

**TSG-RAN Meeting #12
Stockholm, Sweden, 12 - 15 June 2001**

RP-010323

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

Source: TSG-RAN WG2

Agenda item: 8.2.4

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version	Versio	Workitem
R2-011083	agreed	25.331	773		Rel-4	Corrections to IPDLs for TDD	F	4.0.0	4.1.0	LCS1-UEpos-enh
R2-011390	agreed	25.331	850	2	Rel-4	Correction to 1.28Mcps TDD RACH parameters and operation	F	4.0.0	4.1.0	LCRTDD-L23
R2-011155	agreed	25.331	851		Rel-4	TFCI coding in case of 8PSK	F	4.0.0	4.1.0	LCRTDD-L23
R2-011472	agreed	25.331	902	1	Rel-4	Structure and naming of information elements	F	4.0.0	4.1.0	TEI4

CHANGE REQUEST

⌘ **25.331 CR 773** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

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

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

Title:	⌘ Corrections to IPDLs for TDD		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ LCS1-UEpos-enh	Date:	⌘ 4.5.2001
Category:	⌘ F	Release:	⌘ REL-4
	Use <u>one</u> of the following categories: F (essential correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ The value range of the IP_spacing parameters is different for TDD and FDD. This has already been taken into account in the NBAP and RANAP specifications and is corrected by this CR for RRC. Semantic description is replaced by a reference to the RAN1 documents. This change corresponds to a R99 change proposed in R2-011037 – CR 727 to 25.331.
Summary of change:	⌘ - value range of the IP_spacing parameter is different for TDD and FDD - Semantic description is replaced by a reference
Consequences if not approved:	⌘ Misalignment between NBAP, RANAP and RRC

Clauses affected:	⌘ 10.3.7.98; 11.2		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

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

10.3.7.98 UE positioning IPDL parameters

This IE contains parameters for the IPDL mode. The use of this parameters is described in [29].

Information Element/Group name	Need	Multi	Type and Reference	Semantics description	Version
IP_spacing	MP		Integer(5,7,10,15,20,30,40,50)	The IPs are repeated every IP spacing frame.	
CHOICE MODE					REL-4
>FDD					REL-4
>> IP_spacing	MP		Integer(5,7,10,15,20,30,40,50)	See [29]	
>>IP length	MP		Integer(5,10)	See [29] The length in symbols of the idle periods	
>>IP offset	MP		Integer(0..9)	See [29] Relates the BFN and SFN, should be same as T_cell defined in [10]	
>>Seed	MP		Integer(0..63)	See [29] Seed used to start the random number generator	
>TDD					REL-4
>> IP_spacing	MP		Integer(30,40,50,70,100)	See [33]	REL-4
>>IP_Start	MP		Integer(0..4095)	See [33] Number of the first frame containing idle periods	REL-4
>>IP_Slot	MP		Integer(0..14)	See [33] Number of the idle slot within a frame	REL-4
>>IP_PCCPCH	CV-channel		Boolean	See [33] Indicates if the PCCPCH is switched off in two consecutive frames	REL-4
Burst mode parameters	OP				
>Burst Start	MP		Integer(0..15)	See [29] and [33] The frame number where the 1 st Idle Period Burst occurs within an SFN cycle. Scaling factor 256.	
>Burst Length	MP		Integer(10..25)	See [29] and [33] Number of Idle Periods in a 'burst' of Idle Periods	
>Burst freq	MP		Integer(1..16)	See [29] and [33] Number of 10ms frames between consecutive Idle Period bursts. Scaling factor 256.	

Condition	Explanation
<i>channel</i>	This IE is present only if the idle slot carries the PCCPCH

11.3 Information element definitions

```
-- *****
--
--      MEASUREMENT INFORMATION ELEMENTS (10.3.7)
--
-- *****

IP-Spacing-TDD ::=                               ENUMERATED {
                                                e30, e40, e50, e70, e100}

UE-Positioning-IPDL-Parameters ::=              SEQUENCE {
    ip-Spacing                                  IP-Spacing,
    ip-Length                                   IP-Length,
    ip-Offset                                   INTEGER (0..9),
    seed                                         INTEGER (0..63),
    burstModeParameters                         BurstModeParameters
}

UE-Positioning-IPDL-Parameters-r4 ::=           SEQUENCE {
    ip-Spacing                               IP-Spacing,
    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-PCCPCH                             IP-PCCPCH
        }
    },
    burstModeParameters                         BurstModeParameters
}

UP-IPDL-Parameters-TDD ::=                     SEQUENCE {
    ip-Spacing                                  IP-Spacing-TDD,
    ip-slot                                     INTEGER (0..14),
    ip-Start                                   INTEGER (0..4095),
    ip-PCCPCH                                  IP-PCCPCH
    burstModeParameters                         BurstModeParameters
}
OPTIONAL,
OPTIONAL
```

**3GPP TSG-RAN WG2 Meeting #21
 Busan, Korea, 21-25 May 2001**

R2-011390

CR-Form-v3

CHANGE REQUEST

⌘ **25.331** **CR** **850** ⌘ rev **r2** ⌘ Current version: **4.0.0** ⌘

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

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

Title:	⌘ Correction to 1.28 Mcps TDD RACH parameters and operation.		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ LCRTDD-L23	Date:	⌘ 2001/5/15
Category:	⌘ F	Release:	⌘ REL-4
<p><i>Use <u>one</u> of the following categories:</i></p> <p>F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p><i>Use <u>one</u> of the following releases:</i></p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>	

Reason for change:	⌘ To align WG2 TDD 1.28 Mcps RACH parameter specifications to WG1 specification of RACH operation.		
Summary of change:	<p>⌘ The parameters: Mmax, the maximum number of unsuccessful synchronisation power ramp cycles that can occur before the MAC stops the RACH access procedure, and WT, the number of sub-frames in which an FPACH response to a SYNC_UL burst can be transmitted, are added to the SYNC_UL and FPACH IE respectively.</p> <p>The maximum number of codes within a TDD 1.28 Mcps PRACH is modified to be four.</p> <p>Constraints on maxPRACH for the TDD 1.28 Mcps case are removed to permit the specification of multiple RACH each with its own TTI.</p> <p>The option of a 5 ms TTI is added. This value of TTI applies only to TDD 1.28 Mcps RACH operation.</p> <p>A description of how a UE should select between multiple TDD 1.28 Mcps RACH is added.</p>		
Consequences if not approved:	⌘ WG1 and WG2 descriptions of TDD 1.28 Mcps RACH operation will not be aligned.		

Clauses affected:	⌘ 8.5.18, 8.6.6.31, 10.3.5.11, 10.3.6.35a, 10.3.6.51a, 10.3.6.52, 10.3.6.78a, 10.3.10, 11		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

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8.5.18 Selection of RACH TTI

8.5.18.1 FDD Mode

In FDD mode, a RACH may employ either 10 or 20 ms TTI. The supported TTI is indicated as a semi-static parameter of the RACH Transport Format in system information. If in one cell RACHs for both 10 and 20 ms TTI are supported, the UE shall select an appropriate RACH according to the following rule:

The UE shall first check whether a RACH Transport Format is available which is suitable for the transmission of the current transport Block Set for both 10 and 20 ms TTI. The UE shall:

- if the required transport format is available only for one particular TTI:
 - select this TTI;
 - identify the corresponding RACHs;
 - proceed with RACH selection as specified in subclause 8.6.6.2.
- if the required transport format is available on both types of RACH, 10 and 20 ms TTI:
 - perform TTI selection as follows:
 - when the UE calculates the initial preamble transmit power ("Preamble_Initial_Power") as specified in subclause 8.5.7:
 - calculate a transmit power margin,

$$\text{Margin} = \{ \min(\text{Maximum allowed UL tx power, P_MAX}) - \max(\text{Preamble_Initial_Power, Preamble_Initial_Power} + \Delta P_{p-m} + 10 \cdot \log_{10}(1 + (\beta_d / \beta_c)^2)) \}$$

where "Maximum allowed UL tx power" is the maximum allowed uplink transmit power indicated in system information (in dBm), and P_MAX is the maximum RF output power of the UE (dBm). The margin shall be calculated for 10 ms TTI RACH message gain factors β_d and β_c .

NOTE: the expression $\text{Preamble_Initial_Power} + \Delta P_{p-m} + 10 \cdot \log_{10}(1 + (\beta_d / \beta_c)^2)$ represents the total RACH message power if the message would be sent after the initial preamble.

- if the value of "Margin" calculated for RACH with 10 ms TTI is less than 6 dB:
 - select RACH with 20 ms TTI, and proceed as specified in subclause 8.6.6.2.
- perform reselection of the RACH TTI only after successful transmission of one Transport Block Set. However in case L1 message transmission on PRACH has failed at least once while using 10 ms TTI, the UE may use the 20 ms TTI RACH for the retransmission. Handling of RACH Message transmission failure is part of general error handling procedure.

8.5.18.2 1.28Mcps TDD

In 1.28Mcps TDD, a RACH may be assigned a 5, 10 or 20 ms TTI. If, in one cell, more than one RACH is defined a UE shall select the RACH that is to be used for each transmission according to the following rule:

-if only one RACH is assigned a transport format that is suitable for the transmission of the transport block set, then select this RACH and the RACH's TTI,

if more than one RACH is assigned a transport format that is suitable for the transmission of the transport block set, then select that which has the largest TTI. Should two or more RACH having the same TTI fulfil this criteria then randomly select between them as follows:

$$\text{"Index of selected PRACH"} = \text{floor}(\text{rand} * K)$$

-where K is equal to the number of listed PRACH system informations that carry an RACH with the above selected TTI and criteria, "rand" is a random number uniformly distributed in the range 0,...,1, and "floor" refers to rounding down to nearest integer. PRACH system informations carrying RACHs with 5, 10 and 20 ms TTI shall be counted separately. These PRACH system informations shall be indexed from 0 to K-1 in the order of their occurrence in SIB 5 or SIB 6. The random number generator is left to implementation. The scheme shall be implemented such that one of the available PRACH system informations is randomly selected with uniform probability. At start-up of the random number generator in the UE the seed shall be dependent on the IMSI of the UE or time, thereby avoiding that all UEs select the same RACH:-

8.6.6.31 FPACH/PRACH Selection (1.28 Mcps TDD only)

Where more than one FPACH is defined, the FPACH that a UE should receive following a UpPCH transmission is defined by the UpPCH signature (SYNC_UL) code that the UE used. The FPACH/PRACH number = $N \bmod M$ where N denotes the signature number (0..7) and M denotes the number of FPACH/PRACH combinations that have been defined. The FPACH/PRACH number indicates the position of the FPACH/PRACH description in the IE "PRACH info".

The PRACH that should be used is ~~that selected out of the ones~~ associated with the FPACH in the IE "PRACH info" according to [33].

10.3.5.11 Semi-static Transport Format Information

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Transmission time interval	MP		Integer(5, 10, 20, 40, 80, dynamic)	In ms. The value dynamic is only used in TDD mode 5 is only applicable for the RACH in 1.28 Mcps TDD	REL-4
Type of channel coding	MP		Enumerated(No coding, Convolutional, Turbo)		
Coding Rate	<i>CV-Coding</i>		Enumerated(1/2, 1/3)		
Rate matching attribute	MP		Integer(1..hiRM)		
CRC size	MP		Integer(0, 8, 12, 16, 24)	In bits	

Condition	Explanation
<i>Coding</i>	This IE is only present if IE "Type of channel coding" is "Convolutional"

10.3.6.35a FPACH info

NOTE: Only for 1.28 Mcps TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Timeslot number	MP		Integer(1..6)		REL-4
Channelization code	MP		Enumerated((16/1)..(16/16))		REL-4
Midamble Shift and burst type	MP		Midamble shift and burst type 10.3.6.41		REL-4
WT	MP		Integer(1..4)	The number of sub-frames, following the sub-frame in which the SYNC UL is transmitted, in which the FPACH can be transmitted.	REL-4

10.3.6.51a PRACH Channelisation Code 1.28Mcps TDD

NOTE: Only for 1.28Mcps TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Channelisation Code List	MP	1 to 24			REL-4
>Channelisation Code	MP		Enumerated((4/1)..(4/4),(8/1)..(8/8),(16/1)..(16/16))		REL-4

10.3.6.52 PRACH info (for RACH)

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE <i>mode</i>	MP				
>FDD					
>>Available Signature	MP		Bitstring(16)	(Note1) 00000000000000 01:Signature 0 00000000000000 10:Signature 1 00000000000000 11:Signature 0&1: 11111111111111 11:Signature 0to15	
>>Available SF	MP		Integer (32,64,128,256)	In chips per symbol Defines the smallest permitted SF (i.e. the maximum rate)	
>>Preamble scrambling code number	MP		Integer (0 .. 15)	Identification of scrambling code see [28]	
>>Puncturing Limit	MP		Real(0.40..1.00 by step of 0.04)		
>>Available Sub Channel Number	MP		Bitstring(12)	(Note2) 000000000001:SubChNumber 0 000000000010:SubChNumber 1 000000000011:SubChNumber 0&1 ...: 111111111111:SubChNumber 0to11	
>TDD					
>>CHOICE TDD option					REL-4
>>>3.84 Mcps TDD					REL-4
>>>>Timeslot number	MP		Timeslot number 10.3.6.84		
>>>>PRACH Channelisation Code List	MP		PRACH Channelisation Code List 10.3.6.51		
>>>>PRACH Midamble	MP		Enumerated (Direct, Direct/Inverted)	Direct or direct and inverted midamble are used for PRACH	
>>>1.28 Mcps TDD					REL-4
>>>>SYNC_UL info	MP		SYNC_UL info 10.3.6. 78a		REL-4
>>>>PRACH Definition	MP	1..<maxPRACH_FPA CH			REL-4
>>>>>Timeslot number	MP		Timeslot number 10.3.6.84		REL-4
>>>>>PRACH Channelization Code	MP		PRACH Channelization Code 1.28Mcps		REL-4

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			TDD 10.3.6.51a		
>>>>Midamble Shift and burst type	MP		Midamble shift and burst type 10.3.6.41		REL-4
>>>>FPACH info	MP		FPACH info 10.3.6.35a		REL-4
>>PNBSCH allocation	OP		PNBSCH allocation 10.3.8.10a	Identifies frames used for cell synchronisation purposes	REL-4

NOTE 1: Each bit is 0 or 1 to indicate available signature_x, x= 0 to 15.

