list	MP	1 to <maxMBMS-CommonRB>			REL-6
>RB identity	MP		MBMS Common RB identity 10.3.9a.3		REL-6
>PDCP info	MP		PDCP info 10.3.4.2		REL-6
>RLC info	MP		RLC info 10.3.4.23		REL-6
TrCh information for each TrCh	MP	1 to <maxMBMS-CommonTrCh>			REL-6
>Transport channel identity	MP		MBMS Common TrCh identity 10.3.9a.4		REL-6
>TFS	MP		Transport format set 10.3.5.23		REL-6
TrCh information for each CCTrCh	MP	1 to <maxMBMS-CommonCCTrCh>			REL-6
>CCTrCH identity	MP		MBMS Common CCTrCh identity 10.3.9a.1		REL-6
>TFCS	MP		Transport format combination set 10.3.5.20		REL-6
PhyCh information	MP	1 to <maxMBMS-CommonPhyCh>			REL-6
>PhyCh identity	MP		MBMS Common PhyCh identity 10.3.9a.2		REL-6
>Secondary CCPCH info MBMS	MP		Secondary CCPCH info MBMS 10.3.6.71a		REL-6

10.2.16g MBMS CURRENT CELL P-T-M RB INFORMATION

This message is transmitted periodically by UTRAN to inform UEs about the PTM RB configuration used to in a cell, in case one or more MBMS service is provided using p-t-m radio bearers. The message contents does not change within a modification period.

Logical channel: MCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message type	MP		Message Type	Current cell PTM RB info	REL-6
S-CCPCH list	OP	1 to <maxSCCPCH>		Absent in case MTCH are only mapped to the S-CCPCH(s) included in SIB type 5	REL-6
>S-CCPCH identity	OP		MBMS Current cell S-CCPCH identity 10.3.9a.5	When L1- combining applies, this identity is used to refer to this S-CCPCH within the NEIGHBOURING CELL P-T-M RB INFORMATION message	REL-6
>Secondary CCPCH info	MP		MBMS Common PhyCh identity 10.3.9a.2	Refers to a configuration in the common RB info	REL-6
>TrCh information common for all TrCh	MP		MBMS Common CCTrCh identity 10.3.9a.1	Refers to a (TFCS) configuration in the common RB info	REL-6
>~~FACH carrying MTCH~~TrCH information list	MP	1 to <maxTrChperSCCPCH>		List of FACH transport channels carrying one or more MTCH	REL-6
>>TrCh information	MP		MBMS Common TrCh identity 10.3.9a.4	Refers to a (TFS) configuration in the common RB info	REL-6
>>RB information list	O~~M~~P	1 to <maxRBperTrCh>		The IE is absent if temporarily no RBs ~~cell~~ are mapped to this TrCh or if the TrCH only carries MSCH	REL-6
>>>RB information	MP		MBMS p-t-m RB information 10.3.9a.7a		REL-6
~~>>>RB information~~	~~MP~~		~~MBMS Common RB identity 10.3.9a.3~~		~~REL-6~~
~~>>>MBMS short transmission ID~~	~~MP~~		~~MBMS Short transmission identity 10.3.9a.10~~		~~REL-6~~
~~>>>MBMS logical channel identity~~	~~MP~~		~~Integer (1..16)~~	~~This identifier is used to distinguish different MTCH mapped on to a TrCh (within the MAC header)~~	~~REL-6~~
~~>>>L1 combining status~~	~~MP~~		~~BOOLEAN~~	~~Value TRUE means that L1 combining is used for this radio bearer~~	~~REL-6~~
~~>Scheduling information~~	~~OP~~				~~REL-6~~
~~>>FACH carrying MSCH~~	~~MP~~		~~MBMS Common TrCh identity 10.3.9a.4~~	~~Transport channel carrying MSCH~~	~~REL-6~~
>>MSCH configuration	~~M~~OP		MSCH	Included if the TrCH carries	REL-6

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
information			configuration information 10.3.9a.16	MSCH	
S-CCPCH in SIB type 5	OP	1 to <maxSCCPCH>		Every S-CCPCH's included in SIB type 5 may carry MTCH	REL-6
>S-CCPCH identity			Integer (1..maxSCCPCH)	Index of the S-CCPCH within the list included in SIB type 5	REL-6
>~~FACH carrying MTCH~~TrCH information list	MP	1 to <maxFACHPCH>		List of FACH transport channels carrying one or more MTCH	REL-6
>>TrCh identity	MP		Integer (1..maxFACHPCH)	Index of the FACH within the list of TrChs defined for that S-CCPCH as included in SIB type 5	REL-6
>>RB information list	~~M~~OP	1 to <maxRBperTrCh>		The IE is absent if this TrCh only carries MSCH	REL-6
>>>RB information	MP		MBMS p-t-m RB information 10.3.9a.7a		REL-6
~~>>>RB information~~	~~MP~~		~~MBMS Common RB identity 10.3.9a.3~~	~~Refers to a configuration in the common RB info~~	~~REL-6~~
~~>>>MBMS short transmission ID~~	~~MP~~		~~MBMS Short transmission identity 10.3.9a.10~~		~~REL-6~~
~~>>>MBMS logical channel identity~~	~~MP~~		~~Integer (1..16)~~	~~This identifier is used to distinguish different MTCH mapped on to a TrCh (within the MAC header)~~	~~REL-6~~
~~>Scheduling information~~	~~OP~~				~~REL-6~~
~~>>FACH carrying MSCH~~	~~MP~~		~~Integer (1..maxFACHPCH)~~	~~Index of the FACH within the list of TrChs defined for that S-CCPCH as included in SIB type 5~~	~~REL-6~~
>>MSCH configuration information	~~M~~OP		MSCH configuration information 10.3.9a.16	Included if the TrCH carries MSCH	REL-6

10.2.16h MBMS GENERAL INFORMATION

This message is transmitted periodically by UTRAN to inform UEs about the general MBMS (configuration) information. The message contents does not change within a modification period.

~~For the moment this message is used as a placeholder for general information not yet allocated. In case there is sufficient information, there may be sufficient justification to introduce a separate message to transfer this information (FFS).~~

Logical channel: MCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message type	MP		Message Type		REL-6
MBMS preferred frequency information	OP	~~1.. <maxMBMS-Freq>~~	MBMS preferred frequency information 10.3.7.43a		REL-6
MBMS timers and counters	MP		MBMS specific timers and counters 10.3.9a.11	Specific timers like T318	REL-6
MICH configuration information	MP		MICH configuration information 10.3.9a.14		REL-6
Cell group identity	MP		Bit string (12)	Identifies the group of cells for which the same common RLC and PDCP entity is used as the current cell	REL-6
Default MSCH configuration information	OP		MSCH configuration information 10.3.9a.16	The default MSCH configuration	REL-6
~~Default L1 combining configuration info~~	~~OP~~				~~REL-6~~
~~>MBMS L1 combining scheduling cycle length~~	~~MP~~		~~Integer (1..Nx) by step of~~		~~REL-6~~

10.2.16i MBMS MODIFICATION REQUEST

The UE transmits this message to request UTRAN to take certain actions to improve the UE's ability to receive it's (prioritised) activated MBMS services and/ or sessions.

Logical channel: DCCH

Direction: UE → UTRAN

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message type	MP		Message Type		REL-6
MBMS preferred frequency request	OP		Frequency info 10.3.6.36	The MBMS preferred frequency the UE would like to be moved to	REL-6
MBMS RB list requested to be released	OP	1 to <maxRB>		RBs of lower priority MBMS services inhibiting reception of a higher priority service	REL-6
>RB information to release	MP		RB information to release 10.3.4.19		REL-6

10.2.16j MBMS MODIFIED SERVICES INFORMATION

This information is transmitted periodically by UTRAN to inform UEs about a change applicable for one or more MBMS services available in the current cell and possibly in neighbouring cells.

Logical channel: MCCH, DCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message type	MP		Message Type		REL-6
Modified service list	OP	1.. <maxMBMSservModif>			REL-6
>MBMS Transmission identity	MP		MBMS Transmission identity 10.3.9a.12		REL-6
>MBMS required UE action	MP		Enumerated (None, Acquire counting info, Acquire PTM RB info, Establish PMM connection, Release PTM RB~~, Aquire MCCH~~)	Indicates required UE action upon receiving the message. When sent on the DCCH, only the following values apply: None (FLC), Acquire PTM RB info, Establish PMM connection).	REL-6
>MBMS preferred frequency	OP			Indicates the frequency that UEs shall consider as the preferred frequency layer for cell re-selection during a session for an MBMS service the UE has joined, as specified in [25.304] .	REL-6
>>PFL index	CV-*MCCH*		Integer (1.. <maxMBMS-Freq>)	Index pointing to an entry in the list included in MBMS GENERAL INFORMATION.	REL-6
>>PFL info	CV-*DCCH*		Frequency info 10.3.6.36		REL-6
>Continue MCCH reading	MP		BOOLEAN	MCCH in- band notification. Indicates whether or not the UE should continue reading MCCH in the next modification period. Not applicable when sent on the DCCH	REL-6
MBMS re- aquire MCCH	MP		BOOLEAN		REL-6
End of modified MCCH information	OP		Integer (1..15)	Final TTI including MCCH messages with different content than in the previous modification period	REL-6

Condition	Explanation
MCCH	This IE is mandatory present if the message is sent via MCCH and not needed otherwise.
DCCH	This IE is mandatory present if the message is sent via DCCH and not needed otherwise.

10.2.16k MBMS NEIGHBOURING CELL P-T-M RB INFORMATION

This message is transmitted periodically by UTRAN to inform UEs about the p-t-m RB configuration used to in neighbouring cells, indicating the UE may perform selection and/ or soft combining. The message contents does not change within a modification period.

Logical channel: MCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message type	MP		Message Type		REL-6
Neighbouring cell identity	MP		Integer (1..X)	Assumption is to use a short index eg. pointer to SIB 11/ 12	REL-6
Neighbouring cell's S-CCPCH list	MP	1 to <maxSCCPCH>			REL-6
>Secondary CCPCH info	MP		MBMS Common PhyCh identity 10.3.9a.2	S-CCPCH configuration used in neighbouring cell. Refers to a configuration in the common RB info	REL-6
>Rake combinable group id	OP		Integer (0..15)	The IE should only be used in case of FDD. Indicates a group of cells for which Rake combining may be performed	REL-6
~~>CHOICE combining method~~					
>~~>Full~~ L1 combining	OP			L2- combining applies if the IE is absent	REL-6
~~>>>Current cell's S-CCPCH~~	~~MP~~		~~MBMS Current cell S-CCPCH identity 10.3.9a.5~~	~~Reference to the S-CCPCH in the current cell with which L1 combining is performed. Note that this applies exaclty the same configuration, so no further info is needed~~	
>>CHOICE *mode*	MP				REL-6
>>>FDD					REL-6
>>>Type of L1-combining	MP		Enumerated (Rake, Soft)	In case the IE is set to 'Rake', the current and the neighbouring cell are in the same S-CCPCH cluster, as defined in [29]. Each combining method has different transmission time difference requirements, as specified in [19, 20]	REL-6
>>>>MBMS transmission time difference	CV--Soft		Integer (0..3)	Indicates the time difference between the TTIs on the current and the neighbouring cell's SCCPCH that can be L1-combined	REL-6
>>>>MBMS L1 combining schedule	OP		MBMS L1 combining schedule 10.3.9a.7	If included partial layer 1 (Soft) combining applies, in which case this IE indicates when L1-combining applies. If the IE is absent, L1 combining applies continously	REL-6
>>>TDD				(no data)	REL-6
~~>>Other combining~~				~~Partial L1- combining or L2- combining~~	
~~>>>MBMS L1 combining schedule~~	~~OP~~		~~MBMS L1- combining schedule~~	~~If included partial layer 1 (Soft) combining applies, in which case this IE indicates when L1- combining applies. If the IE is absent, L2- combining applies~~	
~~>>~~>CHOICE L23 configuration	MP				REL-6
~~>>~~>>SameAs Current cell				Apart from the physical channel configuration and the MSCH configuration information, the same configuration as for the indicated S-CCPCH used in the current cell applies	REL-6
~~>>~~>>>Current cell's S-CCPCH	MP		MBMS Current cell S-	Reference to the S-CCPCH in the current cell with which applies exaclty the same configuration	REL-6

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			CCPCH identity 10.3.9a.5		
>>>>>MSCH configuration information	MP		MSCH configuration information 10.3.9a.16		REL-6
>>>>Different					REL-6
>>>>>TrCh information for common for all TrCh	MP		MBMS Common CCTrCh identity 10.3.9a.1	Refers to a (TFCS) configuration in the common RB info	REL-6
>>>>>FACH carrying MTCHTrCH information list	MP	1 to <maxFACHPCH>			REL-6
>>>>>>TrCh information	MP		MBMS Common TrCh identity 10.3.9a.4	Refers to a (TFS) configuration in the common RB info	REL-6
>>>>>>TrCh combining status	MP		BOOLEAN	Value TRUE means that TrCh combining is used for this transport channel (TDD only). Note 2.	REL-6
>>>>>>RB information list	OMP	1 to <maxRBperTrCh>		The IE is absent if (temporarily) no RBs corresponding with services provided in the current cell are mapped to this TrCh or if the TrCH only carries MCCH and/or MSCH	REL-6
>>>>>>RB information	MP		MBMS p-t-m RB information 10.3.9a.7a		REL-6
>>>>>>>>MBMS short transmission ID	MP		MBMS Short transmission identity 10.3.9a.10		
>>>>>>>>MBMS logical channel identity	MP		Integer (1..16)	This identifier is used to distinguish different MTCH mapped on to a TrCh (within the MAC header)	
>>>>>>>>L1 combining status	MP		BOOLEAN	Value TRUE means that L1 combining is used for this radio bearer	
>>>>>>Scheduling information	OP				
>>>>>>>FACH carrying MSCH	MP		MBMS Common TrCh identity 10.3.9a.4	Transport channel carrying MSCH	
>>>>>>MSCH configuration information	MOP		MSCH configuration information	Included if the TrCH carries MSCH	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			10.3.9a.16		

NOTE 1: The signalling supports the option that UTRAN maps one service to L1 combining slots for some neighbours and to the L2 combining slots for other neighbours ie. the use of different combining schemes for different neighbours

NOTE 2: Transport combining can only be indicated when the complete L2 configuration is provided for the neighbouring cell (i.e. using L2 configuration choice “different”). Fortunately, a scenario in which the neighbouring cell configuration is different from the current cell is regarded as the typical scenario for using transport combining.

Condition	Explanation
Soft	This IE is mandatory present if the IE "Type of L1-combining" is included and set to ‘soft’ and not needed otherwise.

10.2.16L MBMS SCHEDULING INFORMATION

This message is transmitted periodically by UTRAN to inform UEs when the MBMS services, provided on the same S-CCPCH as the message is sent, are scheduled to be transmitted. The UE may use the scheduling information to discontinue receiving the concerned S-CCPCH. The message is transmitted in accordance with the MSCH configuration applicable for the corresponding S-CCPCH.

Logical channel: MSCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message type	MP		Message Type	
Service scheduling info list	MP	1 to < maxMBMSservSched>		
>MBMS ~~Service~~ Transmission identity	MP		MBMS ~~Service~~ Transmission identity 10.3.9a.12~~8~~	
>MBMS Service transmissions info list	OP	1 to < maxMBMSTransmis>		One or more sets of scheduling information comprising of the beginning and duration of an MBMS service transmission for one scheduling period
>>Start	MP		Integer (0..1020~~1..X~~) by step of 4	Indicates the start of the transmission relative to the TTI in which the MBMS SCHEDULING INFORMATION message was received. In number of radio frames.
>>Duration	MP		Integer (4..1024~~1..X~~)	In number of radio frames
>Next scheduling period	MP		Integer (0~~1~~..312~~2~~)	~~Indicates the next scheduling period that may include information for the concerned service. In case UTRAN is certain no data will be transmitted for several scheduling periods, it may signal a value higher than 1~~Number of scheduling periods, after the current scheduling period, in which no data will be transmitted for the concerned service. If the Next scheduling period is set to 0, data may be transmitted for the concerned service in the scheduling period immediately following the current scheduling period

10.2.16m MBMS UNMODIFIED SERVICES INFORMATION

This message is transmitted periodically by UTRAN to inform UEs about the MBMS services, available in the current cell and possibly in neighbouring cells, that have not changed. The message is repeated every repetition period while its contents does not change within a modification period.

Logical channel: MCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Message type	MP		Message Type	
Unmodified services list	OP	1 to <maxMBMSservUnmodif>		
>MBMS Transmission identity	MP		MBMS Transmission identity 10.3.9a.12	
>MBMS required UE action	MP		Enumerated (None, Acquire PTM RB info, Establish PMM connection)	Indication of the UE action required to receive the service:
>MBMS preferred frequency	OP		Integer (1..<maxMBMS-Freq>)	Information about the frequency that UEs shall consider as the preferred frequency layer for cell re-selection during a session for an MBMS service the UE has joined, as specified in [25.304] . Index pointing to an entry in the list included in MBMS GENERAL INFORMATION

10.2.22 PHYSICAL CHANNEL RECONFIGURATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE Information Elements					
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36		
Integrity check info	CH		Integrity check info 10.3.3.16		
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing an SRNS relocation	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	The UTRAN should not include this IE unless it is performing an SRNS relocation and a change in ciphering algorithm	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"	
New U-RNTI	OP		U-RNTI 10.3.3.47		
New C-RNTI	OP		C-RNTI 10.3.3.8		
New DSCH-RNTI	OP		DSCH-RNTI 10.3.3.9a		
New H-RNTI	OP		H-RNTI 10.3.3.14a		REL-5
New E-RNTI	OP		E-RNTI 10.3.3.10a		REL-6
RRC State Indicator	MP		RRC State Indicator 10.3.3.35a		
UTRAN DRX cycle length coefficient	OP		UTRAN DRX cycle length coefficient 10.3.3.49		
CN Information Elements					
CN Information info	OP		CN Information info 10.3.1.3		
PLMN Identity	OP		PLMN Identity 10.3.1.11	If present, this IE replaces the PLMN in CN Information info.	REL-6
UTRAN mobility information elements					
URA identity	OP		URA identity 10.3.2.6		
RB information elements					
Downlink counter synchronisation info	OP				
>RB with PDCP information list	OP	1 to <maxRBallRABs>			
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	This IE is needed for each RB having PDCP in the case of lossless SRNS relocation	
	OP				REL-5
>>PDCP context relocation info	OP		PDCP context relocation info 10.3.4.1a	This IE is needed for each RB having PDCP and performing PDCP context relocation	REL-5
PhyCH information elements					
Frequency info	OP		Frequency info 10.3.6.36		
Uplink radio resources					
Maximum allowed UL TX power	MD		Maximum allowed UL TX power	Default value is the existing value of the maximum	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			10.3.6.39	allowed UL TX power	
CHOICE *channel requirement*	OP				
>Uplink DPCH info			Uplink DPCH info 10.3.6.88		
>CPCH SET Info			CPCH SET Info 10.3.6.13		
>CPCH set ID			CPCH set ID 10.3.5.3		
E-DCH Info	OP		E-DCH Info 10.3.6.97		REL-6
Downlink radio resources					
CHOICE *mode*	MP				
>FDD					
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30		
>TDD				(no data)	
Downlink HS-PDSCH Information	OP		Downlink HS_PDSCH Information 10.3.6.23a		REL-5
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24		
Downlink information per radio link list	OP	1 to <maxRL>		Send downlink information for each radio link	
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27		
~~MBMS FLC applicability information~~MBMS PL Service Restriction Information	~~M~~OP		Enumerated (TRUE)~~MBMS FLC applicability information 10.3.9a.6~~	Absence means that on the MBMS Preferred Layer (PL) no restrictions apply concerning the use of non-MBMS services i.e. the PL is not congested	REL-6

10.2.27 RADIO BEARER RECONFIGURATION

This message is sent from UTRAN to reconfigure parameters related to a change of QoS. This procedure can also change the multiplexing of MAC, reconfigure transport channels and physical channels. This message is also used to perform a handover from GERAN *Iu mode* to UTRAN.

RLC-SAP: AM or UM or sent through GERAN *Iu mode*

Logical channel: DCCH or sent through GERAN *Iu mode*

Direction: UTRAN → UE

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE Information elements					
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36		
Integrity check info	CH		Integrity check info 10.3.3.16		
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing an SRNS relocation or a handover from GERAN *Iu mode*	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	The UTRAN should not include this IE unless it is performing either an SRNS relocation or a handover from GERAN *Iu mode* and a change in ciphering algorithm	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"	
New U-RNTI	OP		U-RNTI 10.3.3.47		
New C-RNTI	OP		C-RNTI 10.3.3.8		
New DSCH-RNTI	OP		DSCH-RNTI 10.3.3.9a		
New H-RNTI	OP		H-RNTI 10.3.3.14a		REL-5
New E-RNTI	OP		E-RNTI 10.3.3.10a		REL-6
RRC State Indicator	MP		RRC State Indicator 10.3.3.35a		
UTRAN DRX cycle length coefficient	OP		UTRAN DRX cycle length coefficient 10.3.3.49		
CN information elements					
CN Information info	OP		CN Information info 10.3.1.3		
PLMN Identity	OP		PLMN Identity 10.3.1.11	If present, this IE replaces the PLMN in CN Information info.	REL-6
UTRAN mobility information elements					
URA identity	OP		URA identity 10.3.2.6		
CHOICE specification mode	MP				REL-5
>Complete specification					
RB information elements					
>>RAB information to reconfigure list	OP	1 to < maxRABse			

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
		tup >			
>>>RAB information to reconfigure	MP		RAB information to reconfigure 10.3.4.11		
>>RB information to reconfigure list	MP	1to <maxRB>		Although this IE is not always required, need is MP to align with ASN.1	
	OP				REL-4
>>>RB information to reconfigure	MP		RB information to reconfigure 10.3.4.18		
>>RB information to be affected list	OP	1 to <maxRB>			
>>>RB information to be affected	MP		RB information to be affected 10.3.4.17		
>>RB with PDCP context relocation info list	OP	1 to <maxRBallRABs>		This IE is needed for each RB having PDCP and performing PDCP context relocation	REL-5
>>>PDCP context relocation info	MP		PDCP context relocation info 10.3.4.1a		REL-5
TrCH Information Elements					
Uplink transport channels					
>>UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24		
>>Deleted TrCH information list	OP	1 to <maxTrCH>			
>>>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5		
>>Added or Reconfigured TrCH information list	OP	1 to <maxTrCH>			
>>>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2		
>>CHOICE *mode*	OP				
>>>FDD					
>>>>CPCH set ID	OP		CPCH set ID 10.3.5.3		
>>>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxTrCH>			

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
>>>>>DRAC static information	MP		DRAC static information 10.3.5.7		
>>>TDD				(no data)	
Downlink transport channels					
>>DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6		
>>Deleted TrCH information list	OP	1 to <maxTrCH>			
>>>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4		
>>Added or Reconfigured TrCH information list	OP	1 to <maxTrCH>			
>>>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1		
>Preconfiguration					REL-5
>>CHOICE *Preconfiguration mode*	MP			This value only applies in case the message is sent through GERAN *Iu mode*	
>>>Predefined configuration identity	MP		Predefined configuration identity 10.3.4.5		
>>>Default configuration					
>>>>Default configuration mode	MP		Enumerated (FDD, TDD)	Indicates whether the FDD or TDD version of the default configuration shall be used	
>>>>Default configuration identity	MP		Default configuration identity 10.3.4.0		
PhyCH information elements					
Frequency info	OP		Frequency info 10.3.6.36		
Uplink radio resources					
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power	
CHOICE *channel requirement*	OP				
>Uplink DPCH info			Uplink DPCH info 10.3.6.88		
>CPCH SET Info			CPCH SET Info 10.3.6.13		
E-DCH Info	OP		E-DCH Info		REL-6

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			10.3.6.97		
Downlink radio resources					
CHOICE *mode*	MP				
>FDD					
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30		
>TDD				(no data)	
Downlink HS-PDSCH Information	OP		Downlink HS-PDSCH Information 10.3.6.23a		REL-5
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24		
Downlink information per radio link list	MP	1 to <maxRL>		Although this IE is not always required, need is MP to align with ASN.1	
	OP				REL-4
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27		
~~MBMS FLC applicability information~~MBMS PL Service Restriction Information	~~M~~OP		Enumerated (TRUE)~~MBMS FLC applicability information 10.3.9a.6~~	Absence means that on the MBMS Preferred Layer (PL) no restrictions apply concerning the use of non-MBMS services i.e. the PL is not congested	REL-6

10.2.30 RADIO BEARER RELEASE

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE Information Elements					
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36		
Integrity check info	CH		Integrity check info		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			10.3.3.16		
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing an SRNS relocation.	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	The UTRAN should not include this IE unless it is performing an SRNS relocation and a change in ciphering algorithm.	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"	
New U-RNTI	OP		U-RNTI 10.3.3.47		
New C-RNTI	OP		C-RNTI 10.3.3.8		
New DSCH-RNTI	OP		DSCH-RNTI 10.3.3.9a		
New H-RNTI	OP		H-RNTI 10.3.3.14a		REL-5
New E-RNTI	OP		E-RNTI 10.3.3.10a		REL-6
RRC State Indicator	MP		RRC State Indicator 10.3.3.35a		
UTRAN DRX cycle length coefficient	OP		UTRAN DRX cycle length coefficient 10.3.3.49		
CN Information Elements					
CN Information info	OP		CN Information info 10.3.1.3		
PLMN Identity	OP		PLMN Identity 10.3.1.11	If present, this IE replaces the PLMN in CN Information info.	REL-6
Signalling Connection release indication	OP		CN domain identity 10.3.1.1		
UTRAN mobility information elements					
URA identity	OP		URA identity 10.3.2.6		
RB Information Elements					
RAB information to reconfigure list	OP	1 to < maxRABsetup >			
>RAB information to reconfigure	MP		RAB information to reconfigure 10.3.4.11		
RB information to release list	MP	1 to <maxRB>			
>RB information to release	MP		RB information to release 10.3.4.19		
RB information to be affected list	OP	1 to <maxRB>			
>RB information to be affected	MP		RB information to be affected		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			10.3.4.17		
Downlink counter synchronisation info	OP				
>RB with PDCP information list	OP	1 to <maxRBallRABs>			
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	This IE is needed for each RB having PDCP in the case of lossless SRNS relocation	
	OP				REL-5
>RB with PDCP context relocation info list	OP	1 to <maxRBallRABs>			REL-5
>>PDCP context relocation info	MP		PDCP context relocation info 10.3.4.1a	This IE is needed for each RB having PDCP and performing PDCP context relocation	REL-5
TrCH Information Elements					
Uplink transport channels					
UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24		
Deleted TrCH information list	OP	1 to <maxTrCH>			
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5		
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH>			
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2		
CHOICE *mode*	OP				
>FDD					
>>CPCH set ID	OP		CPCH set ID 10.3.5.3		
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxTrCH>			
>>>DRAC static information	MP		DRAC static information 10.3.5.7		
>TDD				(no data)	
Downlink transport channels					
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Deleted TrCH information list	OP	1 to <maxTrCH>			
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4		
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH>			
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1		
PhyCH information elements					
Frequency info	OP		Frequency info 10.3.6.36		
Uplink radio resources					
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power	
CHOICE *channel requirement*	OP				
>Uplink DPCH info			Uplink DPCH info 10.3.6.88		
>CPCH SET Info			CPCH SET Info 10.3.6.13		
E-DCH Info	OP		E-DCH Info 10.3.6.97		REL-6
Downlink radio resources					
CHOICE *mode*	MP				
>FDD					
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30		
>TDD				(no data)	
Downlink HS-PDSCH Information	OP		Downlink HS-PDSCH Information 10.3.6.23a		REL-5
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24		
Downlink information per radio link list	OP	1 to <maxRL>		Send downlink information for each radio link to be set-up	
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27		
~~MBMS FLC applicability information~~MBMS PL Service Restriction Information	~~M~~OP		Enumerated (TRUE)~~MBMS FLC applicability information 10.3.9a.6~~	Absence means that on the MBMS Preferred Layer (PL) no restrictions apply concerning the use of non-MBMS services i.e. the PL is not congested	REL-6
MBMS RB list released to change transfer mode	OP	1 to <maxRB>			REL-6

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
>RB information to release	MP		RB information to release 10.3.4.19		REL-6

10.2.33 RADIO BEARER SETUP

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE Information Elements					
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36		
Integrity check info	CH		Integrity check info 10.3.3.16		
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing an SRNS relocation	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	The UTRAN should not include this IE unless it is performing an SRNS relocation and a change in ciphering algorithm	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"	
New U-RNTI	OP		U-RNTI 10.3.3.47		
New C-RNTI	OP		C-RNTI 10.3.3.8		
New DSCH-RNTI	OP		DSCH-RNTI 10.3.3.9a		
New H-RNTI	OP		H-RNTI 10.3.3.14a		REL-5
New E-RNTI	OP		E-RNTI 10.3.3.10a		REL-6
RRC State Indicator	MP		RRC State Indicator 10.3.3.35a		
UTRAN DRX cycle length coefficient	OP		UTRAN DRX cycle length coefficient 10.3.3.49		
CN Information Elements					
CN Information info	OP		CN Information		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			info 10.3.1.3		
PLMN Identity	OP		PLMN Identity 10.3.1.11	If present, this IE replaces the PLMN in CN Information info.	REL-6
UTRAN mobility information elements					
URA identity	OP		URA identity 10.3.2.6		
RB Information Elements					
Signalling RB information to setup list	OP	1 to <maxSRBsetup>		For each signalling radio bearer established	
>Signalling RB information to setup	MP		Signalling RB information to setup 10.3.4.24		
RAB information to setup list	OP	1 to <maxRABsetup>		For each RAB established	
>RAB information for setup	MP		RAB information for setup 10.3.4.10		
RB information to be affected list	OP	1 to <maxRB>			
>RB information to be affected	MP		RB information to be affected 10.3.4.17		
Downlink counter synchronisation info	OP				
>RB with PDCP information list	OP	1 to <maxRBallRABs>			
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	This IE is needed for each RB having PDCP in the case of lossless SRNS relocation	
	OP				REL-5
>>PDCP context relocation info	OP		PDCP context relocation info 10.3.4.1a	This IE is needed for each RB having PDCP and performing PDCP context relocation	REL-5
TrCH Information Elements					
Uplink transport channels					
UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24		
Deleted TrCH information list	OP	1 to <maxTrCH>			
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH>			
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2		
CHOICE *mode*	OP				
>FDD					
>>CPCH set ID	OP		CPCH set ID 10.3.5.3		
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxTrCH>			
>>>DRAC static information	MP		DRAC static information 10.3.5.7		
>TDD				(no data)	
Downlink transport channels					
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels10.3.5.6		
Deleted TrCH information list	OP	1 to <maxTrCH>			
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4		
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH>			
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1		
PhyCH information elements					
Frequency info	OP		Frequency info 10.3.6.36		
Uplink radio resources					
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power	
CHOICE *channel requirement*	OP				
>Uplink DPCH info			Uplink DPCH info 10.3.6.88		
>CPCH SET Info			CPCH SET Info 10.3.6.13		
E-DCH Info	OP		E-DCH Info 10.3.6.97		REL-6
Downlink radio resources					
CHOICE *mode*	MP				

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
>FDD					
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30		
>TDD				(no data)	
Downlink HS-PDSCH Information	OP		Downlink HS-PDSCH Information 10.3.6.23a		REL-5
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24		
Downlink information per radio link list	OP	1 to <maxRL>		Send downlink information for each radio link	
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27		
~~MBMS FLC applicability information~~MBMS PL Service Restriction Information	~~M~~OP		Enumerated (TRUE)~~MBMS FLC applicability information 10.3.9a.6~~	Absence means that on the MBMS Preferred Layer (PL) no restrictions apply concerning the use of non-MBMS services i.e. the PL is not congested	REL-6

10.2.50 TRANSPORT CHANNEL RECONFIGURATION

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

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE Information Elements					
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36		
Integrity check info	CH		Integrity check info 10.3.3.16		
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing an SRNS relocation	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	The UTRAN should not include this IE unless it is performing an SRNS relocation and a change in ciphering algorithm	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"	
New U-RNTI	OP		U-RNTI 10.3.3.47		
New C-RNTI	OP		C-RNTI 10.3.3.8		
New DSCH-RNTI	OP		DSCH-RNTI 10.3.3.9a		
New H-RNTI	OP		H-RNTI 10.3.3.14a		REL-5
New E-RNTI	OP		E-RNTI 10.3.3.10a		REL-6
RRC State Indicator	MP		RRC State Indicator 10.3.3.35a		
UTRAN DRX cycle length coefficient	OP		UTRAN DRX cycle length coefficient 10.3.3.49		
CN Information Elements					
CN Information info	OP		CN Information info 10.3.1.3		
PLMN Identity	OP		PLMN Identity 10.3.1.11	If present, this IE replaces the PLMN in CN Information info.	REL-6
UTRAN mobility information elements					
URA identity	OP		URA identity 10.3.2.6		
RB information elements					
Downlink counter synchronisation info	OP				
>RB with PDCP information list	OP	1 to <maxRBallRABs>			
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	This IE is needed for each RB having PDCP in the case of lossless SRNS relocation	
	OP				REL-5
>>PDCP context relocation info	OP		PDCP context relocation info 10.3.4.1a	This IE is needed for each RB having PDCP and performing PDCP context relocation	REL-5
TrCH Information Elements					
Uplink transport channels					
UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			10.3.5.24		
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH>			
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2		
CHOICE *mode*	OP				
>FDD					
>>CPCH set ID	OP		CPCH set ID 10.3.5.3		
>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxTrCH>			
>>>DRAC static information	MP		DRAC static information 10.3.5.7		
>TDD				(no data)	
Downlink transport channels					
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6		
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH>			
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1		
PhyCH information elements					
Frequency info	OP		Frequency info 10.3.6.36		
Uplink radio resources					
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power	
CHOICE *channel requirement*	OP				
>Uplink DPCH info			Uplink DPCH info 10.3.6.88		
>CPCH SET Info			CPCH SET Info 10.3.6.13		
E-DCH Info	OP		E-DCH Info 10.3.6.97		REL-6
Downlink radio resources					
CHOICE *mode*	MP				
>FDD					
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30		
>TDD				(no data)	
Downlink HS-PDSCH Information	OP		Downlink HS-PDSCH Information		REL-5

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			10.3.6.23a		
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24		
Downlink information per radio link list	OP	1 to <maxRL>		Send downlink information for each radio link	
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27		
~~MBMS FLC applicability information~~MBMS PL Service Restriction Information	~~M~~OP		Enumerated (TRUE)~~MBMS FLC applicability information 10.3.9a.6~~	Absence means that on the MBMS Preferred Layer (PL) no restrictions apply concerning the use of non-MBMS services i.e. the PL is not congested	REL-6

10.3.4.8 RAB info

This IE contains information used to uniquely identify a radio access bearer.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
RAB identity	MP		RAB identity 10.3.1.14		
MBMS Session identity	OP		MBMS Session identity 10.3.9a.9~~7~~		REL-6
CN domain identity	MP		CN domain identity 10.3.1.1		
NAS Synchronization Indicator	OP		NAS Synchronization indicator 10.3.4.12		
Re-establishment timer	MP		Re-establishment timer 10.3.3.30		

10.3.4.26 UM Duplication Avoidance and Reordering info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Timer_DAR	MP		Integer (40, 80, 120, 160, 240, 320, 480, 640, 960, 1280, 1920, 2560, 3840, 5120)	Timer (in milliseconds) when PDUs are released to the upper layers even though there are outstanding PDUs with lower RLC SN values.	REL-6
Window size DAR	MP		Integer(4, 8, 16, 32, 40,	One spare value is needed	REL-6

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			48, 56, 64~~, 128~~)		

10.3.4.27 UM Out of sequence delivery info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Timer_OSD	CV-~~not~~ *MCCH*		Integer (40, 80, 120, 160, 240, 320, 480, 640, 960, 1280, 1920, 2560, 3840, 5120)		
Window size OS~~S~~D	MP		Integer (8, 16, 32, 40, 48, 56, 64~~, 128~~)	One spare value is needed	REL-6

NOTE: This timer used to flush the buffer is configured at RRC level and indicated via a local primitive.