NOTE 2: Each bit is 0 or 1 to indicate available sub channel number _x, x= 0 to 11.

10.3.6.78a SYNC_UL info

NOTE: Only for 1.28 Mcps TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
SYNC_UL codes bitmap	MP		Bitstring(8)	00000001 indicates code 0 can be used,10000001 indicates that codes 0 and 7 can be used.	REL-4
UL Target SIR	MP		Real(-11 .. 20 by step of 0.5)	In dB	REL-4
Power Ramping Step	MP		Integer(0,1,2,3)	In dB	REL-4
Max SYNC_UL Transmissions	MP		Integer(1,2,4,8)	Maximum numbers of SYNC_UL transmissions in a power ramping sequence.	REL-4
Mmax	MP		Integer(1..32)	Maximum number of synchronisation attempts.	REL-4

10.3.10 Multiplicity values and type constraint values

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

Constant	Explanation	Value
CN information		
maxCNdomains	Maximum number of CN domains	4
UTRAN mobility information		
maxRAT	Maximum number of Radio Access Technologies	maxOtherRAT + 1
maxOtherRAT	Maximum number of other Radio Access Technologies	15
maxURA	Maximum number of URAs in a cell	8
maxInterSysMessages	Maximum number of Inter System Messages	4
maxRABsetup	Maximum number of RABs to be established	16
UE information		
maxtransactions	Maximum number of parallel RRC transactions in downlink	25
maxPDCPalgoType	Maximum number of PDCP algorithm types	8
maxDRACclasses	Maximum number of UE classes which would require different DRAC parameters	8
maxFrequencybands	Maximum number of frequency bands supported by the UE as defined in 25.102	4
maxPage1	Number of UEs paged in the Paging Type 1 message	8
maxSystemCapability	Maximum number of system specific capabilities that can be requested in one message.	16
RB information		
maxPredefConfig	Maximum number of predefined configurations	16
maxRB	Maximum number of RBs	32
maxSRBsetup	Maximum number of signalling RBs to be established	8
maxRBperRAB	Maximum number of RBs per RAB	8
maxRBallRABs	Maximum number of non signalling RBs	27
maxRBMuxOptions	Maximum number of RB multiplexing options	8
maxLoCHperRLC	Maximum number of logical channels per RLC entity	2
MaxROHC-PacketSizes	Maximum number of packet sizes that are allowed to be produced by ROHC.	16
MaxROHC-Profiles	Maximum number of profiles supported by ROHC on a given RB.	8
TrCH information		
maxTrCH	Maximum number of transport channels used in one direction (UL or DL)	32
maxTrCHpreconf	Maximum number of preconfigured Transport channels, per direction	16
maxCCTrCH	Maximum number of CCTrCHs	8
maxTF	Maximum number of different transport formats that can be included in the Transport format set for one transport channel	32
maxTF-CPCH	Maximum number of TFs in a CPCH set	16
maxTFC	Maximum number of Transport Format Combinations	1024
maxTFCl-1-Combs	Maximum number of TFCI (field 1) combinations	512
maxTFCl-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		
maxSubCh	Maximum number of sub-channels on PRACH	12
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
maxSig	Maximum number of signatures on PRACH	16
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 (1 for 1.28Mcps-TDD)
MaxPRACH_FPACH	Maximum number of PRACH / FPACH pairs in a cell (1.28 Mcps TDD)	8
maxFACHPCH	Maximum number of FACHs and PCHs mapped onto one secondary CCPCHs	8
maxRL	Maximum number of radio links	8
maxSCCPCH	Maximum number of secondary CCPCHs per cell	16
maxDPDCH-UL	Maximum number of DPDCHs per cell	6
maxDPCH-DLchan	Maximum number of channelisation codes used for DL DPCH	8
maxDPCHcodesPerTS	Maximum number of codes for one timeslots (TDD)	16
maxPUSCH	Maximum number of PUSCHs	(8)
maxPDSCH	Maximum number of PDSCHs	8
maxPDSCHcodes	Maximum number of codes for PDSCH	16
maxPDSCH-TFCIgroups	Maximum number of TFCI groups for PDSCH	256
maxPDSCHcodeGroups	Maximum number of code groups for PDSCH	256
maxPCPCHs	Maximum number of PCPCH channels in a CPCH Set	64
maxPCPCH-SF	Maximum number of available SFs on PCPCH	7
maxTS	Maximum number of timeslots used in one direction (UL or DL)	6 (1.28 Mcps TDD) 14 (3.84 Mcps TDD)
HiPUSCHIdentities	Maximum number of PDSCH Identities	64
HiPDSCHIdentities	Maximum number of PDSCH Identities	64
Measurement information		
maxTGPS	Maximum number of transmission gap pattern sequences	6
maxAdditionalMeas	Maximum number of additional measurements for a given measurement identity	4
maxMeasEvent	Maximum number of events that can be listed in measurement reporting criteria	8
maxMeasParEvent	Maximum number of measurement parameters (e.g. thresholds) per event	2
maxMeasIntervals	Maximum number of intervals that define the mapping function between the measurements for the cell quality Q of a cell and the representing quality value	1
maxCellMeas	Maximum number of cells to measure	32
maxReportedGSMCells	Maximum number of GSM cells to be reported	6
maxFreq	Maximum number of frequencies to measure	8
maxSat	Maximum number of satellites to measure	16
HiRM	Maximum number that could be set as rate matching attribute for a transport channel	256
Frequency information		
maxFDDFreqList	Maximum number of FDD carrier frequencies to be stored in USIM	4
maxTDDFreqList	Maximum number of TDD carrier frequencies to be stored in USIM	4
maxFDDFreqCellList	Maximum number of neighbouring FDD cells to be stored in USIM	32
maxTDDFreqCellList	Maximum number of neighbouring TDD cells to be stored in USIM	32
maxGSMCellList	Maximum number of GSM cells to be stored in USIM	32
Other information		
maxNumGSMFreqRanges	Maximum number of GSM Frequency Ranges to store	32
maxNumFDDFreqs	Maximum number of FDD centre frequencies to store	8
maxNumTDDFreqs	Maximum number of TDD centre frequencies to store	8
maxNumCDMA200Freqs	Maximum number of CDMA2000 centre frequencies to store	8

11.2 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,
  NAS-Message,
  PagingRecordTypeID,
-- UTRAN Mobility IES :
  URA-Identity,
-- User Equipment IES :
  ActivationTime,
  C-RNTI,
  CapabilityUpdateRequirement,
  CapabilityUpdateRequirement-r4,
  CapabilityUpdateRequirement-r4Ext,
  CellUpdateCause,
  CipheringAlgorithm,
  CipheringModeInfo,
  EstablishmentCause,
  FailureCauseWithProtErr,
  FailureCauseWithProtErrTrId,
  InitialUE-Identity,
  IntegrityProtActivationInfo,
  IntegrityProtectionModeInfo,
  N-308,
  PagingCause,
  PagingRecordList,
  ProtocolErrorIndicator,
  ProtocolErrorIndicatorWithMoreInfo,
  Rb-timer-indicator,
  Re-EstablishmentTimer,
  RedirectionInfo,
  RejectionCause,
  ReleaseCause,
  RRC-StateIndicator,
  RRC-TransactionIdentifier,
  SecurityCapability,
  START-Value,
  STARTList,
  U-RNTI,
  U-RNTI-Short,
  UE-RadioAccessCapability,
  UE-RadioAccessCapability-r4ext,
  UE-ConnTimersAndConstants,
  URA-UpdateCause,
  UTRAN-DRX-CycleLengthCoefficient,
  WaitTime,
-- Radio Bearer IES :
  DefaultConfigIdentity,
  DefaultConfigMode,
  DL-CounterSynchronisationInfo,
  PredefinedConfigIdentity,
  RAB-Info,
  RAB-Info-Post,
  RAB-InformationList,
  RAB-InformationReconfigList,

```

```

RAB-InformationSetupList,
RAB-InformationSetupList-r4,
RB-ActivationTimeInfo,
RB-ActivationTimeInfoList,
RB-COUNT-C-InformationList,
RB-COUNT-C-MSB-InformationList,
RB-IdentityList,
RB-InformationAffectedList,
RB-InformationReconfigList,
RB-InformationReconfigList-r4,
RB-InformationReleaseList,
RB-InformationSetupList,
RB-InformationSetupList-r4,
RB-WithPDCP-InfoList,
SRB-InformationSetupList,
SRB-InformationSetupList2,
UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
  CPCH-SetID,
  DL-AddReconfTransChInfo2List,
  DL-AddReconfTransChInfoList,
  DL-CommonTransChInfo,
  DL-DeletedTransChInfoList,
  DRAC-StaticInformationList,
  TFC-Subset,
  TFCS-Identity,
  UL-AddReconfTransChInfoList,
  UL-CommonTransChInfo,
  UL-DeletedTransChInfoList,
-- Physical Channel IEs :
  AllocationPeriodInfo,
  Alpha,
  CCTrCH-PowerControlInfo,
  CCTrCH-PowerControlInfo-r4,
  ConstantValue,
  CPCH-SetInfo,
  DL-CommonInformation,
  DL-CommonInformation-r4,
  DL-CommonInformationPost,
  DL-InformationPerRL,
  DL-InformationPerRL-List,
  DL-InformationPerRL-List-r4,
  DL-InformationPerRL-ListPostFDD,
  DL-InformationPerRL-PostTDD,
  DL-InformationPerRL-PostTDD-LCR,
  DL-DPCH-PowerControlInfo,
  DL-PDSCH-Information,
  DPCH-CompressedModeStatusInfo,
  FrequencyInfo,
  FrequencyInfoFDD,
  FrequencyInfoTDD,
  IndividualTS-InterferenceList,
  MaxAllowedUL-TX-Power,
  OpenLoopPowerControl-IPDL-TDD,
  PDSCH-CapacityAllocationInfo,
  PDSCH-CapacityAllocationInfo-r4,
  PDSCH-Identity,
  PDSCH-Info,
  PDSCH-Info-r4,
  PRACH-RACH-Info,
  PRACH-RACH-Info-LCR,
  PrimaryCCPCH-TX-Power,
  PUSCH-CapacityAllocationInfo,
  PUSCH-CapacityAllocationInfo-r4,
  PUSCH-Identity,
  RL-AdditionInformationList,
  RL-RemovalInformationList,
  SpecialBurstScheduling,
  SSDT-Information,
  TFC-ControlDuration,
  SSDT-UL,
  TimeslotList,
  TimeslotList-r4,
  TX-DiversityMode,
  UL-ChannelRequirement,
  UL-ChannelRequirement-r4,
  UL-ChannelRequirementWithCPCH-SetID,
  UL-ChannelRequirementWithCPCH-SetID-r4,

```

```

-- REL-4

```

```

    UL-DPCH-Info,
    UL-DPCH-Info-r4,
    UL-DPCH-InfoPostFDD,
    UL-DPCH-InfoPostTDD,
    UL-DPCH-InfoPostTDD-LCR,
    UL-SynchronisationParameters,
    UL-TimingAdvance,
    UL-TimingAdvanceControl,
    UL-TimingAdvanceControl-r4,
-- Measurement IEs :
    AdditionalMeasurementID-List,
    Band-Indicator,
    EventResults,
    InterFreqEventResults-LCR,
    InterRAT-TargetCellDescription,
    MeasuredResults,
    MeasuredResultsList,
    MeasuredResultsList-LCR,
    MeasuredResultsOnRACH,
    MeasurementCommand,
    MeasurementCommand-r4,
    MeasurementIdentity,
    MeasurementReportingMode,
    PrimaryCCPCH-RSCP,
    TimeslotListWithISCP,
    TrafficVolumeMeasuredResultsList,
    UE-Positioning-GPS-AssistanceData,
    UE-Positioning-OTDOA-AssistanceData,
    UP-IPDL-Parameters-TDD,
-- Other IEs :
    BCCH-ModificationInfo,
    CDMA2000-MessageList,
    GSM-MessageList,
    InterRAT-ChangeFailureCause,
    InterRAT-HO-Failure,
    InterRAT-UE-RadioAccessCapabilityList,
    InterRAT-UE-SecurityCapList,
    InterRATMessage,
    IntraDomainNasNodeSelector,
    ProtocolErrorInformation,
    ProtocolErrorMoreInformation,
    Rplmn-Information,
    Rplmn-Information-r4,
    SegCount,
    SegmentIndex,
    SFN-Prime,
    SIB-Data-fixed,
    SIB-Data-variable,
    SIB-Type
FROM InformationElements

    maxSIBperMsg,
    maxSystemCapability
FROM Constant-definitions;

END

```

11.3 Information element definitions

```

InformationElements DEFINITIONS AUTOMATIC TAGS ::=
-- *****
--
--     CORE NETWORK INFORMATION ELEMENTS (10.3.1)
--
-- *****

BEGIN

IMPORTS

    hiPDSCHidentities,
    hiPUSCHidentities,
    hiRM,
    maxAC,
    maxAdditionalMeas,
    maxASC,
    maxASCmap,

```

```

maxASCPersist,
maxCCTrCH,
maxCellMeas,
maxCellMeas-1,
maxCNdomains,
maxCPCHsets,
maxDPCH-DLchan,
maxDPCHcodesPerTS,
maxDPDCH-UL,
maxDRACclasses,
maxFACH,
maxFreq,
maxFrequencybands,
maxInterSysMessages,
maxLoCHperRLC,
maxMeasEvent,
maxMeasIntervals,
maxMeasParEvent,
maxNumCDMA2000Freqs,
maxNumFDDFreqs,
maxNumGSMFreqRanges,
maxNumTDDFreqs,
maxOtherRAT,
maxPage1,
maxPCPCH-APsig,
maxPCPCH-APsubCh,
maxPCPCH-CDSig,
maxPCPCH-CDSUBch,
maxPCPCH-SF,
maxPCPCHs,
maxPDCPAlgoType,
maxPDSCH,
maxPDSCH-TFCIgroups,
maxPRACH,
maxPRACH-FPACH,
maxPUSCH,
maxRABsetup,
maxRAT,
maxRB,
maxRBallRABs,
maxRBMuxOptions,
maxRBperRAB,
maxReportedGSMCells,
maxSRBsetup,
maxRL,
maxRL-1,
maxROHC-PacketSizes,
maxROHC-Profile,
maxSCCPCH,
maxSat,
maxSIB,
maxSIB-FACH,
maxSig,
maxSubCh,
maxSystemCapability,
maxTF,
maxTF-CPCH,
maxTFC,
maxTFCI-2-Combs,
maxTGPS,
maxTrCH,
maxTS,
maxTS-1,
maxTS-LCR,
maxTS-LCR-1,
maxURA

```

FROM Constant-definitions;

```

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

```

```

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

```

```

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

```

```

BitModeRLC-SizeInfo ::=
    CHOICE {
        sizeType1
            INTEGER (0..127),
        sizeType2
            SEQUENCE {
                part1
                    INTEGER (0..15),
                part2
                    INTEGER (1..7)
            }
            -- Actual size = (part1 * 8) + 128 + part2
            OPTIONAL
        sizeType3
            SEQUENCE {
                part1
                    INTEGER (0..47),
                part2
                    INTEGER (1..15)
            }
            -- Actual size = (part1 * 16) + 256 + part2
            OPTIONAL
        sizeType4
            SEQUENCE {
                part1
                    INTEGER (0..62),
                part2
                    INTEGER (1..63)
            }
            -- Actual size = (part1 * 64) + 1024 + part2
            OPTIONAL
    }
-- Actual value = IE value * 0.1
BLER-QualityValue ::=
    INTEGER (-63..0)

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

CodingRate ::=
    ENUMERATED {
        half,
        third }

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

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

DL-AddReconfTransChInfo2List ::=         SEQUENCE (SIZE (1..maxTrCH)) OF
    DL-AddReconfTransChInformation2

DL-AddReconfTransChInfoList ::=          SEQUENCE (SIZE (1..maxTrCH)) OF
    DL-AddReconfTransChInformation

-- ASN.1 for IE "Added or Reconfigured DL TrCH information"
-- in case of messages other than: Radio Bearer Release message and
-- Radio Bearer Reconfiguration message
DL-AddReconfTransChInformation ::=        SEQUENCE {
    dl-TransportChannelType              DL-TrCH-Type,
    dl-transportChannelIdentity           TransportChannelIdentity,
    tfs-SignallingMode                   CHOICE {
        explicit                          TransportFormatSet,
        sameAsULTrCH                      UL-TransportChannelIdentity
    },
    dch-QualityTarget                     QualityTarget                       OPTIONAL,
    tm-SignallingInfo                     TM-SignallingInfo                   OPTIONAL
}

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

```

```

        sameAsULTrCH
    },
    qualityTarget
}

DL-CommonTransChInfo ::=
    sccpch-TFCS
    modeSpecificInfo
        fdd
            tfcs-SignallingMode
                explicit
                sameAsUL
            }
        },
        tdd
            individualDL-CCTrCH-InfoList
            }
    }

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

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

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

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

DRAC-StaticInformation ::=
    transmissionTimeValidity
    timeDurationBeforeRetry
    drac-ClassIdentity
}

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

ExplicitTFCS-Configuration ::=
    complete
    addition
    removal
    replacement
        tfcsRemoval
        tfcsAdd
    }
}

GainFactor ::=
    INTEGER (0..15)

GainFactorInformation ::=
    signalledGainFactors
    computedGainFactors
}

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

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

IndividualUL-CCTrCH-Info ::=
    ul-TFCS-Identity
    ul-TFCS
}

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

```

```

LogicalChannelByRB ::= SEQUENCE {
    rb-Identity          RB-Identity,
    logChOfRb           INTEGER (0..1)
}
                                                                    OPTIONAL

LogicalChannelList ::= CHOICE {
    allSizes            NULL,
    configured          NULL,
    explicitList        SEQUENCE (SIZE (1..15)) OF
                        LogicalChannelByRB
}

NumberOfTbSizeAndTTIList ::= SEQUENCE (SIZE (1..maxTF)) OF SEQUENCE {
    numberOfTransportBlocks
    transmissionTimeInterval
}

MessType ::= ENUMERATED {
    transportFormatCombinationControl }

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

NumberOfTransportBlocks ::= CHOICE {
    zero                NULL,
    one                 NULL,
    small               INTEGER (2..17),
    large               INTEGER (18..512)
}

OctetModeRLC-SizeInfoType1 ::= CHOICE {
    sizeType1           INTEGER (0..31),
    -- Actual size = (8 * sizeType1) + 16
    sizeType2           SEQUENCE {
        part1           INTEGER (0..23),
        part2           INTEGER (1..3)
        -- Actual size = (32 * part1) + 272 + (part2 * 8)
    },
    sizeType3           SEQUENCE {
        part1           INTEGER (0..61),
        part2           INTEGER (1..7)
        -- Actual size = (64 * part1) + 1040 + (part2 * 8)
    }
}
                                                                    OPTIONAL
                                                                    OPTIONAL

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

PowerOffsetInformation ::= SEQUENCE {
    gainFactorInformation GainFactorInformation,
    -- PowerOffsetPp-m is always absent in TDD
    powerOffsetPp-m      PowerOffsetPp-m
}
                                                                    OPTIONAL

PowerOffsetPp-m ::= INTEGER (-5..10)

PreDefTransChConfiguration ::= SEQUENCE {
    ul-CommonTransChInfo      UL-CommonTransChInfo,
    ul-AddReconfTrChInfoList  UL-AddReconfTransChInfoList,
    dl-CommonTransChInfo      DL-CommonTransChInfo,
    dl-TrChInfoList           DL-AddReconfTransChInfoList
}

QualityTarget ::= SEQUENCE {
    bler-QualityValue         BLER-QualityValue
}

RateMatchingAttribute ::= INTEGER (1..hiRM)

ReferenceTFC-ID ::= INTEGER (0..3)

```



```

RestrictedTrChInfo ::=
    ul-TransportChannelType
    restrictedTrChIdentity
    allowedTFI-List
}
SEQUENCE {
    UL-TrCH-Type,
    TransportChannelIdentity,
    AllowedTFI-List
} OPTIONAL

RestrictedTrChInfoList ::=
SEQUENCE (SIZE (1..maxTrCH)) OF
    RestrictedTrChInfo

SemistaticTF-Information ::=
    -- TABULAR: Transmission time interval has been included in the IE CommonTransChTFS.
    channelCodingType
    rateMatchingAttribute
    crc-Size
}
SEQUENCE {
    ChannelCodingType,
    RateMatchingAttribute,
    CRC-Size
}

SignalledGainFactors ::=
    modeSpecificInfo
    fdd
        gainFactorBetaC
    },
    tdd
        NULL
    },
    gainFactorBetaD
    referenceTFC-ID
}
SEQUENCE {
    CHOICE {
        SEQUENCE {
            GainFactor
        },
        NULL
    },
    GainFactor,
    ReferenceTFC-ID
} OPTIONAL

SplitTFCI-Signalling ::=
    splitType
    tfci-Field2-Length
    tfci-Field1-Information
    tfci-Field2-Information
}
SEQUENCE {
    SplitType
    INTEGER (1..10)
    ExplicitTFCS-Configuration
    TFCI-Field2-Information
} OPTIONAL,
OPTIONAL,
OPTIONAL,
OPTIONAL

SplitType ::=
ENUMERATED {
    hardSplit, logicalSplit }

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

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

TFCI-Field2-Information ::=
    tfci-Range
    explicit
}
CHOICE {
    TFci-RangeList,
    ExplicitTFCS-Configuration
}

TFCI-Range ::=
    maxTFciField2Value
    tfcs-InfoForDSCH
}
SEQUENCE {
    INTEGER (1..1023),
    TFCS-InfoForDSCH
}

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

TFCS ::=
    normalTFCI-Signalling
    splitTFCI-Signalling
}
CHOICE {
    ExplicitTFCS-Configuration,
    SplitTFCI-Signalling
}

TFCS-Identity ::=
    tfcs-ID
    sharedChannelIndicator
}
SEQUENCE {
    INTEGER (1..8)
    BOOLEAN
}
DEFAULT 1,

TFCS-IdentityPlain ::=
INTEGER (1..8)

TFCS-InfoForDSCH ::=
    ctfc2bit
    ctfc4bit
    ctfc6bit
    ctfc8bit
    ctfc12bit
}
CHOICE {
    INTEGER (0..3),
    INTEGER (0..15),
    INTEGER (0..63),
    INTEGER (0..255),
    INTEGER (0..4095),
}

```

```

ctfc16bit          INTEGER (0..65535),
ctfc24bit          INTEGER (0..16777215)
}

TFCS-ReconfAdd ::=
  ctfcSize          SEQUENCE {
    CHOICE {
      ctfc2Bit      SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
        ctfc2        INTEGER (0..3),
        gainFactorInformation PowerOffsetInformation OPTIONAL
      },
      ctfc4Bit      SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
        ctfc4        INTEGER (0..15),
        gainFactorInformation PowerOffsetInformation OPTIONAL
      },
      ctfc6Bit      SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
        ctfc6        INTEGER (0..63),
        gainFactorInformation PowerOffsetInformation OPTIONAL
      },
      ctfc8Bit      SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
        ctfc8        INTEGER (0..255),
        gainFactorInformation PowerOffsetInformation OPTIONAL
      },
      ctfc12Bit     SEQUENCE (SIZE(1..maxTFC)) OF SEQUENCE {
        ctfc12       INTEGER (0..4095),
        gainFactorInformation PowerOffsetInformation OPTIONAL
      },
      ctfc16Bit     SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
        ctfc16       INTEGER(0..65535),
        gainFactorInformation PowerOffsetInformation OPTIONAL
      },
      ctfc24Bit     SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
        ctfc24       INTEGER(0..16777215),
        gainFactorInformation PowerOffsetInformation OPTIONAL
      }
    }
  }
}

TFCS-Removal ::=
  tfci              SEQUENCE {
    INTEGER (0..1023)
  }

TFCS-RemovalList ::=
  SEQUENCE (SIZE (1..maxTFC)) OF
  TFCS-Removal

TimeDurationBeforeRetry ::=
  INTEGER (1..256)

TM-SignallingInfo ::=
  messType          MessType,
  tm-SignallingMode CHOICE {
    mode1           NULL,
    mode2           SEQUENCE {
      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
}

UL-AddReconfTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCH)) OF

```

UL-AddReconfTransChInformation

```

UL-AddReconfTransChInformation ::= SEQUENCE {
    ul-TransportChannelType      UL-TrCH-Type,
    transportChannelIdentity     TransportChannelIdentity,
    transportFormatSet          TransportFormatSet
}

UL-CommonTransChInfo ::=          SEQUENCE {
    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,
            ul-TFCS              TFCS
        }
    }
}

UL-ControlledTrChList ::=          SEQUENCE (SIZE (1..maxTrCH)) OF
    TransportChannelIdentity

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

UL-TransportChannelIdentity ::=    SEQUENCE {
    ul-TransportChannelType      UL-TrCH-Type,
    ul-TransportChannelIdentity  TransportChannelIdentity
}

UL-TrCH-Type ::= ENUMERATED {dch, usch}

-- *****
--
--     PHYSICAL CHANNEL INFORMATION ELEMENTS (10.3.6)
--
-- *****

AC-To-ASC-Mapping ::=              INTEGER (0..7)

AC-To-ASC-MappingTable ::=         SEQUENCE (SIZE (maxASCmap)) OF
    AC-To-ASC-Mapping

AccessServiceClass-FDD ::=         SEQUENCE {
    availableSignatureStartIndex  INTEGER (0..15),
    availableSignatureEndIndex    INTEGER (0..15),
    assignedSubChannelNumber      BIT STRING (SIZE(4))
}

AccessServiceClass-TDD ::=         SEQUENCE {
    channelisationCodeIndices     BIT STRING (SIZE(8))                OPTIONAL,
    subchannelSize                CHOICE {
        size1                     NULL,
        size2                     SEQUENCE {
            subchannels            ENUMERATED { subch0, subch1 } OPTIONAL
        },
        size4                     SEQUENCE {
            subchannels            BIT STRING (SIZE(4))                OPTIONAL
        },
        size8                     SEQUENCE {
            subchannels            BIT STRING (SIZE(8))                OPTIONAL
        }
    }
}

AccessServiceClass-TDD-LCR ::=     SEQUENCE {
    availableSYNC-UlCodesIndics   BIT STRING (SIZE(8))                OPTIONAL,
    subchannelSize                CHOICE {
        size1                     NULL,
        size2                     SEQUENCE {
            subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'.
            subchannels            BIT STRING (SIZE(8))                OPTIONAL
        }
    }
}

```

```

        subchannels          ENUMERATED { subch0, subch1 } OPTIONAL
    },
    size4
        subchannels          SEQUENCE {
                                BIT STRING (SIZE(4))          OPTIONAL
        },
    size8
        subchannels          SEQUENCE {
                                BIT STRING (SIZE(8))          OPTIONAL
        }
    }
}

AICH-Info ::=
    channelisationCode256    SEQUENCE {
                                ChannelisationCode256,
                                BOOLEAN,
                                AICH-TransmissionTiming
    }

AICH-PowerOffset ::=
    INTEGER (-22..5)

AICH-TransmissionTiming ::=
    ENUMERATED {
        e0, e1
    }

AllocationPeriodInfo ::=
    allocationActivationTime  SEQUENCE {
                                INTEGER (0..255),
                                allocationDuration
                                INTEGER (1..256)
    }
}

Alpha ::=
    INTEGER (0..8)

AP-AICH-ChannelisationCode ::=
    INTEGER (0..255)

AP-PreambleScramblingCode ::=
    INTEGER (0..79)

AP-Signature ::=
    INTEGER (0..15)

AP-Signature-VCAM ::=
    SEQUENCE {
        ap-Signature          AP-Signature,
        availableAP-SubchannelList AvailableAP-SubchannelList OPTIONAL
    }

AP-Subchannel ::=
    INTEGER (0..11)

ASCSetting-FDD ::=
    SEQUENCE {
        -- TABULAR: This is MD in tabular description
        -- Default value is previous ASC
        -- If this is the first ASC, the default value is all available signature and sub-channels
        accessServiceClass-FDD AccessServiceClass-FDD OPTIONAL
    }

ASCSetting-TDD ::=
    SEQUENCE {
        -- TABULAR: This is MD in tabular description
        -- Default value is previous ASC
        -- If this is the first ASC, the default value is all available channelisation codes and
        -- all available sub-channels with subchannelSize=size1.
        accessServiceClass-TDD AccessServiceClass-TDD OPTIONAL
    }