Condition	**Explanation**
notMCCH	If this concerns a logical channel other than MCCH then this IE is mandatory otherwise it is not needed. In the latter case Timer_OSD takes the value of the IE Modification Period as indicated within the IE MCCH configuration information

10.3.6.71a Secondary CCPCH info MBMS

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CHOICE *mode*	MP			
>FDD				
>>Secondary scrambling code	OP		Secondary scrambling code 10.3.6.74	May only be sent for SCCPCH channels not carrying the PCH.
>>STTD indicator	MD		STTD Indicator 10.3.6.78	Default value is “TRUE”
>>Spreading factor	MP		Integer(4, 8, 16, 32, 64, 128, 256)	
>>Code number	MP		Integer(0..Sp reading factor – 1)	
>>TFCI existence	MD		Boolean	TRUE indicates that TFCI is used. When spreading factor is less than or equal to 64, FALSE indicates that TFCI is not used and therefore DTX is used in the TFCI field. Default value is “TRUE”
>>Fixed or Flexible Position	MD		Enumerated (Fixed, Flexible)	Default value is “Flexible”
>>Timing Offset	MD		Integer(0..38 144 by step of 256)	Chip Delay of the Secondary CCPCH relative to the Primary CCPCH. Default value is 0.
>TDD				
>>Downlink Timeslots and Codes	MP		Downlink timeslots and codes 10.3.6.32	One or more timeslots and codes for S-CCPCH supporting MBMS MTCHSFN

10.3.6.72 Secondary CCPCH system information

Information element	Need	Multi	Type and reference	Semantics description	Version
Secondary CCPCH system information	MP	1 to <maxSCCPCH>			
>Secondary CCPCH info	MP		Secondary CCPCH info 10.3.6.71	Note 1	
>TFCS	MD		Transport format combination set 10.3.5.20	For FACHs and PCH Default value is the value of "TFCS" for the previous SCCPCH in the list. NOTE: The first occurrence is then MP.	
>FACH/PCH information	MD	1 to <maxFACHPCH>		Default value is the value of "FACH/PCH" for the previous SCCPCH in the list. NOTE: The first occurrence is then MP.	
>>TFS	MP		Transport format set 10.3.5.23	For each FACH and PCH Note 2	
>>Transport channel identity	MP		Transport channel identity 10.3.5.18		
>>CTCH indicator	MP		Boolean	The value "TRUE" indicates that a CTCH is mapped on the FACH, and "FALSE" that no CTCH is mapped.	
>>MCCH configuration information	CV-*SIB type 5*		MCCH configuration information 10.3.9a.13~~2~~	Present when the corresponding FACH carries MCCH	REL-6
>PICH info	OP		PICH info 10.3.6.49	PICH info is present only when PCH is multiplexed on Secondary CCPCH	

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

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

Condition	Explanation
SIB type 5	The IE is optional if the IE " Secondary CCPCH system information" is included in the SIB type 5, otherwise the IE is not needed in the message

10.3.6.72a Secondary CCPCH system information MBMS

Information element	Need	Multi	Type and reference	Semantics description	Version
Secondary CCPCH system information	MP			An S-CCPCH carrying MCCH and possibly also MTCH and MSCH	REL-6
>Secondary CCPCH info MBMS	MP		Secondary CCPCH info MBMS 10.3.6.71a		REL-6
>TFCS	MP		Transport format combination set 10.3.5.20		REL-6
>FACH carrying MCCH	MP				REL-6
>>TFS	MP		Transport format set 10.3.5.23		REL-6
>>MCCH configuration information	MP		MCCH configuration information 10.3.9a.132		REL-6
>FACH carrying MTCH list	OP	1 to <maxFACHPCH>			REL-6
>>TFS	MP		Transport format set 10.3.5.23		REL-6
>Scheduling information	OP				REL-6
>>FACH carrying MSCH	MP		Transport format set 10.3.5.23	Transport channel carrying MSCH	REL-6
>>MSCH configuration information	MP		MSCH configuration information 10.3.9a.16		REL-6

10.3.7.43a MBMS preferred frequency information

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
MBMS preferred frequency list	OP	1 to < maxMBMS-Freq>			REL-6
>MBMS preferred frequency	MP		Integer(0 .. <maxMBMS-Freq>-1)	Value n corresponds with the $(n+1)^{th}$ frequency included in the IE New inter-frequency cells that is specified within SIB 11	REL-6
> CHOICE *Layer convergence information*	MP				REL-6
>>Qoffmbms	MP		Integer (0..7)	The offset added to cells on this MBMS preferred frequency The mapping to actual values is FFS	REL-6
>>HCS_OFF_{mbms}	MP		Integer (0..7)	Offset added to the normal HCS priority level of cells on this MBMS preferred frequency	REL-6

10.3.9a MBMS Information elements

10.3.9a.1 MBMS Common CCTrCH identity

Identifies a Coded Composite Transport channel configuration included within the MBMS COMMON P-T-M RB INFORMATION message.

Information element/Group name	Need	Multi	Type and reference	Semantics description	Version
MBMS Common CCTrCh identity	MP		Integer (1..32)		REL-6

10.3.9a.2 MBMS Common PhyCh identity

Identifies a physical channel configuration included within the MBMS COMMON P-T-M RB INFORMATION message.

Information element/Group name	Need	Multi	Type and reference	Semantics description	Version
MBMS Common PhyCh identity	MP		Integer (1..32)		REL-6

10.3.9a.3 MBMS Common RB identity

Identifies a radio bearer channel configuration included within the MBMS COMMON P-T-M RB INFORMATION message.

Information element/Group name	Need	Multi	Type and reference	Semantics description	Version
MBMS Common RB identity	MP		Integer (1..32)		REL-6

10.3.9a.4 MBMS Common TrCh identity

Identifies a transport channel configuration included within the MBMS COMMON P-T-M RB INFORMATION message.

Information element/Group name	Need	Multi	Type and reference	Semantics description	Version
MBMS Common TrCh identity	MP		Integer (1..32)		REL-6

10.3.9a.5 MBMS Current cell S-CCPCH identity

Identifies one of the current cell's Secondary CCPCH's.

Information element/Group name	Need	Multi	Type and reference	Semantics description	Version
MBMS Current cell S-CCPCH identity	MP		Integer (1..16)		REL-6

10.3.9a.6 MBMS FLC applicability information

Includes information about the applicability of FLC.

Information element/Group name	Need	Multi	Type and reference	Semantics description	Version
MBMS FLC applicability	OP		Enumerated (FALSE)	Absence means FLC applies for the RRC state indicated in the message including this information element	REL-6

10.3.9a.7 MBMS L1 combining schedule

Includes information about the MBMS L1 combining schedule.

Information element/Group name	Need	Multi	Type and reference	Semantics description	Version
MBMS L1 combining ~~scheduling~~ cycle length	MD		Enumerated (32, 64, 128, 256, 512, 1024)	In number of radio frames. Default value is the value included in the MBMS GENERAL INFORMATION message	REL-6
MBMS L1 combining ~~scheduling~~ cycle offset	MD		Integer (0.. MBMS ~~scheduling~~ L1 combining cycle length - 4) by step of 4	Start of the L1 combining cycle (relative to the timing of the current cell) in number of radio frames. Default value is no offset	REL-6
~~MBMS transmission time difference~~	~~MP~~		~~Enumerated (FFS)~~	~~Indicates the time difference between the TTIs on the current and the neighbouring cell's SCCPCH that can be L1- combined. A positive value means the current transmits prior to the current cell~~	~~REL-6~~
MTCH L1~~-~~ combining period list	MP	1 to < maxMBMS-L1CP>		One or more periods in which L1 combining is performed	REL-6
>Start	MP		Integer ~~(0..Nx)~~(0.. MBMS ~~scheduling~~ L1 combining cycle length - 4) by step of 4	Number of frames from the end of the previous ~~period~~ combining period or the start of the cycle (for the first period)	REL-6
>Duration	MP		Integer ~~(0..Ny)~~(4.. MBMS ~~scheduling~~ L1 combining cycle length) by step of 4	Number of frames (see note)	REL-6

NOTE: The MTCH L1- combining period should indicate one or more complete TTIs.

10.3.9a.7a MBMS p-t-m RB information

Includes information about an MBMS p-t-m radio bearers mapped on a TrCH.

Information element/Group name	Need	Multi	Type and reference	Semantics description	Version
RB information	CV-*Curr*		MBMS Common RB identity 10.3.9a.3		REL-6
MBMS short transmission ID	MP		MBMS Short transmission identity 10.3.9a.10		REL-6
MBMS logical channel identity	MP		Integer (1..15)	This identifier is used to distinguish different MTCH mapped on to a TrCh (within the MAC header)	REL-6
L1 combining status	CV-*Neigh*		Enumerated (true)	The IE is only applicable in case of parial L1 comining, in which case value TRUE means that L1 combining is used for this radio bearer	REL-6

Condition	Explanation
Curr	The IE is mandatory present if the IE "MBMS p-t-m RB information list" is included in the MBMS CURRENT CELL P-T-M RB INFORMATION message and not needed otherwise
Neigh	The IE is mandatory present if the IE "MBMS p-t-m RB information list" is included in the MBMS NEIGHBOURING CELL P-T-M RB INFORMATION message and not needed otherwise

10.3.9a.8 MBMS Service identity

Includes information about the identity of an MBMS service.

Information element/Group name	Need	Multi	Type and reference	Semantics description	Version
MBMS Service ID	MP		Octet string (3)	~~TMGI (note)~~ The first octet contains octet 3 [5] of the NAS system information element, the second octet contains octet 4 of the NAS system information element and so on	REL-6
PLMN identity	CV-*SameAs-MIB*		PLMN identity 10.3.1.11		REL-6

Condition	Explanation
SameAs-*MIB*	The IE is not needed if the PLMN identity is the same as indicated by the IE "PLMN identity" within the Master Information Block; otherwise the element is mandatory in the message.

~~NOTE: The MCC and MNC parts of the TMGI need not be signalled if the value is the same as for the PLMN identity included in SIB 1~~

10.3.9a.9 MBMS Session identity

Includes information about the the identity of a session of an MBMS service.

Information element/Group name	Need	Multi	Type and reference	Semantics description	Version
MBMS Session ID	MP			Octet string (1)~~Details are FFS~~	REL-6

10.3.9a.10 MBMS Short transmission identity

Includes a short identity of the MBMS transmission identity, which concerns a session of a specific service.

Information element/Group name	Need	Multi	Type and reference	Semantics description	Version
MBMS short transmission identity	MP		Integer (1..32)	Reference/ index to a transmission listed in the MBMS MODIFIED SERVICES INFORMATION or MBMS UNMODIFIED SERVICES INFORMATION	REL-6

10.3.9a.11 MBMS specific timers and counters

Includes MBMS specific timers and counters.

Information element/Group name	Need	Multi	Type and reference	Semantics description	Version
T318	MD		Integer(250... 2000 by step of 250, 3000, 4000, 6000, 8000, 10000, 12000, 16000)	Value in milliseconds. Default value is 1000.	REL-6

10.3.9a.12 MBMS Transmission identity

Includes information about the MBMS transmission identity, which concerns a session of a specific service.

Information element/Group name	Need	Multi	Type and reference	Semantics description	Version
MBMS Service ID	MP		MBMS Service identity 10.3.9a.8		REL-6
MBMS Session ID	OP		MBMS Session identity 10.3.9a.9		REL-6

10.3.9a.13 MCCH configuration information

Includes information about the MCCH configuration.

Information	Need	Multi	Type and	Semantics	Version

element/Group name			reference	description	
Access Info Period coefficient	MD		Integer (0..3)	Represents a, the access information coefficient. The number of repetitions per modification period equals 2^a while the actual access information period, in number of frames, equals MP DIV 2^a	REL-6
Repetition Period coefficient	MP		Integer (0..3)	Represents r, the repetition period coefficient. The number of repetitions per modification period equals 2^r while the actual repetition period, in number of frames, equals MP DIV 2^r	REL-6
Modification period coefficient	MP		Integer (7..10)	Represents m, the modification period coefficient. The actual modification period, in number of frames, equals 2^r	REL-6
RLC info	MP		RLC info 10.3.4.23		REL-6
TCTF presence	CV-rel6		Enumerated (false)	By default the TCTF is present even though the FACH only carries one logical channel (type). When this IE is included, the TCTF is absent	REL-6

Condition	Explanation
rel6	This IE is not needed if the IE is contained within the IE "Secondary CCPCH system information", otherwise the IE is optional.

10.3.9a.14 MICH configuration information

Includes information about the MICH configuration.

Information element/Group name	Need	Multi	Type and reference	Semantics description	Version
MICH Power offset	MP		MICH Power offset 10.3.9a.15		REL-6
CHOICE *mode*	MP				REL-6
>FDD					REL-6
>>Channelisation code	MP		Integer (0.255)		REL-6
>>Number of NI per frame	MP		Integer (18, 36, 72, 144)		REL-6
>>STTD indicator	FFS		STTD Indicator 10.3.6.78		REL-6
>TDD					REL-6
>>Timeslot number	MP		Timeslot number 10.3.6.84		REL-6
>>Midamble shift and burst type	MP		Midamble shift and burst type 10.3.6.41		REL-6
>>CHOICE *TDD option*	MP				REL-6
>>>3.84 Mcps TDD					REL-6
>>>>Channelisation code	MP		Enumerated ((16/1)…(16/16))		REL-6
>>>1.28 Mcps TDD					REL-6
>>>>Codes list	MP	1 to 2			REL-6
>>>>>Channelisation code	MP		Enumerated ((16/1)…(16/16))		REL-6
>>Repetition period/length	MD		Enumerated((4/2),(8/2), (8/4),(16/2), (16/4), (32/2),(32/4),(64/2),(64/4))	Default value is "(64/2)".	REL-6
>>Offset	MP		Integer (0…Repetition period -1)	SFN mod Repetitionperiod = Offset.	REL-6
>>MBMS Notification indicator length	MD		Integer (4, 8, 16)	Indicates the length of one MBMS Notification indicator in bits. Default value is 4.	REL-6

10.3.9a.15 MICH Power offset

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

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
MICH Power offset	MP		Integer(-10 .. +5)	Offset in dB	REL-6

10.3.9a.16 MSCH configuration information

Includes information about the MSCH configuration.

Information element/Group name	Need	Multi	Type and reference	Semantics description	Version
MSCH configuration information	MP			Scheduling information is provided starting at SFN mod MSCH_REP = MSCH_OFF	REL-6
>Scheduling period	MD		Enumerated (32, 64, 128, 256, 512, 1024)	The period, in number of frames, between MBMS scheduling messages (MSCH_REP) Default value is the value included in the MBMS GENERAL INFORMATION message	REL-6
>Scheduling offset	MD		Integer (0..(MSCH_REP-1))	The position of MBMS scheduling messages relative to timing of the corresponding cell (MSCH_OFF) Default value is the value included in the MBMS GENERAL INFORMATION message	REL-6
>RLC info	MD		RLC info 10.3.4.23	Default value is the one included in the MBMS GENERAL INFORMATION message	REL-6
TCTF presence	OP		Enumerated (false)	By default the TCTF is present even though the FACH only carries one logical channel (type). When this IE is included, the TCTF is absent	REL-6

10.3.10 Multiplicity values and type constraint values

The following table includes constants that are either used as multi bounds (name starting with "max") or as high or low value in a type specification (name starting with "lo" or "hi"). Constants are specified only for values appearing more than once in the RRC specification. In case a constant is related to one or more other constants, an expression is included in the "value" column instead of the actual value.

Constant	Explanation	Value	Version
CN information			
maxCNdomains	Maximum number of CN domains	4	
UTRAN mobility			

Constant	Explanation	Value	Version
information			
maxRAT	Maximum number or Radio Access Technologies	maxOtherRAT + 1	
maxOtherRAT	Maximum number or other Radio Access Technologies	15	
maxURA	Maximum number of URAs in a cell	8	
maxInterSysMessages	Maximum number of Inter System Messages	4	
maxRABsetup	Maximum number of RABs to be established	16	
UE information			
maxtransactions	Maximum number of parallel RRC transactions in downlink	25	
maxPDCPalgoType	Maximum number of PDCP algorithm types	8	
maxDRACclasses	Maximum number of UE classes which would require different DRAC parameters	8	
maxFreqBandsFDD	Maximum number of frequency bands supported by the UE as defined in [21]	8	
maxFreqBandsTDD	Maximum number of frequency bands supported by the UE as defined in [22]	4	
maxFreqBandsGSM	Maximum number of frequency bands supported by the UE as defined in [45]	16	
maxPage1	Number of UEs paged in the Paging Type 1 message	8	
maxSystemCapability	Maximum number of system specific capabilities that can be requested in one message.	16	
MaxURNTIgroup	Maximum number of U-RNTI groups in one message	8	REL-5
RB information			
maxPredefConfig	Maximum number of predefined configurations	16	
maxRB	Maximum number of RBs	32	
maxSRBsetup	Maximum number of signalling RBs to be established	8	
maxRBperRAB	Maximum number of RBs per RAB	8	
maxRBallRABs	Maximum number of non signalling RBs	27	
maxRBperTrCh	Maximum number of RB per TrCh	16	REL-6
maxRBMuxOptions	Maximum number of RB multiplexing options	8	
maxLoCHperRLC	Maximum number of logical channels per RLC entity	2	
MaxROHC-PacketSizes	Maximum number of packet sizes that are allowed to be produced by ROHC.	16	
MaxROHC-Profiles	Maximum number of profiles supported by ROHC on a given RB.	8	
maxRFC 3095-CID	Maximum number of available CID values per radio bearer	16384	REL-5
TrCH information			
MaxHProcesses	Maximum number of H-ARQ processes	8	REL-5
MaxHSDSCH_TB_index	Maximum number of TB set size configurations for the HS-DSCH.	64 (FDD and 1.28 MCPS TDD); 512 (3.84 Mcps TDD)	REL-5
maxMACdPDUSizes	Maximum number of MAC-d PDU sizes per queue permitted for MAC-hs	8	REL-5
maxTrCH	Maximum number of transport channels used in one direction (UL or DL)	32	
maxTrCHpreconf	Maximum number of preconfigured Transport channels, per direction	16	
maxCCTrCH	Maximum number of CCTrCHs	8	
maxQueueID	Maximum number of Mac-hs queues	8	REL-5
MaxTF	Maximum number of different transport formats that can be included in the Transport format set for one transport channel	32	
maxTF-CPCH	Maximum number of TFs in a CPCH set	16	
maxTFC	Maximum number of Transport Format Combinations	1024	
maxTFCsub	Maximum number of Transport Format Combinations Subset	1024	
maxTFCI-1-Combs	Maximum number of TFCI (field 1) combinations	512	

Constant	Explanation	Value	Version
maxTFCI-2-Combs	Maximum number of TFCI (field 2) combinations	512	
maxCPCHsets	Maximum number of CPCH sets per cell	16	
maxSIBperMsg	Maximum number of complete system information blocks per SYSTEM INFORMATION message	16	
maxSIB	Maximum number of references to other system information blocks.	32	
maxSIB-FACH	Maximum number of references to system information blocks on the FACH	8	
PhyCH information			
maxHSSCCHs	Maximum number of HSSCCH codes that can be assigned to a UE	4	REL-5
maxPCPCH-APsubCH	Maximum number of available sub-channels for AP signature on PCPCH	12	
maxPCPCH-CDsubCH	Maximum number of available sub-channels for CD signature on PCPCH	12	
maxPCPCH-APsig	Maximum number of available signatures for AP on PCPCH	16	
maxPCPCH-CDsig	Maximum number of available signatures for CD on PCPCH	16	
maxAC	Maximum number of access classes	16	
maxASC	Maximum number of access service classes	8	
maxASCmap	Maximum number of access class to access service classes mappings	7	
maxASCpersist	Maximum number of access service classes for which persistence scaling factors are specified	6	
maxPRACH	Maximum number of PRACHs in a cell	16	
MaxPRACH_FPACH	Maximum number of PRACH / FPACH pairs in a cell (1.28 Mcps TDD)	8	REL-4
maxFACHPCH	Maximum number of FACHs and PCHs mapped onto one secondary CCPCHs	8	
maxTrChperSCCPCH	Maximum number of TrCh per S-CCPCH	8	REL-6
maxRL	Maximum number of radio links	8	
maxSCCPCH	Maximum number of secondary CCPCHs per cell	16	
maxDPDCH-UL	Maximum number of DPDCHs per cell	6	
maxDPCH-DLchan	Maximum number of channelisation codes used for DL DPCH	8	
maxPUSCH	Maximum number of PUSCHs	(8)	
maxPDSCH	Maximum number of PDSCHs	8	
maxPDSCHcodes	Maximum number of codes for PDSCH	16	
maxPDSCH-TFCIgroups	Maximum number of TFCI groups for PDSCH	256	
maxPDSCHcodeGroups	Maximum number of code groups for PDSCH	256	
maxPCPCHs	Maximum number of PCPCH channels in a CPCH Set	64	
maxPCPCH-SF	Maximum number of available SFs on PCPCH	7	
maxTS	Maximum number of timeslots used in one direction (UL or DL)	14 (3.84 Mcps TDD)	
		6 (1.28 Mcps TDD)	REL-4
hiPUSCHidentities	Maximum number of PUSCH Identities	64	
hiPDSCHidentities	Maximum number of PDSCH Identities	64	
Measurement information			
maxTGPS	Maximum number of transmission gap pattern sequences	6	
maxAdditionalMeas	Maximum number of additional measurements for a given measurement identity	4	
maxMeasEvent	Maximum number of events that can be listed in measurement reporting criteria	8	
maxMeasParEvent	Maximum number of measurement parameters (e.g. thresholds) per event	2	
maxMeasIntervals	Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value	1	

Constant	Explanation	Value	Version
maxCellMeas	Maximum number of cells to measure	32	
maxReportedGSMCells	Maximum number of GSM cells to be reported	8	
maxFreq	Maximum number of frequencies to measure	8	
maxSat	Maximum number of satellites to measure	16	
maxSatAlmanacStorage	Maximum number of satellites for which to store GPS Almanac information	32	
HiRM	Maximum number that could be set as rate matching attribute for a transport channel	256	
Frequency information			
MaxFDDFreqList	Maximum number of FDD carrier frequencies to be stored in USIM	4	
MaxTDDFreqList	Maximum number of TDD carrier frequencies to be stored in USIM	4	
MaxFDDFreqCellList	Maximum number of neighbouring FDD cells to be stored in USIM	32	
MaxTDDFreqCellList	Maximum number of neighbouring TDD cells to be stored in USIM	32	
MaxGSMCellList	Maximum number of GSM cells to be stored in USIM	32	
Other information			
MaxGERANSI	Maximum number of GERAN SI blocks that can be provided as part of NACC information	8	REL-5
maxNumGSMFreqRanges	Maximum number of GSM Frequency Ranges to store	32	
MaxNumFDDFreqs	Maximum number of FDD centre frequencies to store	8	
MaxNumTDDFreqs	Maximum number of TDD centre frequencies to store	8	
maxNumCDMA200Freqs	Maximum number of CDMA2000 centre frequencies to store	8	
maxGSMTargetCells	Maximum number of GSM target cells	32	REL-6
MBMS information			
maxMBMS-CommonCCTrCh	Maximum number of CCTrCh configurations included in the MBMS COMMON P-T-M RB INFORMATION message	32	REL-6
maxMBMS-CommonPhyCh	Maximum number of PhyCh configurations included in the MBMS COMMON P-T-M RB INFORMATION message	32	REL-6
maxMBMS-CommonRB	Maximum number of RB configurations included in the MBMS COMMON P-T-M RB INFORMATION message	32	REL-6
maxMBMS-CommonTrCh	Maximum number of TrCh configurations included in the MBMS COMMON P-T-M RB INFORMATION message	32	REL-6
maxMBMS-Freq	Maximum number of MBMS preferred frequencies	4	REL-6
maxMBMS-L1CP	Maximum number of periods in which layer 1 combining applies	4~~FFS~~	REL-6
maxMBMSservCount	Maximum number of MBMS services in a Access Info message	4	REL-6
maxMBMSservDedic	Maximum number of MBMS services in a dedicated notification/ Paging type 2 message	4	REL-6
maxMBMSservModif	Maximum number of MBMS services in a MBMS MODIFIED SERVICES INFORMATION message	4	REL-6
maxMBMSservSched	Maximum number of MBMS services in a MBMS SCHEDULING INFORMATION message	16	REL-6
maxMBMSservUnmodif	Maximum number of MBMS services in a MBMS UNMODIFIED SERVICES INFORMATION message	32	REL-6

Constant	Explanation	Value	Version
maxMBMSTransmis	Maximum number of transmissions for which scheduling information is provided within a scheduling period	4~~FFS~~	REL-6

3GPP TSG-RAN WG2 Meeting #46
Phoenix, Arizona, USA, 14 – 18 February 2005

Tdoc ⌘R2-050748
(Revised: R2-050720)

CR-Form-v7.1

CHANGE REQUEST

⌘ **25.331** **CR** **2536** ⌘**rev** **1** ⌘ Current version: **6.4.0** ⌘

*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 [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	MBMS corrections to 25.331 ASN.1
Source:	⌘	RAN WG2
Work item code:	⌘	MBMS-RAN
Date:	⌘	02/03/2005
Category:	⌘	**F**
Release:	⌘	Rel-6

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:

Ph2	*(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)*
Rel-7	*(Release 7)*

Reason for change:	⌘	Numerous corrections have been done to the tabular description of MBMS related RRC messages (CR 2530 to 25.331). This CR proposes corrections to align the ASN.1 to the tabular.
Summary of change:	⌘	This CR proposes corrections to align the ASN.1 to the tabular.
Consequences if not approved:	⌘	The ASN.1 definition of MBMS related RRC messages would not be concistent with the tabular.

Clauses affected:	⌘	11.2, 11.3 and 11.4

	Y	N			
Other specs affected:		X	Other core specifications	⌘	(25.331 CR2530rev2).
		X	Test specifications		
		X	O&M Specifications		

Other comments:	⌘	The CR is linked with CR 2530 to 25.331 on Miscellaneous MBMS corrections (R2-050729).

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

11.1 General message structure

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

BEGIN

IMPORTS

    ActiveSetUpdate,
    ActiveSetUpdateComplete,
    ActiveSetUpdateFailure,
    AssistanceDataDelivery,
    CellChangeOrderFromUTRAN,
    CellChangeOrderFromUTRANFailure,
    CellUpdate,
    CellUpdateConfirm-CCCH,
    CellUpdateConfirm,
    CounterCheck,
    CounterCheckResponse,
    DownlinkDirectTransfer,
    HandoverToUTRANComplete,
    InitialDirectTransfer,
    HandoverFromUTRANCommand-GERANIu,
    HandoverFromUTRANCommand-GSM,
    HandoverFromUTRANCommand-CDMA2000,
    HandoverFromUTRANFailure,
    MBMSAccessInformation,
    MBMSCommonPTMRBInformation,
    MBMSCurrentCellPTMRBInformation,
    MBMSGeneralInformation,
    MBMSModificationRequest,
    MBMSModifiedServicesInformation,
    MBMSNeighbouringCellPTMRBInformation,
    MBMSSchedulingInformation,
    MBMSUnmodifiedServicesInformation,
    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,
    handoverFromUTRANCommand-GERANIu    HandoverFromUTRANCommand-GERANIu,
    mbmsModifiedServicesInformation     MBMSModifiedServicesInformation,
    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,
    mbmsModificationRequest             MBMSModificationRequest,
    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,
    spare                               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,
    spare                               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
```

```
}

--**************************************************************
--
-- MCCH messages
--
--**************************************************************

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

MCCH-MessageType ::= CHOICE {
    mbmsAccessInformation               MBMSAccessInformation,
    mbmsCommonPTMRBInformation          MBMSCommonPTMRBInformation,
    mbmsCurrentCellPTMRBInformation     MBMSCurrentCellPTMRBInformation,
    mbmsGeneralInformation              MBMSGeneralInformation,
    mbmsModifiedServicesInformation     MBMSModifiedServicesInformation,
    mbmsNeighbouringCellPTMRBInformation
                                        MBMSNeighbouringCellPTMRBInformation,
    mbmsUnmodifiedServicesInformation   MBMSUnmodifiedServicesInformation,
    spare9                              NULL,
    spare8                              NULL,
    spare7                              NULL,
    spare6                              NULL,
    spare5                              NULL,
    spare4                              NULL,
    spare3                              NULL,
    spare2                              NULL,
    spare1                              NULL
}

--**************************************************************
--
-- MSCH messages
--
--**************************************************************

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

MSCH-MessageType ::= CHOICE {
    mbmsSchedulingInformation           MBMSSchedulingInformation,
    spare3                              NULL,
    spare2                              NULL,
    spare1                              NULL
}

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,
    PLMN-Identity,
-- UTRAN Mobility IEs :
    CellIdentity,
    CellIdentity-PerRL-List,
    URA-Identity,
-- User Equipment IEs :
    AccessStratumReleaseIndicator,
    ActivationTime,
    C-RNTI,
    CapabilityUpdateRequirement,
    CapabilityUpdateRequirement-r4,
    CapabilityUpdateRequirement-r4-ext,
    CapabilityUpdateRequirement-r5,
    CellUpdateCause,
    CellUpdateCause-ext,
    CipheringAlgorithm,
    CipheringModeInfo,
    DSCH-RNTI,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    GroupReleaseInformation,
    H-RNTI,
    UESpecificBehaviourInformation1idle,
    UESpecificBehaviourInformation1interRAT,
    InitialUE-Identity,
    IntegrityProtActivationInfo,
    IntegrityProtectionModeInfo,
    N-308,
    PagingCause,
    PagingRecordList,
    PagingRecord2List-r5,
    ProtocolErrorIndicator,
    ProtocolErrorIndicatorWithMoreInfo,
    RadioFrequencyBandTDDList,
    Rb-timer-indicator,
    RedirectionInfo,
    RedirectionInfo-r6,
    RejectionCause,
    ReleaseCause,
    RF-CapabilityComp,
    RRC-StateIndicator,
    RRC-TransactionIdentifier,
    SecurityCapability,
    START-Value,
    STARTList,
    SystemSpecificCapUpdateReq-v590ext,
    U-RNTI,
    U-RNTI-Short,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-v370ext,
    UE-RadioAccessCapability-v380ext,
    UE-RadioAccessCapability-v3a0ext,
    UE-RadioAccessCapability-v3g0ext,
    UE-RadioAccessCapability-v4b0ext,
    UE-RadioAccessCapability-v590ext,
    UE-RadioAccessCapabilityComp,
    DL-PhysChCapabilityFDD-v380ext,
    UE-ConnTimersAndConstants,
    UE-ConnTimersAndConstants-v3a0ext,
    UE-ConnTimersAndConstants-r5,
    UE-SecurityInformation,
    URA-UpdateCause,
    UTRAN-DRX-CycleLengthCoefficient,
    WaitTime,
-- Radio Bearer IEs :
    DefaultConfigIdentity,
    DefaultConfigIdentity-r4,
    DefaultConfigIdentity-r5,
    DefaultConfigMode,
    DL-CounterSynchronisationInfo,
    DL-CounterSynchronisationInfo-r5,
    PredefinedConfigIdentity,
    PredefinedConfigStatusList,
    PredefinedConfigStatusListComp,
```

```
    PredefinedConfigSetWithDifferentValueTag,
    RAB-Info,
    RAB-Info-Post,
    RAB-InformationList,
    RAB-InformationReconfigList,
    RAB-InformationSetupList,
    RAB-InformationSetupList-r4,
    RAB-InformationSetupList-r5,
    RAB-InformationSetupList-r6-ext,
    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-PDCPContextRelocationList,
    SRB-InformationSetupList,
    SRB-InformationSetupList-r5,
    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,
    CCTrCH-PowerControlInfo-r5,
    ConstantValue,
    ConstantValueTdd,
    CPCH-SetInfo,
    DL-CommonInformation,
    DL-CommonInformation-r4,
    DL-CommonInformation-r5,
    DL-CommonInformationPost,
    DL-HSPDSCH-Information,
    DL-InformationPerRL-List,
    DL-InformationPerRL-List-r4,
    DL-InformationPerRL-List-r5,
    DL-InformationPerRL-List-r5bis,
    DL-InformationPerRL-ListPostFDD,
    DL-InformationPerRL-PostTDD,
    DL-InformationPerRL-PostTDD-LCR-r4,
    DL-PDSCH-Information,
    DL-TPC-PowerOffsetPerRL-List,
    DPC-Mode,
    DPCH-CompressedModeStatusInfo,
    FrequencyInfo,
    FrequencyInfoFDD,
    FrequencyInfoTDD,
    HARQ-Preamble-Mode,
    HS-SICH-Power-Control-Info-TDD384,
    MaxAllowedUL-TX-Power,
    OpenLoopPowerControl-IPDL-TDD-r4,
    PDSCH-CapacityAllocationInfo,
    PDSCH-CapacityAllocationInfo-r4,
    PDSCH-Identity,
    PrimaryCPICH-Info,
    PrimaryCCPCH-TX-Power,
    PUSCH-CapacityAllocationInfo,
```

```
    PUSCH-CapacityAllocationInfo-r4,
    PUSCH-Identity,
    PUSCH-SysInfoList-HCR-r5,
    PDSCH-SysInfoList-HCR-r5,
    RL-AdditionInformationList,
    RL-RemovalInformationList,
    SpecialBurstScheduling,
    SSDT-Information,
    TFC-ControlDuration,
    SSDT-UL,
    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-Info-r5,
    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,
    DeltaRSCP,
    Frequency-Band,
    EventResults,
    Inter-FreqEventCriteriaList-v590ext,
    Intra-FreqEventCriteriaList-v590ext,
    IntraFreqReportingCriteria-1b-r5,
    IntraFreqEvent-1d-r5,
    InterFreqEventResults-LCR-r4-ext,
    InterRATCellInfoIndicator,
    InterRAT-TargetCellDescription,
    MeasuredResults,
    MeasuredResults-v390ext,
    MeasuredResults-v590ext,
    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,
-- Other IEs :
    BCCH-ModificationInfo,
    CDMA2000-MessageList,
    GSM-TargetCellInfoList,
    GERANIu-MessageList,
    GERAN-SystemInformation,
    GSM-MessageList,
    InterRAT-ChangeFailureCause,
    InterRAT-HO-FailureCause,
    InterRAT-UE-RadioAccessCapabilityList,
    InterRAT-UE-RadioAccessCapability-v590ext,
    InterRAT-UE-SecurityCapList,
    IntraDomainNasNodeSelector,
    ProtocolErrorMoreInformation,
    Rplmn-Information,
    Rplmn-Information-r4,
    SegCount,
    SegmentIndex,
    SFN-Prime,
```