ASCSetting-TDD-LCR ::=
    SEQUENCE {
        -- TABULAR: This is MD in tabular description
        -- Default value is previous ASC
        -- If this is the first ASC, the default value is all available SYNC_UL codes and
        -- all available sub-channels with subchannelSize=size1.
        accessServiceClass-TDD-LCR AccessServiceClass-TDD-LCR 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(SIZE(16))

AvailableSubChannelNumbers ::=   BIT STRING(SIZE(12))

BurstType ::=                   ENUMERATED {
                                short1, long2 }

CCTrCH-PowerControlInfo ::=     SEQUENCE {
    tfcs-Identity                TFCS-Identity                OPTIONAL,
    ul-DPCH-PowerControlInfo     UL-DPCH-PowerControlInfo
}

CCTrCH-PowerControlInfo-r4 ::=  SEQUENCE {
    tfcs-Identity                TFCS-Identity                OPTIONAL,
    ul-DPCH-PowerControlInfo     UL-DPCH-PowerControlInfo-r4
}

CD-AccessSlotSubchannel ::=     INTEGER (0..11)

CD-AccessSlotSubchannelList ::= SEQUENCE (SIZE (1..maxPCPCH-CDsubCh)) OF
                                CD-AccessSlotSubchannel

CD-CA-ICH-ChannelisationCode ::= INTEGER (0..255)

CD-PreambleScramblingCode ::=   INTEGER (0..79)

CD-SignatureCode ::=           INTEGER (0..15)

CD-SignatureCodeList ::=       SEQUENCE (SIZE (1..maxPCPCH-CDsig)) OF
                                CD-SignatureCode

CellAndChannelIdentity ::=     SEQUENCE {
    burstType                    BurstType,
    midambleShift                MidambleShiftLong,
    basicMidambleNumber          INTEGER (0..127)
}

CellParametersID ::=           INTEGER (0..127)

Cfntargetsfnframeoffset ::=    INTEGER(0..255)

ChannelAssignmentActive ::=     CHOICE {
    notActive                    NULL,
    isActive                    AvailableMinimumSF-ListVCAM
}

ChannelisationCode256 ::=      INTEGER (0..255)

ChannelReqParamsForUCSM ::=    SEQUENCE {
    availableAP-SignatureList     AvailableAP-SignatureList,
    availableAP-SubchannelList    AvailableAP-SubchannelList    OPTIONAL
}

ClosedLoopTimingAdjMode ::=    ENUMERATED {
                                slot1, slot2 }

CodeNumberDSCH ::=            INTEGER (0..255)

CodeRange ::=                 SEQUENCE {
    pdsch-CodeMapList            PDSCH-CodeMapList
}

CodeWordSet ::=               ENUMERATED {
                                longCWS,
                                mediumCWS,
                                shortCWS,
                                ssdtOff }

CommonTimeslotInfo ::=        SEQUENCE {
    -- TABULAR: The IE below is MD, but since it can be encoded in a single
    -- bit it is not defined as OPTIONAL.
    secondInterleavingMode       SecondInterleavingMode,

```

```

    tfci-Coding                TFCI-Coding                OPTIONAL,
    puncturingLimit            PuncturingLimit,
    repetitionPeriodAndLength  RepetitionPeriodAndLength  OPTIONAL
}

CommonTimeslotInfoSCCPCH ::=          SEQUENCE {
    -- TABULAR: The IE below is MD, but since it can be encoded in a single
    -- bit it is not defined as OPTIONAL.
    secondInterleavingMode        SecondInterleavingMode,
    tfci-Coding                    TFCI-Coding                OPTIONAL,
    puncturingLimit                PuncturingLimit,
    repetitionPeriodLengthAndOffset RepetitionPeriodLengthAndOffset  OPTIONAL
}

ConstantValue ::=                    INTEGER (-35..-10)

CPCH-PersistenceLevels ::=           SEQUENCE {
    cpch-SetID                     CPCH-SetID,
    dynamicPersistenceLevelTF-List  DynamicPersistenceLevelTF-List
}

CPCH-PersistenceLevelsList ::=       SEQUENCE (SIZE (1..maxCPCHsets)) OF
    CPCH-PersistenceLevels

CPCH-SetInfo ::=                     SEQUENCE {
    cpch-SetID                      CPCH-SetID,
    transportFormatSet              TransportFormatSet,
    tfcs                             TFCS,
    ap-PreambleScramblingCode       AP-PreambleScramblingCode,
    ap-AICH-ChannelisationCode       AP-AICH-ChannelisationCode,
    cd-PreambleScramblingCode        CD-PreambleScramblingCode,
    cd-CA-ICH-ChannelisationCode     CD-CA-ICH-ChannelisationCode,
    cd-AccessSlotSubchannelList     CD-AccessSlotSubchannelList  OPTIONAL,
    cd-SignatureCodeList            CD-SignatureCodeList        OPTIONAL,
    deltaPp-m                       DeltaPp-m,
    ul-DPCCH-SlotFormat              UL-DPCCH-SlotFormat,
    n-StartMessage                   N-StartMessage,
    n-EOT                             N-EOT,
    channelAssignmentActive          ChannelAssignmentActive,
    -- TABULAR: VCAM info has been nested inside ChannelAssignmentActive,
    -- which in turn is mandatory since it's only a binary choice.
    cpch-StatusIndicationMode       CPCH-StatusIndicationMode,
    pcpch-ChannelInfoList            PCPCH-ChannelInfoList
}

CPCH-SetInfoList ::=                 SEQUENCE (SIZE (1..maxCPCHsets)) OF
    CPCH-SetInfo

CPCH-StatusIndicationMode ::=       ENUMERATED {
    pa-mode,
    pamsf-mode }

CSICH-PowerOffset ::=               INTEGER (-10..5)

-- DefaultDPCH-OffsetValueFDD and DefaultDPCH-OffsetValueTDD corresponds to
-- IE "Default DPCH Offset Value" depending on the mode.
-- Actual value = IE value * 512
DefaultDPCH-OffsetValueFDD ::=      INTEGER (0..599)

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

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

-- Actual value = IE value * 0.1
DeltaSIR ::=                        INTEGER (0..30)

DL-CCTrCh ::=                       SEQUENCE {
    tfcs-Identity                   TFCS-IdentityPlain        OPTIONAL,
    timeInfo                         TimeInfo,
    dl-CCTrCh-TimeslotsCodes        DownlinkTimeslotsCodes  OPTIONAL,
    ul-CCTrChTPCList                UL-CCTrChTPCList        OPTIONAL
}

DL-CCTrCh-r4 ::=                    SEQUENCE {
    tfcs-Identity                   TFCS-IdentityPlain        OPTIONAL,
    timeInfo                         TimeInfo,
    tddOption                        CHOICE {
        tdd384                      SEQUENCE {

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```

        dl-CCTrCH-TimeslotsCodes      DownlinkTimeslotsCodes  OPTIONAL
    },
    tdd128                             SEQUENCE {
        dl-CCTrCH-TimeslotsCodes      DownlinkTimeslotsCodes-LCR  OPTIONAL
    }
},
ul-CCTrChTPCList                      UL-CCTrChTPCList          OPTIONAL
}

DL-CCTrChList ::=                      SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                        DL-CCTrCh

DL-CCTrChList-r4 ::=                  SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                        DL-CCTrCh-r4

DL-CCTrChTPCList ::=                  SEQUENCE (SIZE (0..maxCCTrCH)) OF
                                        TFCS-Identity

DL-ChannelisationCode ::=             SEQUENCE {
    secondaryScramblingCode            SecondaryScramblingCode      OPTIONAL,
    sf-AndCodeNumber                  SF512-AndCodeNumber,
    scramblingCodeChange               ScramblingCodeChange        OPTIONAL
}

DL-ChannelisationCodeList ::=          SEQUENCE (SIZE (1..maxDPCH-DLchan)) OF
                                        DL-ChannelisationCode

DL-CommonInformation ::=               SEQUENCE {
    dl-DPCH-InfoCommon                DL-DPCH-InfoCommon          OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                             SEQUENCE {
            defaultDPCH-OffsetValue      DefaultDPCH-OffsetValueFDD  OPTIONAL,
            dpch-CompressedModeInfo      DPCH-CompressedModeInfo    OPTIONAL,
            tx-DiversityMode              TX-DiversityMode            OPTIONAL,
            ssdt-Information              SSDT-Information            OPTIONAL
        },
        tdd                             SEQUENCE {
            defaultDPCH-OffsetValue      DefaultDPCH-OffsetValueTDD  OPTIONAL
        }
    }
}

DL-CommonInformation-r4 ::=            SEQUENCE {
    dl-DPCH-InfoCommon                DL-DPCH-InfoCommon          OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                             SEQUENCE {
            defaultDPCH-OffsetValue      DefaultDPCH-OffsetValueFDD  OPTIONAL,
            dpch-CompressedModeInfo      DPCH-CompressedModeInfo    OPTIONAL,
            tx-DiversityMode              TX-DiversityMode            OPTIONAL,
            ssdt-Information              SSDT-Information-r4        OPTIONAL
        },
        tdd                             SEQUENCE {
            tddOption                    CHOICE {
                tdd384                   NULL,
                tdd128                   SEQUENCE {
                    tstd-Indicator        BOOLEAN
                }
            },
            defaultDPCH-OffsetValue      DefaultDPCH-OffsetValueTDD  OPTIONAL
        }
    }
}

DL-CommonInformationPost ::=           SEQUENCE {
    dl-DPCH-InfoCommon                DL-DPCH-InfoCommonPost
}

DL-CommonInformationPredef ::=         SEQUENCE {
    dl-DPCH-InfoCommon                DL-DPCH-InfoCommonPredef    OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                             SEQUENCE {
            defaultDPCH-OffsetValue      DefaultDPCH-OffsetValueFDD
        },
        tdd                             SEQUENCE {
            defaultDPCH-OffsetValue      DefaultDPCH-OffsetValueTDD
        }
    }
}

```

```

DL-CompressedModeMethod ::=          ENUMERATED {
                                        puncturing, sf-2,
                                        higherLayerScheduling }

DL-DPCH-InfoCommon ::=              SEQUENCE {
    cfnHandling                       CHOICE {
        maintain                       NULL,
        initialise                      SEQUENCE {
            cfnTargetsSfnFrameOffset   CfnTargetsSfnFrameOffset           OPTIONAL
        }
    },
    modeSpecificInfo                  CHOICE {
        fdd                            SEQUENCE {
            dl-DPCH-PowerControlInfo   DL-DPCH-PowerControlInfo           OPTIONAL,
            powerOffsetPilot-pdpdch    PowerOffsetPilot-pdpdch,
            dl-rate-matching-restriction DL-rate-matching-restriction     OPTIONAL,
            spreadingFactorAndPilot    SF512-AndPilot,
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            positionFixedOrFlexible    PositionFixedOrFlexible,
            tfci-Existence              BOOLEAN
        },
        tdd                            SEQUENCE {
            dl-DPCH-PowerControlInfo   DL-DPCH-PowerControlInfo           OPTIONAL,
            commonTimeslotInfo         CommonTimeslotInfo                 OPTIONAL
        }
    }
}

DL-DPCH-InfoCommonPost ::=          SEQUENCE {
    dl-DPCH-PowerControlInfo          DL-DPCH-PowerControlInfo           OPTIONAL
}

DL-DPCH-InfoCommonPredef ::=        SEQUENCE {
    modeSpecificInfo                  CHOICE {
        fdd                            SEQUENCE {
            spreadingFactorAndPilot    SF512-AndPilot,
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            positionFixedOrFlexible    PositionFixedOrFlexible,
            tfci-Existence              BOOLEAN
        },
        tdd                            SEQUENCE {
            commonTimeslotInfo         CommonTimeslotInfo
        }
    }
}

DL-DPCH-InfoPerRL ::=              CHOICE {
    fdd                                SEQUENCE {
        pCPICH-UsageForChannelEst     PCPICH-UsageForChannelEst,
        dcph-FrameOffset              DPCH-FrameOffset,
        secondaryCPICH-Info            SecondaryCPICH-Info                 OPTIONAL,
        dl-ChannelisationCodeList     DL-ChannelisationCodeList,
        tpc-CombinationIndex           TPC-CombinationIndex,
        ssdt-CellIdentity              SSDT-CellIdentity                 OPTIONAL,
        closedLoopTimingAdjMode       ClosedLoopTimingAdjMode           OPTIONAL
    },
    tdd                                DL-CCTrChList
}

DL-DPCH-InfoPerRL-r4 ::=            CHOICE {
    fdd                                SEQUENCE {
        pCPICH-UsageForChannelEst     PCPICH-UsageForChannelEst,
        dcph-FrameOffset              DPCH-FrameOffset,
        secondaryCPICH-Info            SecondaryCPICH-Info                 OPTIONAL,
        dl-ChannelisationCodeList     DL-ChannelisationCodeList,
        tpc-CombinationIndex           TPC-CombinationIndex,
        ssdt-CellIdentity              SSDT-CellIdentity                 OPTIONAL,
        closedLoopTimingAdjMode       ClosedLoopTimingAdjMode           OPTIONAL
    },
    tdd                                DL-CCTrChList-r4
}