```
    SIB-Data-fixed,
    SIB-Data-variable,
    SIB-Type,
-- MBMS IEs:
    MBMS-CellGroupIdentity-r6,
    MBMS-CommonRBInformationList-r6,
    MBMS-CurrentCell-SCCPCHList-r6,
    MBMS-DefaultL1CombiningConfigInfo-r6,
    MBMS-FLCApplicabilityInfo-r6,
    MBMS-JoinedInformation-r6,
    MBMS-MICHConfigurationInfo-r6,
    MBMS-ModifedServiceList-r6,
    MBMS-MSCHConfigurationInfo-r6,
    MBMS-NeighbouringCellSCCPCHList-r6,
    MBMS-PhyChInformationList-r6,
    MBMS-PL-ServiceRestrictInfo-r6,
    MBMS-PreferredFreqRequest-r6,
    MBMS-PreferredFrequencyList-r6,
    MBMS-ServiceAccessInfoList-r6,
    MBMS-ServiceSchedulingInfoList-r6,
    MBMS-SIBType5-SCCPCHList-r6,
    MBMS-TimersAndCouneters-r6,
    MBMS-TranspChInfoForEachCCTrCh-r6,
    MBMS-TranspChInfoForEachTrCh-r6,
    MBMS-UnmodifiedServiceList-r6
FROM InformationElements

    maxSIBperMsg,
    maxURNTI-Group
FROM Constant-definitions;

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

ActiveSetUpdate ::= CHOICE {
    r3                          SEQUENCE {
        activeSetUpdate-r3              ActiveSetUpdate-r3-IEs,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            activeSetUpdate-r3-add-ext      BIT STRING      OPTIONAL,
            v4b0NonCriticalExtensions       SEQUENCE {
                activeSetUpdate-v4b0ext     ActiveSetUpdate-v4b0ext-IEs,
                v590NonCriticalExtensions       SEQUENCE {
                    activeSetUpdate-v590ext         ActiveSetUpdate-v590ext-IEs,
                    nonCriticalExtensions           SEQUENCE {} OPTIONAL
                }   OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3               SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
}

ActiveSetUpdate-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        -- dummy and dummy2 are not used in this version of the specification, they should
        -- not be sent and if received they should be ignored.
        dummy                       IntegrityProtectionModeInfo         OPTIONAL,
        dummy2                      CipheringModeInfo                   OPTIONAL,
        activationTime                  ActivationTime                      OPTIONAL,
        newU-RNTI                       U-RNTI                              OPTIONAL,
    -- Core network IEs
        cn-InformationInfo              CN-InformationInfo                  OPTIONAL,
    -- Radio bearer IEs
        -- dummy3 is not used in this version of the specification, it should
        -- not be sent and if received it should be ignored.
        dummy3                      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-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- ssdt-UL extends SSDT-Information. FDD only.
        ssdt-UL-r4                      SSDT-UL                             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
}

ActiveSetUpdate-v590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        dpc-Mode                        DPC-Mode,
        dl-TPC-PowerOffsetPerRL-List    DL-TPC-PowerOffsetPerRL-List            OPTIONAL
}

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

ActiveSetUpdateComplete ::= 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                       IntegrityProtActivationInfo         OPTIONAL,
    -- Radio bearer IEs
        -- dummy2 and dummy3 are not used in this version of the specification, they should
        -- not be sent and if received they should be ignored.
        dummy2                      RB-ActivationTimeInfoList           OPTIONAL,
        dummy3                      UL-CounterSynchronisationInfo       OPTIONAL,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            activeSetUpdateComplete-r3-add-ext      BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        }   OPTIONAL
}

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

ActiveSetUpdateFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            activeSetUpdateFailure-r3-add-ext       BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
    }   OPTIONAL
}

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

AssistanceDataDelivery ::= CHOICE {
    r3                              SEQUENCE {
        assistanceDataDelivery-r3       AssistanceDataDelivery-r3-IEs,
        v3a0NonCriticalExtensions       SEQUENCE {
            assistanceDataDelivery-v3a0ext  AssistanceDataDelivery-v3a0ext,
            laterNonCriticalExtensions      SEQUENCE {
                -- Container for additional R99 extensions
                assistanceDataDelivery-r3-add-ext       BIT STRING      OPTIONAL,
                v4b0NonCriticalExtensions       SEQUENCE {
                    assistanceDataDelivery-v4b0ext
                                                AssistanceDataDelivery-v4b0ext-IEs,
                    nonCriticalExtensions           SEQUENCE {}                 OPTIONAL
                }   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-v4b0ext-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,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            cellChangeOrderFromUTRAN-r3-add-ext     BIT STRING      OPTIONAL,
            v590NonCriticalExtensions           SEQUENCE {
                cellChangeOrderFromUTRAN-v590ext    CellChangeOrderFromUTRAN-v590ext-IEs,
                nonCriticalExtensions           SEQUENCE {} OPTIONAL
            }   OPTIONAL
        }   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,
        -- the IE rab-InformationList is not used in this version of the specification, it should
        -- not be sent and if received it should be ignored. The IE may be used in a later
        -- version of the protocol and hence it is not changed into a dummy
        rab-InformationList             RAB-InformationList                 OPTIONAL,
        interRAT-TargetCellDescription  InterRAT-TargetCellDescription
}

CellChangeOrderFromUTRAN-v590ext-IEs ::= SEQUENCE {
        geran-SystemInfoType                CHOICE  {
            sI                                  GERAN-SystemInformation,
            pSI                                 GERAN-SystemInformation
        }       OPTIONAL
}

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

```
CellChangeOrderFromUTRANFailure ::= CHOICE {
    r3                              SEQUENCE {
        cellChangeOrderFromUTRANFailure-r3
                                        CellChangeOrderFromUTRANFailure-r3-IEs,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            cellChangeOrderFromUTRANFailure-r3-add-ext      BIT STRING  OPTIONAL,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        }   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,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            cellUpdate-r3-add-ext           BIT STRING  OPTIONAL,
            v590NonCriticalExtensions   SEQUENCE {
                cellUpdate-v590ext  CellUpdate-v590ext,
                v6xyNonCriticalExtensions       SEQUENCE {
                    cellUpdate-v6xyext              CellUpdate-v6xyext-IEs,
                    nonCriticalExtensions           SEQUENCE {} OPTIONAL
                }       OPTIONAL
            }       OPTIONAL
        }   OPTIONAL
}

CellUpdate-v590ext ::= SEQUENCE {
    establishmentCause              EstablishmentCause  OPTIONAL
}

CellUpdate-v6xyext-IEs ::=          SEQUENCE {
    -- User equipment IEs
        cellUpdateCause-ext             CellUpdateCause-ext                 OPTIONAL
}

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

CellUpdateConfirm ::= CHOICE {
    r3                              SEQUENCE {
        cellUpdateConfirm-r3            CellUpdateConfirm-r3-IEs,
        v3a0NonCriticalExtensions       SEQUENCE {
            cellUpdateConfirm-v3a0ext       CellUpdateConfirm-v3a0ext,
```

```
            laterNonCriticalExtensions      SEQUENCE {
                -- Container for additional R99 extensions
                cellUpdateConfirm-r3-add-ext    BIT STRING  OPTIONAL,
                v4b0NonCriticalExtensions       SEQUENCE {
                    cellUpdateConfirm-v4b0ext       CellUpdateConfirm-v4b0ext-IEs,
                    v590NonCriticalExtenstions      SEQUENCE {
                        cellUpdateConfirm-v590ext       CellUpdateConfirm-v590ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            cellUpdateConfirm-v6xyext       CellUpdateConfirm-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {} OPTIONAL
                        }       OPTIONAL
                    }       OPTIONAL
                }       OPTIONAL
            }       OPTIONAL
        },
        later-than-r3                   SEQUENCE {
            rrc-TransactionIdentifier       RRC-TransactionIdentifier,
            criticalExtensions              CHOICE {
                r4                              SEQUENCE {
                    cellUpdateConfirm-r4            CellUpdateConfirm-r4-IEs,
                    v4d0NonCriticalExtensions       SEQUENCE {
                        -- Container for adding non critical extensions after freezing REL-5
                        cellUpdateConfirm-r4-add-ext    BIT STRING      OPTIONAL,
                        v590NonCriticalExtenstions      SEQUENCE {
                            cellUpdateConfirm-v590ext       CellUpdateConfirm-v590ext-IEs,
                            v6xyNonCriticalExtensions       SEQUENCE {
                                cellUpdateConfirm-v6xyext       CellUpdateConfirm-v6xyext-IEs,
                                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                            }   OPTIONAL
                        }   OPTIONAL
                    }   OPTIONAL
                },
                criticalExtensions              CHOICE {
                    r5                              SEQUENCE {
                        cellUpdateConfirm-r5            CellUpdateConfirm-r5-IEs,
                        -- Container for adding non critical extensions after freezing REL-6
                        cellUpdateConfirm-r5-add-ext    BIT STRING      OPTIONAL,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            cellUpdateConfirm-v6xyext       CellUpdateConfirm-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                        }   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-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- ssdt-UL extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
        ssdt-UL-r4                      SSDT-UL                                 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-v590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        dl-TPC-PowerOffsetPerRL-List    DL-TPC-PowerOffsetPerRL-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-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-r4       OPTIONAL,
        rb-InformationAffectedList      RB-InformationAffectedList          OPTIONAL,
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo       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-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-r5      OPTIONAL,
        rb-InformationAffectedList      RB-InformationAffectedList-r5      OPTIONAL,
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo-r5   OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo            UL-CommonTransChInfo-r4            OPTIONAL,
        ul-deletedTransChInfoList       UL-DeletedTransChInfoList          OPTIONAL,
        ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList        OPTIONAL,
        modeSpecificTransChInfo         CHOICE {
            fdd                             SEQUENCE {
                cpch-SetID                      CPCH-SetID                 OPTIONAL,
                addReconfTransChDRAC-Info       DRAC-StaticInformationList OPTIONAL
            },
            tdd                             NULL
        },
        dl-CommonTransChInfo            DL-CommonTransChInfo-r4            OPTIONAL,
        dl-DeletedTransChInfoList       DL-DeletedTransChInfoList-r5       OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r5     OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                      OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power              OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement-r5           OPTIONAL,
        modeSpecificPhysChInfo          CHOICE {
            fdd                             SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information       OPTIONAL
            },
            tdd                             NULL
        },
        dl-HSPDSCH-Information          DL-HSPDSCH-Information             OPTIONAL,
        dl-CommonInformation            DL-CommonInformation-r5            OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List-r5        OPTIONAL
}

CellUpdateConfirm-v6xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        harq-Preamble-Mode              HARQ-Preamble-Mode                 OPTIONAL,
    -- MBMS IEs
        mbms-PL-ServiceRestrictInfo     MBMS-PL-ServiceRestrictInfo-r6     OPTIONAL
        mbms-FLCApplicabilityInfo       MBMS-FLCApplicabilityInfo-r6
}

-- **************************************************
--
-- 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,
            laterNonCriticalExtensions      SEQUENCE {
                -- Container for additional R99 extensions
                cellUpdateConfirm-CCCH-r3-add-ext           BIT STRING  OPTIONAL,
                v4b0NonCriticalExtensions       SEQUENCE {
                    cellUpdateConfirm-v4b0ext       CellUpdateConfirm-v4b0ext-IEs,
                    v590NonCriticalExtensions       SEQUENCE {
                        cellUpdateConfirm-v590ext       CellUpdateConfirm-v590ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            cellUpdateConfirm-v6xyext       CellUpdateConfirm-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {} OPTIONAL
                        }   OPTIONAL
                    }   OPTIONAL
                }   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,
                v4d0NonCriticalExtensions           SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    cellUpdateConfirm-CCCH-r4-add-ext       BIT STRING      OPTIONAL,
                    v590NonCriticalExtensions       SEQUENCE {
                        cellUpdateConfirm-v590ext       CellUpdateConfirm-v590ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            cellUpdateConfirm-v6xyext       CellUpdateConfirm-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                        }   OPTIONAL
                    }   OPTIONAL
                }   OPTIONAL
            },
            criticalExtensions              CHOICE {
                r5                              SEQUENCE {
                    cellUpdateConfirm-r5            CellUpdateConfirm-r5-IEs,
                    cellUpdateConfirm-CCCH-r5-add-ext       BIT STRING      OPTIONAL,
                    v6xyNonCriticalExtensions       SEQUENCE {
                        cellUpdateConfirm-v6xyext       CellUpdateConfirm-v6xyext-IEs,
                        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                    }   OPTIONAL
                },
                criticalExtensions              SEQUENCE {}
            }
        }
    }
}

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

CounterCheck ::= CHOICE {
    r3                              SEQUENCE {
        counterCheck-r3                 CounterCheck-r3-IEs,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            counterCheck-r3-add-ext     BIT STRING  OPTIONAL,
            nonCriticalExtensions       SEQUENCE {} OPTIONAL
        }   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,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            counterCheckResponse-r3-add-ext     BIT STRING  OPTIONAL,
            nonCriticalExtensions               SEQUENCE {} OPTIONAL
        }   OPTIONAL
}

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

DownlinkDirectTransfer ::= CHOICE {
    r3                              SEQUENCE {
        downlinkDirectTransfer-r3       DownlinkDirectTransfer-r3-IEs,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            downlinkDirectTransfer-r3-add-ext       BIT STRING  OPTIONAL,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        }   OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
}

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

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


HandoverToUTRANCommand ::= CHOICE {
    r3                              SEQUENCE {
        handoverToUTRANCommand-r3       HandoverToUTRANCommand-r3-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions              CHOICE {
        r4                              SEQUENCE {
            handoverToUTRANCommand-r4       HandoverToUTRANCommand-r4-IEs,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        },
        criticalExtensions              CHOICE {
            r5                              SEQUENCE {
                handoverToUTRANCommand-r5       HandoverToUTRANCommand-r5-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-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        new-U-RNTI                      U-RNTI-Short,
        cipheringAlgorithm              CipheringAlgorithm                  OPTIONAL,
    -- Radio bearer IEs
    -- Specification mode information
        specificationMode               CHOICE {
            complete                        SEQUENCE {
                srb-InformationSetupList        SRB-InformationSetupList,
                rab-InformationSetupList        RAB-InformationSetupList-r4         OPTIONAL,
                ul-CommonTransChInfo            UL-CommonTransChInfo-r4,
                ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList,
                dl-CommonTransChInfo            DL-CommonTransChInfo-r4,
                dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r4,
                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.
                preConfigMode                   CHOICE {
                    predefinedConfigIdentity        PredefinedConfigIdentity,
                    defaultConfig                   SEQUENCE {
                        defaultConfigMode               DefaultConfigMode,
                        defaultConfigIdentity           DefaultConfigIdentity-r4
                    }
                },
                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
}

HandoverToUTRANCommand-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        new-U-RNTI                      U-RNTI-Short,
        cipheringAlgorithm              CipheringAlgorithm                  OPTIONAL,
    -- Radio bearer IEs
    -- Specification mode information
        specificationMode               CHOICE {
            complete                        SEQUENCE {
                srb-InformationSetupList        SRB-InformationSetupList-r5,
                rab-InformationSetupList        RAB-InformationSetupList-r5         OPTIONAL,
                ul-CommonTransChInfo            UL-CommonTransChInfo-r4,
                ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList,
                dl-CommonTransChInfo            DL-CommonTransChInfo-r4,
                dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r5,
                ul-DPCH-Info                    UL-DPCH-Info-r5,
                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-r5,
                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-r5
                    }
                },
                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,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            handoverToUTRANComplete-r3-add-ext      BIT STRING  OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   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,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            initialDirectTransfer-r3-add-ext        BIT STRING  OPTIONAL,
                v590NonCriticalExtensions       SEQUENCE {
                    initialDirectTransfer-v590ext   InitialDirectTransfer-v590ext,
                    v6xyNonCriticalExtensions       SEQUENCE {
```

```
                        initialDirectTransfer-v6xyext   InitialDirectTransfer-v6xyext-IEs,
                        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                    }       OPTIONAL
                }       OPTIONAL
            }       OPTIONAL
        }   OPTIONAL
}

InitialDirectTransfer-v3a0ext ::= SEQUENCE {
    -- start-value shall always be included in this version of the protocol
    start-Value                     START-Value                         OPTIONAL
}
InitialDirectTransfer-v590ext ::= SEQUENCE {
    establishmentCause      EstablishmentCause  OPTIONAL
}

InitialDirectTransfer-v6xyext-IEs ::= SEQUENCE {
    -- Core network IEs
        plmn-Identity                   PLMN-Identity                       OPTIONAL,
    -- MBMS IEs
        mbms-JoinedInformation          MBMS-JoinedInformation-r6           OPTIONAL
}

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

HandoverFromUTRANCommand-GSM ::= CHOICE {
    r3                              SEQUENCE {
        handoverFromUTRANCommand-GSM-r3
                                        HandoverFromUTRANCommand-GSM-r3-IEs,
        -- UTRAN should not include the IE laterNonCriticalExtensions when it sets the IE
        -- gsm-message included in handoverFromUTRANCommand-GSM-r3 to single-GSM-Message. The UE
        -- behaviour upon receiving a message with this combination of IE values is unspecified.
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            handoverFromUTRANCommand-GSM-r3-add-ext     BIT STRING  OPTIONAL,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        }   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
        toHandoverRAB-Info              RAB-Info                            OPTIONAL,
    -- Measurement IEs
        frequency-band                  Frequency-Band,
    -- Other IEs
        gsm-message                     CHOICE {
            -- In the single-GSM-Message case the following rules apply:
            -- 1> the GSM message directly follows the basic production; the final padding that
            --    results when PER encoding the abstract syntax value is removed prior to appending
            --    the GSM message.
            -- 2> the RRC message excluding the GSM part, does not contain a length determinant;
            --    there is no explicit parameter indicating the size of the included GSM message.
            -- 3> depending on need, final padding (all “0”s) is added to ensure the final result
            --    comprises a full number of octets
            single-GSM-Message              SEQUENCE {},
            gsm-MessageList                 SEQUENCE {
                gsm-Messages                    GSM-MessageList
            }
        }
}

HandoverFromUTRANCommand-GERANIu ::= SEQUENCE {
    rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    handoverFromUTRANCommand-GERANIu    CHOICE {
        r5                              SEQUENCE {
            handoverFromUTRANCommand-GERANIu-r5
```

```
                                        HandoverFromUTRANCommand-GERANIu-r5-IEs,
            -- UTRAN should not include the IE nonCriticalExtensions when it sets
            -- the IE geranIu-message included in handoverFromUTRANCommand-GERANIu-r5 to
            -- single-GERANIu-Message
            -- The UE behaviour upon receiving a message including this combination of IE values is
            -- not specified
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        },
        later-than-r5                   SEQUENCE {
            criticalExtensions              SEQUENCE {}
        }
    }
}

HandoverFromUTRANCommand-GERANIu-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        activationTime                  ActivationTime                      OPTIONAL,
    -- Measurement IEs
        frequency-Band                  Frequency-Band,
    -- Other IEs
        geranIu-Message                     CHOICE {
            -- In the single-GERANIu-Message case the following rules apply:
            -- 1> the GERAN Iu message directly follows the basic production; the final padding that
            --    results when PER encoding the abstract syntax value is removed prior to appending
            --    the GERAN Iu message.
            -- 2> the RRC message excluding the GERAN Iu part does not contain a length determinant;
            --    there is no explicit parameter indicating the size of the included GERAN Iu
            --    message.
            -- 3> depending on need, final padding (all “0”s) is added to ensure the final result
            --    comprises a full number of octets.
            single-GERANIu-Message          SEQUENCE {},
            geranIu-MessageList             SEQUENCE {
                geranIu-Messages                GERANIu-MessageList
            }
        }
}

HandoverFromUTRANCommand-CDMA2000 ::= CHOICE {
    r3                              SEQUENCE {
        handoverFromUTRANCommand-CDMA2000-r3
                                        HandoverFromUTRANCommand-CDMA2000-r3-IEs,
        laterNonCriticalExtensions          SEQUENCE {
            -- Container for additional R99 extensions
            handoverFromUTRANCommand-CDMA2000-r3-add-ext
                                                BIT STRING      OPTIONAL,
            nonCriticalExtensions               SEQUENCE {}     OPTIONAL
        }   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
        toHandoverRAB-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,
        -- In case the interRATMessage to be transferred is for GERAN Iu mode, the
        -- message should be placed in the HandoverFromUtranFailure-v590ext-IEs
        -- non-critical extension container.
```

```
        interRATMessage                 CHOICE {
            gsm                             SEQUENCE {
                gsm-MessageList                     GSM-MessageList
            },
            cdma2000                            SEQUENCE {
                cdma2000-MessageList                CDMA2000-MessageList
            }
        }               OPTIONAL,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            handoverFromUTRANFailure-r3-add-ext     BIT STRING  OPTIONAL,
            v590NonCriticalExtensions       SEQUENCE {
                handoverFromUTRANFailure-v590ext    HandoverFromUtranFailure-v590ext-IEs,
                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
            }   OPTIONAL
        }   OPTIONAL
}

HandoverFromUtranFailure-v590ext-IEs ::= SEQUENCE {
    geranIu-MessageList                     GERANIu-MessageList         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-IEs,
                laterNonCriticalExtensions      SEQUENCE {
                    interRATHandoverInfo-v3d0ext    InterRATHandoverInfo-v3d0ext-IEs,
                    -- Container for additional R99 extensions
                    interRATHandoverInfo-r3-add-ext     BIT STRING  OPTIONAL,
                    v3g0NonCriticalExtensions           SEQUENCE {
                        interRATHandoverInfo-v3g0ext    InterRATHandoverInfo-v3g0ext-IEs,
                        v4b0NonCriticalExtensions       SEQUENCE {
                            interRATHandoverInfo-v4b0ext    InterRATHandoverInfo-v4b0ext-IEs,
                            v4d0NonCriticalExtensions       SEQUENCE {
                                interRATHandoverInfo-v4d0ext    InterRATHandoverInfo-v4d0ext-IEs,
                                -- Reserved for future non critical extension
                                v590NonCriticalExtensions       SEQUENCE {
                                    interRATHandoverInfo-v590ext
                                                                    InterRATHandoverInfo-v590ext-IEs,
                                    nonCriticalExtensions           SEQUENCE {} OPTIONAL
                                }   OPTIONAL
                            }   OPTIONAL
                        }   OPTIONAL
                    }   OPTIONAL
                }   OPTIONAL
            }   OPTIONAL
        }
    }
}

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

```
        dl-PhysChCapabilityFDD-v380ext      DL-PhysChCapabilityFDD-v380ext
}

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

InterRATHandoverInfo-v3d0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        uESpecificBehaviourInformation1interRAT     UESpecificBehaviourInformation1interRAT
    OPTIONAL
}


InterRATHandoverInfo-v3g0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v3g0ext    UE-RadioAccessCapability-v3g0ext        OPTIONAL
}
InterRATHandoverInfo-v4b0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        accessStratumReleaseIndicator       AccessStratumReleaseIndicator
}

InterRATHandoverInfo-v4d0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    tdd128-RF-Capability                RadioFrequencyBandTDDList       OPTIONAL
}

InterRATHandoverInfo-v590ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        predefinedConfigStatusListComp      PredefinedConfigStatusListComp          OPTIONAL,
        ue-RadioAccessCapabilityComp        UE-RadioAccessCapabilityComp            OPTIONAL
}

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

MeasurementControl ::= CHOICE {
    -- The Rel-4 functionality of UE Positioning OTDOA AssistanceData TDD is only available
    -- in the later-than-r3 branch of this message (i.e. through the use of the IE
    -- ue-Positioning-OTDOA-AssistanceData-r4)
    r3                          SEQUENCE {
        measurementControl-r3           MeasurementControl-r3-IEs,
        v390nonCriticalExtensions       SEQUENCE {
            measurementControl-v390ext      MeasurementControl-v390ext,
            v3a0NonCriticalExtensions           SEQUENCE {
                measurementControl-v3a0ext          MeasurementControl-v3a0ext,
                laterNonCriticalExtensions      SEQUENCE {
                    -- Container for additional R99 extensions
                    measurementControl-r3-add-ext       BIT STRING  OPTIONAL,
                    v4b0NonCriticalExtensions           SEQUENCE{
                        -- The content of the v4b0 non-critical extension has been removed. If sent
                        -- to a UE of AS release 4, the UE behaviour is unspecified. A UE of AS
                        -- release 5 onward shall comply with the v4b0 and later extensions in this
                        -- branch of the message.
                        v590NonCriticalExtensions       SEQUENCE {
                            measurementControl-v590ext      MeasurementControl-v590ext-IEs,
                            v5b0NonCriticalExtensions       SEQUENCE {
                                measurementControl-v5b0ext      MeasurementControl-v5b0ext-IEs,
                                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                            }                       OPTIONAL
                        }                           OPTIONAL
                    }                           OPTIONAL
                }                           OPTIONAL
            }                           OPTIONAL
        }                           OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                measurementControl-r4           MeasurementControl-r4-IEs,
                v4d0NonCriticalExtensions           SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
```

```
                    measurementControl-r4-add-ext       BIT STRING      OPTIONAL,
                    v590NonCriticalExtensions       SEQUENCE{
                        measurementControl-v590ext      MeasurementControl-v590ext-IEs,
                        v5b0NonCriticalExtensions       SEQUENCE {
                            measurementControl-v5b0ext      MeasurementControl-v5b0ext-IEs,
                            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                        }   OPTIONAL
                    }   OPTIONAL
                }   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-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
}

MeasurementControl-v590ext-IEs ::= SEQUENCE {
    measurementCommand-v590ext          CHOICE {
        -- the choice “intra-frequency” shall be used for the case of intra-frequency measurement,
        -- as well as when intra-frequency events are configured for inter-frequency measurement
        intra-frequency                     Intra-FreqEventCriteriaList-v590ext,
        inter-frequency                     Inter-FreqEventCriteriaList-v590ext
    }       OPTIONAL,
    intraFreqReportingCriteria-1b-r5        IntraFreqReportingCriteria-1b-r5        OPTIONAL,
    intraFreqEvent-1d-r5                    IntraFreqEvent-1d-r5                    OPTIONAL,
    -- most significant part of "RRC transaction identifier" (MSP),
    -- "RRC transaction identifier" = rrc-TransactionIdentifier-MSP-v590ext * 4 +
    -- rrc-TransactionIdentifier
    rrc-TransactionIdentifier-MSP-v590ext   RRC-TransactionIdentifier
}

MeasurementControl-v5b0ext-IEs ::=  SEQUENCE {
    interRATCellInfoIndicator           InterRATCellInfoIndicator           OPTIONAL
}

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

MeasurementControlFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
```

```
            measurementControlFailure-r3-add-ext        BIT STRING      OPTIONAL,
            v590NonCriticalExtensions       SEQUENCE {
                measurementControlFailure-v590ext       MeasurementControlFailure-v590ext-IEs,
                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
            }   OPTIONAL
        }   OPTIONAL
}

MeasurementControlFailure-v590ext-IEs ::= SEQUENCE {
    -- most significant part of "RRC transaction identifier" (MSP),
    -- "RRC transaction identifier" = rrc-TransactionIdentifier-MSP-v590ext * 4 +
    -- rrc-TransactionIdentifier
    -- If the rrc-TransactionIdentifier-MSP-v590ext was not received in the MEASUREMENT CONTROL
    -- message, then the rrc-TransactionIdentifier-MSP-v590ext shall be set to zero
    rrc-TransactionIdentifier-MSP-v590ext   RRC-TransactionIdentifier
}

-- **************************************************
--
-- 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,
            laterNonCriticalExtensions      SEQUENCE {
                -- Container for additional R99 extensions
                measurementReport-r3-add-ext        BIT STRING      OPTIONAL,
                v4b0NonCriticalExtensions       SEQUENCE {
                    measurementReport-v4b0ext       MeasurementReport-v4b0ext-IEs,
                    -- Extension mechanism for non-Rel4 information
                    v590NonCriticalExtensions   SEQUENCE {
                        measurementReport-v590ext       MeasurementReport-v590ext-IEs,
                        v5b0NonCriticalExtensions       SEQUENCE {
                            measurementReport-v5b0ext       MeasurementReport-v5b0ext-IEs,
                            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                        }       OPTIONAL
                    }       OPTIONAL
                }       OPTIONAL
            }       OPTIONAL
        }       OPTIONAL
}

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

MeasurementReport-v4b0ext-IEs ::= SEQUENCE {
    interFreqEventResults-LCR       InterFreqEventResults-LCR-r4-ext        OPTIONAL,
    -- additionalMeasuredResults-LCR shall contain measurement results and additional measurement
    -- results list.
    additionalMeasuredResults-LCR   MeasuredResultsList-LCR-r4-ext          OPTIONAL,
    gsmOTDreferenceCell             PrimaryCPICH-Info                       OPTIONAL
}

MeasurementReport-v590ext-IEs ::= SEQUENCE {
    measuredResults-v590ext             MeasuredResults-v590ext             OPTIONAL
}

MeasurementReport-v5b0ext-IEs ::=   SEQUENCE {
    interRATCellInfoIndicator           InterRATCellInfoIndicator           OPTIONAL
}

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

PagingType1 ::= SEQUENCE {
```

```
    -- User equipment IEs
        pagingRecordList                PagingRecordList                    OPTIONAL,
    -- Other IEs
        bcch-ModificationInfo           BCCH-ModificationInfo               OPTIONAL,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            pagingType1-r3-add-ext          BIT STRING      OPTIONAL,
            v590NonCriticalExtensions       SEQUENCE {
                pagingType1-v590ext             PagingType1-v590ext-IEs,
                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
            }   OPTIONAL
        }   OPTIONAL
}

PagingType1-v590ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        pagingRecord2List               PagingRecord2List-r5                OPTIONAL
}

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

PagingType2 ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        pagingCause                     PagingCause,
    -- Core network IEs
        cn-DomainIdentity               CN-DomainIdentity,
        pagingRecordTypeID              PagingRecordTypeID,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            pagingType2-r3-add-ext          BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

PhysicalChannelReconfiguration ::= CHOICE {
    r3                              SEQUENCE {
        physicalChannelReconfiguration-r3
                                        PhysicalChannelReconfiguration-r3-IEs,
        v3a0NonCriticalExtensions           SEQUENCE {
            physicalChannelReconfiguration-v3a0ext      PhysicalChannelReconfiguration-v3a0ext,
            laterNonCriticalExtensions      SEQUENCE {
                -- Container for additional R99 extensions
                physicalChannelReconfiguration-r3-add-ext           BIT STRING      OPTIONAL,
                v4b0NonCriticalExtenstions          SEQUENCE {
                    physicalChannelReconfiguration-v4b0ext
                                                PhysicalChannelReconfiguration-v4b0ext-IEs,
                    v590NonCriticalExtenstions          SEQUENCE {
                        physicalChannelReconfiguration-v590ext
                                                    PhysicalChannelReconfiguration-v590ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            physicalChannelReconfiguration-v6xyext
                                                        PhysicalChannelReconfiguration-v6xyext-IEs,
                            nonCriticalExtensions                   SEQUENCE {} OPTIONAL
                        }   OPTIONAL
                    }   OPTIONAL
                }   OPTIONAL
            }   OPTIONAL
        }   OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
        r4                              SEQUENCE {
            physicalChannelReconfiguration-r4
                                            PhysicalChannelReconfiguration-r4-IEs,
            v4d0NonCriticalExtensions           SEQUENCE {
                -- Container for adding non critical extensions after freezing REL-5
```

```
                    physicalChannelReconfiguration-r4-add-ext       BIT STRING      OPTIONAL,
                    v590NonCriticalExtenstions          SEQUENCE {
                        physicalChannelReconfiguration-v590ext
                                                PhysicalChannelReconfiguration-v590ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            physicalChannelReconfiguration-v6xyext
                                                PhysicalChannelReconfiguration-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                        }   OPTIONAL
                    }   OPTIONAL
                }   OPTIONAL
            },
            criticalExtensions              CHOICE {
                r5                              SEQUENCE {
                    physicalChannelReconfiguration-r5
                                                PhysicalChannelReconfiguration-r5-IEs,
                    -- Container for adding non critical extensions after freezing REL-6
                    physicalChannelReconfiguration-r5-add-ext       BIT STRING      OPTIONAL,
                    v6xyNonCriticalExtensions       SEQUENCE {
                        physicalChannelReconfiguration-v6xyext
                                                PhysicalChannelReconfiguration-v6xyext-IEs,
                        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                    }   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-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- ssdt-UL extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
        ssdt-UL-r4                      SSDT-UL                             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-v590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
```

```
        dl-TPC-PowerOffsetPerRL-List    DL-TPC-PowerOffsetPerRL-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
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo       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
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo-r5    OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                       OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power               OPTIONAL,
        -- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r5 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-r5             OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List-r5         OPTIONAL
}

PhysicalChannelReconfiguration-v6xyext-IEs ::= SEQUENCE {
    -- Core network IEs
        plmn-Identity                   PLMN-Identity                       OPTIONAL,
    -- Physical channel IEs
        harq-Preamble-Mode              HARQ-Preamble-Mode                  OPTIONAL,
    -- MBMS IEs
        mbms-PL-ServiceRestrictInfo     MBMS-PL-ServiceRestrictInfo-r6      OPTIONAL
        mbms-FLCApplicabilityInfo       MBMS-FLCApplicabilityInfo-r6
}
```

```
-- **************************************************
--
-- 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,
        -- dummy is not used in this version of the specification and
        -- it should be ignored by the receiver.
        dummy                           RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            physicalChannelReconfigurationComplete-r3-add-ext       BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

PhysicalChannelReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier           OPTIONAL,
        failureCause                    FailureCauseWithProtErr,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            physicalChannelReconfigurationFailure-r3-add-ext        BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

PhysicalSharedChannelAllocation ::= CHOICE {
    r3                              SEQUENCE {
        physicalSharedChannelAllocation-r3
                                        PhysicalSharedChannelAllocation-r3-IEs,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            physicalSharedChannelAllocation-r3-add-ext      BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        }   OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        dsch-RNTI                       DSCH-RNTI                           OPTIONAL,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                physicalSharedChannelAllocation-r4
                                                PhysicalSharedChannelAllocation-r4-IEs,
                v4d0NonCriticalExtensions           SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    physicalSharedChannelAllocation-r4-add-ext      BIT STRING      OPTIONAL,
                    nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                }       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 confirmRequest 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,
        trafficVolumeReportRequest      INTEGER (0..255)                    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    OPTIONAL,
        timeslotListWithISCP            TimeslotListWithISCP                OPTIONAL,
        primaryCCPCH-RSCP               PrimaryCCPCH-RSCP                   OPTIONAL,
        allocationConfirmation          CHOICE {
            pdschConfirmation               PDSCH-Identity,
            puschConfirmation               PUSCH-Identity
        }                                                                   OPTIONAL,
        protocolErrorIndicator          ProtocolErrorIndicatorWithMoreInfo,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            puschCapacityRequest-r3-add-ext     BIT STRING      OPTIONAL,
            v590NonCriticalExtensions       SEQUENCE {
                puschCapacityRequest-v590ext    PUSCHCapacityRequest-v590ext,
                nonCriticalExtensions           SEQUENCE {} OPTIONAL
            }       OPTIONAL
        }   OPTIONAL
}

PUSCHCapacityRequest-v590ext ::= SEQUENCE {
    primaryCCPCH-RSCP-delta             DeltaRSCP           OPTIONAL
}
-- **************************************************
--
-- RADIO BEARER RECONFIGURATION
--
-- **************************************************

RadioBearerReconfiguration ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerReconfiguration-r3   RadioBearerReconfiguration-r3-IEs,
        -- Prefix "v3ao" is used (in one instance) to keep alignment with R99
        v3aoNonCriticalExtensions       SEQUENCE {
            radioBearerReconfiguration-v3a0ext  RadioBearerReconfiguration-v3a0ext,
            laterNonCriticalExtensions      SEQUENCE {
                -- Container for additional R99 extensions
                radioBearerReconfiguration-r3-add-ext       BIT STRING      OPTIONAL,
```

```
                v4b0NonCriticalExtensions           SEQUENCE {
                    radioBearerReconfiguration-v4b0ext
                                                    RadioBearerReconfiguration-v4b0ext-IEs,
                    v590NonCriticalExtensions           SEQUENCE {
                        radioBearerReconfiguration-v590ext
                                                        RadioBearerReconfiguration-v590ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            radioBearerReconfiguration-v6xyext
                                                            RadioBearerReconfiguration-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {} OPTIONAL
                        }   OPTIONAL
                    }   OPTIONAL
                }   OPTIONAL
            }   OPTIONAL
        },
        later-than-r3                   SEQUENCE {
            rrc-TransactionIdentifier       RRC-TransactionIdentifier,
            criticalExtensions              CHOICE {
                r4                              SEQUENCE {
                    radioBearerReconfiguration-r4   RadioBearerReconfiguration-r4-IEs,
                    v4d0NonCriticalExtensions           SEQUENCE {
                        -- Container for adding non critical extensions after freezing REL-5
                        radioBearerReconfiguration-r4-add-ext       BIT STRING      OPTIONAL,
                        v590NonCriticalExtensions           SEQUENCE {
                            radioBearerReconfiguration-v590ext
                                                        RadioBearerReconfiguration-v590ext-IEs,
                            v6xyNonCriticalExtensions       SEQUENCE {
                                radioBearerReconfiguration-v6xyext
                                                            RadioBearerReconfiguration-v6xyext-IEs,
                                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                            }   OPTIONAL
                        }   OPTIONAL
                    }   OPTIONAL
                },
                criticalExtensions              CHOICE {
                    r5                              SEQUENCE {
                        radioBearerReconfiguration-r5       RadioBearerReconfiguration-r5-IEs,
                        -- Container for adding non critical extensions after freezing REL-6
                        radioBearerReconfiguration-r5-add-ext       BIT STRING      OPTIONAL,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            radioBearerReconfiguration-v6xyext
                                                            RadioBearerReconfiguration-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                        }   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-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- ssdt-UL extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
        ssdt-UL-r4                      SSDT-UL                             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-v590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        dl-TPC-PowerOffsetPerRL-List    DL-TPC-PowerOffsetPerRL-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-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
}

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,
    -- Specification mode information
        specificationMode               CHOICE {
            complete                        SEQUENCE {
            -- Radio bearer IEs
                rab-InformationReconfigList     RAB-InformationReconfigList         OPTIONAL,
                rb-InformationReconfigList      RB-InformationReconfigList-r5       OPTIONAL,
                rb-InformationAffectedList      RB-InformationAffectedList-r5       OPTIONAL,
                rb-PDCPContextRelocationList    RB-PDCPContextRelocationList        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
            },
            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-r5
                    }
                }
            }
        },
    -- 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-r5             OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List-r5         OPTIONAL
}

RadioBearerReconfiguration-v6xyext-IEs ::= SEQUENCE {
```

```
    -- Core network IEs
        plmn-Identity                   PLMN-Identity                       OPTIONAL,
    -- Physical channel IEs
        harq-Preamble-Mode              HARQ-Preamble-Mode                  OPTIONAL,
    -- MBMS IEs
        mbms-PL-ServiceRestrictInfo     MBMS-PL-ServiceRestrictInfo-r6      OPTIONAL
        mbms-FLCApplicabilityInfo       MBMS-FLCApplicabilityInfo-r6
}

-- **************************************************
--
-- 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,
        -- dummy is not used in this version of the specification and
        -- it should be ignored by the receiver.
        dummy                           RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            radioBearerReconfigurationComplete-r3-add-ext       BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        }   OPTIONAL
}

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

RadioBearerReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Radio bearer IEs
        potentiallySuccesfulBearerList  RB-IdentityList                     OPTIONAL,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            radioBearerReconfigurationFailure-r3-add-ext        BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        }   OPTIONAL
}

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

RadioBearerRelease ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerRelease-r3           RadioBearerRelease-r3-IEs,
        v3a0NonCriticalExtensions       SEQUENCE {
            radioBearerRelease-v3a0ext      RadioBearerRelease-v3a0ext,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            radioBearerRelease-r3-add-ext       BIT STRING      OPTIONAL,
                v4b0NonCriticalExtensions       SEQUENCE {
                    radioBearerRelease-v4b0ext      RadioBearerRelease-v4b0ext-IEs,
                    v590NonCriticalExtensions       SEQUENCE {
                        radioBearerRelease-v590ext      RadioBearerRelease-v590ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            radioBearerRelease-v6xyext      RadioBearerRelease-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {} OPTIONAL
                        }       OPTIONAL
                    }   OPTIONAL
                }   OPTIONAL
            }   OPTIONAL
```

```
        }   OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                radioBearerRelease-r4           RadioBearerRelease-r4-IEs,
                v4d0NonCriticalExtensions           SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    radioBearerRelease-r4-add-ext       BIT STRING      OPTIONAL,
                    v590NonCriticalExtensions       SEQUENCE {
                        radioBearerRelease-v590ext      RadioBearerRelease-v590ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            radioBearerRelease-v6xyext      RadioBearerRelease-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                        }   OPTIONAL
                    }   OPTIONAL
                }   OPTIONAL
            },
            criticalExtensions              CHOICE {
                r5                              SEQUENCE {
                    radioBearerRelease-r5           RadioBearerRelease-r5-IEs,
                    -- Container for adding non critical extensions after freezing REL-6
                    radioBearerRelease-r5-add-ext       BIT STRING      OPTIONAL,
                    v6xyNonCriticalExtensions       SEQUENCE {
                        radioBearerRelease-v6xyext      RadioBearerRelease-v6xyext-IEs,
                        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                    }   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-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- IE ssdt-UL extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
        ssdt-UL-r4                      SSDT-UL                             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-v590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        dl-TPC-PowerOffsetPerRL-List    DL-TPC-PowerOffsetPerRL-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,
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo       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
}

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,
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo-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-r5                 OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List-r5             OPTIONAL
}

RadioBearerRelease-v6xyext-IEs ::= SEQUENCE {
    -- Core network IEs
        plmn-Identity                   PLMN-Identity                           OPTIONAL,
    -- Physical channel IEs
        harq-Preamble-Mode              HARQ-Preamble-Mode                      OPTIONAL,
    -- MBMS IEs
        mbms-PL-ServiceRestrictInfo     MBMS-PL-ServiceRestrictInfo-r6          OPTIONAL,
        mbms-FLCApplicabilityInfo       MBMS-FLCApplicabilityInfo-r6,
        mbms-RB-ListReleasedToChangeTransferMode
                                        RB-InformationReleaseList               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,
        -- dummy is not used in this version of the specification and
        -- it should be ignored by the receiver.
        dummy                           RB-ActivationTimeInfoList               OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo           OPTIONAL,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            radioBearerReleaseComplete-r3-add-ext       BIT STRING      OPTIONAL,
```

```
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

RadioBearerReleaseFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Radio bearer IEs
        potentiallySuccesfulBearerList  RB-IdentityList                     OPTIONAL,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            radioBearerReleaseFailure-r3-add-ext        BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

RadioBearerSetup ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerSetup-r3             RadioBearerSetup-r3-IEs,
        v3a0NonCriticalExtensions       SEQUENCE {
            radioBearerSetup-v3a0ext        RadioBearerSetup-v3a0ext,
            laterNonCriticalExtensions      SEQUENCE {
                -- Container for additional R99 extensions
                radioBearerSetup-r3-add-ext     BIT STRING      OPTIONAL,
                v4b0NonCriticalExtensions       SEQUENCE {
                    radioBearerSetup-v4b0ext        RadioBearerSetup-v4b0ext-IEs,
                    v590NonCriticalExtensions       SEQUENCE {
                        radioBearerSetup-v590ext        RadioBearerSetup-v590ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            radioBearerSetup-v6xyext        RadioBearerSetup-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {} OPTIONAL
                        }   OPTIONAL
                    }   OPTIONAL
                }   OPTIONAL
            }   OPTIONAL
        }   OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                radioBearerSetup-r4             RadioBearerSetup-r4-IEs,
                v4d0NonCriticalExtensions           SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    radioBearerSetup-r4-add-ext     BIT STRING      OPTIONAL,
                    v590NonCriticalExtensions       SEQUENCE {
                        radioBearerSetup-v590ext        RadioBearerSetup-v590ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            radioBearerSetup-v6xyext        RadioBearerSetup-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                        }   OPTIONAL
                    }   OPTIONAL
                }   OPTIONAL
            },
            criticalExtensions              CHOICE {
                r5                              SEQUENCE {
                    radioBearerSetup-r5             RadioBearerSetup-r5-IEs,
                    -- Container for adding non critical extensions after freezing REL-6
                    radioBearerSetup-r5-add-ext     BIT STRING      OPTIONAL,
                    v6xyNonCriticalExtensions       SEQUENCE {
                        radioBearerSetup-v6xyext        RadioBearerSetup-v6xyext-IEs,
                        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                    }   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-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- ssdt-UL extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
        ssdt-UL-r4                      SSDT-UL                                 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-v590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        dl-TPC-PowerOffsetPerRL-List    DL-TPC-PowerOffsetPerRL-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,
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo       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-r5         OPTIONAL,
        rab-InformationSetupList        RAB-InformationSetupList-r5         OPTIONAL,
        rb-InformationAffectedList      RB-InformationAffectedList-r5       OPTIONAL,
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo-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-r5             OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List-r5         OPTIONAL
}

RadioBearerSetup-v6xyext-IEs ::= SEQUENCE {
    -- Core network IEs
        plmn-Identity                   PLMN-Identity                       OPTIONAL,
    -- Physical channel IEs
        harq-Preamble-Mode              HARQ-Preamble-Mode                  OPTIONAL,
    -- Radio bearer IEs
        rab-InformationSetupList        RAB-InformationSetupList-r6-ext     OPTIONAL,
    -- MBMS IEs
        mbms-PL-ServiceRestrictInfo     MBMS-PL-ServiceRestrictInfo-r6      OPTIONAL
        mbms-FLCApplicabilityInfo       MBMS-FLCApplicabilityInfo-r6
}

-- **************************************************
--
-- 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,
        -- dummy is not used in this version of the specification and
        -- it should be ignored by the receiver.
        dummy                           RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            radioBearerSetupComplete-r3-add-ext     BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

RadioBearerSetupFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Radio bearer IEs
        potentiallySuccesfulBearerList  RB-IdentityList                     OPTIONAL,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            radioBearerSetupFailure-r3-add-ext      BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

RRCConnectionReject ::= CHOICE {
    r3                              SEQUENCE {
        rrcConnectionReject-r3          RRCConnectionReject-r3-IEs,
        laterNonCriticalExtensions      SEQUENCE {
```

```
            -- Container for additional R99 extensions
            rrcConnectionReject-r3-add-ext      BIT STRING      OPTIONAL,
            v6xyNonCriticalExtensions           SEQUENCE {
                rrcConnectionReject-v6xyext     RRCConnectionReject-v6xyext-IEs,
                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
            }   OPTIONAL
        }   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
}

RRCConnectionReject-v6xyext-IEs ::= SEQUENCE {
    redirectionInfo-v6xyext             GSM-TargetCellInfoList          OPTIONAL
}

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

RRCConnectionRelease ::= CHOICE {
    r3                              SEQUENCE {
        rrcConnectionRelease-r3         RRCConnectionRelease-r3-IEs,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            rrcConnectionRelease-r3-add-ext     BIT STRING      OPTIONAL,
            v6xyNonCriticalExtensions           SEQUENCE {
                rrcConnectionRelease-v6xyext    RRCConnectionRelease-v6xyext-IEs,
                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
            }   OPTIONAL
        }   OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                rrcConnectionRelease-r4         RRCConnectionRelease-r4-IEs,
                v4d0NonCriticalExtensions           SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-6
                    rrcConnectionRelease-r4-add-ext     BIT STRING      OPTIONAL,
                    v6xyNonCriticalExtensions           SEQUENCE {
                        rrcConnectionRelease-v6xyext
                                                        RRCConnectionRelease-v6xyext-IEs,
                        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                    }   OPTIONAL
                }   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
}

RRCConnectionRelease-v6xyext-IEs ::= SEQUENCE {
    redirectionInfo-v6xyext             RedirectionInfo-r6  OPTIONAL
}

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

RRCConnectionRelease-CCCH ::= CHOICE {
    r3                              SEQUENCE {
        rrcConnectionRelease-CCCH-r3    RRCConnectionRelease-CCCH-r3-IEs,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            rrcConnectionRelease-CCCH-r3-add-ext        BIT STRING      OPTIONAL,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
        }   OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        u-RNTI                          U-RNTI,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                rrcConnectionRelease-CCCH-r4    RRCConnectionRelease-CCCH-r4-IEs,
                v4d0NonCriticalExtensions           SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    rrcConnectionRelease-CCCH-r4-add-ext        BIT STRING      OPTIONAL,
                    nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                }       OPTIONAL
            },
            criticalExtensions              SEQUENCE {
                -- TABULAR: CHOICE IdentityType (U-RNTI, GroupIdentity) is replaced with the
                -- optional element groupIdentity, since the U-RNTI is mandatory in ASN.1.
                -- In case CHOICE IdentityType is equal to GroupIdentity the value of the U-RNTI
                -- shall be ignored by a UE complying with this version of the message.
                groupIdentity       SEQUENCE ( SIZE (1 .. maxURNTI-Group) ) OF
                                        GroupReleaseInformation     OPTIONAL,
                criticalExtensions              CHOICE {
                    r5                              SEQUENCE {
                        rrcConnectionRelease-CCCH-r5    RRCConnectionRelease-CCCH-r5-IEs,
                        -- Container for adding non critical extensions after freezing REL-6
                        rrcConnectionRelease-CCCH-r5-add-ext        BIT STRING      OPTIONAL,
                        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
}

-- The R5 and R4 sequence of IEs are identical in this message
RRCConnectionRelease-CCCH-r5-IEs ::= RRCConnectionRelease-CCCH-r4-IEs

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

```
RRCConnectionReleaseComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        errorIndication                 FailureCauseWithProtErr             OPTIONAL,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            rrcConnectionReleaseComplete-r3-add-ext     BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

RRCConnectionRequest ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        initialUE-Identity              InitialUE-Identity,
        establishmentCause              EstablishmentCause,
        -- protocolErrorIndicator is MD, but for compactness reasons no default value
        -- has been assigned to it.
        protocolErrorIndicator          ProtocolErrorIndicator,
    -- Measurement IEs
        measuredResultsOnRACH           MeasuredResultsOnRACH               OPTIONAL,
    --  Non critical Extensions
        v3d0NonCriticalExtensions           SEQUENCE {
            rRCConnectionRequest-v3d0ext    RRCConnectionRequest-v3d0ext-IEs,
        -- Reserved for future non critical extension
            v4b0NonCriticalExtensions           SEQUENCE {
                rrcConnectionRequest-v4b0ext        RRCConnectionRequest-v4b0ext-IEs,
                v590NonCriticalExtensions           SEQUENCE {
                    rrcConnectionRequest-v590ext        RRCConnectionRequest-v590ext-IEs,
                    -- Reserved for future non critical extension
                    nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                }   OPTIONAL
            }   OPTIONAL
        }   OPTIONAL
}

RRCConnectionRequest-v3d0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        uESpecificBehaviourInformation1idle     UESpecificBehaviourInformation1idle     OPTIONAL
}

RRCConnectionRequest-v4b0ext-IEs ::=    SEQUENCE {
    -- User equipment IEs
        accessStratumReleaseIndicator           AccessStratumReleaseIndicator
}

RRCConnectionRequest-v590ext-IEs ::=    SEQUENCE {
    -- User equipment IEs
        predefinedConfigStatusInfo          BOOLEAN
}

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

RRCConnectionSetup ::= CHOICE {
    r3                              SEQUENCE {
        rrcConnectionSetup-r3           RRCConnectionSetup-r3-IEs,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            rrcConnectionSetup-r3-add-ext       BIT STRING      OPTIONAL,
            v4b0NonCriticalExtensions       SEQUENCE {
                rrcConnectionSetup-v4b0ext      RRCConnectionSetup-v4b0ext-IEs,
                v590NonCriticalExtensions       SEQUENCE {
                    rrcConnectionSetup-v590ext      RRCConnectionSetup-v590ext-IEs,
                    nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                }   OPTIONAL
            }   OPTIONAL
        }   OPTIONAL
```

```
    },
    later-than-r3                   SEQUENCE {
        initialUE-Identity              InitialUE-Identity,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                rrcConnectionSetup-r4           RRCConnectionSetup-r4-IEs,
                v4d0NonCriticalExtensions           SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    rrcConnectionSetup-r4-add-ext       BIT STRING      OPTIONAL,
                    v590NonCriticalExtensions       SEQUENCE {
                        rrcConnectionSetup-v590ext      RRCConnectionSetup-v590ext-IEs,
                        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                    }   OPTIONAL
                }   OPTIONAL
            },
            criticalExtensions                  CHOICE {
                r5                              SEQUENCE {
                    rrcConnectionSetup-r5           RRCConnectionSetup-r5-IEs,
                    -- Container for adding non critical extensions after freezing REL-6
                    rrcConnectionSetup-r5-add-ext       BIT STRING      OPTIONAL,
                    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 capabilityUpdateRequirement 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-v4b0ext-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-r4                      SSDT-UL                                 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-v590ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        systemSpecificCapUpdateReq      SystemSpecificCapUpdateReq-v590ext      OPTIONAL,
    -- Physical channel IEs
        dl-TPC-PowerOffsetPerRL-List    DL-TPC-PowerOffsetPerRL-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 capabilityUpdateRequirement 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-r4             OPTIONAL,
        ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList         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,
        dl-CommonInformation            DL-CommonInformation-r4             OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List-r4         OPTIONAL
}

RRCConnectionSetup-r5-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
        activationTime                  ActivationTime                      OPTIONAL,
        new-U-RNTI                      U-RNTI,
        new-c-RNTI                      C-RNTI                              OPTIONAL,
        rrc-StateIndicator              RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient,
        -- TABULAR: If capabilityUpdateRequirement is not present, the default value
        -- defined in 10.3.3.2 shall be used.
        capabilityUpdateRequirement     CapabilityUpdateRequirement-r5      OPTIONAL,
    -- Specification mode information
        specificationMode               CHOICE {
            complete                        SEQUENCE {
                -- Radio bearer IEs
                srb-InformationSetupList        SRB-InformationSetupList2,
                -- Transport channel IEs
                ul-CommonTransChInfo            UL-CommonTransChInfo-r4             OPTIONAL,
                ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList         OPTIONAL,
                dl-CommonTransChInfo            DL-CommonTransChInfo-r4             OPTIONAL,
                dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r4      OPTIONAL
            },
            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-r5
                    }
                }
            }
        },
    -- 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-r5bis      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-IEs,
                    laterNonCriticalExtensions          SEQUENCE {
                        -- Container for additional R99 extensions
                        rrcConnectionSetupComplete-r3-add-ext       BIT STRING      OPTIONAL,
                        v3g0NonCriticalExtensions           SEQUENCE {
                            rrcConnectionSetupComplete-v3g0ext  RRCConnectionSetupComplete-v3g0ext-IEs,
                            v4b0NonCriticalExtensions           SEQUENCE {
                                rrcConnectionSetupComplete-v4b0ext
                                                                    RRCConnectionSetupComplete-v4b0ext-IEs,
                                v590NonCriticalExtensions           SEQUENCE {
                                    rrcConnectionSetupComplete-v590ext
                                                                    RRCConnectionSetupComplete-v590ext-IEs,
                                    nonCriticalExtensions               SEQUENCE {}     OPTIONAL
                                }       OPTIONAL
                            }       OPTIONAL
                        }       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-IEs ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v3a0ext    UE-RadioAccessCapability-v3a0ext    OPTIONAL
}

RRCConnectionSetupComplete-v3g0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v3g0ext    UE-RadioAccessCapability-v3g0ext    OPTIONAL
}

RRCConnectionSetupComplete-v4b0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v4b0ext        UE-RadioAccessCapability-v4b0ext        OPTIONAL
}

RRCConnectionSetupComplete-v590ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v590ext        UE-RadioAccessCapability-v590ext        OPTIONAL,
    -- Other IEs
        ue-RATSpecificCapability-v590ext        InterRAT-UE-RadioAccessCapability-v590ext   OPTIONAL
}

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

RRC-FailureInfo ::= CHOICE {
    r3                                      SEQUENCE {
        rRC-FailureInfo-r3                      RRC-FailureInfo-r3-IEs,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            rrc-FailureInfo-r3-add-ext      BIT STRING      OPTIONAL,
```

```
            nonCriticalExtensions                       SEQUENCE {} OPTIONAL
        }   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,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            rrcStatus-r3-add-ext        BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

SecurityModeCommand ::= CHOICE {
    r3                              SEQUENCE {
        securityModeCommand-r3          SecurityModeCommand-r3-IEs,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            securityModeCommand-r3-add-ext      BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   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,
        laterNonCriticalExtensions      SEQUENCE {
```

```
            -- Container for additional R99 extensions
            securityModeComplete-r3-add-ext     BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

SecurityModeFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            securityModeFailure-r3-add-ext      BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

SignallingConnectionRelease ::= CHOICE {
    r3                          SEQUENCE {
        signallingConnectionRelease-r3  SignallingConnectionRelease-r3-IEs,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            signallingConnectionRelease-r3-add-ext      BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   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,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            signallingConnectionReleaseIndication-r3-add-ext        BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   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,
        laterNonCriticalExtensions          SEQUENCE {
            -- Container for additional R99 extensions
            systemInformationChangeIndication-r3-add-ext        BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

TransportChannelReconfiguration ::= CHOICE {
    r3                              SEQUENCE {
        transportChannelReconfiguration-r3
                                        TransportChannelReconfiguration-r3-IEs,
        v3a0NonCriticalExtensions       SEQUENCE {
            transportChannelReconfiguration-v3a0ext
                                            TransportChannelReconfiguration-v3a0ext,
            laterNonCriticalExtensions          SEQUENCE {
                -- Container for additional R99 extensions
                transportChannelReconfiguration-r3-add-ext      BIT STRING      OPTIONAL,
                v4b0NonCriticalExtensions       SEQUENCE {
                    transportChannelReconfiguration-v4b0ext
                                                    TransportChannelReconfiguration-v4b0ext-IEs,
                    v590NonCriticalExtensions       SEQUENCE {
                        transportChannelReconfiguration-v590ext
                                                        TransportChannelReconfiguration-v590ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            transportChannelReconfiguration-v6xyext
                                                        TransportChannelReconfiguration-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                        }       OPTIONAL
                    }       OPTIONAL
                }       OPTIONAL
            }       OPTIONAL
        }       OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                transportChannelReconfiguration-r4
                                                TransportChannelReconfiguration-r4-IEs,
                v4d0NonCriticalExtensions           SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    transportChannelReconfiguration-r4-add-ext      BIT STRING      OPTIONAL,
                    v590NonCriticalExtensions       SEQUENCE {
                        transportChannelReconfiguration-v590ext
                                                        TransportChannelReconfiguration-v590ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            transportChannelReconfiguration-v6xyext
                                                        TransportChannelReconfiguration-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                        }   OPTIONAL
                    }   OPTIONAL
                }   OPTIONAL
            },
            criticalExtensions              CHOICE {
                r5                              SEQUENCE {
                    transportChannelReconfiguration-r5
                                                    TransportChannelReconfiguration-r5-IEs,
                    -- Container for adding non critical extensions after freezing REL-6
                    transportChannelReconfiguration-r5-add-ext      BIT STRING      OPTIONAL,
                    v6xyNonCriticalExtensions       SEQUENCE {
                        transportChannelReconfiguration-v6xyext
                                                        TransportChannelReconfiguration-v6xyext-IEs,
                        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
```

```
                    }   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-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        -- ssdt-UL extends SSDT-Information, which is included in
        -- DL-CommonInformation. FDD only.
        ssdt-UL-r4                      SSDT-UL                             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-v590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
        dl-TPC-PowerOffsetPerRL-List    DL-TPC-PowerOffsetPerRL-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
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo       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
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo-r5    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-r5             OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List-r5         OPTIONAL
}

TransportChannelReconfiguration-v6xyext-IEs ::= SEQUENCE {
```

```
    -- Core network IEs
        plmn-Identity                   PLMN-Identity                       OPTIONAL,
    -- Physical channel IEs
        harq-Preamble-Mode              HARQ-Preamble-Mode                  OPTIONAL,
    -- MBMS IEs
        mbms-PL-ServiceRestrictInfo     MBMS-PL-ServiceRestrictInfo-r6      OPTIONAL
        mbms-FLCApplicabilityInfo       MBMS-FLCApplicabilityInfo-r6
}

-- **************************************************
--
-- 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,
        -- dummy is not used in this version of the specification and
        -- it should be ignored by the receiver.
        dummy                           RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
        laterNonCriticalExtensions          SEQUENCE {
            -- Container for additional R99 extensions
            transportChannelReconfigurationComplete-r3-add-ext      BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

TransportChannelReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
        laterNonCriticalExtensions          SEQUENCE {
            -- Container for additional R99 extensions
            transportChannelReconfigurationFailure-r3-add-ext       BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

TransportFormatCombinationControl ::= SEQUENCE {
        -- rrc-TransactionIdentifier is always included in this version of the specification
        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,
        laterNonCriticalExtensions          SEQUENCE {
            -- Container for additional R99 extensions
            transportFormatCombinationControl-r3-add-ext        BIT STRING      OPTIONAL,
                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

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

TransportFormatCombinationControlFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
        laterNonCriticalExtensions          SEQUENCE {
            -- Container for additional R99 extensions
            transportFormatCombinationControlFailure-r3-add-ext     BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

UECapabilityEnquiry ::= CHOICE {
    r3                              SEQUENCE {
        ueCapabilityEnquiry-r3          UECapabilityEnquiry-r3-IEs,
        laterNonCriticalExtensions          SEQUENCE {
            -- Container for additional R99 extensions
            ueCapabilityEnquiry-r3-add-ext      BIT STRING      OPTIONAL,
            v4b0NonCriticalExtensions       SEQUENCE {
                ueCapabilityEnquiry-v4b0ext     UECapabilityEnquiry-v4b0ext-IEs,
                v590NonCriticalExtensions           SEQUENCE {
                    ueCapabilityEnquiry-v590ext     UECapabilityEnquiry-v590ext-IEs,
                    nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                }                           OPTIONAL
            }       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-v4b0ext-IEs ::= SEQUENCE {
        capabilityUpdateRequirement-r4-ext  CapabilityUpdateRequirement-r4-ext
}

UECapabilityEnquiry-v590ext-IEs ::= SEQUENCE {
        systemSpecificCapUpdateReq      SystemSpecificCapUpdateReq-v590ext
}

-- ************************************************
--
-- 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-IEs,
                    laterNonCriticalExtensions          SEQUENCE {
                        -- Container for additional R99 extensions
                        ueCapabilityInformation-r3-add-ext      BIT STRING      OPTIONAL,
```

```
                        -- Reserved for future non critical extension
                        v4b0NonCriticalExtensions           SEQUENCE {
                            ueCapabilityInformation-v4b0ext     UECapabilityInformation-v4b0ext,
                            v590NonCriticalExtensions           SEQUENCE {
                                ueCapabilityInformation-v590ext     UECapabilityInformation-v590ext,
                                nonCriticalExtensions               SEQUENCE {}     OPTIONAL
                            }       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-IEs ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v3a0ext        UE-RadioAccessCapability-v3a0ext        OPTIONAL
}

UECapabilityInformation-v4b0ext ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v4b0ext        UE-RadioAccessCapability-v4b0ext        OPTIONAL
}

UECapabilityInformation-v590ext ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v3g0ext        UE-RadioAccessCapability-v3g0ext        OPTIONAL,
        ue-RadioAccessCapability-v590ext        UE-RadioAccessCapability-v590ext        OPTIONAL,
    -- Other IEs
        ue-RATSpecificCapability-v590ext    InterRAT-UE-RadioAccessCapability-v590ext   OPTIONAL
}


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

UECapabilityInformationConfirm ::= CHOICE {
    r3                              SEQUENCE {
        ueCapabilityInformationConfirm-r3
                                        UECapabilityInformationConfirm-r3-IEs,
        laterNonCriticalExtensions          SEQUENCE {
            -- Container for additional R99 extensions
            ueCapabilityInformationConfirm-r3-add-ext       BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   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,
        laterNonCriticalExtensions          SEQUENCE {
            -- Container for additional R99 extensions
            uplinkDirectTransfer-r3-add-ext     BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

UplinkPhysicalChannelControl ::= CHOICE {
    r3                          SEQUENCE {
        uplinkPhysicalChannelControl-r3 UplinkPhysicalChannelControl-r3-IEs,
        laterNonCriticalExtensions          SEQUENCE {
            -- Container for additional R99 extensions
            uplinkPhysicalChannelControl-r3-add-ext     BIT STRING      OPTIONAL,
            v4b0NonCriticalExtensions       SEQUENCE {
                uplinkPysicalChannelControl-v4b0ext     UplinkPhysicalChannelControl-v4b0ext-IEs,
                -- Extension mechanism for non- release4 information
                noncriticalExtensions           SEQUENCE {}                     OPTIONAL
            }   OPTIONAL
        }   OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                uplinkPhysicalChannelControl-r4 UplinkPhysicalChannelControl-r4-IEs,
                v4d0NonCriticalExtensions           SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    uplinkPhysicalChannelControl-r4-add-ext     BIT STRING      OPTIONAL,
                    nonCriticalExtensions           SEQUENCE {} OPTIONAL
                }       OPTIONAL
            },
            criticalExtensions          CHOICE {
                r5                              SEQUENCE {
                    uplinkPhysicalChannelControl-r5 UplinkPhysicalChannelControl-r5-IEs,
                    -- Container for adding non critical extensions after freezing REL-6
                    uplinkPhysicalChannelControl-r5-add-ext     BIT STRING      OPTIONAL,
                    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-v4b0ext-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,
        specialBurstScheduling          SpecialBurstScheduling              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
            }
        }
}

UplinkPhysicalChannelControl-r5-IEs ::= SEQUENCE {
    -- Physical channel IEs
        ccTrCH-PowerControlInfo         CCTrCH-PowerControlInfo-r5          OPTIONAL,
        specialBurstScheduling          SpecialBurstScheduling              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,
                hs-SICH-PowerControl            HS-SICH-Power-Control-Info-TDD384   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,
        laterNonCriticalExtensions          SEQUENCE {
            -- Container for additional R99 extensions
            uraUpdate-r3-add-ext        BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

URAUpdateConfirm ::= CHOICE {
    r3                              SEQUENCE {
        uraUpdateConfirm-r3             URAUpdateConfirm-r3-IEs,
        laterNonCriticalExtensions          SEQUENCE {
            -- Container for additional R99 extensions
            uraUpdateConfirm-r3-add-ext     BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r5                              SEQUENCE {
                uraUpdateConfirm-r5             URAUpdateConfirm-r5-IEs,
                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
            },
            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
}

URAUpdateConfirm-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        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-r5    OPTIONAL
}

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

URAUpdateConfirm-CCCH ::= CHOICE {
    r3                              SEQUENCE {
        uraUpdateConfirm-CCCH-r3        URAUpdateConfirm-CCCH-r3-IEs,
        laterNonCriticalExtensions          SEQUENCE {
            -- Container for additional R99 extensions
            uraUpdateConfirm-CCCH-r3-add-ext        BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   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,
            laterNonCriticalExtensions          SEQUENCE {
                -- Container for additional R99 extensions
                utranMobilityInformation-r3-add-ext     BIT STRING      OPTIONAL,
                v6xyNonCriticalExtensions           SEQUENCE {
                    utranMobilityInformation-v6xyext    UtranMobilityInformation-v6xyext-IEs,
                    nonCriticalExtensions               SEQUENCE {}     OPTIONAL
```

```
                }       OPTIONAL
            }       OPTIONAL
        }       OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r5                              SEQUENCE {
                utranMobilityInformation-r5     UTRANMobilityInformation-r5-IEs,
                v6xyNonCriticalExtensions       SEQUENCE {
                    utranMobilityInformation-v6xyext    UtranMobilityInformation-v6xyext-IEs,
                    nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                }   OPTIONAL
            },
            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
}

UTRANMobilityInformation-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                   OPTIONAL,
        new-U-RNTI                      U-RNTI                              OPTIONAL,
        new-C-RNTI                      C-RNTI                              OPTIONAL,
        ue-ConnTimersAndConstants       UE-ConnTimersAndConstants-r5        OPTIONAL,
    -- CN information elements
        cn-InformationInfo              CN-InformationInfoFull              OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo-r5    OPTIONAL
}

UtranMobilityInformation-v6xyext-IEs ::= SEQUENCE {
    plmn-Identity                       PLMN-Identity                       OPTIONAL
}

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

UTRANMobilityInformationConfirm ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo         OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                      OPTIONAL,
        -- dummy is not used in this version of the specification and
        -- it should be ignored by the receiver.
        dummy                           RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
        laterNonCriticalExtensions          SEQUENCE {
            -- Container for additional R99 extensions
```

```
            utranMobilityInformationConfirm-r3-add-ext      BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

UTRANMobilityInformationFailure ::= SEQUENCE {
    -- UE information elements
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
        laterNonCriticalExtensions          SEQUENCE {
            -- Container for additional R99 extensions
            utranMobilityInformationFailure-r3-add-ext      BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

-- **************************************************
--
-- MBMS ACCESS INFORMATION
--
-- **************************************************

MBMSAccessInformation ::= SEQUENCE {
    -- Access Information IEs
        mbms-ServiceAccessInfoList      MBMS-ServiceAccessInfoList-r6,
    -- Non critical extensions
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- MBMS COMMON PTM RB INFORMATION
--
-- **************************************************

MBMSCommonPTMRBInformation ::= SEQUENCE {
    -- Common PTM RB Information IEs
        mbms-CommonRBInformationList    MBMS-CommonRBInformationList-r6,
        mbms-TranspChInfoForEachTrCh    MBMS-TranspChInfoForEachTrCh-r6,
        mbms-TranspChInfoForEachCCTrCh  MBMS-TranspChInfoForEachCCTrCh-r6,
        mbms-PhyChInformationList       MBMS-PhyChInformationList-r6,
    -- Non critical extensions
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- MBMS CURRENT CELL PTM RB INFORMATION
--
-- **************************************************

MBMSCurrentCellPTMRBInformation ::= SEQUENCE {
    -- Current Cell PTM RB Information IEs
        mbms-CurrentCell-SCCPCHList     MBMS-CurrentCell-SCCPCHList-r6      OPTIONAL,
        mbms-SIBType5-SCCPCHList        MBMS-SIBType5-SCCPCHList-r6         OPTIONAL,
    -- Non critical extensions
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- MBMS GENERAL INFORMATION
--
-- **************************************************

MBMSGeneralInformation ::= SEQUENCE {
    -- MBMS General Information IEs
        mbms-PreferredFrequencyInfo     MBMS-PreferredFrequencyList-r6      OPTIONAL,
        mbms-TimersAndCouneters         MBMS-TimersAndCouneters-r6,
        michConfigurationInfo           MBMS-MICHConfigurationInfo-r6,
        cellGroupIdentity               MBMS-CellGroupIdentity-r6,
        mschDefaultConfigurationInfo    MBMS-MSCHConfigurationInfo-r6       OPTIONAL,
```

```
        defaultL1CombiningConfigInfo    MBMS-DefaultL1CombiningConfigInfo-r6    OPTIONAL,
    -- Non critical extensions
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- MBMS MODIFICATION REQUEST
--
-- **************************************************

MBMSModificationRequest ::= SEQUENCE {
    -- MBMS Modification Request IEs
        mbms-PreferredFreqRequest       MBMS-PreferredFreqRequest-r6        OPTIONAL,
        rb-InformationReleaseList       RB-InformationReleaseList           OPTIONAL,
    -- Non critical extensions
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- MBMS MODIFIED SERVICES INFORMATION
--
-- **************************************************

MBMSModifiedServicesInformation ::= SEQUENCE {
    -- MBMS Modified Services Information IEs
        modifedServiceList              MBMS-ModifedServiceList-r6          OPTIONAL,
        mbms-ReacquireMCCH              BOOLEAN,
        endOfModifiedMCCHInformation    INTEGER (01..15)                        OPTIONAL,    --
FFS
    -- Non critical extensions
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- MBMS NEIGHBOURING CELL PTM RB INFORMATION
--
-- **************************************************

MBMSNeighbouringCellPTMRBInformation ::= SEQUENCE {
    -- MBMS Neighbouring Cell PTM RB Information IEs
        neighbouringCellIdentity        INTEGER (1),    -- FFS
        neighbouringCellSCCPCHList      MBMS-NeighbouringCellSCCPCHList-r6,
    -- Non critical extensions
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- MBMS SCHEDULING INFORMATION
--
-- **************************************************

MBMSSchedulingInformation ::= SEQUENCE {
    -- MBMS Scheduling Information IEs
        serviceSchedulingInfoList       MBMS-ServiceSchedulingInfoList-r6,
    -- Non critical extensions
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

-- **************************************************
--
-- MBMS UNMODIFIED SERVICES INFORMATION
--
-- **************************************************

MBMSUnmodifiedServicesInformation ::= SEQUENCE {
    -- IEs
        unmodifiedServiceList           MBMS-UnmodifiedServiceList-r6       OPTIONAL,
    -- Non critical extensions
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

END
```