DL-DPCH-InfoPerRL-PostFDD ::=        SEQUENCE {
    pCPICH-UsageForChannelEst         PCPICH-UsageForChannelEst,
    dl-ChannelisationCode             DL-ChannelisationCode,
    tpc-CombinationIndex               TPC-CombinationIndex
}

```



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DL-DPCH-InfoPerRL-PostTDD ::= SEQUENCE {
    dl-CCTrCH-TimeslotsCodes
}
DownlinkTimeslotsCodes

DL-DPCH-InfoPerRL-PostTDD-LCR ::= SEQUENCE {
    dl-CCTrCH-TimeslotsCodes
}
DownlinkTimeslotsCodes-LCR

DL-DPCH-PowerControlInfo ::= SEQUENCE {
    modeSpecificInfo
    CHOICE {
        fdd
            dpc-Mode
        },
        tdd
            tpc-StepSizeTDD
    }
}
TPC-StepSizeTDD OPTIONAL

DL-FrameType ::= ENUMERATED {
    dl-FrameTypeA, dl-FrameTypeB }

DL-InformationPerRL ::= SEQUENCE {
    modeSpecificInfo
    CHOICE {
        fdd
            primaryCPICH-Info
            pdsch-SHO-DCH-Info
            pdsch-CodeMapping
        },
        tdd
            PrimaryCCPCH-Info
    },
    dl-DPCH-InfoPerRL
    secondaryCCPCH-Info
}
DL-DPCH-InfoPerRL OPTIONAL,
SecondaryCCPCH-Info OPTIONAL

DL-InformationPerRL-r4 ::= SEQUENCE {
    modeSpecificInfo
    CHOICE {
        fdd
            primaryCPICH-Info
            pdsch-SHO-DCH-Info
            pdsch-CodeMapping
        },
        tdd
            PrimaryCCPCH-Info-r4
    },
    dl-DPCH-InfoPerRL
    secondaryCCPCH-Info
}
DL-DPCH-InfoPerRL-r4 OPTIONAL,
SecondaryCCPCH-Info-r4 OPTIONAL

DL-InformationPerRL-List ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-InformationPerRL

DL-InformationPerRL-List-r4 ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-InformationPerRL-r4

DL-InformationPerRL-ListPostFDD ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-InformationPerRL-PostFDD

DL-InformationPerRL-PostFDD ::= SEQUENCE {
    primaryCPICH-Info
    dl-DPCH-InfoPerRL
}
PrimaryCPICH-Info,
DL-DPCH-InfoPerRL-PostFDD

DL-InformationPerRL-PostTDD ::= SEQUENCE {
    primaryCCPCH-Info
    dl-DPCH-InfoPerRL
}
PrimaryCCPCH-InfoPost,
DL-DPCH-InfoPerRL-PostTDD

DL-InformationPerRL-PostTDD-LCR ::= SEQUENCE {
    primaryCCPCH-Info
    dl-DPCH-InfoPerRL
}
PrimaryCCPCH-InfoPostTDD-LCR,
DL-DPCH-InfoPerRL-PostTDD-LCR

DL-PDSCH-Information ::= SEQUENCE {
    pdsch-SHO-DCH-Info
    pdsch-CodeMapping
}
PDSCH-SHO-DCH-Info OPTIONAL,
PDSCH-CodeMapping OPTIONAL

```

```

DL-rate-matching-restriction ::= SEQUENCE {
    restrictedTrCH-InfoList          RestrictedTrCH-InfoList          OPTIONAL
}

DL-TS-ChannelisationCode ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

DL-TS-ChannelisationCodesShort ::= SEQUENCE {
    codesRepresentation             CHOICE {
        consecutive                 SEQUENCE {
            firstChannelisationCode DL-TS-ChannelisationCode,
            lastChannelisationCode  DL-TS-ChannelisationCode
        },
        bitmap                      BIT STRING (SIZE (16))
    }
}

DownlinkAdditionalTimeslots ::= SEQUENCE {
    parameters                     CHOICE {
        sameAsLast                 SEQUENCE {
            timeslotNumber         TimeslotNumber
        },
        newParameters              SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo,
            dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort
        }
    }
}

DownlinkAdditionalTimeslots-LCR ::= SEQUENCE {
    parameters                     CHOICE {
        sameAsLast                 SEQUENCE {
            timeslotNumber         TimeslotNumber-LCR
        },
        newParameters              SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo-LCR,
            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 ::= SEQUENCE {
    firstIndividualTimeslotInfo    IndividualTimeslotInfo-LCR,
    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
        }
    }
}

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

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

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-- The actual value of DPCCH power offset is the value of this (2 + IE * 4).
DPCCH-PowerOffset2 ::= INTEGER (-28..-13)

DPCH-CompressedModeInfo ::= SEQUENCE {
    tgp-SequenceList      TGP-SequenceList
}

DPCH-CompressedModeStatusInfo ::= SEQUENCE (SIZE (1..maxTGPS)) OF
    TGP-SequenceShort

-- TABULAR: Actual value = IE value * 256
DPCH-FrameOffset ::= INTEGER (0..149)

DSCH-Mapping ::= SEQUENCE {
    maxTFCI-Field2Value    MaxTFCI-Field2Value,
    spreadingFactor        SF-PDSCH,
    codeNumber              CodeNumberDSCH,
    multiCodeInfo          MultiCodeInfo
}

DSCH-MappingList ::= SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
    DSCH-Mapping

DSCH-RadioLinkIdentifier ::= INTEGER (0..511)

DurationTimeInfo ::= INTEGER (1..4096)

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

DynamicPersistenceLevel ::= INTEGER (1..8)

DynamicPersistenceLevelList ::= SEQUENCE (SIZE (1..maxPRACH)) OF
    DynamicPersistenceLevel

DynamicPersistenceLevelTF-List ::= SEQUENCE (SIZE (1..maxTF-CPCH)) OF
    DynamicPersistenceLevel

FACH-PCH-Information ::= SEQUENCE {
    transportFormatSet      TransportFormatSet,
    transportChannelIdentity TransportChannelIdentity,
    ctch-Indicator          BOOLEAN
}

FACH-PCH-InformationList ::= SEQUENCE (SIZE (1..maxFACH)) OF
    FACH-PCH-Information

FPACH-Info ::= SEQUENCE {
    timeslot                TimeslotNumber-PRACH-LCR,
    channelisationCode      TDD-FPACH-CCode16,
    midambleShiftAndBurstType MidambleShiftAndBurstType-LCR,
    wi                     Wi-LCR
}

FrequencyInfo ::= SEQUENCE {
    modeSpecificInfo        CHOICE {
        fdd                  FrequencyInfoFDD,
        tdd                  FrequencyInfoTDD
    }
}

FrequencyInfoFDD ::= SEQUENCE {
    uarfcn-UL               UARFCN                OPTIONAL,
    uarfcn-DL               UARFCN
}

FrequencyInfoTDD ::= SEQUENCE {
    uarfcn-Nt               UARFCN
}

IndividualTimeslotInfo ::= SEQUENCE {
    timeslotNumber          TimeslotNumber,
    tfci-Existence         BOOLEAN,
    midambleShiftAndBurstType MidambleShiftAndBurstType
}

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IndividualTimeslotInfo-LCR ::= SEQUENCE {
    timeslotNumber          TimeslotNumber-LCR,
    tfci-Existence         BOOLEAN,
    midambleShiftAndBurstType MidambleShiftAndBurstType-LCR,
    modulation             ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols        ENUMERATED { zero, one, sixteenOverSF }
}

IndividualTimeslotLCR-Ext ::= SEQUENCE {
-- timeslotNumber and tfci-Existence is taken from IndividualTimeslotInfo.
-- midambleShiftAndBurstType in IndividualTimeslotInfo shall be ignored.
    midambleShiftAndBurstType MidambleShiftAndBurstType-LCR,
    modulation             ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols        ENUMERATED { zero, one, sixteenOverSF }
}

IndividualTS-Interference ::= SEQUENCE {
    timeslot              TimeslotNumber,
    ul-TimeslotInterference UL-Interference
}

IndividualTS-Interference-LCR ::= SEQUENCE {
    timeslot              TimeslotNumber-LCR,
    ul-TimeslotInterference UL-Interference
}

IndividualTS-InterferenceList ::= SEQUENCE (SIZE (1..maxTS)) OF
    IndividualTS-Interference

IndividualTS-InterferenceList-r4 ::= CHOICE {
    tdd384                SEQUENCE (SIZE (1..maxTS)) OF
        IndividualTS-Interference,
    tdd128                SEQUENCE (SIZE (1..maxTS-LCR)) OF
        IndividualTS-Interference-LCR
}

ITP ::= ENUMERATED {
    mode0, mode1 }

NidIdentifyAbort ::= INTEGER (1..128)

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

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

MaxPowerIncrease ::= INTEGER (0..3)

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

MidambleConfigurationBurstTypeand3 ::= ENUMERATED {ms4, ms8, ms16}

MidambleConfigurationBurstType2 ::= ENUMERATED {ms3, ms6}

MidambleShiftAndBurstType ::= SEQUENCE {
    burstType             CHOICE {
        type1            SEQUENCE {
            midambleConfigurationBurstTypeand3 MidambleConfigurationBurstTypeand3,
            midambleAllocationMode           CHOICE {
                defaultMidamble           NULL,
                commonMidamble           NULL,
                ueSpecificMidamble        SEQUENCE {
                    midambleShift          MidambleShiftLong
                }
            }
        },
        type2            SEQUENCE {
            midambleConfigurationBurstType2 MidambleConfigurationBurstType2,
            midambleAllocationMode           CHOICE {
                defaultMidamble           NULL,
                commonMidamble           NULL,
                ueSpecificMidamble        SEQUENCE {
                    midambleShift          MidambleShiftShort
                }
            }
        },
        type3            SEQUENCE {
            midambleConfigurationBurstTypeand3 MidambleConfigurationBurstTypeand3,
            midambleAllocationMode           CHOICE {

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        defaultMidamble
        ueSpecificMidamble
        midambleShift
    }
}
}
}
}

MidambleShiftAndBurstType-LCR ::= SEQUENCE {
    midambleAllocationMode
        CHOICE {
            defaultMidamble
                NULL,
            ueSpecificMidamble
                SEQUENCE {
                    midambleShift
                        INTEGER (0..15)
                }
        },
    midambleConfiguration
        INTEGER (1..8) -- Actual value = IE value * 2
}

MidambleShiftLong ::= INTEGER (0..15)

MidambleShiftShort ::= INTEGER (0..5)

MinimumSpreadingFactor ::= ENUMERATED {
    sf4, sf8, sf16, sf32,
    sf64, sf128, sf256 }

MultiCodeInfo ::= INTEGER (1..16)

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

N-GAP ::= ENUMERATED {
    f2, f4, f8 }

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

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

NB01 ::= INTEGER (0..50)

NF-Max ::= INTEGER (1..64)

NumberOfDPDCH ::= INTEGER (1..maxDPDCH-UL)

NumberOfFBI-Bits ::= INTEGER (1..2)

OpenLoopPowerControl-TDD ::= SEQUENCE {
    primaryCCPCH-TX-Power
        PrimaryCCPCH-TX-Power,
    -- The following IEs shall be ignored in 1.28Mcps TDD mode.
    alpha
        Alpha
        OPTIONAL,
    prach-ConstantValue
        ConstantValue,
    dpch-ConstantValue
        ConstantValue,
    pusch-ConstantValue
        ConstantValue
        OPTIONAL
}

OpenLoopPowerControl-IPDL-TDD ::= SEQUENCE {
    ipdl-alpha
        Alpha,
    maxPowerIncrease
        MaxPowerIncrease
}

PagingIndicatorLength ::= ENUMERATED {
    pi4, pi8, pi16 }

PC-Preamble ::= INTEGER (0..7)

-- For 1.28Mcps TDD, the following IE includes elements for the PCCPCH Info additional to those
-- in PrimaryCCPCH-Info
PCCPCH-LCR-Extensions ::= SEQUENCE {
    tstd-Indicator
        BOOLEAN
}

PCP-Length ::= ENUMERATED {
    as0, as8 }

PCPCH-ChannelInfo ::= SEQUENCE {
    pcpch-UL-ScramblingCode
        INTEGER (0..79),

```

```

    pcpch-DL-ChannelisationCode      INTEGER (0..511),
    pcpch-DL-ScramblingCode          SecondaryScramblingCode      OPTIONAL,
    pcp-Length                       PCP-Length,
    ucsm-Info                        UCSM-Info                      OPTIONAL
}

PCPCH-ChannelInfoList ::=          SEQUENCE (SIZE (1..maxPCPCHs)) OF
    PCPCH-ChannelInfo

PCPICH-UsageForChannelEst ::=      ENUMERATED {
    maybeUsed,
    shallNotBeUsed }

PDSCH-CapacityAllocationInfo ::=  SEQUENCE {
    pdsch-PowerControlInfo          PDSCH-PowerControlInfo      OPTIONAL,
    pdsch-AllocationPeriodInfo      AllocationPeriodInfo,
    tfcs-Identity                   TFCS-IdentityPlain          OPTIONAL,
    configuration                    CHOICE {
        old-Configuration            SEQUENCE {
            pdsch-Identity          PDSCH-Identity
        },
        new-Configuration            SEQUENCE {
            pdsch-Info              PDSCH-Info,
            pdsch-Identity          PDSCH-Identity      OPTIONAL
        }
    }
}

PDSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
    pdsch-PowerControlInfo          PDSCH-PowerControlInfo      OPTIONAL,
    pdsch-AllocationPeriodInfo      AllocationPeriodInfo,
    tfcs-Identity                   TFCS-IdentityPlain          OPTIONAL,
    configuration                    CHOICE {
        old-Configuration            SEQUENCE {
            pdsch-Identity          PDSCH-Identity
        },
        new-Configuration            SEQUENCE {
            pdsch-Info-r4           PDSCH-Info-r4,
            pdsch-Identity          PDSCH-Identity      OPTIONAL
        }
    }
}

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

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

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

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

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

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

PDSCH-Info ::=                    SEQUENCE {
    tfcs-Identity                   TFCS-IdentityPlain          OPTIONAL,
    commonTimeslotInfo             CommonTimeslotInfo          OPTIONAL,

```



```

        sttd-Indicator                BOOLEAN
    },
    tdd                                SEQUENCE {
        channelisationCode            TDD-PICH-CCode                OPTIONAL,
        timeslot                       TimeslotNumber            OPTIONAL,
        burstType                       CHOICE {
            type-1                     MidambleShiftLong,
            type-2                     MidambleShiftShort
        }
        repetitionPeriodLengthOffset    RepPerLengthOffset-PICH    OPTIONAL,
        pagingIndicatorLength           PagingIndicatorLength    OPTIONAL,
        n-GAP                           N-GAP                    DEFAULT f4,
        n-PCH                           N-PCH                    DEFAULT 2
    }
}

PICH-Info-LCR ::=
    timeslot                           TimeslotNumber-LCR        OPTIONAL,
    midambleShiftAndBurstType           MidambleShiftAndBurstType-LCR,
    repetitionPeriodLengthOffset        RepPerLengthOffset-PICH    OPTIONAL,
    pagingIndicatorLength               PagingIndicatorLength    DEFAULT pi4,
    n-GAP                               N-GAP                    DEFAULT f4,
    n-PCH                               N-PCH                    DEFAULT 2
}

PICH-PowerOffset ::=
    INTEGER (-10..5)

PilotBits128 ::=
    ENUMERATED {
        pb4, pb8 }

PilotBits256 ::=
    ENUMERATED {
        pb2, pb4, pb8 }

PositionFixedOrFlexible ::=
    ENUMERATED {
        fixed,
        flexible }

PowerControlAlgorithm ::=
    CHOICE {
        algorithm1                      TPC-StepSizeFDD,
        algorithm2                      NULL
    }

PowerOffsetPilot-pdpdch ::=
    INTEGER (0..24)

PowerRampStep ::=
    INTEGER (1..8)

PRACH-ChanCodes-LCR ::=
    SEQUENCE (SIZE (1..24)) OF
        TDD-PRACH-CCode-LCR

PRACH-Definition-LCR ::=
    SEQUENCE {
        timeslot                       TimeslotNumber-PRACH-LCR,
        prach-ChanCodes-LCR           PRACH-ChanCodes-LCR,
        midambleShiftAndBurstType     MidambleShiftAndBurstType-LCR,
        fpach-Info                    FPACH-Info
    }

PRACH-Midamble ::=
    ENUMERATED {
        direct,
        direct-Inverted }

PRACH-Partitioning ::=
    CHOICE {
        fdd                             SEQUENCE (SIZE (1..maxASC)) OF
            ASCSetting-FDD,
        tdd                             SEQUENCE (SIZE (1..maxASC)) OF
            ASCSetting-TDD
    }

PRACH-Partitioning-LCR ::=
    SEQUENCE (SIZE (1..maxASC)) OF
        ASCSetting-TDD-LCR

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          OPTIONAL
    }
}

```

```

PRACH-RACH-Info-LCR ::=          SEQUENCE {
    sync-UL-Info                 SYNC-UL-Info,
    prach-DefinitionList         SEQUENCE (SIZE (1..maxPRACH)) OF
                                PRACH-Definition-LCR
}

```

```

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
    }
}

```

~~For 1.28Mcps TDD, the following list shall include only one PRACH-SystemInformation.~~

```

PRACH-SystemInformationList ::= SEQUENCE (SIZE (1..maxPRACH)) OF
                                PRACH-SystemInformation

```

```

PreambleRetransMax ::=          INTEGER (1..64)

```

```

PreambleScramblingCodeWordNumber ::= INTEGER (0..15)

```

```

PreDefPhyChConfiguration ::=   SEQUENCE {
    ul-DPCH-InfoPredef           UL-DPCH-InfoPredef,
    dl-CommonInformationPredef    DL-CommonInformationPredef  OPTIONAL
}

```

```

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

```

```

PrimaryCCPCH-Info-r4 ::=       CHOICE {
    fdd                          SEQUENCE {
        tx-DiversityIndicator     BOOLEAN
    },
    tdd                          SEQUENCE {
        tddOption                 CHOICE {

```

```

    tdd384
      syncCase
        syncCase1
          timeslot
        },
        syncCase2
          timeslotSync2
      }
    },
    tdd128
      tstd-Indicator
    }
  },
  cellParametersID
  blockSTTD-Indicator
}

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

PrimaryCCPCH-InfoPost ::= SEQUENCE {
  syncCase
    CHOICE {
      syncCase1
        SEQUENCE {
          timeslot
        }
      },
    syncCase2
      SEQUENCE {
        timeslotSync2
      }
  },
  cellParametersID       CellParametersID,
  blockSTTD-Indicator    BOOLEAN
}

PrimaryCCPCH-InfoPostTDD-LCR ::= SEQUENCE {
  tstd-Indicator           BOOLEAN,
  cellParametersID       CellParametersID,
  blockSTTD-Indicator    BOOLEAN
}

PrimaryCCPCH-TX-Power ::= INTEGER (6..43)

PrimaryCPICH-Info ::= SEQUENCE {
  primaryScramblingCode
}

PrimaryCPICH-TX-Power ::= INTEGER (-10..50)

PrimaryScramblingCode ::= INTEGER (0..511)

PuncturingLimit ::= ENUMERATED {
  p10-40, p10-44, p10-48, p10-52, p10-56,
  p10-60, p10-64, p10-68, p10-72, p10-76,
  p10-80, p10-84, p10-88, p10-92, p10-96, p11 }

PUSCH-CapacityAllocationInfo ::= SEQUENCE {
  pusch-Allocation
    CHOICE {
      pusch-AllocationPending
      NULL,
      pusch-AllocationAssignment
      SEQUENCE {
        pdsch-AllocationPeriodInfo
        AllocationPeriodInfo,
        pusch-PowerControlInfo
        UL-TargetSIR     OPTIONAL,
        tfcs-Identity
        TFCS-IdentityPlain OPTIONAL,
        configuration
        CHOICE {
          old-Configuration
            SEQUENCE {
              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 {
            pdsch-AllocationPeriodInfo AllocationPeriodInfo,
            pusch-PowerControlInfo-r4 PUSCH-PowerControlInfo-r4 OPTIONAL,
            tfcs-Identity TFCS-IdentityPlain OPTIONAL,
            configuration CHOICE {
                old-Configuration SEQUENCE {
                    pusch-Identity PUSCH-Identity
                },
                new-Configuration SEQUENCE {
                    pusch-Info PUSCH-Info-r4,
                    pusch-Identity PUSCH-Identity OPTIONAL
                }
            }
        }
    }
}

PUSCH-Identity ::= INTEGER (1..hiPUSCHidentities)

PUSCH-Info ::= SEQUENCE {
    tfcs-Identity TFCS-IdentityPlain OPTIONAL,
    commonTimeslotInfo CommonTimeslotInfo OPTIONAL,
    pusch-TimeslotsCodes UplinkTimeslotsCodes OPTIONAL
}

PUSCH-Info-r4 ::= SEQUENCE {
    tfcs-Identity TFCS-IdentityPlain OPTIONAL,
    commonTimeslotInfo CommonTimeslotInfo OPTIONAL,
    tddOption CHOICE {
        tdd384 SEQUENCE {
            pusch-TimeslotsCodes UplinkTimeslotsCodes OPTIONAL
        },
        tdd128 SEQUENCE {
            pusch-TimeslotsCodes UplinkTimeslotsCodes-LCR OPTIONAL
        }
    }
}

PUSCH-Info-LCR ::= SEQUENCE {
    tfcs-Identity TFCS-IdentityPlain OPTIONAL,
    commonTimeslotInfo CommonTimeslotInfo OPTIONAL,
    pusch-TimeslotsCodes UplinkTimeslotsCodes-LCR OPTIONAL
}

PUSCH-PowerControlInfo-r4 ::= SEQUENCE {
    ul-TargetSIR UL-TargetSIR,
    tddOption CHOICE {
        tdd384 NULL,
        tdd128 SEQUENCE {
            tpc-StepSize TPC-StepSizeTDD OPTIONAL,
            dl-CCTrChTPCList DL-CCTrChTPCList OPTIONAL
        }
    }
}

PUSCH-SysInfo ::= SEQUENCE {
    pusch-Identity PUSCH-Identity,
    pusch-Info PUSCH-Info,
    usch-TFS TransportFormatSet OPTIONAL,
    usch-TFCS TFCS OPTIONAL
}

PUSCH-SysInfo-LCR ::= SEQUENCE {
    pusch-Identity PUSCH-Identity,
    pusch-Info-LCR PUSCH-Info-LCR,
    usch-TFS TransportFormatSet OPTIONAL,
    usch-TFCS TFCS OPTIONAL
}

PUSCH-SysInfoList ::= SEQUENCE (SIZE (1..maxPUSCH)) OF PUSCH-SysInfo

PUSCH-SysInfoList-LCR ::= SEQUENCE (SIZE (1..maxPUSCH)) OF PUSCH-SysInfo-LCR

```

```

PUSCH-SysInfoList-SFN ::=          SEQUENCE (SIZE (1..maxPDSCH)) OF
    pusched-SysInfo                SEQUENCE {
    sfn-TimeInfo                    PUSCH-SysInfo,
    }                               SFN-TimeInfo
                                     OPTIONAL

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

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

ReducedScramblingCodeNumber ::=    INTEGER (0..8191)

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

RepetitionPeriodLengthAndOffset ::= CHOICE {
    repetitionPeriod1              NULL,
    repetitionPeriod2              SEQUENCE {
        length                     NULL,
        offset                     INTEGER (0..1)
    },
    repetitionPeriod4              SEQUENCE {
        length                     INTEGER (1..3),
        offset                     INTEGER (0..3)
    },
    repetitionPeriod8              SEQUENCE {
        length                     INTEGER (1..7),
        offset                     INTEGER (0..7)
    },
    repetitionPeriod16             SEQUENCE {
        length                     INTEGER (1..15),
        offset                     INTEGER (0..15)
    },
    repetitionPeriod32             SEQUENCE {
        length                     INTEGER (1..31),
        offset                     INTEGER (0..31)
    },
    repetitionPeriod64             SEQUENCE {
        length                     INTEGER (1..63),
        offset                     INTEGER (0..63)
    }
}

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

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

RepPerLengthOffset-PICH ::=        CHOICE {
    rpp4-2                         INTEGER (0..3),
    rpp8-2                         INTEGER (0..7),
    rpp8-4                         INTEGER (0..7),
    rpp16-2                       INTEGER (0..15),
    rpp16-4                       INTEGER (0..15),
    rpp32-2                       INTEGER (0..31),
    rpp32-4                       INTEGER (0..31),
}

```

```

    rpp64-2                INTEGER (0..63),
    rpp64-4                INTEGER (0..63)
}

RestrictedTrCH ::=
    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,
    fach-PCH-InformationList FACH-PCH-InformationList,
    sib-ReferenceListFACH   SIB-ReferenceListFACH
}

SCCPCH-LCR-Extensions ::= SEQUENCE {
    secondaryCCPCH-LCR-Extensions SecondaryCCPCH-LCR-Extensions,
    -- pich-Info in the SCCPCH-SystemInformation IE shall be absent, and instead the following used.
    pich-Info                PICH-Info-LCR           OPTIONAL
}

-- The following list includes elements additional to those in
-- SCCPCH-SystemInformationList for the 1.28Mcps TDD. The order of the IEs
-- indicates which SCCPCH-LCR-Extensions IE extends which SCCPCH-SystemInformation IE.
SCCPCH-LCR-ExtensionsList ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
    SCCPCH-LCR-Extensions

SCCPCH-SystemInformation ::= SEQUENCE {
    secondaryCCPCH-Info      SecondaryCCPCH-Info,
    tfcs                    TFCS           OPTIONAL,
    fach-PCH-InformationList FACH-PCH-InformationList OPTIONAL,
    pich-Info                PICH-Info     OPTIONAL
}

SCCPCH-SystemInformationList ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
    SCCPCH-SystemInformation

ScramblingCodeChange ::= ENUMERATED {
    codeChange, noCodeChange }

ScramblingCodeType ::= ENUMERATED {
    shortSC,

```

```

longSC }

SecondaryCCPCH-Info ::=
  modeSpecificInfo
    fdd
      PCPICH-UsageForChannelEst      PCPICH-UsageForChannelEst,
      secondaryCPICH-Info             SecondaryCPICH-Info           OPTIONAL,
      secondaryScramblingCode         SecondaryScramblingCode       OPTIONAL,
      sttD-Indicator                  BOOLEAN,
      sf-AndCodeNumber                SF256-AndCodeNumber,
      pilotSymbolExistence            BOOLEAN,
      tfci-Existence                  BOOLEAN,
      positionFixedOrFlexible         PositionFixedOrFlexible,
      timingOffset                    TimingOffset                     DEFAULT 0
    },
    tdd
      -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
      commonTimeslotInfo              CommonTimeslotInfoSCCPCH,
      individualTimeslotInfo          IndividualTimeslotInfo,
      channelisationCode              SCCPCH-ChannelisationCodeList
    }
  }

SecondaryCCPCH-Info-r4 ::=
  modeSpecificInfo
    fdd
      PCPICH-UsageForChannelEst      PCPICH-UsageForChannelEst,
      secondaryCPICH-Info             SecondaryCPICH-Info           OPTIONAL,
      secondaryScramblingCode         SecondaryScramblingCode       OPTIONAL,
      sttD-Indicator                  BOOLEAN,
      sf-AndCodeNumber                SF256-AndCodeNumber,
      pilotSymbolExistence            BOOLEAN,
      tfci-Existence                  BOOLEAN,
      positionFixedOrFlexible         PositionFixedOrFlexible,
      timingOffset                    TimingOffset                     DEFAULT 0
    },
    tdd
      -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
      commonTimeslotInfo              CommonTimeslotInfoSCCPCH,
      tddOption                       CHOICE {
        tdd384                        SEQUENCE {
          individualTimeslotInfo      IndividualTimeslotInfo
        },
        tdd128                        SEQUENCE {
          individualTimeslotInfo      IndividualTimeslotInfo-LCR
        }
      },
      channelisationCode              SCCPCH-ChannelisationCodeList
    }
  }

SecondaryCCPCH-LCR-Extensions ::=
  SEQUENCE {
    individualTimeslotLCR-Ext        IndividualTimeslotLCR-Ext
  }

SecondaryCPICH-Info ::=
  SEQUENCE {
    secondaryDL-ScramblingCode       SecondaryScramblingCode       OPTIONAL,
    channelisationCode                ChannelisationCode256
  }

SecondaryScramblingCode ::=
  INTEGER (1..15)

SecondInterleavingMode ::=
  ENUMERATED {
    frameRelated, timeslotRelated }

-- SF256-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF256-AndCodeNumber ::=
  CHOICE {
    sf4                               INTEGER (0..3),
    sf8                               INTEGER (0..7),
    sf16                              INTEGER (0..15),
    sf32                              INTEGER (0..31),
    sf64                              INTEGER (0..63),
    sf128                             INTEGER (0..127),
    sf256                             INTEGER (0..255)
  }