11.3 Information element definitions

```
InformationElements DEFINITIONS AUTOMATIC TAGS ::=

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,
    maxGERAN-SI,
    maxHProcesses,
    maxHSDSCHTBIndex,
    maxHSDSCHTBIndex-tdd384,
    maxHSSCCHs,
    maxInterSysMessages,
    maxLoCHperRLC,
    maxMAC-d-PDUsizes,
    maxMBMS-CommonCCTrCh,
    maxMBMS-CommonPhyCh,
    maxMBMS-CommonRB,
    maxMBMS-CommonTrCh,
    maxMBMS-Freq,
    maxMBMS-L1CP,
    maxMBMSservCount,
    maxMBMSservDedic,
    maxMBMSservModif,
    maxMBMSservSched,
    maxMBMSservUnmodif,
    maxMBMSTransmis,
    maxMeasEvent,
    maxMeasIntervals,
    maxMeasParEvent,
    maxNumCDMA2000Freqs,
    maxNumFDDFreqs,
    maxNumGSMFreqRanges,
    maxGSMTargetCells,
    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,
```

```
    maxRBperTrCh,
    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,
    maxTrChperSCCPCH,
    maxTrCHpreconf,
    maxTS,
    maxTS-1,
    maxTS-2,
    maxTS-LCR,
    maxTS-LCR-1,
    maxURA,
    maxURNTI-Group
FROM Constant-definitions;

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

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
        },
        iMSIcauseUEinitiatedEvent                       SEQUENCE {
            routingparameter                                RoutingParameter
        },
        iMEI                                            SEQUENCE {
            routingparameter                                RoutingParameter
        },
        spare2                                          SEQUENCE {
            routingparameter                                RoutingParameter
        },
        spare1                                          SEQUENCE {
            routingparameter                                RoutingParameter
        }
    },
    -- dummy is not used in this version of the specification and
    -- it should be ignored by the receiver.
    dummy                                   BOOLEAN
}

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

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

IMSI-GSM-MAP ::=                    SEQUENCE (SIZE (6..21)) 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

MultiplePLMN-List-r6 ::=            SEQUENCE {
    mibPLMN-Identity                    BOOLEAN,
    multiplePLMNs                       SEQUENCE (SIZE (1..5)) OF
                                            PLMN-IdentityWithOptionalMCC-r6
}
```

```
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-IdentityWithOptionalMCC-r6 ::= SEQUENCE {
    mcc                                 MCC                     OPTIONAL,
    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,
    -- NOTE: IE accessClassBarredList should not be included if the IE CellAccessRestriction
    -- is included in the IE SysInfoType4
    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)

Q-Hyst-S-Fine ::= INTEGER (0..40)

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-SearchQual = 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)

-- Actual value T-Reselection-S-Fine = IE value * 0.2
T-Reselection-S-Fine ::=                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, rel-5, rel-6, 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  BOOLEAN,
    -- ue-RadioCapabilityTDDUpdateRequirement is for 3.84Mcps TDD update requirement
    ue-RadioCapabilityTDDUpdateRequirement  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
}

-- If the IE CellUpdateCause has the value 'cellUpdateCause-ext', the actual value is
-- defined in the IE CellUpdateCause-ext.
CellUpdateCause ::=                 ENUMERATED {
                                        cellReselection,
                                        periodicalCellUpdate,
                                        uplinkDataTransmission,
                                        utran-pagingResponse,
                                        re-enteredServiceArea,
                                        radiolinkFailure,
                                        rlc-unrecoverableError,
                                        cellUpdateCause-ext }

-- The IE CellUpdateCause-ext shall be present, if the IE CellUpdateCause has the
-- value 'cellUpdateCause-ext'.
CellUpdateCause-ext ::=             ENUMERATED {
                                        mbms-Reception,
                                        spare3, spare2, spare1 }

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

CipheringAlgorithm ::=              ENUMERATED {
                                        uea0, uea1 }

CipheringModeCommand ::=            CHOICE {
    startRestart                        CipheringAlgorithm,
    dummy                       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,
                                        mbms-Reception,
                                        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,
    mbmsSessionAlreadyReceivedCorrectly NULL,
    lowerPriorityMBMSService            NULL,
    spare5                              NULL,
    spare4                              NULL,
    spare3                              NULL,
    spare2                              NULL,
    spare1                              NULL
}

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

GroupIdentityWithReleaseInformation ::=     SEQUENCE {
        rrc-ConnectionReleaseInformation        RRC-ConnectionReleaseInformation,
        groupReleaseInformation                 GroupReleaseInformation
    }

GroupReleaseInformation ::=         SEQUENCE {
    uRNTI-Group                         U-RNTI-Group
}

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

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

HSDSCH-physical-layer-category ::=      INTEGER (1..64)

UESpecificBehaviourInformation1idle ::= BIT STRING (SIZE (4))

UESpecificBehaviourInformation1interRAT ::= BIT STRING (SIZE (8))


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))

-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
MaxHcContextSpace ::=                   ENUMERATED  {
                                            dummy, by1024, by2048, by4096,
                                            by8192 }

MaxHcContextSpace-r5-ext ::=            ENUMERATED  {
                                            by16384, by32768, by65536, by131072 }


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

MaximumAM-EntityNumberRLC-Cap ::=   ENUMERATED {
                                        dummy, 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 {
                                        dummy, 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 {
                                        dummy1, dummy2, tfc16, tfc32, tfc48, tfc64,
                                        tfc96, tfc128, tfc256, tfc512, tfc1024 }

-- the values 1 …4 for MaxPhysChPerFrame are not used in this version of the protocol
MaxPhysChPerFrame ::=               INTEGER (1..224)
```

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

MaxPhysChPerTimeslot ::=            ENUMERATED {
                                        ts1, ts2 }

-- the values 1 …4 for MaxPhysChPerTS are not used in this version of the protocol
MaxPhysChPerTS ::=                  INTEGER (1..16)

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

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

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

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

MaxTransportBlocksUL ::=            ENUMERATED {
                                        dummy, 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
}

MeasurementCapabilityExt ::=        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, dummy }

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

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

MultiModeRAT-Capability-v590ext ::= SEQUENCE {
    supportOfUTRAN-ToGERAN-NACC         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-312-r5 ::=                            ENUMERATED {
                                        s1, s2, s4, s10, s20,
                                        s50, s100, s200, s400,
                                        s600, s800, s1000 }

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

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

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

N-315-r5 ::=                            ENUMERATED {
                                        s1, s2, s4, s10, s20,
                                        s50, s100, s200, s400,
                                        s600, s800, s1000 }


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

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

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

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

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

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

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

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

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

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

PagingRecord2-r5 ::=                CHOICE {
    utran-SingleUE-Identity             SEQUENCE {
        u-RNTI                              U-RNTI,
        cn-OriginatedPage-connectedMode-UE  SEQUENCE {
            pagingCause                         PagingCause,
            cn-DomainIdentity                   CN-DomainIdentity,
            pagingRecordTypeID                  PagingRecordTypeID
        }                                                               OPTIONAL,
        rrc-ConnectionReleaseInformation    RRC-ConnectionReleaseInformation
    },
    utran-GroupIdentity                 SEQUENCE ( SIZE (1 .. maxURNTI-Group) ) OF
                                            GroupIdentityWithReleaseInformation
}

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

PagingRecord2List-r5 ::=            SEQUENCE (SIZE (1..maxPage1)) OF
                                        PagingRecord2-r5

PDCP-Capability ::=                 SEQUENCE {
    losslessSRNS-RelocationSupport      BOOLEAN,
    -- If present, the "maxHcContextSpace" in the IE "PDCP-Capability-r5-ext" overrides the
    -- "supported" value in this IE. The value in this IE may be used by a pre-REL-5 UTRAN.
    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
        }
    }
}

PDCP-Capability-r5-ext ::=          SEQUENCE {
    supportForRfc3095ContextRelocation      BOOLEAN,
    maxHcContextSpace                       MaxHcContextSpace-r5-ext    OPTIONAL
}

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 {
    fdd-hspdsch                                 CHOICE {
        supported                                   SEQUENCE {
            hsdsch-physical-layer-category              HSDSCH-physical-layer-category,
            supportOfDedicatedPilotsForChannelEstimationOfHSDSCH    BOOLEAN,
            -- simultaneousSCCPCH-DPCH-HSDSCH-Reception shall be true only if the
            -- IE SimultaneousSCCPCH-DPCH-Reception indicates support of simultaneous
            -- reception of S-CCPCH and DPCH
```

```
            simultaneousSCCPCH-DPCH-HSDSCH-Reception        BOOLEAN
        },
        unsupported                                         NULL
    },
    tdd384-hspdsch                                      CHOICE {
        supported                                           HSDSCH-physical-layer-category,
        unsupported                                         NULL
    },
    tdd128-hspdsch                                      CHOICE {
        supported                                           HSDSCH-physical-layer-category,
        unsupported                                         NULL
    }
}

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

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

ProtocolErrorIndicator ::=          ENUMERATED {
                                        noError, errorOccurred }

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

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

RadioFrequencyBandFDD ::=           ENUMERATED {
    -- fdd2100, fdd1900, fdd1800 correspond to Band I, Band II and Band III respectively
                                        fdd2100,
                                        fdd1900,
                                        fdd1800,
                                        bandVI,
                                        bandIV,
                                        bandV, 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
}

RedirectionInfo-r6 ::=              CHOICE {
    frequencyInfo                       FrequencyInfo,
    interRATInfo                        InterRATInfo-r6
}

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,
            radioFrequencyTDDBandList   RadioFrequencyBandTDDList,
            chipRateCapability          ChipRateCapability
        }                                   OPTIONAL
}

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

RLC-Capability ::=                  SEQUENCE {
    -- If present, the "totalRLC-AM-BufferSize" in the IE "RLC-Capability-r5-ext" overrides the
    -- corresponding value in this IE. The value in this IE may be used by a pre-REL-5 UTRAN.
    totalRLC-AM-BufferSize              TotalRLC-AM-BufferSize,
    maximumRLC-WindowSize               MaximumRLC-WindowSize,
    maximumAM-EntityNumber              MaximumAM-EntityNumberRLC-Cap
}

RLC-Capability-r5-ext ::=               SEQUENCE {
    totalRLC-AM-BufferSize              TotalRLC-AM-BufferSize-r5-ext       OPTIONAL
}

RRC-ConnectionReleaseInformation ::=    CHOICE {
    noRelease                           NULL,
    release                             SEQUENCE {
        releaseCause                        ReleaseCause
    }
}

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 {
                                        -- For each bit value “0” means false/ not supported
                                            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 {
                                        -- For each bit value “0” means false/ not supported
                                            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
        -- Note: the reference to DPDCH in the element name below is incorrect (see tabular). The
        -- name is not changed, to keep it aligned with R99.
        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
```

```
}

CapabilityUpdateRequirement-r5 ::=  SEQUENCE {
    ue-RadioCapabilityFDDUpdateRequirement-FDD  BOOLEAN,
    ue-RadioCapabilityTDDUpdateRequirement-TDD384   BOOLEAN,
    ue-RadioCapabilityTDDUpdateRequirement-TDD128   BOOLEAN,
    systemSpecificCapUpdateReqList      SystemSpecificCapUpdateReqList-r5       OPTIONAL
}

SystemSpecificCapUpdateReq ::=      ENUMERATED {
                                        gsm }

SystemSpecificCapUpdateReq-v590ext ::=      ENUMERATED {
                                        geranIu }

SystemSpecificCapUpdateReq-r5 ::=       ENUMERATED {
                                        gsm, geranIu }

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

SystemSpecificCapUpdateReqList-r5 ::= SEQUENCE (SIZE (1..maxSystemCapability)) OF
                                        SystemSpecificCapUpdateReq-r5

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 }

-- All the values are changed to "infinity" in Rel-5
T-317 ::=                               ENUMERATED {
                                            infinity0,  infinity1,  infinity2, infinity3, infinity4,
                                            infinity5, infinity6, infinity7}

T-318 ::=                               ENUMERATED {
                                            ms250, ms500, ms750, ms1000, ms1250, ms1500,
                                            ms1750, ms2000, ms3000, ms4000, ms6000, ms8000,
                                            ms10000, ms12000, ms16000 }

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 {
                                            dummy, kb10, kb50, kb100,
                                            kb150, kb500, kb1000, spare }

TotalRLC-AM-BufferSize-r5-ext ::=       ENUMERATED {
                                            kb200, kb300, kb400, kb750 }

-- 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-Group ::=                        CHOICE {
-- TABULAR: not following the tabular strictly, but this will most likely save bits
    all                                     NULL,
    u-RNTI-BitMaskIndex-b1                  BIT STRING (SIZE (31)),
    u-RNTI-BitMaskIndex-b2                  BIT STRING (SIZE (30)),
    u-RNTI-BitMaskIndex-b3                  BIT STRING (SIZE (29)),
    u-RNTI-BitMaskIndex-b4                  BIT STRING (SIZE (28)),
    u-RNTI-BitMaskIndex-b5                  BIT STRING (SIZE (27)),
    u-RNTI-BitMaskIndex-b6                  BIT STRING (SIZE (26)),
    u-RNTI-BitMaskIndex-b7                  BIT STRING (SIZE (25)),
    u-RNTI-BitMaskIndex-b8                  BIT STRING (SIZE (24)),
    u-RNTI-BitMaskIndex-b9                  BIT STRING (SIZE (23)),
    u-RNTI-BitMaskIndex-b10                 BIT STRING (SIZE (22)),
    u-RNTI-BitMaskIndex-b11                 BIT STRING (SIZE (21)),
    u-RNTI-BitMaskIndex-b12                 BIT STRING (SIZE (20)),
    u-RNTI-BitMaskIndex-b13                 BIT STRING (SIZE (19)),
    u-RNTI-BitMaskIndex-b14                 BIT STRING (SIZE (18)),
    u-RNTI-BitMaskIndex-b15                 BIT STRING (SIZE (17)),
    u-RNTI-BitMaskIndex-b16                 BIT STRING (SIZE (16)),
    u-RNTI-BitMaskIndex-b17                 BIT STRING (SIZE (15)),
    u-RNTI-BitMaskIndex-b18                 BIT STRING (SIZE (14)),
    u-RNTI-BitMaskIndex-b19                 BIT STRING (SIZE (13)),
    u-RNTI-BitMaskIndex-b20                 BIT STRING (SIZE (12)),
```

```
    u-RNTI-BitMaskIndex-b21             BIT STRING (SIZE (11)),
    u-RNTI-BitMaskIndex-b22             BIT STRING (SIZE (10)),
    u-RNTI-BitMaskIndex-b23             BIT STRING (SIZE (9)),
    u-RNTI-BitMaskIndex-b24             BIT STRING (SIZE (8)),
    u-RNTI-BitMaskIndex-b25             BIT STRING (SIZE (7)),
    u-RNTI-BitMaskIndex-b26             BIT STRING (SIZE (6)),
    u-RNTI-BitMaskIndex-b27             BIT STRING (SIZE (5)),
    u-RNTI-BitMaskIndex-b28             BIT STRING (SIZE (4)),
    u-RNTI-BitMaskIndex-b29             BIT STRING (SIZE (3)),
    u-RNTI-BitMaskIndex-b30             BIT STRING (SIZE (2)),
    u-RNTI-BitMaskIndex-b31             BIT STRING (SIZE (1))
}

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 infinity4
}

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

UE-ConnTimersAndConstants-r5 ::=        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                               N-312-r5                                DEFAULT s1,
    t-313                               T-313                                   DEFAULT 3,
    n-313                               N-313                                   DEFAULT s20,
    t-314                               T-314                                   DEFAULT s12,
    t-315                               T-315                                   DEFAULT s180,
    n-315                               N-315-r5                                DEFAULT s1,
    t-316                               T-316                                   DEFAULT s30,
```

```
    t-317                               T-317                               DEFAULT infinity4
}

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-PowerClassExt ::=                ENUMERATED {class1, class2, class3, class4,
                                         spare4, spare3, spare2, spare1 }

UE-RadioAccessCapability ::=        SEQUENCE {
    -- UE-RadioAccessCapability is compatible with R99, although accessStratumReleaseIndicator
    -- is removed from this IE, since its encoding did not does in bits. The
    -- accessStratumReleaseIndicator is provided in the relevant REL-4 extension IEs.
    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-RadioAccessCapability-v3g0ext ::=    SEQUENCE {
    ue-PositioningCapabilityExt-v3g0        UE-PositioningCapabilityExt-v3g0
}

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

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

UE-PositioningCapabilityExt-v3g0 ::=    SEQUENCE {
    sfn-sfnType2Capability              ENUMERATED { true }
}

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

UE-RadioAccessCapabBandFDD ::=  SEQUENCE{
```

```
    radioFrequencyBandFDD               RadioFrequencyBandFDD,
    fddRF-Capability                    SEQUENCE {
        ue-PowerClass                       UE-PowerClassExt,
        txRxFrequencySeparation             TxRxFrequencySeparation
    }                                                           OPTIONAL,
    measurementCapability               MeasurementCapabilityExt
}

UE-RadioAccessCapability-v4b0ext ::=    SEQUENCE {
    pdcp-Capability-r4-ext              PDCP-Capability-r4-ext,
    tdd-CapabilityExt                   SEQUENCE {
        rf-Capability                       RF-Capability-r4-ext,
        physicalChannelCapability-LCR       PhysicalChannelCapability-LCR-r4,
        measurementCapability-r4-ext        MeasurementCapability-r4-ext
    }                                           OPTIONAL,
    -- IE " AccessStratumReleaseIndicator" is not needed in RRC CONNECTION SETUP COMPLETE
    accessStratumReleaseIndicator               AccessStratumReleaseIndicator   OPTIONAL
}

UE-RadioAccessCapabilityComp ::= SEQUENCE {
    totalAM-RLCMemoryExceeds10kB            BOOLEAN,
    rf-CapabilityComp                       RF-CapabilityComp
}

RF-CapabilityComp ::= SEQUENCE {
    fdd                     CHOICE {
        notSupported                    NULL,
        supported                       RF-CapabBandListFDDComp
    },
    tdd384-RF-Capability    CHOICE {
        notSupported                    NULL,
        supported                       RadioFrequencyBandTDDList
    },
    tdd128-RF-Capability    CHOICE {
        notSupported                    NULL,
        supported                       RadioFrequencyBandTDDList
    }
}

-- NOTE: This IE is the frequency separation in MHz
RF-CapabBandFDDComp ::= ENUMERATED { notSupported, mhz190,
                                     mhz174-8-205-2, mhz134-8-245-2 }

RF-CapabBandListFDDComp ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
    -- the first entry corresponds with the first value of IE RadioFrequencyBandFDD,
    -- fdd2100, and so on
    RF-CapabBandFDDComp

UE-RadioAccessCapability-v590ext ::=    SEQUENCE {
    dl-CapabilityWithSimultaneousHS-DSCHConfig  DL-CapabilityWithSimultaneousHS-DSCHConfig
    OPTIONAL,
    pdcp-Capability-r5-ext              PDCP-Capability-r5-ext,
    rlc-Capability-r5-ext               RLC-Capability-r5-ext,
    physicalChannelCapability           PhysicalChannelCapability-hspdsch-r5,
    multiModeRAT-Capability-v590ext     MultiModeRAT-Capability-v590ext
}

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

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

DefaultConfigIdentity ::=           INTEGER (0..10)

DefaultConfigIdentity-r4 ::=        INTEGER (0..12)

DefaultConfigIdentity-r5 ::=        INTEGER (0..13)

DefaultConfigMode ::=               ENUMERATED {
                                        fdd,
                                        tdd }

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

```
DL-AM-RLC-Mode-r5 ::=                   SEQUENCE {
    dl-RLC-PDU-size                     OctetModeRLC-SizeInfoType1,
    inSequenceDelivery                  BOOLEAN,
    receivingWindowSize                 ReceivingWindowSize,
    dl-RLC-StatusInfo                   DL-RLC-StatusInfo
}

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

DL-CounterSynchronisationInfo-r5 ::=    SEQUENCE {
    rb-WithPDCP-InfoList                    RB-WithPDCP-InfoList            OPTIONAL,
    rb-PDCPContextRelocationList            RB-PDCPContextRelocationList    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-RFC3095-r4 ::=                   SEQUENCE {
    cid-InclusionInfo                   CID-InclusionInfo-r4,
    max-CID                             INTEGER (1..16383)                  DEFAULT 15,
    reverseDecompressionDepth           INTEGER (0..65535)                  DEFAULT 0
}

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-Mode-r5 ::=                      CHOICE {
    dl-AM-RLC-Mode-r5                   DL-AM-RLC-Mode-r5,
    dl-UM-RLC-Mode-r5                   DL-UM-RLC-Mode-r5,
    dl-TM-RLC-Mode                      DL-TM-RLC-Mode
}

DL-RLC-Mode-r6 ::=                      CHOICE {
    dl-AM-RLC-Mode-r5                   DL-AM-RLC-Mode-r5,
    dl-UM-RLC-Mode-r5                   DL-UM-RLC-Mode-r6,
    dl-TM-RLC-Mode                      DL-TM-RLC-Mode
}

DL-RLC-StatusInfo ::=               SEQUENCE {
    timerStatusProhibit                 TimerStatusProhibit                 OPTIONAL,
    -- dummy is not used in this version of the specification, it should not be sent
    -- and if received they should be ignored.
    dummy                           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
}

DL-UM-RLC-LI-size ::=                   ENUMERATED {
                                        size7, size15 }

DL-UM-RLC-Mode-r5 ::=                   SEQUENCE {
    dl-UM-RLC-LI-size                   DL-UM-RLC-LI-size
}

DL-UM-RLC-Mode-r6 ::=               SEQUENCE {
    dl-UM-RLC-LI-size                   DL-UM-RLC-LI-size,
    dl-UM-RLC-DuplAvoid-Reord-Info      UM-RLC-DuplAvoid-Reord-Info-r6      OPTIONAL,
    dl-UM-RLC-OutOSeqDelivery-Info      UM-RLC-OutOSeqDelivery-Info-r6      OPTIONAL
}

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-d-HFN-initial-value ::=         BIT STRING (SIZE (24))

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
    }
}

PredefinedConfigStatusListComp ::= SEQUENCE {
    setsWithDifferentValueTag           PredefinedConfigSetsWithDifferentValueTag,
    otherEntries                        PredefinedConfigStatusListVarSz             OPTIONAL
}

PredefinedConfigSetsWithDifferentValueTag ::= SEQUENCE (SIZE (1..2)) OF
                                              PredefinedConfigSetWithDifferentValueTag

PredefinedConfigSetWithDifferentValueTag ::= SEQUENCE {
    startPosition                           INTEGER (0..10)     DEFAULT 0,
    -- numberOfEntries                      INTEGER (6..16),
    -- numberOfEntries is covered by the size of the list in IE PredefinedConfigValueTagList
    valueTagList                            PredefinedConfigValueTagList
}


PredefinedConfigValueTagList ::=        SEQUENCE (SIZE (1..maxPredefConfig)) OF
                                            PredefinedConfigValueTag

PredefinedConfigStatusListVarSz ::=     SEQUENCE (SIZE (1..maxPredefConfig)) OF
                                            PredefinedConfigStatusInfo

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

RAB-Info-r6-ext ::=                 SEQUENCE {
    mbms-SessionIdentity                MBMS-SessionIdentity                OPTIONAL
}

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-InformationSetup-r5 ::=         SEQUENCE {
    rab-Info                            RAB-Info,
    rb-InformationSetupList             RB-InformationSetupList-r5
}

RAB-InformationSetup-r6-ext ::=     SEQUENCE {
```

```
    rab-Info-r6-ext                     RAB-Info-r6-ext
}

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

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

RAB-InformationSetupList-r5 ::=     SEQUENCE (SIZE (1..maxRABsetup)) OF
                                        RAB-InformationSetup-r5

-- The IE 'RAB-InformationSetupList-r6-ext' provides elements of extension information, which
-- are added to the corresponding elements of the IE 'RAB-InformationSetupList/-r4/-r5'.
RAB-InformationSetupList-r6-ext ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
                                        RAB-InformationSetup-r6-ext

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-r5
}

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,
    pdcp-SN-Info                        PDCP-SN-Info                        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,
    pdcp-SN-Info                        PDCP-SN-Info                        OPTIONAL,
    rlc-Info                            RLC-Info-r5                         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-InfoChoice                      RLC-InfoChoice,
    rb-MappingInfo                      RB-MappingInfo
}

RB-InformationSetup-r5 ::=          SEQUENCE {
    rb-Identity                         RB-Identity,
    pdcp-Info                           PDCP-Info-r4                        OPTIONAL,
    rlc-InfoChoice                      RLC-InfoChoice-r5,
    rb-MappingInfo                      RB-MappingInfo-r5
}

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

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

RB-InformationSetupList-r5 ::=      SEQUENCE (SIZE (1..maxRBperRAB)) OF
                                        RB-InformationSetup-r5

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-PDCPContextRelocation ::=            SEQUENCE {
    rb-Identity                             RB-Identity,
    dl-RFC3095-Context-Relocation           BOOLEAN,
    ul-RFC3095-Context-Relocation           BOOLEAN
}

RB-PDCPContextRelocationList ::=            SEQUENCE (SIZE (1..maxRBallRABs)) OF
```

RB-PDCPContextRelocation

```
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 {
    rohcProfileList                     ROHC-ProfileList-r4,
    ul-RFC3095                          UL-RFC3095-r4                       OPTIONAL,
    dl-RFC3095                          DL-RFC3095-r4                       OPTIONAL
}

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

RLC-Info-r5 ::=                     SEQUENCE {
    ul-RLC-Mode                         UL-RLC-Mode                         OPTIONAL,
    dl-RLC-Mode-r5                      DL-RLC-Mode-r5                      OPTIONAL,
    rlc-OneSidedReEst                   BOOLEAN
}

RLC-Info-r6 ::=                     SEQUENCE {
    ul-RLC-Mode                         UL-RLC-Mode                         OPTIONAL,
    dl-RLC-Mode-r5                      DL-RLC-Mode-r6                      OPTIONAL,
    rlc-OneSidedReEst                   BOOLEAN
}

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

RLC-InfoChoice-r5 ::=                   CHOICE {
    rlc-Info-r5                         RLC-Info-r5,
    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-InformationSetup-r5 ::=         SEQUENCE {
    -- The default value for rb-Identity is the smallest value not used yet.
    rb-Identity                         RB-Identity                         OPTIONAL,
    rlc-InfoChoice                      RLC-InfoChoice-r5,
    rb-MappingInfo                      RB-MappingInfo-r5
}

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

SRB-InformationSetupList-r5 ::=     SEQUENCE (SIZE (1..maxSRBsetup)) OF
                                        SRB-InformationSetup-r5

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

TimerDAR-r6 ::=                     ENUMERATED {
                                        ms40, ms80, ms120, ms160, ms240, ms320, ms480, ms640,
                                        ms960, ms1280, ms1920, ms2560, ms3840, ms5120 }

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 }

TimerOSD-r6 ::=                     ENUMERATED {
                                        ms40, ms80, ms120, ms160, ms240, ms320, ms480, ms640,
                                        ms960, ms1280, ms1920, ms2560, ms3840, ms5120 }

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-RFC3095-r4 ::=                   SEQUENCE {
    cid-InclusionInfo                   CID-InclusionInfo-r4,
    max-CID                             INTEGER (1..16383)                  DEFAULT 15,
    rohcPacketSizeList                  ROHC-PacketSizeList-r4
}

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
}

UM-RLC-DuplAvoid-Reord-Info-r6 ::=  SEQUENCE {
    timer-DAR                           TimerDAR-r6,
    widowSize-DAR                       WindowSizeDAR-r6
    windowSize-OSSD                     WindowSizeOSSD-r6
}

UM-RLC-OutOSeqDelivery-Info-r6 ::=  SEQUENCE {
    timer-OSD                           TimerOSD-r6                         OPTIONAL,
    windowSize-OSD                      WindowSizeOSD-r6
    timer-DAR                           TimerDAR-r6,
    widowSize-DAR                       WindowSizeDAR-r6
}

WindowSizeDAR-r6 ::=                ENUMERATED {
                                        ws4, ws8, ws16, ws32, ws40, ws48,
                                        ws56, ws64, ws128, spare1 }

WindowSizeOSSD-r6 ::=               ENUMERATED {
                                        ws8, ws16, ws32, ws40, ws48,
                                        ws56, ws64, ws128, spare1 }

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

AddOrReconfMAC-dFlow ::=            SEQUENCE {
    mac-hs-AddReconfQueue-List              MAC-hs-AddReconfQueue-List  OPTIONAL,
    mac-hs-DelQueue-List                    MAC-hs-DelQueue-List    OPTIONAL
}

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

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

BitModeRLC-SizeInfo ::=             CHOICE {
    sizeType1                           INTEGER (0..127),
    -- Actual value sizeType2 = (part1 * 8) + 128 + part2
    sizeType2                           SEQUENCE {
        part1                               INTEGER (0..15),
        part2                               INTEGER (1..7)                  OPTIONAL
    },
```

```
    -- Actual value sizeType3 = (part1 * 16) + 256 + part2
    sizeType3                           SEQUENCE {
        part1                               INTEGER (0..47),
        part2                               INTEGER (1..15)                 OPTIONAL
    },
    -- Actual value sizeType4 = (part1 * 64) + 1024 + part2
    sizeType4                           SEQUENCE {
        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, it should
    -- not be sent and if received it 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-TypeId1-r5,
    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-TypeId2-r5
}

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

DL-TrCH-TypeId1-r5 ::=              CHOICE {
    dch                                 TransportChannelIdentity,
    dsch                                TransportChannelIdentity,
    hsdsch                              NULL
}

DL-TrCH-TypeId2-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 {
    harqInfo                            HARQ-Info               OPTIONAL,
    addOrReconfMAC-dFlow                AddOrReconfMAC-dFlow    OPTIONAL
}

HARQ-Info ::=                       SEQUENCE {
    numberOfProcesses                   INTEGER (1..8),
    memoryPartitioning                  CHOICE {
        implicit                            NULL,
        explicit                            SEQUENCE (SIZE (1..maxHProcesses)) OF
                                                HARQMemorySize
    }
}

HARQMemorySize ::=                  ENUMERATED {
                                        hms800, hms1600, hms2400, hms3200, hms4000,
                                        hms4800, hms5600, hms6400, hms7200, hms8000,
                                        hms8800, hms9600, hms10400, hms11200, hms12000,
                                        hms12800, hms13600, hms14400, hms15200, hms16000,
                                        hms17600, hms19200, hms20800, hms22400, hms24000,
                                        hms25600, hms27200, hms28800, hms30400, hms32000,
                                        hms36000, hms40000, hms44000, hms48000, hms52000,
                                        hms56000, hms60000, hms64000, hms68000, hms72000,
                                        hms76000, hms80000, hms88000, hms96000, hms104000,
                                        hms112000, hms120000, hms128000, hms136000, hms144000,
                                        hms152000, hms160000, hms176000, hms192000, hms208000,
                                        hms224000, hms240000, hms256000, hms272000, hms288000,
                                        hms304000 }

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-mac-d-flow-id            MAC-d-FlowIdentity
}

MAC-d-FlowIdentity ::=              INTEGER (0..7)

MAC-d-PDU-SizeInfo-List ::=         SEQUENCE (SIZE(1.. maxMAC-d-PDUsizes)) OF
                                        MAC-d-PDUsizeInfo

--MAC-d-Pdu sizes need to be defined
MAC-d-PDUsizeInfo ::=               SEQUENCE{
    mac-d-PDU-Size                      INTEGER (1..5000),
    mac-d-PDU-Index                     INTEGER(0..7)
}

MAC-hs-AddReconfQueue-List ::=              SEQUENCE (SIZE(1..maxQueueIDs)) OF
                                        MAC-hs-AddReconfQueue

MAC-hs-AddReconfQueue ::=           SEQUENCE {
    mac-hsQueueId                       INTEGER(0..7),
    mac-dFlowId                         MAC-d-FlowIdentity,
    reorderingReleaseTimer              T1-ReleaseTimer,
    mac-hsWindowSize                    MAC-hs-WindowSize,
    mac-d-PDU-SizeInfo-List             MAC-d-PDU-SizeInfo-List             OPTIONAL
}

MAC-hs-DelQueue-List ::=                SEQUENCE (SIZE(1..maxQueueIDs)) OF
                                        MAC-hs-DelQueue

MAC-hs-DelQueue ::=                 SEQUENCE {
    mac-hsQueueId                       INTEGER(0..7)
}

MAC-hs-WindowSize ::=               ENUMERATED {
                                        mws4, mws6, mws8, mws12, mws16, mws24, mws32 }

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 }

T1-ReleaseTimer ::=                 ENUMERATED {
                                        rt10, rt20, rt30, rt40, rt50,
                                        rt60, rt70, rt80, rt90, rt100,
                                        rt120, rt140, rt160, rt200, rt300,
                                        rt400 }

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)

TransportChannelIdentity ::=        INTEGER (1..32)

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


TransportFormatSet ::=              CHOICE {
    dedicatedTransChTFS                 DedicatedTransChTFS,
    commonTransChTFS                    CommonTransChTFS
}

TransportFormatSet-LCR ::=              CHOICE {
    dedicatedTransChTFS                 DedicatedTransChTFS,
    commonTransChTFS-LCR                CommonTransChTFS-LCR
}
```

```
-- The maximum allowed size of 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}

USCH-TransportChannelsInfo ::=      SEQUENCE (SIZE (1..maxTrCH)) OF
                                        SEQUENCE {
    usch-TransportChannelIdentity           TransportChannelIdentity,
    usch-TFS                                TransportFormatSet
}
-- **************************************************
--
--     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 {
                                        type1, type2 }

-- 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
}

CCTrCH-PowerControlInfo-r5 ::=      SEQUENCE {
    tfcs-Identity                       TFCS-Identity                       OPTIONAL,
    ul-DPCH-PowerControlInfo            UL-DPCH-PowerControlInfo-r5
}

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 }

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-CCTrChListToRemove ::=           SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                        TFCS-IdentityPlain

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-r4       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-CommonInformation-r5 ::=         SEQUENCE {
    dl-DPCH-InfoCommon                  DL-DPCH-InfoCommon-r4           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
        }
    },
    mac-hsResetIndicator                ENUMERATED { true }         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-InfoCommon-r4 ::=               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
        }
    },
-- The IE mac-d-HFN-initial-value should be absent in the RRCConnectionSetup-r4-IEs or
-- RRCConnectionSetup-r5-IEs or HandoverToUTRANCommand-r4-IEs or HandoverToUTRANCommand-r5-IEs and
-- if the IE is included, the general error handling for conditional IEs applies.
    mac-d-HFN-initial-value             MAC-d-HFN-initial-value             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                                 SEQUENCE {
        dl-CCTrChListToEstablish            DL-CCTrChList                   OPTIONAL,
        dl-CCTrChListToRemove               DL-CCTrChListToRemove           OPTIONAL
    }
}

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                                 SEQUENCE {
        dl-CCTrChListToEstablish            DL-CCTrChList-r4                OPTIONAL,
        dl-CCTrChListToRemove               DL-CCTrChListToRemove           OPTIONAL
    }
}

DL-DPCH-InfoPerRL-r5 ::=            CHOICE {
    fdd                                 SEQUENCE {
        pCPICH-UsageForChannelEst           PCPICH-UsageForChannelEst,
        dpch-FrameOffset                    DPCH-FrameOffset,
        secondaryCPICH-Info                 SecondaryCPICH-Info             OPTIONAL,
        dl-ChannelisationCodeList           DL-ChannelisationCodeList,
        tpc-CombinationIndex                TPC-CombinationIndex,
        powerOffsetTPC-pdpdch               PowerOffsetTPC-pdpdch           OPTIONAL,
        ssdt-CellIdentity                   SSDT-CellIdentity               OPTIONAL,
        closedLoopTimingAdjMode             ClosedLoopTimingAdjMode         OPTIONAL
    },
    tdd                                 SEQUENCE {
        dl-CCTrChListToEstablish            DL-CCTrChList-r4                OPTIONAL,
        dl-CCTrChListToRemove               DL-CCTrChListToRemove           OPTIONAL
    }
}

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    OPTIONAL,
    measurement-feedback-Info       Measurement-Feedback-Info   OPTIONAL,
    modeSpecificInfo                CHOICE {
    tdd                             CHOICE{
            tdd384                          SEQUENCE {
                dl-HSPDSCH-TS-Configuration DL-HSPDSCH-TS-Configuration     OPTIONAL
            },
            tdd128                          SEQUENCE {
                hs-PDSCH-Midamble-Configuration-TDD128
```

```
                        HS-PDSCH-Midamble-Configuration-TDD128              OPTIONAL
            }
        },
        fdd                         NULL
    }
}

-- The IE 'DL-HSPDSCH-TS-Configuration' applies to tdd-384 REL-5 onward
DL-HSPDSCH-TS-Configuration ::=     SEQUENCE (SIZE (1..maxTS-2)) OF
                                        SEQUENCE {
    timeslot                            TimeslotNumber,
    midambleShiftAndBurstType           MidambleShiftAndBurstType-DL
}

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-r5                OPTIONAL,
    sccpch-InfoforFACH                  SCCPCH-InfoForFACH-r4               OPTIONAL,
    cell-id                             CellIdentity                        OPTIONAL
}

DL-InformationPerRL-r5bis ::=       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-r5                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-List-r5bis ::=      SEQUENCE (SIZE (1..maxRL)) OF
                                            DL-InformationPerRL-r5bis

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-TPC-PowerOffsetPerRL ::=     SEQUENCE {
        powerOffsetTPC-pdpdch               PowerOffsetTPC-pdpdch           OPTIONAL
}

-- NOTE: The radio links in the following list have a one-to-one mapping with the
-- radio links in the message.
DL-TPC-PowerOffsetPerRL-List ::=    SEQUENCE (SIZE (1..maxRL)) OF
                                        DL-TPC-PowerOffsetPerRL

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-PowerOffset2 = 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)

DSCH-TransportChannelsInfo ::=      SEQUENCE (SIZE (1..maxTrCH)) OF
                                        SEQUENCE {
    dsch-transport-channel-identity         TransportChannelIdentity,
    dsch-TFS                                TransportFormatSet
}
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

Feedback-cycle ::=                  ENUMERATED {
                                        fc0, fc2, fc4, fc8, fc10, fc20, fc40, fc80, fc160}

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
}

HARQ-Preamble-Mode ::=              INTEGER (0..1)

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-PDSCH-Midamble-Configuration-TDD128 ::=  SEQUENCE {
    midambleAllocationMode              CHOICE{
        defaultMidamble                     NULL,
        commonMidamble                      NULL,
        ueSpecificMidamble                  INTEGER (0..15)
    },
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration               INTEGER (1..8)
}

HS-SCCH-Info ::=                    SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            hS-SCCHChannelisationCodeInfo       SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                    HS-SCCH-Codes,
            dl-ScramblingCode                   SecondaryScramblingCode     OPTIONAL
        },
        tdd                                 CHOICE {
            tdd384                              SEQUENCE {
```

```
                nack-ack-power-offset              INTEGER (-7..8),
                hs-SICH-PowerControl-Info          HS-SICH-Power-Control-Info-TDD384,
                hS-SCCH-SetConfiguration           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 {
    timeslotNumber                      TimeslotNumber-LCR-r4,
    firstChannelisationCode             HS-ChannelisationCode-LCR,
    secondChannelisationCode            HS-ChannelisationCode-LCR,
    midambleAllocationMode              CHOICE {
        defaultMidamble                     NULL,
        commonMidamble                      NULL,
        ueSpecificMidamble                  INTEGER(0..15)
    },
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration               INTEGER (1..8),
    bler-target                         Bler-Target,
    hs-sich-configuration               HS-SICH-Configuration-TDD128
}

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 (-7..8),
    power-level-HSSICH                  INTEGER (-120..-58),
    tpc-step-size                       ENUMERATED { s1, s2, s3 , spare1}
}



HS-SCCH-TDD384 ::=              SEQUENCE {
    timeslotNumber                      TimeslotNumber,
    channelisationCode                  DL-TS-ChannelisationCode,
    midambleAllocationMode              CHOICE {
        defaultMidamble                     NULL,
        commonMidamble                      NULL,
        ueSpecificMidamble                  SEQUENCE {
            midambleShift                       MidambleShiftLong
        }
    },
    midambleconfiguration               MidambleConfigurationBurstType1and3,
    bler-target                         Bler-Target,
    hs-sich-configuration               HS-SICH-Configuration-TDD384
}

HS-SICH-Configuration-TDD384 ::=    SEQUENCE {
    timeslotNumber                      TimeslotNumber,
    channelisationCode                  DL-TS-ChannelisationCode,
    midambleAllocationMode              CHOICE {
        defaultMidamble                     NULL,
        ueSpecificMidamble                  SEQUENCE {
            midambleShift                       MidambleShiftLong
        }
    },
    midambleconfiguration               MidambleConfigurationBurstType1and3
}

HS-SICH-Power-Control-Info-TDD384 ::= SEQUENCE {
    -- Actual value ul-target-SIR = IE value * 0.5
    ul-target-SIR                       INTEGER (-22..40),
    hs-sich-ConstantValue               ConstantValue
}
```

```
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 },
    additionalSS-TPC-Symbols            INTEGER(1..15)      OPTIONAL
}

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-InterferenceList ::=   SEQUENCE (SIZE (1..maxTS)) OF
                                        IndividualTS-Interference

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 {
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            measurementPowerOffset          MeasurementPowerOffset,
            feedback-cycle                  Feedback-cycle,
            cqi-RepetitionFactor            CQI-RepetitionFactor,
            deltaCQI                        DeltaCQI
        },
        tdd                             NULL
    }
}


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-DL ::=        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
                }
            }
        }
    }
}

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-HCR-r5 ::=                SEQUENCE {
    pdsch-Identity                  PDSCH-Identity,
    pdsch-Info                      PDSCH-Info,
    dsch-TransportChannelsInfo      DSCH-TransportChannelsInfo          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-HCR-r5 ::=            SEQUENCE (SIZE (1..maxPDSCH)) OF PDSCH-SysInfo-HCR-r5

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-HCR-r5 ::=            SEQUENCE (SIZE (1..maxPDSCH)) OF
                                        SEQUENCE {
    pdsch-SysInfo                           PDSCH-SysInfo-HCR-r5,
    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 }

    -- Actual measurement power offset value = IE value * 0.5
MeasurementPowerOffset ::=          INTEGER (-12..26)

PositionFixedOrFlexible ::=         ENUMERATED {
                                        fixed,
                                        flexible }

PowerControlAlgorithm ::=           CHOICE {
    algorithm1                          TPC-StepSizeFDD,
    algorithm2                          NULL
}

PowerOffsetPilot-pdpdch ::=         INTEGER (0..24)

PowerOffsetTPC-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
    -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-FDD are listed,
    -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
                                            ASCSetting-FDD,
    tdd                                 SEQUENCE (SIZE (1..maxASC)) OF
    -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-TDD are listed,
    -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
                                            ASCSetting-TDD
}

PRACH-Partitioning-LCR-r4 ::=       SEQUENCE (SIZE (1..maxASC)) OF
    -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-TDD-LCR-r4 are listed,
    -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
                                            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,
        sctd-Indicator                      BOOLEAN
    }
}

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

PUSCH-SysInfo ::=                   SEQUENCE {
    pusch-Identity                      PUSCH-Identity,
    pusch-Info                          PUSCH-Info,
    usch-TFS                            TransportFormatSet                  OPTIONAL,
    usch-TFCS                           TFCS                                OPTIONAL
}

PUSCH-SysInfo-HCR-r5 ::=                SEQUENCE {
    pusch-Identity                      PUSCH-Identity,
    pusch-Info                          PUSCH-Info,
    usch-TransportChannelsInfo          USCH-TransportChannelsInfo          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-HCR-r5 ::=            SEQUENCE (SIZE (1..maxPUSCH)) OF PUSCH-SysInfo-HCR-r5

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-HCR-r5 ::=            SEQUENCE (SIZE (1..maxPUSCH)) OF
                                        SEQUENCE {
    pusch-SysInfo                           PUSCH-SysInfo-HCR-r5,
    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)
}

RepPerLengthOffset-MICH ::=         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-SystemInformation-MBMS-r6-ext ::= SEQUENCE {
    mcch-ConfigurationInfo              MBMS-MCCH-ConfigurationInfo-r6      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

-- The SCCPCH-SystemInformationList-MBMS-r6-ext includes elements additional to those in the
-- SCCPCH-SystemInformationList for the mapping of MCCH onto an S-CCPCH common for both MBMS
-- and non-MBMS purposes.The order of the IEs indicates which SCCPCH-SystemInformation-MBMS-r6-ext
-- IE extends which SCCPCH-SystemInformation IE.
SCCPCH-SystemInformationList-MBMS-r6-ext ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                        SCCPCH-SystemInformation-MBMS-r6-ext

-- The SCCPCH-SystemInformation-MBMS-r6 is used for an S-CCPCH dedicated for MBMS purposes.
SCCPCH-SystemInformation-MBMS-r6 ::= SEQUENCE {
    secondaryCCPCHInfo-MBMS             SecondaryCCPCHInfo-MBMS-r6,
    transportFormatCombinationSet       TFCS,
    fachCarryingMCCH                    SEQUENCE {
        transportFormatSet                  TransportFormatSet,
        mcch-ConfigurationInfo              MBMS-MCCH-ConfigurationInfo-r6
    },
    fachCarryingMTCH-List               MBMS-FACHCarryingMTCH-ListSEQUENCE (SIZE (1..maxFACHPCH)) OF
                                            TransportFormatSet          OPTIONAL,
    schedulingInformation               SEQUENCE {
        fachCarryingMSCH                    TransportFormatSet,
        mschConfigurationInfo               MBMS-MSCHConfigurationInfo-r6
    }       OPTIONAL
}

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
}

SecondaryCCPCHInfo-MBMS-r6 ::=      SEQUENCE {
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            secondaryScramblingCode         SecondaryScramblingCode         OPTIONAL,
            sttd-Indicator                  BOOLEAN,
            sf-AndCodeNumber                SF256-AndCodeNumber,
            tfci-Existence                  BOOLEAN,
            positionFixedOrFlexible         PositionFixedOrFlexible,
            timingOffset                    TimingOffset                    DEFAULT 0
        },
        tdd384                          DownlinkTimeslotsCodes,
        tdd128                          DownlinkTimeslotsCodes-LCR-r4
    }
}

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
}

-- actual scheduling value = 2^(signalled value +1) and is the periodicity of sending special burst frames
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-r4                          SSDT-UL                                 OPTIONAL
}

SSDT-UL ::=                         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)),
    fpach-Info                          FPACH-Info-r4,
    -- Actual value prxUpPCHdes = IE value - 120
    prxUpPCHdes                         INTEGER (0..62),
    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,
-- Channelisation codes cc16-9, cc16-10, cc16-11, cc16-12, cc16-13, cc16-14,
-- cc16-15 and cc16-16 shall not be used
    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)

-- Actual value TPC-StepSizeFDD = IE value + 1
TPC-StepSizeFDD ::=                 INTEGER (0..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,
    -- The IE ul-TargetSIR corresponds to PRX-DPCHdes for 1.28Mcps TDD
    -- Actual value PRX-DPCHdes = (value of IE "ul-TargetSIR" – 120)
    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-CCTrCHListToRemove ::=           SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                        TFCS-IdentityPlain

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               OPTIONAL,
            ul-CCTrCHListToRemove               UL-CCTrCHListToRemove       OPTIONAL
```

```
        }
    }
}

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            OPTIONAL,
            ul-CCTrCHListToRemove               UL-CCTrCHListToRemove       OPTIONAL
        }
    }
}

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            OPTIONAL,
            ul-CCTrCHListToRemove               UL-CCTrCHListToRemove       OPTIONAL
        }
    }
}

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,
            individuallySignalled               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,
        sRB-delay                           SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm               PowerControlAlgorithm
    },
    tdd                                 SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-DPCHdes for 1.28Mcps TDD
        -- Actual value PRX-DPCHdes = (value of IE "ul-TargetSIR" – 120)
        ul-TargetSIR                        UL-TargetSIR                OPTIONAL,
        ul-OL-PC-Signalling                 CHOICE {
            broadcast-UL-OL-PC-info             NULL,
            individuallySignalled               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,
        sRB-delay                           SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm               PowerControlAlgorithm,
        deltaACK                            DeltaACK    OPTIONAL,
        deltaNACK                           DeltaNACK   OPTIONAL,
        ack-NACK-repetition-factor          ACK-NACK-repetitionFactor   OPTIONAL
    },
    tdd                                 SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-DPCHdes for 1.28Mcps TDD
        -- Actual value PRX-DPCHdes = (value of IE "ul-TargetSIR" – 120)
        ul-TargetSIR                        UL-TargetSIR                OPTIONAL,
        ul-OL-PC-Signalling                 CHOICE {
            broadcast-UL-OL-PC-info             NULL,
            individuallySignalled               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 {
    -- The IE ul-TargetSIR corresponds to PRX-DPCHdes for 1.28Mcps TDD
    -- Actual value PRX-DPCHdes = (value of IE "ul-TargetSIR" – 120)
    ul-TargetSIR                        UL-TargetSIR
}

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

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

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


UL-SynchronisationParameters-r4 ::= SEQUENCE {
    stepSize                            INTEGER (1..8),
    frequency                           INTEGER (1..8)
}

-- Actual value UL-TargetSIR = (IE value * 0.5) - 11
UL-TargetSIR ::=                    INTEGER (0..62)

UL-TimingAdvance ::=                INTEGER (0..63)

UL-TimingAdvanceControl ::=         CHOICE {
    disabled                            NULL,
    enabled                             SEQUENCE {
        ul-TimingAdvance                    UL-TimingAdvance                OPTIONAL,
        activationTime                      ActivationTime                  OPTIONAL
    }
}

UL-TimingAdvanceControl-r4 ::=      CHOICE {
    disabled                            NULL,
    enabled                             SEQUENCE {
        tddOption                           CHOICE {
            tdd384                              SEQUENCE {
                ul-TimingAdvance                    UL-TimingAdvance                OPTIONAL,
                activationTime                      ActivationTime                  OPTIONAL
            },
            tdd128                              SEQUENCE {
                ul-SynchronisationParameters        UL-SynchronisationParameters-r4 OPTIONAL,
                synchronisationParameters           SynchronisationParameters-r4    OPTIONAL
            }
        }
    }
}

UL-TimingAdvanceControl-LCR-r4 ::=  CHOICE {
    disabled                            NULL,
    enabled                             SEQUENCE {
```

```
        ul-SynchronisationParameters        UL-SynchronisationParameters-r4 OPTIONAL,
        synchronisationParameters           SynchronisationParameters-r4    OPTIONAL
    }
}

UL-TS-ChannelisationCode ::=        ENUMERATED {
                                        cc1-1, cc2-1, cc2-2,
                                        cc4-1, cc4-2, cc4-3, cc4-4,
                                        cc8-1, cc8-2, cc8-3, cc8-4,
                                        cc8-5, cc8-6, cc8-7, cc8-8,
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8,
                                        cc16-9, cc16-10, cc16-11, cc16-12,
                                        cc16-13, cc16-14, cc16-15, cc16-16 }

UL-TS-ChannelisationCodeList ::=    SEQUENCE (SIZE (1..2)) OF
                                        UL-TS-ChannelisationCode

UplinkAdditionalTimeslots ::=       SEQUENCE {
    parameters                          CHOICE {
        sameAsLast                          SEQUENCE {
            timeslotNumber                      TimeslotNumber
        },
        newParameters                       SEQUENCE {
            individualTimeslotInfo                      IndividualTimeslotInfo,
            ul-TS-ChannelisationCodeList                UL-TS-ChannelisationCodeList
        }
    }
}

UplinkAdditionalTimeslots-LCR-r4 ::=    SEQUENCE {
    parameters                          CHOICE {
        sameAsLast                          SEQUENCE {
            timeslotNumber                      TimeslotNumber
        },
        newParameters                       SEQUENCE {
            individualTimeslotInfo                      IndividualTimeslotInfo-LCR-r4,
            ul-TS-ChannelisationCodeList                UL-TS-ChannelisationCodeList
        }
    }
}

UplinkTimeslotsCodes ::=            SEQUENCE {
    dynamicSFusage                      BOOLEAN,
    firstIndividualTimeslotInfo         IndividualTimeslotInfo,
    ul-TS-ChannelisationCodeList        UL-TS-ChannelisationCodeList,
    moreTimeslots                       CHOICE {
        noMore                              NULL,
        additionalTimeslots                 CHOICE {
            consecutive                         SEQUENCE {
                numAdditionalTimeslots              INTEGER (1..maxTS-1)
            },
            timeslotList                        SEQUENCE (SIZE (1..maxTS-1)) OF
                                                    UplinkAdditionalTimeslots
        }
    }
}

UplinkTimeslotsCodes-LCR-r4 ::=     SEQUENCE {
    dynamicSFusage                      BOOLEAN,
    firstIndividualTimeslotInfo         IndividualTimeslotInfo-LCR-r4,
    ul-TS-ChannelisationCodeList        UL-TS-ChannelisationCodeList,
    moreTimeslots                       CHOICE {
        noMore                              NULL,
        additionalTimeslots                 CHOICE {
            consecutive                         SEQUENCE {
                numAdditionalTimeslots              INTEGER (1..maxTS-LCR-1)
            },
            timeslotList                        SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                                                    UplinkAdditionalTimeslots-LCR-r4
        }
    }
}

Wi-LCR ::=                                                          INTEGER(1..4)

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

```
--     MEASUREMENT INFORMATION ELEMENTS (10.3.7)
--
-- ************************************************

AcquisitionSatInfo ::=              SEQUENCE {
    satID                               SatID,
    -- Actual value dopplerOthOrder = IE value * 2.5
    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,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy           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 {
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy                   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
        }
    }
}

CellSelectReselectInfo-v590ext ::= SEQUENCE {
    deltaQrxlevmin                  DeltaQrxlevmin                  OPTIONAL,
    deltaQhcs                       DeltaRSCP                       OPTIONAL
}

CellSelectReselectInfoPCHFACH-v5b0ext ::= SEQUENCE {
    q-Hyst-l-S-PCH              Q-Hyst-S-Fine                       OPTIONAL,
    q-Hyst-l-S-FACH             Q-Hyst-S-Fine                       OPTIONAL,
    q-Hyst-2-S-PCH              Q-Hyst-S-Fine                       OPTIONAL,
    q-Hyst-2-S-FACH             Q-Hyst-S-Fine                       OPTIONAL,
    t-Reselection-S-PCH         T-Reselection-S                     OPTIONAL,
    t-Reselection-S-FACH        T-Reselection-S-Fine                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 DeltaQrxlevmin = IE value * 2
DeltaQrxlevmin ::= INTEGER (-2..-1)

DeltaRSCP ::= INTEGER (-5..-1)

DeltaRSCPPerCell ::= SEQUENCE {
    deltaRSCP                       DeltaRSCP   OPTIONAL
}

-- Actual value DeltaRRC = IE value * 0.032
DeltaRRC ::=                        INTEGER (-7..7)

DGPS-CorrectionSatInfo ::=          SEQUENCE {
    satID                               SatID,
    iode                                IODE,
    udre                                UDRE,
    prc                                 PRC,
    rrc                                 RRC,
-- dummy1 and dummy2 are not used in this version of the specification and should be ignored.
    dummy1                          DeltaPRC,
    dummy2                          DeltaRRC,
    -- dummy3 and dummy4 are not used in this version of the specification. They should not
    -- be sent and if received they should be ignored.
    dummy3                          DeltaPRC            OPTIONAL,
    dummy4                          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),
    -- Actual value orientationMajorAxis = IE value * 2
    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),
    -- Actual value orientationMajorAxis = IE value * 2
    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..1022),
    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,
    cellsForInterFreqMeasList           CellsForInterFreqMeasList           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

--Following IE shall be used regardless of CPICH RSCP(FDD) or Primary CCPCH RSCP(TDD)
--The order of the list corresponds to the order of the cells in Inter-FrequencyMeasuredResultsList
InterFrequencyMeasuredResultsList-v590ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                            DeltaRSCPPerCell

Inter-FreqEventCriteria-v590ext ::= SEQUENCE {
    threholdUsedFrequency-delta             DeltaRSCP,
    threholdNonUsedFrequency-deltaList      ThreholdNonUsedFrequency-deltaList      OPTIONAL
}

--The order of the list corresponds to the order of the events in Inter-FreqEventList
Inter-FreqEventCriteriaList-v590ext ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                            Inter-FreqEventCriteria-v590ext

--The order of the list corresponds to the order of relevant events in Intra-FreqEventCriteriaList
--i.e. the first element of the list corresponds to the first occurance of event 1e, 1f, 1h, 1i,
--the second element of the list corresponds to the second occurance of event 1e, 1f, 1h, 1i
Intra-FreqEventCriteriaList-v590ext ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                            DeltaRSCP

--Following IE shall be used regardless of CPICH RSCP(FDD) or Primary CCPCH RSCP(TDD)
--The order of the list corresponds to the order of the cells in Intra-FrequencyMeasuredResultsList
IntraFrequencyMeasuredResultsList-v590ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                            DeltaRSCPPerCell

IntraFreqReportingCriteria-1b-r5 ::= SEQUENCE {
    periodicReportingInfo-1b            PeriodicReportingInfo-1b
}

PeriodicReportingInfo-1b ::= SEQUENCE {
    reportingAmount                     ReportingAmount,
    reportingInterval                   ReportingInterval
}

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)

InterRATCellInfoIndicator ::=       INTEGER (0..3)

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 }

InterRATInfo-r6 ::=                 SEQUENCE {
    rat                                 InterRATInfo,
    gsm-TargetCellInfoList              GSM-TargetCellInfoList          OPTIONAL
```

```
}

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
}

IntraFreqEvent-1d-r5 ::=        SEQUENCE {
    triggeringCondition                 TriggeringCondition2    OPTIONAL,
    useCIO                              BOOLEAN                 OPTIONAL
}

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.
-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
IntraFreqMeasQuantity-FDD ::=       ENUMERATED {
                                        cpich-Ec-N0,
                                        cpich-RSCP,
                                        pathloss,
                                        dummy }

-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
IntraFreqMeasQuantity-TDD ::=       ENUMERATED {
                                        primaryCCPCH-RSCP,
                                        pathloss,
                                        timeslotISCP,
                                        dummy }

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 {
```

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                                        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-v590ext ::= CHOICE {
    intraFrequencyMeasuredResultsList       IntraFrequencyMeasuredResultsList-v590ext,
    interFrequencyMeasuredResultsList       InterFrequencyMeasuredResultsList-v590ext
}

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 {
    -- CHOICE cellSelectQualityMeasure represents PCCPCH-RSCP in TDD mode.
    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,
    -- dummy is not used in this version of specification and it shall be ignored by the UE.
    dummy       UE-InternalMeasurementSysInfo       OPTIONAL
}

MeasurementControlSysInfo-LCR-r4-ext ::=    SEQUENCE {
    -- CHOICE use-of-HCS shall have the same value as the use-of-HCS
    -- in MeasurementControlSysInfo
    -- CHOICE cellSelectQualityMeasure represents PCCPCH-RSCP in TDD mode.
    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 "absent" as valid and handle the
        -- message as if the IE NewInterRATCell was absent
        absent                              NULL,
        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 "absent" as valid and handle the
        -- message as if the IE NewInterRATCell-B was absent
        absent                              NULL,
        spare1                              NULL
    }
}
```

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

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
}

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 }
                                    -- When the value “ril0” is used, the UE behaviour is not
                                    -- defined.

-- 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 }

-- Identifies the satellite and is equal to (SV ID No - 1) where SV ID No is defined in [12].
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
-- For 1.28Mcps TDD, Max value of SFN-SFN-ObsTimeDifference1 is 3276799.
-- Values above Max are spare
SFN-SFN-ObsTimeDifference1 ::=      INTEGER (0..16777215)

-- SPARE: SFN-SFN-ObsTimeDifference2, Max = 40961
-- For 1.28Mcps TDD, Max value of SFN-SFN-ObsTimeDifference2 is 27649.
-- 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)

-- The order of the list corresponds to the order of frequency defined in Inter-FreqEventCriteria
ThreholdNonUsedFrequency-deltaList ::= SEQUENCE (SIZE (1..maxFreq)) OF
                                            DeltaRSCPPerCell

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
}
```

```
-- dummy and dummy2 are not used in this version of the specification, they should
-- not be sent and if received the UE behaviour is not specified.
UE-AutonomousUpdateMode ::=         CHOICE {
    dummy                               NULL,
    onWithNoReporting                   NULL,
    dummy2                              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)


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,
                                    notAccomplishedGPS-TimingOfCellFrames,
                                    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,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy           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-Offset-Validity                 SFN-Offset-Validity                 OPTIONAL,
    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,
    horizontal-Accuracy                 UE-Positioning-Accuracy             OPTIONAL,
    gps-TimingOfCellWanted              BOOLEAN,
    -- dummy2 is not used in this version of specification and it should
    -- be ignored.
    dummy2                              BOOLEAN,
    additionalAssistanceDataRequest     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
    -- Actual value utran-GPSTimingOfCell = (ms-part * 4294967296) + ls-part
    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
    -- Actual value ue-GPSTimingOfCell = (ms-part * 4294967296) + ls-part
    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))
}

GERAN-SystemInfoBlock ::=               OCTET STRING (SIZE (1..23))

GERAN-SystemInformation ::=             SEQUENCE (SIZE (1..maxGERAN-SI)) OF GERAN-SystemInfoBlock

GSM-BA-Range ::=                        SEQUENCE {
                                            gsmLowRangeUARFCN       UARFCN,
                                            gsmUpRangeUARFCN        UARFCN
```

```
}

GSM-BA-Range-List ::=                   SEQUENCE (SIZE (1..maxNumGSMFreqRanges)) OF
                                            GSM-BA-Range


-- This IE is formatted as 'TLV' and is coded in the same way as the Mobile Station Classmark 2
-- information element in [5]. The first octet is the Mobile station classmark 2 IEI and its value
-- shall be set to 33H. The second octet is the Length of mobile station classmark 2 and its value
-- shall be set to 3. The octet 3 contains the first octet of the value part of the Mobile Station
-- Classmark 2 information element, the octet 4 contains the second octet of the value part of the
-- Mobile Station Classmark 2 information element and so on. For each of these octets, the first/
-- leftmost/ most significant bit of the octet contains b8 of the corresponding octet of the Mobile
-- Station Classmark 2.
GSM-Classmark2 ::=                  OCTET STRING (SIZE (5))

-- This IE is formatted as 'V' and is coded in the same way as the value part in the Mobile station
-- classmark 3 information element in [5]
-- The value part is specified by means of CSN.1, which encoding results in a bit string, to which
-- final padding may be appended upto the next octet boundary [5]. The first/ leftmost bit of the
-- CSN.1 bit string is placed in the first/ leftmost/ most significant bit of the first
-- octet. This continues until the last bit of the CSN.1 bit string, which is placed in the last/
-- rightmost/ least significant bit of the last octet.
GSM-Classmark3 ::=                  OCTET STRING (SIZE (1..32))

GSM-MessageList ::=                 SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                                        BIT STRING (SIZE (1..512))

GsmSecurityCapability ::=           BIT STRING {
                                        -- For each bit value “0” means false/ not supported
                                        a5-7(0),
                                        a5-6(1),
                                        a5-5(2),
                                        a5-4(3),
                                        a5-3(4),
                                        a5-2(5),
                                        a5-1(6)
                                        }   (SIZE (7))


GSM-TargetCellInfoList ::=      SEQUENCE (SIZE (1..maxGSMTargetCells)) OF
                                            GSM-TargetCellInfo


GSM-TargetCellInfo ::=              SEQUENCE {
    bcch-ARFCN                          BCCH-ARFCN,
    frequency-band                      Frequency-Band,
    bsic                                BSIC            OPTIONAL
}

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
}

GERANIu-MessageList ::=             SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                                        BIT STRING (SIZE (1..32768))

GERANIu-RadioAccessCapability ::=   BIT STRING (SIZE (1..170))

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-RadioAccessCapability-v590ext ::= SEQUENCE {
    geranIu-RadioAccessCapability       GERANIu-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
        v6xyNonCriticalExtensions           SEQUENCE {
            masterInformationBlock-v6xyext      MasterInformationBlock-v6xyext      OPTIONAL,
            nonCriticalExtensions               SEQUENCE {}                         OPTIONAL
        }   OPTIONAL
}

MasterInformationBlock-v6xyext ::=  SEQUENCE {
    multiplePLMN-List                   MultiplePLMN-List-r6            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,
                                        spare6, 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,
                                        systemInformationBlockType5bis,
                                        spare1 }

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,
    sysInfoType5bis                     CellValueTag,
    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,
    sysInfoType5bis                     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
        v4b0NonCriticalExtensions       SEQUENCE {
            sysInfoType3-v4b0ext            SysInfoType3-v4b0ext-IEs,
            v590NonCriticalExtension        SEQUENCE {
                sysInfoType3-v590ext            SysInfoType3-v590ext,
                nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
            }                           OPTIONAL
        }                           OPTIONAL
}

SysInfoType3-v4b0ext-IEs ::= SEQUENCE {
    mapping-LCR                     Mapping-LCR-r4                          OPTIONAL
}

SysInfoType3-v590ext ::= SEQUENCE {
    cellSelectReselectInfo-v590ext      CellSelectReselectInfo-v590ext      OPTIONAL
}

SysInfoType4 ::=                    SEQUENCE {
    -- UTRAN mobility IEs
        cellIdentity                    CellIdentity,
        cellSelectReselectInfo          CellSelectReselectInfoSIB-3-4,
        cellAccessRestriction           CellAccessRestriction,
    -- Extension mechanism for non- release99 information
        v4b0NonCriticalExtensions       SEQUENCE {
            sysInfoType4-v4b0ext            SysInfoType4-v4b0ext-IEs,
            v590NonCriticalExtension        SEQUENCE {
                sysInfoType4-v590ext            SysInfoType4-v590ext,
                v5b0NonCriticalExtension        SEQUENCE {
                    sysInfoType4-v5b0ext            SysInfoType4-v5b0ext-IEs,
                    nonCriticalExtensions           SEQUENCE {}                 OPTIONAL
                }   OPTIONAL
            }   OPTIONAL
        }   OPTIONAL
}

SysInfoType4-v4b0ext-IEs ::= SEQUENCE {
    mapping-LCR                     Mapping-LCR-r4                          OPTIONAL
}


SysInfoType4-v590ext ::= SEQUENCE {
    cellSelectReselectInfo-v590ext      CellSelectReselectInfo-v590ext      OPTIONAL
}

SysInfoType4-v5b0ext-IEs ::= SEQUENCE {
    cellSelectReselectInfoPCHFACH-v5b0ext   CellSelectReselectInfoPCHFACH-v5b0ext       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.
    -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
    -- included.
                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
        v4b0NonCriticalExtensions       SEQUENCE {
            sysInfoType5-v4b0ext            SysInfoType5-v4b0ext-IEs        OPTIONAL,
        -- Extension mechanism for non- rel-4 information
            v590NonCriticalExtensions       SEQUENCE {
                sysInfoType5-v590ext            SysInfoType5-v590ext-IEs        OPTIONAL,
                v6xyNonCriticalExtensions       SEQUENCE {
                    sysInfoType5-v6xyext            SysInfoType5-v6xyext-IEs,
                    nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
                }       OPTIONAL
            }       OPTIONAL
        }       OPTIONAL
}

SysInfoType5-v4b0ext-IEs ::= SEQUENCE {
    --The following IE PNBSCH-Allocation-r4 shall be used for 3.84Mcps TDD only.
    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,
    frequencyBandIndicator          RadioFrequencyBandFDD           OPTIONAL
}

SysInfoType5-v590ext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo             SEQUENCE {
        pusch-SysInfoList-SFN           PUSCH-SysInfoList-SFN-HCR-r5    OPTIONAL,
        pdsch-SysInfoList-SFN           PDSCH-SysInfoList-SFN-HCR-r5    OPTIONAL
    }                                                                   OPTIONAL
}