```

```

-- SF512-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF512-AndCodeNumber ::= CHOICE {
    sf4          INTEGER (0..3),
    sf8          INTEGER (0..7),
    sf16         INTEGER (0..15),
    sf32         INTEGER (0..31),
    sf64         INTEGER (0..63),
    sf128        INTEGER (0..127),
    sf256        INTEGER (0..255),
    sf512        INTEGER (0..511)
}

-- SF512-AndPilot encodes both "Spreading factor" and "Number of bits for Pilot bits"
SF512-AndPilot ::= CHOICE {
    sfd4         NULL,
    sfd8         NULL,
    sfd16        NULL,
    sfd32        NULL,
    sfd64        NULL,
    sfd128       PilotBits128,
    sfd256       PilotBits256,
    sfd512       NULL
}

SF-PDSCH ::= ENUMERATED {
    sfp4, sfp8, sfp16, sfp32,
    sfp64, sfp128, sfp256 }

SF-PRACH ::= ENUMERATED {
    sfpr32, sfpr64, sfpr128, sfpr256 }

SFN-TimeInfo ::= SEQUENCE {
    activationTimeSFN    INTEGER (0..4095),
    physChDuration       DurationTimeInfo
}

SpecialBurstScheduling ::= INTEGER (0..7)

SpreadingFactor ::= ENUMERATED {
    sf4, sf8, sf16, sf32,
    sf64, sf128, sf256 }

SRB-delay ::= INTEGER (0..7)

SSDT-CellIdentity ::= ENUMERATED {
    ssdt-id-a, ssdt-id-b, ssdt-id-c,
    ssdt-id-d, ssdt-id-e, ssdt-id-f,
    ssdt-id-g, ssdt-id-h }

SSDT-Information ::= SEQUENCE {
    s-Field          S-Field,
    codeWordSet      CodeWordSet
}

SSDT-Information-r4 ::= SEQUENCE {
    s-Field          S-Field,
    codeWordSet      CodeWordSet,
    ssdt-UL          SSDT-UL OPTIONAL
}

-- The following information element is used to extend the
-- SSDT-Information IE from Release 4 onwards.
SSDT-UL ::= ENUMERATED {
    ul, ul-AndDL }

SynchronisationParameters ::= SEQUENCE {
    sync-UL-CodesBitmap    BIT STRING (SIZE (8)) OPTIONAL,
    fpach-Info             FPACH-Info,
    sync-UL-Procedure      SYNC-UL-Procedure OPTIONAL
}

SYNC-UL-Procedure ::= SEQUENCE {
    max-SYNC-UL-Transmissions    ENUMERATED { tr1, tr2, tr4, tr8 },
    powerRampingStep             INTEGER (0..3)
}

SYNC-UL-Info ::= SEQUENCE {
    sync-UL-Codes-Bitmap    BIT STRING ( SIZE (8)),
    ul-TargetSIR            UL-TargetSIR,
    powerRampingStep        INTEGER (0..3),
}

```

```

max-SYNC-UL-Transmissions      ENUMERATED { tr1, tr2, tr4, tr8 }
mmax                           INTEGER (1..32)
}

TDD-FPACH-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-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 ::=       ENUMERATED {
                                cc4-1, cc4-2, cc4-3, cc4-4,
                                cc8-1, cc8-2, cc8-3, cc8-4,
                                cc8-5, cc8-6, cc8-7, cc8-8,
                                cc16-1, cc16-2, cc16-3, cc16-4,
                                cc16-5, cc16-6, cc16-7, cc16-8,
                                cc16-9, cc16-10, cc16-11, cc16-12,
                                cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCodeList ::=       CHOICE {
    sf8                           SEQUENCE (SIZE (1..8)) OF
                                TDD-PRACH-CCode8,
    sf16                          SEQUENCE (SIZE (1..8)) OF
                                TDD-PRACH-CCode16
}

TFC-ControlDuration ::=       ENUMERATED {
                                tfc-cd1, tfc-cd2, tfc-cd4, tfc-cd8,
                                tfc-cd16, tfc-cd24, tfc-cd32,
                                tfc-cd48, tfc-cd64, tfc-cd128,
                                tfc-cd192, tfc-cd256, tfc-cd512 }

TFCI-Coding ::=               ENUMERATED {
                                tfci-bits-4, tfci-bits-8,
                                tfci-bits-16, tfci-bits-32 }

TGCFN ::=                     INTEGER (0..255)

-- The value 270 represents "undefined" in the tabular description.
TGD ::=                       INTEGER (15..270)

TGL ::=                       INTEGER (1..14)

TGMP ::=                      ENUMERATED {
                                tdd-Measurement, fdd-Measurement,
                                gsm-CarrierRSSIMeasurement,
                                gsm-initialBSICIdentification, gsmBSICReconfirmation }

TGP-Sequence ::=              SEQUENCE {
    tgpsi                          TGPSI,
    tgps-Status                     CHOICE {
        activate                     SEQUENCE {
            tgcfn
        },
        deactivate                     NULL
    },
    tgps-ConfigurationParams         TGPS-ConfigurationParams           OPTIONAL
}

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

```



```

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

TGPL ::=
    INTEGER (1..144)

-- TABULAR: The value 0 represents "infinity" in the tabular description.
TGPRC ::=
    INTEGER (0..511)

TGPS-ConfigurationParams ::=
    SEQUENCE {
        tgmp
        tgprc
        tgsn
        tgl1
        tgl2
        tgd
        tgpl1
        tgpl2
        rpp
        itp
        ul-DL-Mode
        -- TABULAR: Compressed mode method is nested inside UL-DL-Mode
        dl-FrameType
        deltaSIR1
        deltaSIRAfter1
        deltaSIR2
        deltaSIRAfter2
        nidentifyAbort
        treconfirmAbort
    }

TGPSI ::=
    INTEGER (1..maxTGPS)

TGSN ::=
    INTEGER (0..14)

TimeInfo ::=
    SEQUENCE {
        activationTime
        durationTimeInfo
    }

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
    }

-- If TimeslotNumber is included for a 1.28Mcps TDD description, it shall take values from 0..6
TimeslotNumber ::=
    INTEGER (0..14)

TimeslotNumber-LCR ::=
    INTEGER (0..6)

TimeslotNumber-PRACH-LCR ::=
    INTEGER (1..6)

TimeslotSync2 ::=
    INTEGER (0..6)

-- Actual value = IE value * 256
TimingOffset ::=
    INTEGER (0..149)

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

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

TPC-StepSizeTDD ::=
    INTEGER (1..3)

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

TX-DiversityMode ::=
    ENUMERATED {

```

```

        noDiversity,
        sttd,
        closedLoopModel1,
        closedLoopMode2 }

UARFCN ::=                                INTEGER (0..16383)

UCSM-Info ::=                             SEQUENCE {
    minimumSpreadingFactor                MinimumSpreadingFactor,
    nf-Max                                 NF-Max,
    channelReqParamsForUCSM              ChannelReqParamsForUCSM
}

UL-CCTrCH ::=                             SEQUENCE {
    tfcs-Identity                          TFCS-IdentityPlain          OPTIONAL,
    timeInfo                                TimeInfo,
    commonTimeslotInfo                      CommonTimeslotInfo          OPTIONAL,
    ul-CCTrCH-TimeslotsCodes                UplinkTimeslotsCodes       OPTIONAL
}

UL-CCTrCH-r4 ::=                          SEQUENCE {
    tfcs-Identity                          TFCS-IdentityPlain          OPTIONAL,
    timeInfo                                TimeInfo,
    commonTimeslotInfo                      CommonTimeslotInfo          OPTIONAL,
    tddOption                               CHOICE {
        tdd384                             SEQUENCE {
            ul-CCTrCH-TimeslotsCodes        UplinkTimeslotsCodes       OPTIONAL
        },
        tdd128                             SEQUENCE {
            ul-CCTrCH-TimeslotsCodes        UplinkTimeslotsCodes-LCR   OPTIONAL
        }
    }
}

UL-CCTrCHList ::=                         SEQUENCE (SIZE (1..maxCCTrCH)) OF
    UL-CCTrCH

UL-CCTrCHList-r4 ::=                      SEQUENCE (SIZE (1..maxCCTrCH)) OF
    UL-CCTrCH-r4

UL-CCTrChTPCList ::=                      SEQUENCE (SIZE (0..maxCCTrCH)) OF
    TFCS-Identity

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

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

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

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

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

UL-DPCH-Info ::=                          SEQUENCE {

```

```

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

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

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

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

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

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

UL-DPCH-PowerControlInfo ::=
  fdd
    dpccch-PowerOffset
    pc-Preamble
    sRB-delay
    powerControlAlgorithm

```

```

-- TABULAR: TPC step size nested inside PowerControlAlgorithm
},
tdd
  ul-TargetSIR                               SEQUENCE {
  ul-OL-PC-Signalling                          UL-TargetSIR,
  broadcast-UL-OL-PC-info                      CHOICE {
    handoverGroup                             NULL,
    individualTS-InterferenceList            SEQUENCE {
      dpch-ConstantValue                      IndividualTS-InterferenceList,
      primaryCCPCH-TX-Power                   ConstantValue,
                                              PrimaryCCPCH-TX-Power
    }
  }
}
}
}
}
}
OPTIONAL

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

UL-DPCH-PowerControlInfoPostFDD ::= SEQUENCE {
  dpcch-PowerOffset  DPCCH-PowerOffset2, -- smaller range to save bits
  pc-Preamble        PC-Preamble,
  srb-delay          SRB-delay
}

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

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

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

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

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

UL-SynchronisationParameters ::= SEQUENCE {
  stepSize      INTEGER (1..8),
  frequency     INTEGER (1..8)
}

```

```

-- Actual value = (IE value * 0.5) - 11
UL-TargetSIR ::= INTEGER (0..62)

UL-TimingAdvance ::= INTEGER (0..63)

UL-TimingAdvanceControl ::= CHOICE {
    disabled          NULL,
    enabled           SEQUENCE {
        ul-TimingAdvance          UL-TimingAdvance          OPTIONAL,
        activationTime            ActivationTime            OPTIONAL
    }
}

UL-TimingAdvanceControl-r4 ::= CHOICE {
    disabled          NULL,
    enabled           SEQUENCE {
        tddOption      CHOICE {
            tdd384     SEQUENCE {
                ul-TimingAdvance          UL-TimingAdvance          OPTIONAL,
                activationTime            ActivationTime            OPTIONAL
            },
            tdd128     SEQUENCE {
                ul-SynchronisationParameters  UL-SynchronisationParameters  OPTIONAL,
                synchronisationParameters      SynchronisationParameters  OPTIONAL
            }
        }
    }
}

UL-TimingAdvanceControl-LCR ::= CHOICE {
    disabled          NULL,
    enabled           SEQUENCE {
        ul-SynchronisationParameters  UL-SynchronisationParameters  OPTIONAL,
        synchronisationParameters      SynchronisationParameters  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 ::= SEQUENCE {
    parameters          CHOICE {
        sameAsLast      SEQUENCE {
            timeslotNumber          TimeslotNumber
        },
        newParameters    SEQUENCE {
            individualTimeslotInfo    IndividualTimeslotInfo-LCR,
            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 ::= SEQUENCE {
  dynamicSFusage        BOOLEAN,
  firstIndividualTimeslotInfo
  IndividualTimeslotInfo-LCR,
  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
    }
  }
}
}
}

Wi-LCR ::= INTEGER(1..4)

```

```

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

BCC ::= INTEGER (0..7)

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

-- Actual value = IE value * 8
BCCH-ModificationTime ::= INTEGER (0..511)

BSIC ::= SEQUENCE {
  ncc                    NCC,
  bcc                    BCC
}

CBS-DRX-Level1Information ::= SEQUENCE {
  ctch-AllocationPeriod INTEGER (1..256),
  cbs-FrameOffset        INTEGER (0..255)
}

CDMA2000-Message ::= SEQUENCE {
  msg-Type              BIT STRING (SIZE (8)),
  payload               BIT STRING (SIZE (1..512))
}

CDMA2000-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
  CDMA2000-Message

CDMA2000-UMTS-Frequency-List ::= SEQUENCE (SIZE (1..maxNumCDMA2000Freqs)) OF
  FrequencyInfoCDMA2000

CellValueTag ::= INTEGER (1..4)

--Actual value = 2^(IE value)
ExpirationTimerFactor ::= INTEGER (1..8)

FDD-UMTS-Frequency-List ::= SEQUENCE (SIZE (1..maxNumFDDFreqs)) OF
  FrequencyInfoFDD

FrequencyInfoCDMA2000 ::= SEQUENCE {

```

```

band-Class          BIT STRING (SIZE (5)),
cdma-Freq           BIT STRING (SIZE(11))
}

GSM-BA-Range ::= SEQUENCE {
    gsmLowRangeUARFCN    UARFCN,
    gsmUpRangeUARFCN    UARFCN
}

GSM-BA-Range-List ::= SEQUENCE (SIZE (1..maxNumGSMFreqRanges)) OF
    GSM-BA-Range

GSM-Classmark2 ::= OCTET STRING (SIZE (5))
GSM-Classmark3 ::= OCTET STRING (SIZE (1..32))
GSM-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
    BIT STRING (SIZE (1..512))

GsmSecurityCapability ::= BIT STRING (SIZE (7))

IdentificationOfReveivedMessage ::= SEQUENCE {
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    receivedMessageType          ReceivedMessageType
}

InterRAT-ChangeFailureCause ::= CHOICE {
    configurationUnacceptable    NULL,
    physicalChannelFailure       NULL,
    protocolError                ProtocolErrorInformation,
    unspecified                   NULL,
    spare1                       NULL,
    spare2                       NULL,
    spare3                       NULL
}

InterRAT-UE-RadioAccessCapability ::= CHOICE {
    gsm          SEQUENCE {
        gsm-Classmark2    GSM-Classmark2,
        gsm-Classmark3    GSM-Classmark3
    },
    cdma2000     SEQUENCE {
        cdma2000-MessageList    CDMA2000-MessageList
    }
}

InterRAT-UE-RadioAccessCapabilityList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
    InterRAT-UE-RadioAccessCapability

InterRAT-UE-SecurityCapability ::= CHOICE {
    gsm          SEQUENCE {
        gsmSecurityCapability    GsmSecurityCapability
    }
}

InterRAT-UE-SecurityCapList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
    InterRAT-UE-SecurityCapability

InterRAT-HO-Failure ::= SEQUENCE {
    interRAT-HO-FailureCause    InterRAT-HO-FailureCause    OPTIONAL,
    interRATMessage             InterRATMessage             OPTIONAL
}

InterRAT-HO-FailureCause ::= CHOICE {
    configurationUnacceptable    NULL,
    physicalChannelFailure       NULL,
    protocolError                ProtocolErrorInformation,
    interRAT-ProtocolError       NULL,
    unspecified                   NULL,
    spare1                       NULL,
    spare2                       NULL,
    spare3                       NULL,
    spare4                       NULL
}

InterRATMessage ::= CHOICE {
    gsm          SEQUENCE {
        gsm-MessageList    GSM-MessageList
    }
}