SysInfoType5-v6xyext-IEs ::=        SEQUENCE {
    sccpch-SystemInformation-MBMS       CHOICE {
        sccpch-CommonForMBMSAndNonMBMS      SCCPCH-SystemInformationList-MBMS-r6-ext,
        sccpch-DedicatedForMBMS             SCCPCH-SystemInformation-MBMS-r6
    }       OPTIONAL
}

-- SysInfoType5bis uses the same structure as SysInfoType5
SysInfoType5bis ::= SysInfoType5

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.
                -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should
                -- also be included.
                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
        v4b0NonCriticalExtensions       SEQUENCE {
            sysInfoType6-v4b0ext            SysInfoType6-v4b0ext-IEs        OPTIONAL,
        -- Extension mechanism for non- rel-4 information
            v590NonCriticalExtensions   SEQUENCE {
                sysInfoType6-v590ext            SysInfoType6-v590ext-IEs        OPTIONAL,
                nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
            }                           OPTIONAL
        }                           OPTIONAL
}

SysInfoType6-v4b0ext-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,
    frequencyBandIndicator          RadioFrequencyBandFDD           OPTIONAL
}

SysInfoType6-v590ext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo             SEQUENCE {
        pusch-SysInfoList-SFN           PUSCH-SysInfoList-SFN-HCR-r5    OPTIONAL,
        pdsch-SysInfoList-SFN           PDSCH-SysInfoList-SFN-HCR-r5    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
        v4b0NonCriticalExtensions       SEQUENCE {
            sysInfoType11-v4b0ext           SysInfoType11-v4b0ext-IEs       OPTIONAL,
            v590NonCriticalExtension        SEQUENCE {
                sysInfoType11-v590ext           SysInfoType11-v590ext-IEs,
                nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
            }                               OPTIONAL
        }                               OPTIONAL
}

SysInfoType11-v4b0ext-IEs ::= SEQUENCE {
    fach-MeasurementOccasionInfo-LCR-Ext    FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
    measurementControlSysInfo-LCR           MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType11-v590ext-IEs ::= SEQUENCE {
    --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
    newIntraFrequencyCellInfoList-v590ext   SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                CellSelectReselectInfo-v590ext  OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
    newInterFrequencyCellInfoList-v590ext   SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                CellSelectReselectInfo-v590ext  OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterRATCellInfoList
    newInterRATCellInfoList-v590ext         SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                CellSelectReselectInfo-v590ext  OPTIONAL,
    intraFreqEventCriteriaList-v590ext      Intra-FreqEventCriteriaList-v590ext     OPTIONAL,
    intraFreqReportingCriteria-1b-r5        IntraFreqReportingCriteria-1b-r5    OPTIONAL,
    intraFreqEvent-1d-r5                    IntraFreqEvent-1d-r5                OPTIONAL
}

SysInfoType12 ::=                   SEQUENCE {
    -- Measurement IEs
        fach-MeasurementOccasionInfo    FACH-MeasurementOccasionInfo        OPTIONAL,
        measurementControlSysInfo       MeasurementControlSysInfo,
    -- Extension mechanism for non- release99 information
        v4b0NonCriticalExtensions       SEQUENCE {
            sysInfoType12-v4b0ext           SysInfoType12-v4b0ext-IEs       OPTIONAL,
            v590NonCriticalExtension        SEQUENCE {
                sysInfoType12-v590ext           SysInfoType12-v590ext-IEs,
                nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
            }                               OPTIONAL
        }                               OPTIONAL
}

SysInfoType12-v4b0ext-IEs ::= SEQUENCE {
    fach-MeasurementOccasionInfo-LCR-Ext    FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
    measurementControlSysInfo-LCR           MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType12-v590ext-IEs ::= SEQUENCE {
    --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
    newIntraFrequencyCellInfoList-v590ext   SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                CellSelectReselectInfo-v590ext  OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
    newInterFrequencyCellInfoList-v590ext   SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                CellSelectReselectInfo-v590ext  OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterRATCellInfoList
    newInterRATCellInfoList-v590ext         SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                CellSelectReselectInfo-v590ext  OPTIONAL,
    intraFreqEventCriteriaList-v590ext      Intra-FreqEventCriteriaList-v590ext     OPTIONAL,
    intraFreqReportingCriteria-1b-r5        IntraFreqReportingCriteria-1b-r5    OPTIONAL,
```

```
    intraFreqEvent-1d-r5                    IntraFreqEvent-1d-r5                OPTIONAL
}

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,
            v4b0NonCriticalExtensions       SEQUENCE {
                sysInfoType13-v4b0ext           SysInfoType13-v4b0ext-IEs,
            -- Extension mechanism for non- release99 information
                nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
            }                               OPTIONAL
        }                               OPTIONAL
}

SysInfoType13-v3a0ext-IEs ::= SEQUENCE {
    ue-IdleTimersAndConstants-v3a0ext       UE-IdleTimersAndConstants-v3a0ext
}

SysInfoType13-v4b0ext-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
        v4b0NonCriticalExtensions           SEQUENCE {
            sysInfoType15-v4b0ext               SysInfoType15-v4b0ext-IEs,
        -- Extension mechanism for non- release4 information
            nonCriticalExtensions               SEQUENCE {}             OPTIONAL
```

```
        }   OPTIONAL
}

SysInfoType15-v4b0ext-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
            v4b0NonCriticalExtensions           SEQUENCE {
                sysInfoType15-4-v4b0ext             SysInfoType15-4-v4b0ext,
                nonCriticalExtensions               SEQUENCE {}     OPTIONAL
            }   OPTIONAL
        }   OPTIONAL
}

SysInfoType15-4-v3a0ext ::= SEQUENCE {
    sfn-Offset-Validity             SFN-Offset-Validity     OPTIONAL
}

SysInfoType15-4-v4b0ext ::= 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.
        -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
        -- included.
        pusch-SysInfoList               PUSCH-SysInfoList               OPTIONAL,
        pdsch-SysInfoList               PDSCH-SysInfoList               OPTIONAL,
    -- Extension mechanism for non- release99 information
        v4b0NonCriticalExtensions       SEQUENCE {
            sysInfoType17-v4b0ext           SysInfoType17-v4b0ext-IEs,
            v590NonCriticalExtensions   SEQUENCE {
                sysInfoType17-v590ext           SysInfoType17-v590ext-IEs       OPTIONAL,
                nonCriticalExtensions           SEQUENCE {}                     OPTIONAL
            }                           OPTIONAL
        }                               OPTIONAL
}

SysInfoType17-v4b0ext-IEs ::= SEQUENCE {
    tdd128SpecificInfo              SEQUENCE {
        pusch-SysInfoList               PUSCH-SysInfoList-LCR-r4        OPTIONAL,
        pdsch-SysInfoList               PDSCH-SysInfoList-LCR-r4        OPTIONAL
    }                                                                   OPTIONAL
}

SysInfoType17-v590ext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo             SEQUENCE {
        pusch-SysInfoList           PUSCH-SysInfoList-HCR-r5    OPTIONAL,
        pdsch-SysInfoList           PDSCH-SysInfoList-HCR-r5    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))

-- **************************************************
--
--     MBMS INFORMATION ELEMENTS (10.3.9a)
--
-- **************************************************

MBMS-AccessProbabilityFactor ::=    ENUMERATED {
                                        apf0, apf32, apf64, apf96, apf128, apf160, apf192,
                                        apf224, apf256, apf288, apf320, apf352, apf384, apf416,
                                        apf448, apf480, apf512, apf544, apf576, apf608, apf640,
                                        apf672, apf704, apf736, apf768, apf800, apf832, apf864,
                                        apf896, apf928, apf960, apf1000 }

MBMS-CellGroupIdentity-r6 ::=       BIT STRING (SIZE (12))

MBMS-CommonCCTrChIdentity ::=       INTEGER (1..32)

MBMS-CommonPhyChIdentity ::=        INTEGER (1..32)

MBMS-CommonRBIdentity ::=           INTEGER (1..32)

MBMS-CommonTrChIdentity ::=         INTEGER (1..32)

MBMS-CommonRBInformation-r6 ::=     SEQUENCE {
    commonRBIdentity                    MBMS-CommonRBIdentity,
    pdcp-Info                           PDCP-Info-r4,
    rlc-Info                            RLC-Info-r6
}

MBMS-CommonRBInformationList-r6 ::= SEQUENCE (SIZE (1..maxMBMS-CommonRB)) OF
                                        MBMS-CommonRBInformation-r6

MBMS-CommonTrChIdentity ::=         INTEGER (1..32)

MBMS-CurrentCell-SCCPCH-r6 ::=      SEQUENCE {
    sccpchIdentity                      MBMS-SCCPCHIdentity                 OPTIONAL,
    secondaryCCPCH-Info                 MBMS-CommonPhyChIdentity,
    transpCh-InfoCommonForAllTrCh       MBMS-CommonCCTrChIdentity,
    transpCHInformation                 MBMS-TrCHInformation-CommList
}
    facchCarryingMTCH                   MBMS-FACCHCarryingMTCH-CommList,
    schedulingInfo                      SEQUENCE {
        facchCarryingMSCH                   MBMS-CommonTrChIdentity,
        mschConfigurationInfo               MBMS-MSCHConfigurationInfo-r6
    }       OPTIONAL
}

MBMS-CurrentCell-SCCPCHList-r6 ::=  SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                        MBMS-CurrentCell-SCCPCH-r6

MBMS-SCCPCHIdentity ::=             INTEGER (1..maxSCCPCH)

MBMS-DefaultL1CombiningConfigInfo-r6 ::= SEQUENCE {
    mbms-L1CombiningSchedCycleLength    MBMS-L1CombiningSchedCycleLength
}

MBMS-FACHCarryingMTCH-List ::=      SEQUENCE (SIZE (1..maxFACHPCH)) OF
                                        TransportFormatSet

MBMS-FACCHCarryingMTCH-Comm ::=     SEQUENCE {
    transpCh-Info                       MBMS-CommonTrChIdentity,
    rbInformation                       MBMS-RBInformation-CList
}

MBMS-FACCHCarryingMTCH-CommList ::= SEQUENCE (SIZE (1..maxTrChperSCCPCH)) OF
                                        MBMS-FACCHCarryingMTCH-Comm

MBMS-FACCHCarryingMTCH-Neighb ::=   SEQUENCE {
    transpCh-Info                       MBMS-CommonTrChIdentity,
    transpCh-CombiningStatus            BOOLEAN,
    rbInformation                       MBMS-RBInformation-NList
}
```

```
MBMS-FACCHCarryingMTCH-NeighbList ::= SEQUENCE (SIZE (1..maxFACHPCH)) OF
                                      MBMS-FACCHCarryingMTCH-Neighb

MBMS-FACCHCarryingMTCH-SIB5 ::=     SEQUENCE {
    transpCh-Identity                   INTEGER (1..maxFACHPCH),
    rbInformation                       MBMS-RBInformation-Slist
}

MBMS-FACCHCarryingMTCH-SIB5List ::= SEQUENCE (SIZE (1..maxTrChperSCCPCH)) OF
                                      MBMS-FACCHCarryingMTCH-SIB5

MBMS-FLCApplicabilityInfo-r6 ::=    SEQUENCE {
    mbms-FLCApplicability               ENUMERATED { false }                OPTIONAL
}

MBMS-JoinedInformation-r6 ::=       SEQUENCE {
    p-TMSI                              P-TMSI-GSM-MAP                      OPTIONAL
}

MBMS-L1CombiningSchedCycleLength ::= ENUMERATED { spare1 }          -- FFS

MBMS-L1CombiningSchedCycleOffset ::= ENUMERATED { spare1 }          -- FFS

MBMS-L1CombiningSchedule-32 ::=     SEQUENCE {
    -- Actual L1 combining schedule values (offset, start, duration) = IE value * 4
    cycleOffset                         INTEGER (0..7)                      OPTIONAL,
    mtch-L1CombiningPeriodList          SEQUENCE (SIZE (1..maxMBMS-L1CP)) OF SEQUENCE {
        periodStart                         INTEGER (0..7),
        periodDuration                      INTEGER (1..8)
    }
}

MBMS-L1CombiningSchedule-64 ::=     SEQUENCE {
    -- Actual L1 combining schedule values (offset, start, duration) = IE value * 4
    cycleOffset                         INTEGER (0..15)                     OPTIONAL,
    mtch-L1CombiningPeriodList          SEQUENCE (SIZE (1..maxMBMS-L1CP)) OF SEQUENCE {
        periodStart                         INTEGER (0..15),
        periodDuration                      INTEGER (1..16)
    }
}

MBMS-L1CombiningSchedule-128 ::=    SEQUENCE {
    -- Actual L1 combining schedule values (offset, start, duration) = IE value * 4
    cycleOffset                         INTEGER (0..31)                     OPTIONAL,
    mtch-L1CombiningPeriodList          SEQUENCE (SIZE (1..maxMBMS-L1CP)) OF SEQUENCE {
        periodStart                         INTEGER (0..31),
        periodDuration                      INTEGER (1..32)
    }
}

MBMS-L1CombiningSchedule-256 ::=    SEQUENCE {
    -- Actual L1 combining schedule values (offset, start, duration) = IE value * 4
    cycleOffset                         INTEGER (0..63)                     OPTIONAL,
    mtch-L1CombiningPeriodList          SEQUENCE (SIZE (1..maxMBMS-L1CP)) OF SEQUENCE {
        periodStart                         INTEGER (0..63),
        periodDuration                      INTEGER (1..64)
    }
}

MBMS-L1CombiningSchedule-512 ::=    SEQUENCE {
    -- Actual L1 combining schedule values (offset, start, duration) = IE value * 4
    cycleOffset                         INTEGER (0..127)                        OPTIONAL,
    mtch-L1CombiningPeriodList          SEQUENCE (SIZE (1..maxMBMS-L1CP)) OF SEQUENCE {
        periodStart                         INTEGER (0..127),
        periodDuration                      INTEGER (1..128)
    }
}

MBMS-L1CombiningSchedule-1024 ::=   SEQUENCE {
    -- Actual L1 combining schedule values (offset, start, duration) = IE value * 4
    cycleOffset                         INTEGER (0..255)                        OPTIONAL,
    mtch-L1CombiningPeriodList          SEQUENCE (SIZE (1..maxMBMS-L1CP)) OF SEQUENCE {
        periodStart                         INTEGER (0..255),
        periodDuration                      INTEGER (1..256)
    }
}

MBMS-L1CombiningSchedule ::=        CHOICE {
```

```
    cycleLength-32                          MBMS-L1CombiningSchedule-32,
    cycleLength-64                          MBMS-L1CombiningSchedule-64,
    cycleLength-128                         MBMS-L1CombiningSchedule-128,
    cycleLength-256                         MBMS-L1CombiningSchedule-256,
    cycleLength-512                         MBMS-L1CombiningSchedule-512,
    cycleLength-1024                        MBMS-L1CombiningSchedule-1024
}

MBMS-L1CombiningSchedule ::=          SEQUENCE {
    layer1CombiningSchedCycleLength     MBMS-L1CombiningSchedCycleLength    OPTIONAL,
    layer1CombiningSchedCycleOffset     MBMS-L1CombiningSchedCycleOffset    OPTIONAL,
    layer1CombiningTransmTimeDiff       MBMS-L1CombiningTransmTimeDiff,
    mtch-L1Combiningperiod List         MBMS-MTCH-L1CombiningPeriodList
}

MBMS-L1CombiningTransmTimeDiff ::=  INTEGER (0..3)ENUMERATED { spare1 }      -- FFS

MBMS-L23Configuration ::=           CHOICE {
    sameAsCurrent                       SEQUENCE {
        currentCell-SCCPCH                  MBMS-SCCPCHIdentity,
        mschConfigurationInfo               MBMS-MSCHConfigurationInfo-r6
    },
    different                           SEQUENCE {
        transpCh-InfoCommonForAllTrCh       MBMS-CommonCCTrChIdentity,
        transpCHInformation                 MBMS-TrCHInformation-NeighbList
    }
}
        facchCarryingMTCH                   MBMS-FACCHCarryingMTCH-NeighbList,
        schedulingInfo                      SEQUENCE {
            facchCarryingMSCH                   MBMS-CommonTrChIdentity,
            mschConfigurationInfo               MBMS-MSCHConfigurationInfo-r6
        }       OPTIONAL
    }
}

MBMS-LogicalChIdentity ::=          INTEGER (1..1615)

MBMS-MCCH-ConfigurationInfo-r6 ::=  SEQUENCE {
    accessInfoPeriodCoefficient         ---------INTEGER (10..3),      -- FFS
    repetitionPeriodCoefficient         ---------INTEGER (10..3),      -- FFS
    modificationPeriodCoefficient       ------------INTEGER (17..10),    -- FFS
    rlc-Info                            RLC-Info-r6,
    tctf-Presence                       MBMS-TCTF-Presence                  OPTIONAL
}

MBMS-MICHConfigurationInfo-r6 ::=   SEQUENCE {
    michPowerOffset                     MBMS-MICHPowerOffset,
    mode                                CHOICE {
        fdd                                 SEQUENCE {
            channelisationCode256               ChannelisationCode256,
            ni-CountPerFrame                    MBMS-NI-CountPerFrame,
            sttd-Indicator                      BOOLEAN
        },
        tdd384                              SEQUENCE {
            timeslot                            TimeslotNumber,
            midambleShiftAndBurstType           MidambleShiftAndBurstType,
            channelisationCode                  DL-TS-ChannelisationCode,
            repetitionPeriodLengthOffset        RepPerLengthOffset-MICH     OPTIONAL,
            mbmsNotificationIndLength           MBMS-MICHNotificationIndLength  DEFAULT mn4
        },
        tdd128                              SEQUENCE {
            timeslot                            TimeslotNumber-LCR-r4,
            midambleShiftAndBurstType           MidambleShiftAndBurstType-LCR-r4,
            channelisationCodeList              SEQUENCE (SIZE (1..2)) OF
                                                    DL-TS-ChannelisationCode,
            repetitionPeriodLengthOffset        RepPerLengthOffset-MICH     OPTIONAL,
            mbmsNotificationIndLength           MBMS-MICHNotificationIndLength  DEFAULT mn4
        }
    }
}

MBMS-MICHNotificationIndLength ::=  ENUMERATED { mn4, mn8, mn16 }

MBMS-MICHPowerOffset ::=            INTEGER (-10..5)

MBMS-ModifedService-r6 ::=          SEQUENCE {
    mbms-TransmissionIdentity           MBMS-TransmissionIdentity,
    mbms-RequiredUEAction               MBMS-RequiredUEAction-Mod,
```

```
    mbms-PreferredFrequency             CHOICE {
        mcch                                MBMS-PFLIndex,
        dcch                                MBMS-PFLInfo
    }       OPTIONAL,
    continueMCCHReading                 BOOLEAN
}

MBMS-ModifedServiceList-r6 ::=      SEQUENCE (SIZE (1..maxMBMSservModif)) OF
                                        MBMS-ModifedService-r6

MBMS-MTCH-L1CombiningPeriod ::=     SEQUENCE {
    start                               INTEGER (0),    -- FFS
    duration                            INTEGER (0)     -- FFS
}

MBMS-MTCH-L1CombiningPeriodList ::= SEQUENCE (SIZE (1..maxMBMS-L1CP)) OF
                                        MBMS-MTCH-L1CombiningPeriod

MBMS-MSCHConfigurationInfo-r6 ::=   SEQUENCE {
    mschShedulingInfo                   MBMS-MSCHSchedulingInfo             OPTIONAL,
    rlc-Info                            RLC-Info-r6                         OPTIONAL,
    tctf-Presence                       MBMS-TCTF-Presence                  OPTIONAL
}

MBMS-MSCHSchedulingInfo ::=         CHOICE {
    schedulingPeriod-32-Offset          INTEGER (0..31),
    schedulingPeriod-64-Offset          INTEGER (0..63),
    schedulingPeriod-128-Offset         INTEGER (0..127),
    schedulingPeriod-256-Offset         INTEGER (0..255),
    schedulingPeriod-512-Offset         INTEGER (0..511),
    schedulingPeriod-1024-Offset        INTEGER (0..1023)
}

MBMS-NeighbouringCellSCCPCH-r6 ::=  SEQUENCE {
    secondaryCCPCH-Info                 MBMS-CommonPhyChIdentity,
    rakeCombinableGroupId               MBMS-RakeCombinableGroupId          OPTIONAL,
    layer1Combining                     CHOICE {
        fdd                                 SEQUENCE {
            typeOfL1Combining                   MBMS-TypeOfL1Combining,
            mbms-L1CombiningSchedule            MBMS-L1CombiningSchedule    OPTIONAL
        },
        tdd                                 NULL
    }       OPTIONAL,
    mbms-L23Configuration               MBMS-L23Configuration
}
    combiningMethod                     CHOICE {
        fullL1Combining                     SEQUENCE {
            currentCellSCCPCH                   MBMS-SCCPCHIdentity,
            typeOfL1Combining                   MBMS-TypeOfL1Combining
        },
        otherCombining                      SEQUENCE {
            mbms-L1CombSchedule                 MBMS-L1CombiningSchedule    OPTIONAL,
            mbms-L2Configuration                MBMS-L2Configuration
        }
    }
}

MBMS-NeighbouringCellSCCPCHList-r6 ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                        MBMS-NeighbouringCellSCCPCH-r6

MBMS-NI-CountPerFrame ::=           ENUMERATED { ni18, ni36, ni72, ni144 }

MBMS-PFLIndex ::=                   INTEGER (1..maxMBMS-Freq)

MBMS-PFLInfo ::=                    FrequencyInfo

MBMS-PhyChInformation-r6 ::=        SEQUENCE {
    mbms-CommonPhyChIdentity            MBMS-CommonPhyChIdentity,
    secondaryCCPCHInfo-MBMS             SecondaryCCPCHInfo-MBMS-r6
}

MBMS-PhyChInformationList-r6 ::=    SEQUENCE (SIZE (1..maxMBMS-CommonPhyCh)) OF
                                        MBMS-PhyChInformation-r6

MBMS-PL-ServiceRestrictInfo-r6 ::=  ENUMERATED { true }

MBMS-PreferredFreqRequest-r6 ::=    SEQUENCE {
    preferredFreqRequestdl-UARFCN                   FrequencyInfoUARFCN
```

```
}

MBMS-PreferredFrequencyInfo-r6 ::=  SEQUENCE {
    mbmsPreferredFrequency              INTEGER (1..maxMBMS-Freq),
    layerConvergenceInformation         CHOICE ~~SEQUENCE~~ {
        mbms-Qoffset                        INTEGER (0..7),
        mbms-HCSoffset                      INTEGER (0..7)
    }
}

MBMS-PreferredFrequencyList-r6 ::=  SEQUENCE (SIZE (1..maxMBMS-Freq)) OF
                                    MBMS-PreferredFrequencyInfo-r6

MBMS-PTM-RBInformation-C ::=        ~~SEQUENCE {~~
    rbInformation                       MBMS-CommonRBIdentity,
    shortTransmissionID                 MBMS-ShortTransmissionID,
    logicalChIdentity                   MBMS-LogicalChIdentity~~,~~
~~    layer1-CombiningStatus              BOOLEAN~~
}

MBMS-PTM-RBInformation-CList ::=    ~~SEQUENCE (SIZE (1..maxRBperTrCh)) OF~~
                                    MBMS-PTM-RBInformation-C

MBMS-PTM-RBInformation-N ::=        ~~SEQUENCE {~~
    shortTransmissionID                 MBMS-ShortTransmissionID,
    logicalChIdentity                   MBMS-LogicalChIdentity,
    layer1-CombiningStatus              ENUMERATED { true }                 OPTIONAL~~BOOLEAN~~
}

MBMS-PTM-RBInformation-NList ::=    ~~SEQUENCE (SIZE (1..maxRBperTrCh)) OF~~
                                    MBMS-PTM-RBInformation-N

MBMS-PTM-RBInformation-S ::=        ~~SEQUENCE {~~
    rbInformation                       MBMS-CommonRBIdentity,
    shortTransmissionID                 MBMS-ShortTransmissionID,
    logicalChIdentity                   MBMS-LogicalChIdentity
}

MBMS-PTM-RBInformation-SList ::=    ~~SEQUENCE (SIZE (1..maxRBperTrCh)) OF~~
                                    MBMS-PTM-RBInformation-S

MBMS-RakeCombinableGroupId ::=      INTEGER (0..15)

MBMS-RequiredUEAction-Mod ::=       ~~ENUMERATED {~~
                                    none,
                                    acquireCountingInfo,
                                    acquirePTM-RBInfo,
                                    establishPMMConnection,
                                    releasePTM-RB~~,~~
                                    ~~acquireMCCH~~ }

MBMS-RequiredUEAction-UMod ::=      ENUMERATED {
                                    none,
                                    acquirePTM-RBInfo,
                                    establishPMMConnection }

MBMS-SCCPCHIdentity ::=             INTEGER (1..maxSCCPCH)

MBMS-ServiceAccessInfo-r6 ::=       SEQUENCE {
    shortTransmissionID                 MBMS-ShortTransmissionID,
    accessprobabilityFactor-Idle        MBMS-AccessProbabilityFactor,
    accessprobabilityFactor-UraPCH      MBMS-AccessProbabilityFactor        OPTIONAL
}

MBMS-ServiceAccessInfoList-r6 ::=   SEQUENCE (SIZE (1..maxMBMSservCount)) OF
                                    MBMS-ServiceAccessInfo-r6

MBMS-ServiceIdentity ::=            SEQUENCE {
    serviceIdentity                     OCTET STRING (SIZE (3)),
    plmn-Identity                       CHOICE {
        -- The 'sameAsMIB-PLMN-Id' choice refers to the 'PLMN Identity' (R99) in MIB.
        sameAsMIB-PLMN-Id                   NULL,
        other                               CHOICE {
            -- The 'sameAsMIB-MultiPLMN-Id' choice refers to one of the (1..5) PLMN Identities
            -- provided in the 'Multiple PLMN List' (REL-6) in MIB.
            sameAsMIB-MultiPLMN-Id              INTEGER (1..5),
            explicitPLMN-Id                     PLMN-Identity
        }
```

```
    }
}
    plmn-Identity                       PLMN-Identity                       OPTIONAL,
    serviceIdentity                     OCTET STRING (SIZE (3))
}

MBMS-ServiceSchedulingInfo-r6 ::=   SEQUENCE {
    mbms-ServiceTransmissionIdentity            MBMS-ServiceTransmissionIdentity,
    mbms-ServiceTransmInfoList          MBMS-ServiceTransmInfoList          OPTIONAL,
    nextSchedulingperiod                INTEGER (1..320..31)
}

MBMS-ServiceSchedulingInfoList-r6 ::= SEQUENCE (SIZE (1..maxMBMSservSched)) OF
                                    MBMS-ServiceSchedulingInfo-r6

MBMS-ServiceTransmInfo ::=          SEQUENCE {
    -- Actual values (start, duration) = IE values * 4
    start                           INTEGER (10..255),  -- FFS
    duration                        INTEGER (1..256)    -- FFS
}

MBMS-ServiceTransmInfoList ::=      SEQUENCE (SIZE (1..maxMBMSTransmis)) OF
                                    MBMS-ServiceTransmInfo

MBMS-SessionIdentity ::=            OCTET STRING (SIZE (1))

MBMS-ShortTransmissionID ::=        INTEGER (1..32)

MBMS-SIBType5-SCCPCH-r6 ::=         SEQUENCE {
    sccpchIdentity                      MBMS-SCCPCHIdentity,
    transpCHInformation                 MBMS-TrCHInformation-SIB5List
}
    facchCarryingMTCH                   MBMS-FACCHCarryingMTCH-SIB5List,
    schedulingInfo                      SEQUENCE {
        facchCarryingMSCH                   INTEGER (1..maxFACHPCH),
        mschConfigurationInfo               MBMS-MSCHConfigurationInfo-r6
    }       OPTIONAL
}

MBMS-SIBType5-SCCPCHList-r6 ::=     SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                    MBMS-SIBType5-SCCPCH-r6

MBMS-TCTF-Presence ::=              ENUMERATED { false }

MBMS-TimersAndCouneters-r6 ::=      SEQUENCE {
    t-318                               T-318                               DEFAULT ms1000
}

MBMS-TransmissionIdentity ::=       SEQUENCE {
    mbms-ServiceIdentity                MBMS-ServiceIdentity,
    mbms-SessionIdentity                MBMS-SessionIdentity                OPTIONAL
}

MBMS-TranspChInfoForCCTrCh-r6 ::=   SEQUENCE {
    commonCCTrChIdentity                MBMS-CommonCCTrChIdentity,
    transportFormatCombinationSet       TFCS
}

MBMS-TranspChInfoForEachCCTrCh-r6 ::= SEQUENCE (SIZE (1..maxMBMS-CommonCCTrCh)) OF
                                    MBMS-TranspChInfoForCCTrCh-r6

MBMS-TranspChInfoForEachTrCh-r6 ::= SEQUENCE (SIZE (1..maxMBMS-CommonTrCh)) OF
                                    MBMS-TranspChInfoForTrCh-r6

MBMS-TranspChInfoForTrCh-r6 ::=     SEQUENCE {
    commonTrChIdentity                  MBMS-CommonTrChIdentity,
    transportFormatSet                  TransportFormatSet
}

MBMS-TrCHInformation-Comm ::=       SEQUENCE {
    transpCh-Info                       MBMS-CommonTrChIdentity,
    rbInformation                       MBMS-PTM-RBInformation-CList        OPTIONAL,
    mschConfigurationInfo               MBMS-MSCHConfigurationInfo-r6       OPTIONAL
}

MBMS-TrCHInformation-CommList ::=   SEQUENCE (SIZE (1..maxTrChperSCCPCH)) OF
                                    MBMS-TrCHInformation-Comm
```

```
MBMS-TrCHInformation-Neighb ::=     SEQUENCE {
    transpCh-Info                       MBMS-CommonTrChIdentity,
    transpCh-CombiningStatus            BOOLEAN,
    rbInformation                       MBMS-PTM-RBInformation-NList        OPTIONAL,
    mschConfigurationInfo               MBMS-MSCHConfigurationInfo-r6       OPTIONAL
}

MBMS-TrCHInformation-NeighbList ::= SEQUENCE (SIZE (1..maxFACHPCH)) OF
                                    MBMS-TrCHInformation-Neighb

MBMS-TrCHInformation-SIB5 ::=       SEQUENCE {
    transpCh-Identity                   INTEGER (1..maxFACHPCH),
    rbInformation                       MBMS-PTM-RBInformation-SList        OPTIONAL,
    mschConfigurationInfo               MBMS-MSCHConfigurationInfo-r6       OPTIONAL
}

MBMS-TrCHInformation-SIB5List ::=   SEQUENCE (SIZE (1..maxTrChperSCCPCH)) OF
                                    MBMS-TrCHInformation-SIB5

MBMS-TypeOfL1Combining ::=          ENUMERATED { rake, soft }CHOICE {
    rake                                NULL,
    soft                                MBMS-L1CombiningTransmTimeDiff
}

MBMS-UnmodifiedService-r6 ::=       SEQUENCE {
    mbms-TransmissionIdentity           MBMS-TransmissionIdentity,
    mbms-RequiredUEAction               MBMS-RequiredUEAction-UMod,
    mbms-PreferredFrequency             MBMS-PFLIndex                       OPTIONAL
}

MBMS-UnmodifiedServiceList-r6 ::=   SEQUENCE (SIZE (1..maxMBMSservUnmodif)) OF
                                        MBMS-UnmodifiedService-r6

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
maxGERAN-SI                 INTEGER ::= 8
maxGSMTargetCells           INTEGER ::= 32
maxHProcesses               INTEGER ::= 8
maxHSDSCHTBIndex            INTEGER ::= 64
maxHSDSCHTBIndex-tdd384     INTEGER ::= 512
maxHSSCCHs                  INTEGER ::= 4
maxInterSysMessages         INTEGER ::= 4
maxLoCHperRLC               INTEGER ::= 2
maxMAC-d-PDUsizes           INTEGER ::= 8
maxMBMS-CommonCCTrCh        INTEGER ::= 32
maxMBMS-CommonPhyCh         INTEGER ::= 32
maxMBMS-CommonRB            INTEGER ::= 32
maxMBMS-CommonTrCh          INTEGER ::= 32
maxMBMS-Freq                INTEGER ::= 4
maxMBMS-L1CP                INTEGER ::= 14 - - - FFS
```

```
maxMBMSservCount            INTEGER ::= 4
maxMBMSservDedic            INTEGER ::= 4
maxMBMSservModif            INTEGER ::= 4
maxMBMSservSched            INTEGER ::= 16
maxMBMSservUnmodif          INTEGER ::= 32
maxMBMSTransmis             INTEGER ::= 14 -- FFS
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
maxRBperTrCh                INTEGER ::= 16
maxReportedGSMCells         INTEGER ::= 8
maxRL                       INTEGER ::= 8
maxRL-1                     INTEGER ::= 7
maxRFC3095-CID              INTEGER ::= 16384
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
maxTrChperSCCPCH            INTEGER ::= 8
-- maxTrCHpreconf should be 16 but has been set to 32 for compatibility
maxTrCHpreconf              INTEGER ::= 32
maxTS                       INTEGER ::= 14
maxTS-1                     INTEGER ::= 13
maxTS-2                     INTEGER ::= 12
maxTS-LCR                   INTEGER ::= 6
maxTS-LCR-1                 INTEGER ::= 5
maxURA                      INTEGER ::= 8
maxURNTI-Group              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,
    TransportChannelReconfiguration
FROM PDU-definitions

-- Core Network IEs :
    CN-DomainIdentity,
    CN-DomainInformationList,
    CN-DomainInformationListFull,
    CN-DRX-CycleLengthCoefficient,
    NAS-SystemInformationGSM-MAP,
-- UTRAN Mobility IEs :
    CellIdentity,
    URA-Identity,
-- User Equipment IEs :
    AccessStratumReleaseIndicator,
    C-RNTI,
    ChipRateCapability,
    DL-CapabilityWithSimultaneousHS-DSCHConfig,
    DL-PhysChCapabilityFDD-v380ext,
    DL-PhysChCapabilityTDD,
    DL-PhysChCapabilityTDD-LCR-r4,
    GSM-Measurements,
    HSDSCH-physical-layer-category,
    FailureCauseWithProtErr,
    MaxHcContextSpace,
    MaximumAM-EntityNumberRLC-Cap,
    MaximumRLC-WindowSize,
    MaxNoPhysChBitsReceived,
    MaxPhysChPerFrame,
    MaxPhysChPerSubFrame-r4,
    MaxPhysChPerTS,
    MaxROHC-ContextSessions-r4,
    MaxTS-PerFrame,
    MaxTS-PerSubFrame-r4,
    MinimumSF-DL,
    MultiModeCapability,
    MultiRAT-Capability,
    NetworkAssistedGPS-Supported,
    RadioFrequencyBandTDDList,
    RLC-Capability,
    RRC-MessageSequenceNumber,
    SecurityCapability,
    SimultaneousSCCPCH-DPCH-Reception,
    STARTList,
    STARTSingle,
    START-Value,
    SupportOfDedicatedPilotsForChEstimation,
    TransportChannelCapability,
    TxRxFrequencySeparation,
    U-RNTI,
    UE-MultiModeRAT-Capability,
    UE-PowerClassExt,
    UE-RadioAccessCapabBandFDDList,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-v370ext,
    UE-RadioAccessCapability-v380ext,
    UE-RadioAccessCapability-v3a0ext,
    UE-RadioAccessCapability-v3g0ext,
    UE-RadioAccessCapability-v4b0ext,
    UE-RadioAccessCapability-v590ext,
    UL-PhysChCapabilityFDD,
    UL-PhysChCapabilityTDD,
    UL-PhysChCapabilityTDD-LCR-r4,
-- Radio Bearer IEs :
    PredefinedConfigStatusList,
    PredefinedConfigValueTag,
    RAB-InformationSetupList,
    RAB-InformationSetupList-r4,
    RAB-InformationSetupList-r5,
    RAB-InformationSetupList-r6-ext,
```

```
    RB-Identity,
    SRB-InformationSetupList,
    SRB-InformationSetupList-r5,
-- Transport Channel IEs :
    CPCH-SetID,
    DL-CommonTransChInfo,
    DL-CommonTransChInfo-r4,
    DL-AddReconfTransChInfoList,
    DL-AddReconfTransChInfoList-r4,
    DL-AddReconfTransChInfoList-r5,
    DRAC-StaticInformationList,
    UL-CommonTransChInfo,
    UL-CommonTransChInfo-r4,
    UL-AddReconfTransChInfoList,
-- Physical Channel IEs :
    PrimaryCPICH-Info,
    TPC-CombinationIndex,
    ScramblingCodeChange,
    TGCFN,
    TGPSI,
    TGPS-ConfigurationParams,
-- Measurement IEs :
    Inter-FreqEventCriteriaList-v590ext,
    Intra-FreqEventCriteriaList-v590ext,
    IntraFreqEvent-1d-r5,
    IntraFreqReportingCriteria-1b-r5,
    InterRATCellInfoIndicator,
    MeasurementIdentity,
    MeasurementReportingMode,
    MeasurementType,
    MeasurementType-r4,
    AdditionalMeasurementID-List,
    PositionEstimate,
-- MBMS IEs :
    MBMS-JoinedInformation-r6,
-- Other IEs :
    GERANIu-RadioAccessCapability,
    InterRAT-UE-RadioAccessCapabilityList,
    InterRAT-UE-RadioAccessCapability-v590ext,
    UESpecificBehaviourInformation1idle,
    UESpecificBehaviourInformation1interRAT

FROM InformationElements

    maxCNdomains,
    maxNoOfMeas,

    maxRB,
    maxRBallRABs,
    maxRFC3095-CID,
    maxSRBsetup,
    maxRL,
    maxTGPS
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,
    rfc3095-ContextInfo                 RFC3095-ContextInfo-r5,
    extension                           NULL
}

-- **************************************************
--
-- RRC information, target RNC to source RNC
--
-- **************************************************
```

```
TargetRNC-ToSourceRNC-Container ::= CHOICE {
    radioBearerSetup                    RadioBearerSetup,
    radioBearerReconfiguration          RadioBearerReconfiguration,
    radioBearerRelease                  RadioBearerRelease,
    transportChannelReconfiguration     TransportChannelReconfiguration,
    physicalChannelReconfiguration      PhysicalChannelReconfiguration,
    rrc-FailureInfo                     RRC-FailureInfo,
    -- IE dl-DCCHmessage consists of an octet string that includes the IE DL-DCCH-Message
    dL-DCCHmessage                      OCTET STRING,
    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
}

-- **************************************************
--
-- RFC3095 context, source RNC to target RNC
--
-- **************************************************

RFC3095-ContextInfo-r5 ::= CHOICE {
    r5                              SEQUENCE {
        rFC3095-ContextInfoList-r5      RFC3095-ContextInfoList-r5,
        -- Reserved for future non critical extension
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

RFC3095-ContextInfoList-r5 ::=      SEQUENCE (SIZE (1..maxRBallRABs)) OF
                                        RFC3095-ContextInfo


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

```
-- 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,
                    v3b0NonCriticalExtensions           SEQUENCE {
                        sRNC-RelocationInfo-v3b0ext         SRNC-RelocationInfo-v3b0ext-IEs,
                        v3c0NonCriticalExtensions           SEQUENCE {
                            sRNC-RelocationInfo-v3c0ext         SRNC-RelocationInfo-v3c0ext-IEs,
                            laterNonCriticalExtensions          SEQUENCE {
                                sRNC-RelocationInfo-v3d0ext         SRNC-RelocationInfo-v3d0ext-IEs,
                                -- Container for additional R99 extensions
                                sRNC-RelocationInfo-r3-add-ext      BIT STRING
                                                (CONTAINING SRNC-RelocationInfo-v3h0ext-IEs)     OPTIONAL,
                                v3g0NonCriticalExtensions           SEQUENCE {
                                    sRNC-RelocationInfo-v3g0ext         SRNC-RelocationInfo-v3g0ext-IEs,
                                    v4b0NonCriticalExtensions           SEQUENCE {
                                        sRNC-RelocationInfo-v4b0ext         SRNC-RelocationInfo-v4b0ext-IEs,
                                        v590NonCriticalExtensions           SEQUENCE {
                                            sRNC-RelocationInfo-v590ext
                                                                            SRNC-RelocationInfo-v590ext-IEs,
                                            v5a0NonCriticalExtensions           SEQUENCE {
                                                sRNC-RelocationInfo-v5a0ext
                                                                            SRNC-RelocationInfo-v5a0ext-IEs,
                                                v5b0NonCriticalExtensions           SEQUENCE {
                                                    sRNC-RelocationInfo-v5b0ext
                                                                            SRNC-RelocationInfo-v5b0ext-IEs,
                                                    v6xyNonCriticalExtensions       SEQUENCE {
                                                        sRNC-RelocationInfo-v6xyext
                                                                            SRNC-RelocationInfo-v6xyext-IEs,
                                                            -- Reserved for future non critical extension
                                                        nonCriticalExtensions           SEQUENCE {}  OPTIONAL
                                                    }       OPTIONAL
                                                }       OPTIONAL
                                            }       OPTIONAL
                                        }       OPTIONAL
                                    }       OPTIONAL
                                }       OPTIONAL
                            }       OPTIONAL
                        }       OPTIONAL
                    }       OPTIONAL
                }       OPTIONAL
            }       OPTIONAL
        }       OPTIONAL
    },
    later-than-r3                   CHOICE {
        r4                              SEQUENCE {
            sRNC-RelocationInfo-r4          SRNC-RelocationInfo-r4-IEs,
            v4d0NonCriticalExtensions       SEQUENCE {
                sRNC-RelocationInfo-v4d0ext     SRNC-RelocationInfo-v4d0ext-IEs,
                -- Container for adding non critical extensions after freezing REL-5
                sRNC-RelocationInfo-r4-add-ext      BIT STRING      OPTIONAL,
                v590NonCriticalExtensions           SEQUENCE {
                    sRNC-RelocationInfo-v590ext         SRNC-RelocationInfo-v590ext-IEs,
                    v5a0NonCriticalExtensions           SEQUENCE {
                        sRNC-RelocationInfo-v5a0ext         SRNC-RelocationInfo-v5a0ext-IEs,
                        v5b0NonCriticalExtensions           SEQUENCE {
                            sRNC-RelocationInfo-v5b0ext         SRNC-RelocationInfo-v5b0ext-IEs,
                            v6xyNonCriticalExtensions           SEQUENCE {
                                sRNC-RelocationInfo-v6xyext         SRNC-RelocationInfo-v6xyext-IEs,
                                nonCriticalExtensions               SEQUENCE {} OPTIONAL
                            }   OPTIONAL
                        }   OPTIONAL
                    }   OPTIONAL
                }   OPTIONAL
            }   OPTIONAL
        },
        criticalExtensions              CHOICE {
            r5                              SEQUENCE {
```

```
                sRNC-RelocationInfo-r5          SRNC-RelocationInfo-r5-IEs,
                sRNC-RelocationInfo-r5-add-ext  BIT STRING      OPTIONAL,
                v5a0NonCriticalExtensions       SEQUENCE {
                    sRNC-RelocationInfo-v5a0ext     SRNC-RelocationInfo-v5a0ext-IEs,
                    v5b0NonCriticalExtensions       SEQUENCE {
                        sRNC-RelocationInfo-v5b0ext     SRNC-RelocationInfo-v5b0ext-IEs,
                        v6xyNonCriticalExtensions       SEQUENCE {
                            sRNC-RelocationInfo-v6xyext     SRNC-RelocationInfo-v6xyext-IEs,
                            nonCriticalExtensions           SEQUENCE {}     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,
        -- The order of occurrence in the IE cipheringInfoPerRB-List is the
        -- same as the RBs in SRB-InformationSetupList in RAB-InformationSetupList.
        -- The signalling RBs are supposed to be listed
        -- first. Only UM and AM RBs that are ciphered are listed here
        cipheringInfoPerRB-List         CipheringInfoPerRB-List             OPTIONAL,
        count-C-List                    COUNT-C-List                        OPTIONAL,
        integrityProtectionStatus       IntegrityProtectionStatus,
         -- In the IE srb-SpecificIntegrityProtInfo, the first information listed corresponds to
         -- signalling radio bearer RB0 and after the order of occurrence is the same as the SRBs in
         -- SRB-InformationSetupList
        -- The target RNC may ignore the IE srb-SpecificIntegrityProtInfo if the
        -- IE integrityProtectionStatus has the value "not started".
        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
}

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 {
        cipheringInfoForSRB1-v3a0ext        CipheringInfoPerRB-List-v3a0ext,
        ue-RadioAccessCapability-v3a0ext    UE-RadioAccessCapability-v3a0ext        OPTIONAL,
        -- cn-domain identity for IE startValueForCiphering-v3a0ext is specified
        -- in subsequent extension (SRNC-RelocationInfo-v3b0ext-IEs)
        startValueForCiphering-v3a0ext      START-Value
}

SRNC-RelocationInfo-v3b0ext-IEs ::= SEQUENCE {
        -- cn-domain identity for IE startValueForCiphering-v3a0ext included in previous extension
        cn-DomainIdentity               CN-DomainIdentity,
        -- the IE startValueForCiphering-v3b0ext contains the start values for each CN Domain. The
        -- value of start indicated by the IE startValueForCiphering-v3a0ext should be set to the
        -- same value as the start-Value for the corresponding cn-DomainIdentity in the IE
        -- startValueForCiphering-v3b0ext
        startValueForCiphering-v3b0ext      STARTList2                              OPTIONAL
}

SRNC-RelocationInfo-v3c0ext-IEs ::= SEQUENCE {
        -- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
        -- to send the message contained in the IE “TargetRNC-ToSourceRNC-Container”.
        -- Only included if type is “UE involved”
        rb-IdentityForHOMessage             RB-Identity         OPTIONAL
}

SRNC-RelocationInfo-v3d0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        uESpecificBehaviourInformation1idle     UESpecificBehaviourInformation1idle     OPTIONAL,
        uESpecificBehaviourInformation1interRAT     UESpecificBehaviourInformation1interRAT
    OPTIONAL
}

SRNC-RelocationInfo-v3g0ext-IEs ::= SEQUENCE {
        ue-RadioAccessCapability-v3g0ext    UE-RadioAccessCapability-v3g0ext        OPTIONAL
}

SRNC-RelocationInfo-v3h0ext-IEs ::= SEQUENCE {
        tpc-CombinationInfoList         TPC-CombinationInfoList     OPTIONAL,
        nonCriticalExtension            SEQUENCE {}                 OPTIONAL
}

SRNC-RelocationInfo-v4d0ext-IEs ::= SEQUENCE {
        tpc-CombinationInfoList     TPC-CombinationInfoList     OPTIONAL
}

TPC-CombinationInfoList ::= SEQUENCE (SIZE (1..maxRL)) OF
        TPC-Combination-Info

STARTList2 ::=                      SEQUENCE (SIZE (2..maxCNdomains)) OF
                                        STARTSingle

SRNC-RelocationInfo-v4b0ext-IEs ::= SEQUENCE {
        ue-RadioAccessCapability-v4b0ext    UE-RadioAccessCapability-v4b0ext        OPTIONAL
}

SRNC-RelocationInfo-v590ext-IEs ::= SEQUENCE {
        ue-RadioAccessCapability-v590ext    UE-RadioAccessCapability-v590ext        OPTIONAL,
        ue-RATSpecificCapability-v590ext    InterRAT-UE-RadioAccessCapability-v590ext   OPTIONAL
}

SRNC-RelocationInfo-v5a0ext-IEs ::= SEQUENCE {
        storedCompressedModeInfo        StoredCompressedModeInfo    OPTIONAL
}

SRNC-RelocationInfo-v5b0ext-IEs ::= SEQUENCE {
    interRATCellInfoIndicator           InterRATCellInfoIndicator           OPTIONAL
}
```

```
CipheringInfoPerRB-List-v3a0ext ::= SEQUENCE {
        dl-UM-SN                        BIT STRING (SIZE (7))
}

CipheringStatusList ::=         SEQUENCE (SIZE (1..maxCNdomains)) OF
                                        CipheringStatusCNdomain

CipheringStatusCNdomain ::=             SEQUENCE {
        cn-DomainIdentity               CN-DomainIdentity,
        cipheringStatus                 CipheringStatus
}

CodeChangeStatusList ::= SEQUENCE (SIZE (1..maxRL)) OF
        CodeChangeStatus

CodeChangeStatus ::= SEQUENCE {
        primaryCPICH-Info                   PrimaryCPICH-Info,
        scramblingCodeChange                ScramblingCodeChange
}

StoredCompressedModeInfo ::= SEQUENCE {
        storedTGP-SequenceList      StoredTGP-SequenceList,
        codeChangeStatusList        CodeChangeStatusList    OPTIONAL
}

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

StoredTGP-Sequence ::=                  SEQUENCE {
    tgpsi                               TGPSI,
    current-tgps-Status                         CHOICE {
        active                          SEQUENCE {
            tgcfn                               TGCFN
        },
        inactive                            NULL
    },
    tgps-ConfigurationParams            TGPS-ConfigurationParams            OPTIONAL
}

SRNC-RelocationInfo-r4-IEs ::=          SEQUENCE {
    -- Non-RRC IEs
        -- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
        -- to send the message contained in the IE “TargetRNC-ToSourceRNC-Container”.
        -- Only included if type is “UE involved”
        rb-IdentityForHOMessage         RB-Identity                         OPTIONAL,
        stateOfRRC                      StateOfRRC,
        stateOfRRC-Procedure            StateOfRRC-Procedure,
    -- Ciphering related information IEs
        cipheringStatusList             CipheringStatusList-r4,
        latestConfiguredCN-Domain       CN-DomainIdentity,
        calculationTimeForCiphering     CalculationTimeForCiphering         OPTIONAL,
        count-C-List                    COUNT-C-List                        OPTIONAL,
        cipheringInfoPerRB-List         CipheringInfoPerRB-List-r4          OPTIONAL,
    -- Integrity protection related information IEs
        integrityProtectionStatus       IntegrityProtectionStatus,
        -- The target RNC may ignore the IE srb-SpecificIntegrityProtInfo if the
        -- IE integrityProtectionStatus has the value "not started".
        srb-SpecificIntegrityProtInfo   SRB-SpecificIntegrityProtInfoList,
        implementationSpecificParams    ImplementationSpecificParams        OPTIONAL,
    -- User equipment IEs
        u-RNTI                          U-RNTI,
        c-RNTI                          C-RNTI                              OPTIONAL,
        ue-RadioAccessCapability        UE-RadioAccessCapability-r4,
        ue-RadioAccessCapability-ext    UE-RadioAccessCapabBandFDDList      OPTIONAL,
        ue-Positioning-LastKnownPos     UE-Positioning-LastKnownPos         OPTIONAL,
        uESpecificBehaviourInformation1idle     UESpecificBehaviourInformation1idle     OPTIONAL,
        uESpecificBehaviourInformation1interRAT     UESpecificBehaviourInformation1interRAT
    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-DomainInformationListFull        OPTIONAL,
    -- Measurement IEs
        ongoingMeasRepList              OngoingMeasRepList-r4               OPTIONAL,
    -- Radio bearer IEs
```

```
        predefinedConfigStatusList      PredefinedConfigStatusList,
        srb-InformationList             SRB-InformationSetupList,
        rab-InformationList             RAB-InformationSetupList-r4         OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo            UL-CommonTransChInfo-r4             OPTIONAL,
        ul-TransChInfoList              UL-AddReconfTransChInfoList         OPTIONAL,
        modeSpecificInfo                CHOICE {
            fdd                             SEQUENCE {
                cpch-SetID                      CPCH-SetID                  OPTIONAL,
                transChDRAC-Info                DRAC-StaticInformationList  OPTIONAL
            },
            tdd                             NULL
        }                                                                   OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo-r4             OPTIONAL,
        dl-TransChInfoList              DL-AddReconfTransChInfoList-r4      OPTIONAL,
    -- Measurement report
        measurementReport               MeasurementReport                   OPTIONAL,
        failureCause                    FailureCauseWithProtErr             OPTIONAL
}

SRNC-RelocationInfo-r5-IEs ::=          SEQUENCE {
    -- Non-RRC IEs
        -- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
        -- to send the message contained in the IE “TargetRNC-ToSourceRNC-Container”.
        -- Only included if type is "UE involved"
        rb-IdentityForHOMessage         RB-Identity                         OPTIONAL,
        stateOfRRC                      StateOfRRC,
        stateOfRRC-Procedure            StateOfRRC-Procedure,
    -- Ciphering related information IEs
        cipheringStatusList             CipheringStatusList-r4,
        latestConfiguredCN-Domain       CN-DomainIdentity,
        calculationTimeForCiphering     CalculationTimeForCiphering         OPTIONAL,
        count-C-List                    COUNT-C-List                        OPTIONAL,
        cipheringInfoPerRB-List         CipheringInfoPerRB-List-r4          OPTIONAL,
    -- Integrity protection related information IEs
        integrityProtectionStatus       IntegrityProtectionStatus,
        srb-SpecificIntegrityProtInfo   SRB-SpecificIntegrityProtInfoList   OPTIONAL,
        implementationSpecificParams    ImplementationSpecificParams        OPTIONAL,
    -- User equipment IEs
        u-RNTI                          U-RNTI,
        c-RNTI                          C-RNTI                              OPTIONAL,
        ue-RadioAccessCapability        UE-RadioAccessCapability-r5,
        ue-RadioAccessCapability-ext    UE-RadioAccessCapabBandFDDList      OPTIONAL,
        ue-Positioning-LastKnownPos     UE-Positioning-LastKnownPos         OPTIONAL,
        uESpecificBehaviourInformation1idle
                                        UESpecificBehaviourInformation1idle     OPTIONAL,
        uESpecificBehaviourInformation1interRAT
                                        UESpecificBehaviourInformation1interRAT     OPTIONAL,
    -- Other IEs
        ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList-r5    OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Core network IEs
        cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP,
        cn-DomainInformationList        CN-DomainInformationListFull        OPTIONAL,
    -- Measurement IEs
        ongoingMeasRepList              OngoingMeasRepList-r5               OPTIONAL,
    -- Radio bearer IEs
        predefinedConfigStatusList      PredefinedConfigStatusList,
        srb-InformationList             SRB-InformationSetupList-r5,
        rab-InformationList             RAB-InformationSetupList-r5         OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo            UL-CommonTransChInfo-r4             OPTIONAL,
        ul-TransChInfoList              UL-AddReconfTransChInfoList         OPTIONAL,
        modeSpecificInfo                CHOICE {
            fdd                             SEQUENCE {
                cpch-SetID                      CPCH-SetID                  OPTIONAL,
                transChDRAC-Info                DRAC-StaticInformationList  OPTIONAL
            },
            tdd                             NULL
        }                                                                   OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo-r4             OPTIONAL,
        dl-TransChInfoList              DL-AddReconfTransChInfoList-r5      OPTIONAL,
    -- PhyCH IEs
        tpc-CombinationInfoList         TPC-CombinationInfoList             OPTIONAL,
    -- Measurement report
        measurementReport               MeasurementReport                   OPTIONAL,
    -- Other IEs
```

```
        failureCause                    FailureCauseWithProtErr             OPTIONAL
}

SRNC-RelocationInfo-v6xyext-IEs ::= SEQUENCE {
    -- Radio bearer IEs
        rab-InformationSetupList        RAB-InformationSetupList-r6-ext     OPTIONAL,
    -- MBMS IEs
        mbms-JoinedInformation          MBMS-JoinedInformation-r6           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))
}

CipheringInfoPerRB-r4 ::=           SEQUENCE {
    rb-Identity                         RB-Identity,
    dl-HFN                              BIT STRING (SIZE (20..25)),
    dl-UM-SN                            BIT STRING (SIZE (7))               OPTIONAL,
    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

CipheringInfoPerRB-List-r4 ::=      SEQUENCE (SIZE (1..maxRB)) OF
                                        CipheringInfoPerRB-r4


CipheringStatus ::=                 ENUMERATED {
                                        started, notStarted }

CipheringStatusList-r4 ::=          SEQUENCE (SIZE (1..maxCNdomains)) OF
                                        CipheringStatusCNdomain-r4

CipheringStatusCNdomain-r4 ::=      SEQUENCE {
        cn-DomainIdentity               CN-DomainIdentity,
        cipheringStatus                 CipheringStatus,
        start-Value                     START-Value
}

CN-DomainInformation-v390ext ::=        SEQUENCE {
    cn-DRX-CycleLengthCoeff             CN-DRX-CycleLengthCoefficient
}

CN-DomainInformationList-v390ext ::=    SEQUENCE (SIZE (1..maxCNdomains)) OF
                                        CN-DomainInformation-v390ext

CompressedModeMeasCapability-r4 ::= 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.
    tdd384-Measurements                 BOOLEAN                             OPTIONAL,
    tdd128-Measurements                 BOOLEAN                             OPTIONAL,
    gsm-Measurements                    GSM-Measurements                    OPTIONAL,
    multiCarrierMeasurements            BOOLEAN                             OPTIONAL
}

COUNT-C-List ::=                        SEQUENCE (SIZE (1..maxCNdomains)) OF
                                        COUNT-CSingle

COUNT-CSingle ::=                       SEQUENCE {
    cn-DomainIdentity                   CN-DomainIdentity,
    count-C                             BIT STRING (SIZE (32))
}

DL-PhysChCapabilityFDD-r4 ::=       SEQUENCE {
    maxNoDPCH-PDSCH-Codes               INTEGER (1..8),
```

```
    maxNoPhysChBitsReceived             MaxNoPhysChBitsReceived,
    supportForSF-512                    BOOLEAN,
    supportOfPDSCH                      BOOLEAN,
    simultaneousSCCPCH-DPCH-Reception   SimultaneousSCCPCH-DPCH-Reception,
    supportOfDedicatedPilotsForChEstimation     SupportOfDedicatedPilotsForChEstimation     OPTIONAL
}

DL-PhysChCapabilityFDD-r5 ::=       SEQUENCE {
    maxNoDPCH-PDSCH-Codes               INTEGER (1..8),
    maxNoPhysChBitsReceived             MaxNoPhysChBitsReceived,
    supportForSF-512                    BOOLEAN,
    supportOfPDSCH                      BOOLEAN,
    simultaneousSCCPCH-DPCH-Reception   SimultaneousSCCPCH-DPCH-Reception,
    supportOfDedicatedPilotsForChEstimation     SupportOfDedicatedPilotsForChEstimation     OPTIONAL,
    fdd-hspdsch                         CHOICE {
        supported                           SEQUENCE {
            hsdsch-physical-layer-category      HSDSCH-physical-layer-category,
            supportOfDedicatedPilotsForChannelEstimationOfHSDSCH    BOOLEAN,
            -- simultaneousSCCPCH-DPCH-HSDSCH-Reception shall be true only if the
            -- IE SimultaneousSCCPCH-DPCH-Reception indicates support of simultaneous
            -- reception of S-CCPCH and DPCH
            simultaneousSCCPCH-DPCH-HSDSCH-Reception    BOOLEAN
        },
        unsupported                         NULL
    }
}

DL-PhysChCapabilityTDD-r5 ::=       SEQUENCE {
    maxTS-PerFrame                      MaxTS-PerFrame,
    maxPhysChPerFrame                   MaxPhysChPerFrame,
    minimumSF                           MinimumSF-DL,
    supportOfPDSCH                      BOOLEAN,
    maxPhysChPerTS                      MaxPhysChPerTS,
    tdd384-hspdsch                      CHOICE {
        supported                           HSDSCH-physical-layer-category,
        unsupported                         NULL
    }
}

DL-PhysChCapabilityTDD-LCR-r5 ::=   SEQUENCE {
    maxTS-PerSubFrame                   MaxTS-PerSubFrame-r4,
    maxPhysChPerFrame                   MaxPhysChPerSubFrame-r4,
    minimumSF                           MinimumSF-DL,
    supportOfPDSCH                      BOOLEAN,
    maxPhysChPerTS                      MaxPhysChPerTS,
    supportOf8PSK                       BOOLEAN,
    tdd128-hspdsch                      CHOICE {
        supported                           HSDSCH-physical-layer-category,
        unsupported                         NULL
    }
}

DL-RFC3095-Context ::=              SEQUENCE {
    rfc3095-Context-Identity            INTEGER (0..16383),
    dl-mode                             ENUMERATED {u, o, r},
    dl-ref-ir                           OCTET STRING ( SIZE (1..3000)),
    dl-ref-time                         INTEGER (0..4294967295)     OPTIONAL,
    dl-curr-time                        INTEGER (0..4294967295)     OPTIONAL,
    dl-syn-offset-id                    INTEGER (0..65535)          OPTIONAL,
    dl-syn-slope-ts                     INTEGER (0..4294967295)     OPTIONAL,
    dl-dyn-changed                      BOOLEAN
}

ImplementationSpecificParams ::=    BIT STRING (SIZE (1..512))


IntegrityProtectionStatus ::=       ENUMERATED {
                                        started, notStarted }

InterRAT-UE-RadioAccessCapabilityList-r5 ::=    SEQUENCE {
    interRAT-UE-RadioAccessCapability   InterRAT-UE-RadioAccessCapabilityList,
    geranIu-RadioAccessCapability       GERANIu-RadioAccessCapability               OPTIONAL
}

-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
MaxHcContextSpace-r5 ::=            ENUMERATED {
                                        dummy, by1024, by2048, by4096, by8192,
```

```
                                        by16384, by32768, by65536, by131072 }

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

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
}

OngoingMeasRep-r5 ::=               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,
    measurementCommand-v590ext          CHOICE {
        -- the choice "intra-frequency" shall be used for the case of intra-frequency measurement,
        -- as well as when intra-frequency events are configured for inter-frequency measurement
        intra-frequency                     Intra-FreqEventCriteriaList-v590ext,
        inter-frequency                     Inter-FreqEventCriteriaList-v590ext
    }       OPTIONAL,
    intraFreqReportingCriteria-1b-r5    IntraFreqReportingCriteria-1b-r5    OPTIONAL,
    intraFreqEvent-1d-r5                IntraFreqEvent-1d-r5                OPTIONAL
}

OngoingMeasRepList ::=              SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                        OngoingMeasRep

OngoingMeasRepList-r4 ::=           SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                        OngoingMeasRep-r4

OngoingMeasRepList-r5 ::=           SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                        OngoingMeasRep-r5

PDCP-Capability-r4 ::=              SEQUENCE {
    losslessSRNS-RelocationSupport      BOOLEAN,
    supportForRfc2507                   CHOICE {
        notSupported                        NULL,
        supported                           MaxHcContextSpace
    },
    supportForRfc3095                   CHOICE {
        notSupported                        NULL,
        supported                           SEQUENCE {
            maxROHC-ContextSessions             MaxROHC-ContextSessions-r4  DEFAULT s16,
            reverseCompressionDepth             INTEGER (0..65535)          DEFAULT 0
        }
    }
}
```

```
PDCP-Capability-r5 ::=              SEQUENCE {
    losslessSRNS-RelocationSupport      BOOLEAN,
    supportForRfc2507                   CHOICE {
        notSupported                        NULL,
        supported                           MaxHcContextSpace-r5
    },
    supportForRfc3095                   CHOICE {
        notSupported                        NULL,
        supported                           SEQUENCE {
            maxROHC-ContextSessions             MaxROHC-ContextSessions-r4  DEFAULT s16,
            reverseCompressionDepth             INTEGER (0..65535)          DEFAULT 0,
            supportForRfc3095ContextRelocation  BOOLEAN
        }
    }
}

PhysicalChannelCapability-r4 ::=        SEQUENCE {
        fddPhysChCapability                 SEQUENCE {
            downlinkPhysChCapability            DL-PhysChCapabilityFDD-r4,
            uplinkPhysChCapability              UL-PhysChCapabilityFDD
        }                                           OPTIONAL,
        tdd384-PhysChCapability             SEQUENCE {
            downlinkPhysChCapability            DL-PhysChCapabilityTDD,
            uplinkPhysChCapability              UL-PhysChCapabilityTDD
        }                                           OPTIONAL,
        tdd128-PhysChCapability             SEQUENCE {
            downlinkPhysChCapability            DL-PhysChCapabilityTDD-LCR-r4,
            uplinkPhysChCapability              UL-PhysChCapabilityTDD-LCR-r4
        }                                           OPTIONAL
}

PhysicalChannelCapability-r5 ::=        SEQUENCE {
        fddPhysChCapability                 SEQUENCE {
            downlinkPhysChCapability            DL-PhysChCapabilityFDD-r5,
            uplinkPhysChCapability              UL-PhysChCapabilityFDD
        }                                           OPTIONAL,
        tdd384-PhysChCapability             SEQUENCE {
            downlinkPhysChCapability            DL-PhysChCapabilityTDD-r5,
            uplinkPhysChCapability              UL-PhysChCapabilityTDD
        }                                           OPTIONAL,
        tdd128-PhysChCapability             SEQUENCE {
            downlinkPhysChCapability            DL-PhysChCapabilityTDD-LCR-r5,
            uplinkPhysChCapability              UL-PhysChCapabilityTDD-LCR-r4
        }                                           OPTIONAL
}

RF-Capability-r4 ::=                SEQUENCE {
        fddRF-Capability                    SEQUENCE {
            ue-PowerClass                       UE-PowerClassExt,
            txRxFrequencySeparation             TxRxFrequencySeparation
        }                                                               OPTIONAL,
        tdd384-RF-Capability                SEQUENCE {
            ue-PowerClass                       UE-PowerClassExt,
            radioFrequencyBandTDDList           RadioFrequencyBandTDDList,
            chipRateCapability                  ChipRateCapability
        }                                                               OPTIONAL,
        tdd128-RF-Capability                SEQUENCE {
            ue-PowerClass                       UE-PowerClassExt,
            radioFrequencyBandTDDList           RadioFrequencyBandTDDList,
            chipRateCapability                  ChipRateCapability
        }                                                               OPTIONAL
}

RFC3095-ContextInfo ::=             SEQUENCE {
    rb-Identity                         RB-Identity,
    rfc3095-Context-List                RFC3095-Context-List
}

RFC3095-Context-List ::=            SEQUENCE (SIZE (1..maxRFC3095-CID)) OF SEQUENCE {
    dl-RFC3095-Context                  DL-RFC3095-Context      OPTIONAL,
    ul-RFC3095-Context                  UL-RFC3095-Context      OPTIONAL
}

RLC-Capability-r5 ::=               SEQUENCE {
    totalRLC-AM-BufferSize              TotalRLC-AM-BufferSize-r5,
    maximumRLC-WindowSize               MaximumRLC-WindowSize,
    maximumAM-EntityNumber              MaximumAM-EntityNumberRLC-Cap
}
```

```
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,
                                        awaitRB-ReleaseComplete,
                                        awaitRB-SetupComplete,
                                        awaitRB-ReconfigurationComplete,
                                        awaitTransportCH-ReconfigurationComplete,
                                        awaitPhysicalCH-ReconfigurationComplete,
                                        awaitActiveSetUpdateComplete,
                                        awaitHandoverComplete,
                                        sendCellUpdateConfirm,
                                        sendUraUpdateConfirm,
                                        -- dummy is not used in this version of specification
                                        -- It should not be sent
                                        dummy,
                                        otherStates
}

TotalRLC-AM-BufferSize-r5 ::=       ENUMERATED {
                                        kb10, kb50, kb100, kb150, kb200,
                                        kb300, kb400, kb500, kb750, kb1000 }

TPC-Combination-Info ::= SEQUENCE {
        primaryCPICH-Info                   PrimaryCPICH-Info,
        tpc-CombinationIndex                TPC-CombinationIndex
}

UE-MultiModeRAT-Capability-r5 ::=   SEQUENCE {
    multiRAT-CapabilityList             MultiRAT-Capability,
    multiModeCapability                 MultiModeCapability,
    supportOfUTRAN-ToGERAN-NACC         BOOLEAN
}

UE-Positioning-Capability-r4 ::=    SEQUENCE {
    standaloneLocMethodsSupported           BOOLEAN,
    ue-BasedOTDOA-Supported                 BOOLEAN,
    networkAssistedGPS-Supported            NetworkAssistedGPS-Supported,
    supportForUE-GPS-TimingOfCellFrames     BOOLEAN,
    supportForIPDL                          BOOLEAN,
    rx-tx-TimeDifferenceType2Capable        BOOLEAN,
    validity-CellPCH-UraPCH                 ENUMERATED { true }     OPTIONAL,
    sfn-sfnType2Capability                  ENUMERATED { true }         OPTIONAL
}

UE-Positioning-LastKnownPos ::=     SEQUENCE {
        sfn                             INTEGER (0..4095),
        cell-id                         CellIdentity,
        positionEstimate                PositionEstimate
}

UE-RadioAccessCapability-r4 ::=     SEQUENCE {
    accessStratumReleaseIndicator       AccessStratumReleaseIndicator,
    pdcp-Capability                     PDCP-Capability-r4,
    rlc-Capability                      RLC-Capability,
    transportChannelCapability          TransportChannelCapability,
    rf-Capability                       RF-Capability-r4,
    physicalChannelCapability           PhysicalChannelCapability-r4,
    ue-MultiModeRAT-Capability          UE-MultiModeRAT-Capability,
    securityCapability                  SecurityCapability,
    ue-positioning-Capability           UE-Positioning-Capability-r4,
    measurementCapability               MeasurementCapability-r4        OPTIONAL
}

UE-RadioAccessCapability-r5 ::=     SEQUENCE {
```

```
    accessStratumReleaseIndicator       AccessStratumReleaseIndicator,
    dl-CapabilityWithSimultaneousHS-DSCHConfig
                                        DL-CapabilityWithSimultaneousHS-DSCHConfig  OPTIONAL,
    pdcp-Capability                     PDCP-Capability-r5,
    rlc-Capability                      RLC-Capability-r5,
    transportChannelCapability          TransportChannelCapability,
    rf-Capability                       RF-Capability-r4,
    physicalChannelCapability           PhysicalChannelCapability-r5,
    ue-MultiModeRAT-Capability          UE-MultiModeRAT-Capability-r5,
    securityCapability                  SecurityCapability,
    ue-positioning-Capability           UE-Positioning-Capability-r4,
    measurementCapability               MeasurementCapability-r4        OPTIONAL
}

UL-RFC3095-Context ::=              SEQUENCE {
    rfc3095-Context-Identity            INTEGER (0..16383),
    ul-mode                             ENUMERATED {u, o, r},
    ul-ref-ir                           OCTET STRING ( SIZE (1..3000)),
    ul-ref-time                         INTEGER (0..4294967295)     OPTIONAL,
    ul-curr-time                        INTEGER (0..4294967295)     OPTIONAL,
    ul-syn-offset-id                    INTEGER (0..65535)          OPTIONAL,
    ul-syn-slope-ts                     INTEGER (0..4294967295)     OPTIONAL,
    ul-ref-sn-1                         INTEGER (0..65535)          OPTIONAL

}

END
```