```

```

    },
    cdma2000
        cdma2000-MessageList
    }
}

InterRATMessageList ::=          SEQUENCE (SIZE (1..maxSystemCapability)) OF
                                   InterRATMessage

MasterInformationBlock ::=       SEQUENCE {
    mib-ValueTag                 MIB-ValueTag,
    plmn-Type                    PLMN-Type,
    -- TABULAR: The PLMN identity and ANSI-41 core network information
    -- are included in PLMN-Type.
    sibSb-ReferenceList         SIBSb-ReferenceList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions       SEQUENCE {}
}

MIB-ValueTag ::=                INTEGER (1..8)

NCC ::=                          INTEGER (0..7)

PLMN-ValueTag ::=              INTEGER (1..256)

PredefinedConfigIdentityAndValueTag ::= SEQUENCE {
    predefinedConfigIdentity     PredefinedConfigIdentity,
    predefinedConfigValueTag     PredefinedConfigValueTag
}

ProtocolErrorInformation ::=     SEQUENCE {
    diagnosticsType             CHOICE {
        type1                   SEQUENCE {
            protocolErrorCause   ProtocolErrorCause
        },
        spare                    NULL
    }
}

ReceivedMessageType ::=          ENUMERATED {
    activeSetUpdate,
    cellChangeOrderFromUTRAN,
    cellUpdateConfirm,
    counterCheck,
    downlinkDirectTransfer,
    interRATHandoverCommand,
    measurementControl,
    pagingType2,
    physicalChannelReconfiguration,
    physicalSharedChannelAllocation,
    radioBearerReconfiguration,
    radioBearerRelease,
    radioBearerSetup,
    rrcConnectionRelease,
    rrcConnectionReject,
    rrcConnectionSetup,
    securityModeCommand,
    signallingConnectionRelease,
    transportChannelReconfiguration,
    transportFormatCombinationControl,
    ueCapabilityEnquiry,
    ueCapabilityInformationConfirm,
    uplinkPhysicalChannelControl,
    uraUpdateConfirm,
    utranMobilityInformation,
    assistanceDataDelivery,
    spare1, spare2, spare3, spare4,
    spare5
}

Rplmn-Information ::=          SEQUENCE {
    gsm-BA-Range-List           GSM-BA-Range-List OPTIONAL,
    fdd-UMTS-Frequency-List     FDD-UMTS-Frequency-List
    OPTIONAL,
    tdd-UMTS-Frequency-List     FDD-UMTS-Frequency-List
    OPTIONAL,
}

```



```

List OPTIONAL
}

cdma2000-UMTS-Frequency-List CDMA2000-UMTS-Frequency-

Rplmn-Information-r4 ::= SEQUENCE {
    gsm-BA-Range-List GSM-BA-Range-List OPTIONAL,
    fdd-UMTS-Frequency-List FDD-UMTS-Frequency-List OPTIONAL,
    tdd384-UMTS-Frequency-List TDD-UMTS-Frequency-List OPTIONAL,
    tdd128-UMTS-Frequency-List TDD-UMTS-Frequency-List OPTIONAL,
    cdma2000-UMTS-Frequency-List CDMA2000-UMTS-Frequency-List OPTIONAL
}

SchedulingInformation ::= SEQUENCE {
    scheduling SEQUENCE {
        segCount SegCount DEFAULT 1,
        sib-Pos CHOICE {
            -- The element name indicates the repetition period and the value
            -- (multiplied by two) indicates the position of the first segment.
            rep4 INTEGER (0..1),
            rep8 INTEGER (0..3),
            rep16 INTEGER (0..7),
            rep32 INTEGER (0..15),
            rep64 INTEGER (0..31),
            rep128 INTEGER (0..63),
            rep256 INTEGER (0..127),
            rep512 INTEGER (0..255),
            rep1024 INTEGER (0..511),
            rep2048 INTEGER (0..1023),
            rep4096 INTEGER (0..2047)
        },
        sib-PosOffsetInfo SibOFF-List OPTIONAL
    }
}

SchedulingInformationSIB ::= SEQUENCE {
    sib-Type SIB-TypeAndTag,
    scheduling SchedulingInformation
}

SchedulingInformationSIBSb ::= SEQUENCE {
    sibSb-Type SIBSb-TypeAndTag,
    scheduling SchedulingInformation
}

SegCount ::= INTEGER (1..16)

SegmentIndex ::= INTEGER (1..15)

-- Actual value = 2 * IE value
SFN-Prime ::= INTEGER (0..2047)

SIB-Data-fixed ::= BIT STRING (SIZE (222))

SIB-Data-variable ::= BIT STRING (SIZE (1..214))

SIBOccurIdentity ::= INTEGER (0..15)

SIBOccurrenceIdentityAndValueTag ::= SEQUENCE {
    sibOccurIdentity SIBOccurIdentity,
    sibOccurValueTag SIBOccurValueTag
}

SIBOccurValueTag ::= INTEGER (0..15)

SIB-ReferenceList ::= SEQUENCE (SIZE (1..maxSIB)) OF
    SchedulingInformationSIB

SIBSb-ReferenceList ::= SEQUENCE (SIZE (1..maxSIB)) OF
    SchedulingInformationSIBSb

SIB-ReferenceListFACH ::= SEQUENCE (SIZE (1..maxSIB-FACH)) OF
    SchedulingInformationSIB

SIB-Type ::= ENUMERATED {

```

```

masterInformationBlock,
systemInformationBlockType1,
systemInformationBlockType2,
systemInformationBlockType3,
systemInformationBlockType4,
systemInformationBlockType5,
systemInformationBlockType6,
systemInformationBlockType7,
systemInformationBlockType8,
systemInformationBlockType9,
systemInformationBlockType10,
systemInformationBlockType11,
systemInformationBlockType12,
systemInformationBlockType13,
systemInformationBlockType13-1,
systemInformationBlockType13-2,
systemInformationBlockType13-3,
systemInformationBlockType13-4,
systemInformationBlockType14,
systemInformationBlockType15,
systemInformationBlockType15-1,
systemInformationBlockType15-2,
systemInformationBlockType15-3,
systemInformationBlockType16,
systemInformationBlockType17,
systemInformationBlockType15-4,
systemInformationBlockType18,
schedulingBlock1,
schedulingBlock2,
spare1, spare2, spare3 }

SIB-TypeAndTag ::=
  sysInfoType1
  sysInfoType2
  sysInfoType3
  sysInfoType4
  sysInfoType5
  sysInfoType6
  sysInfoType7
  sysInfoType8
  sysInfoType9
  sysInfoType10
  sysInfoType11
  sysInfoType12
  sysInfoType13
  sysInfoType13-1
  sysInfoType13-2
  sysInfoType13-3
  sysInfoType13-4
  sysInfoType14
  sysInfoType15
  sysInfoType16
  sysInfoType17
  sysInfoType15-1
  sysInfoType15-2
  sysInfoType15-3
  sysInfoType15-4
  sysInfoType18
}

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

SIBSb-TypeAndTag ::=
  sysInfoType1
  sysInfoType2
  sysInfoType3
  sysInfoType4
  sysInfoType5
  sysInfoType6
  sysInfoType7
  sysInfoType8
  sysInfoType9
  sysInfoType10
  sysInfoType11
  sysInfoType12
  sysInfoType13
  sysInfoType13-1
  sysInfoType13-2
  sysInfoType13-3
  sysInfoType13-4
}

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

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

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 tddl28SpecificInfo instead.
                pusch-SysInfoList-SFN    PUSCH-SysInfoList-SFN    OPTIONAL,
                pdsch-SysInfoList-SFN    PDSCH-SysInfoList-SFN    OPTIONAL,
                openLoopPowerControl-TDD  OpenLoopPowerControl-TDD
            }
        },
        primaryCCPCH-Info      PrimaryCCPCH-Info    OPTIONAL,
        prach-SystemInformationList  PRACH-SystemInformationList,
        sCCPCH-SystemInformationList  SCCPCH-SystemInformationList,
        cbs-DRX-Level1Information  CBS-DRX-Level1Information    OPTIONAL,
        -- Conditional on any of the CTCH indicator IEs in
        -- sCCPCH-SystemInformationList
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions     SEQUENCE {
            pnBSCH-Allocation-r4    PNBSCH-Allocation-r4    OPTIONAL,
            -- In case of TDD, the following IE is included instead of the
            -- IE up-IPDL-Parameter in up-OTDOA-AssistanceData.
            openLoopPowerControl-IPDL-TDD  OpenLoopPowerControl-IPDL-TDD    OPTIONAL,
            -- If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included in
            -- PRACH-SystemInformationList shall be ignored, and the following IE shall describe
            -- the PRACH-RACH-Information.
            prach-RACH-Info-LCR        PRACH-RACH-Info-LCR        OPTIONAL,
            -- If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-Partitioning in
            -- PRACH-SystemInformationList shall be absent, and the following IE shall describe
            -- the PRACH-Partitioning.
            prach-Partitioning-LCR     PRACH-Partitioning-LCR     OPTIONAL,
            -- If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE rach-TransportFormatSet in
            -- PRACH-SystemInformationList shall be absent, and the following IE shall describe
            -- the rach-TransportFormatSet.
            rach-TransportFormatSet-LCR  TransportFormatSet-LCR    OPTIONAL,
            tddl28SpecificInfo          SEQUENCE {
                pusch-SysInfoList-SFN-LCR  PUSCH-SysInfoList-SFN-LCR  OPTIONAL,
                pdsch-SysInfoList-SFN-LCR  PDSCH-SysInfoList-SFN-LCR  OPTIONAL,
                pCCPCH-LCR-Extensions      PCCPCH-LCR-Extensions      OPTIONAL,
                sCCPCH-LCR-ExtensionsList  SCCPCH-LCR-ExtensionsList
            }
        },
        -- Extension mechanism for non- rel-4 information
        nonCriticalExtensions     SEQUENCE {}    OPTIONAL
    }
}

SysInfoType6 ::=
    SEQUENCE {
        -- Physical channel IEs
        pich-PowerOffset       PICH-PowerOffset,
        modeSpecificInfo       CHOICE {
            fdd                 SEQUENCE {

```

```

        aich-PowerOffset          AICH-PowerOffset,
        csich-PowerOffset        CSICH-PowerOffset          OPTIONAL
    },
    tdd                          SEQUENCE {
-- If PDSCH/PUSCH is configured for 1.28Mcps TDD, the following IEs should be absent
-- and the info included in the tdd128SpecificInfo instead.
        pusch-SysInfoList-SFN    PUSCH-SysInfoList-SFN      OPTIONAL,
        pdsch-SysInfoList-SFN    PDSCH-SysInfoList-SFN  OPTIONAL,
        openLoopPowerControl-TDD OpenLoopPowerControl-TDD
    }
},
primaryCCPCH-Info              PrimaryCCPCH-Info            OPTIONAL,
prach-SystemInformationList    PRACH-SystemInformationList  OPTIONAL,
sccpch-SystemInformationList    SCCPCH-SystemInformationList  OPTIONAL,
cbs-DRX-LevellInformation      CBS-DRX-LevellInformation    OPTIONAL,
-- Conditional on any of the CTCH indicator IEs in
-- sccpch-SystemInformationList
-- Extension mechanism for non- release99 information
nonCriticalExtensions          SEQUENCE {
-- This IE is present only if IPDLs are applied for TDD
    openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD  OPTIONAL,
-- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included in
-- PRACH-SystemInformationList shall be ignored, and the following IE shall describe
-- the PRACH-RACH-Information.
    prach-RACH-Info-LCR          PRACH-RACH-Info-LCR          OPTIONAL,
-- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-Partitioning in
-- PRACH-SystemInformationList shall be absent, and the following IE shall describe
-- the PRACH-Partitioning.
    prach-Partitioning-LCR        PRACH-Partitioning-LCR        OPTIONAL,
-- If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE rach-TransportFormatSet in
-- PRACH-SystemInformationList shall be absent, and the following IE shall describe
-- the rach-TransportFormatSet.
    rach-TransportFormatSet-LCR    TransportFormatSet-LCR        OPTIONAL,
    tdd128SpecificInfo            SEQUENCE {
        pusch-SysInfoList-SFN-LCR PUSCH-SysInfoList-SFN-LCR  OPTIONAL,
        pdsch-SysInfoList-SFN-LCR PDSCH-SysInfoList-SFN-LCR  OPTIONAL,
        pccpch-LCR-Extensions      PCCPCH-LCR-Extensions      OPTIONAL,
        sccpch-LCR-ExtensionsList    SCCPCH-LCR-ExtensionsList    OPTIONAL,
    }
-- Extension mechanism for non- rel-4 information
    nonCriticalExtensions          SEQUENCE {}          OPTIONAL
}
}
}
END

```

CHANGE REQUEST

⌘ **25.331** **CR** **851** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

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

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

Title:	⌘ TFCI coding in case of 8PSK		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ LCRTDD-L23	Date:	⌘ 2001/5/15
Category:	⌘ F	Release:	⌘ REL-4
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		

Reason for change:	⌘ In case of 8 PSK different sizes of the TFCI code words are defined compared to the QPSK case. This CR clarifies the coding in case of 8 PSK.
Summary of change:	⌘ Clarification of coding of IE "TFCI coding" for timeslots that use 8 PSK
Consequences if not approved:	⌘ Coding of IE "TFCI coding" in case of 8 PSK is unclear

Clauses affected:	⌘ 10.3.6.10		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

How to create CRs using this form:

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

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

10.3.6.10 Common timeslot info

Information Element/Group name	Need	Multi	Type and reference	Semantics description
2 nd interleaving mode	MD		Enumerated(Frame, Timeslot)	Frame timeslot related interleaving. Default value is "Frame"
TFCI coding	MD		Integer(4,8,16,32)	Describes the <u>way amount of bits for</u> the TFCI <u>code word as described in [31].bits are coded in bits.</u> Defaults is no TFCI bit: <u>In case of 8 PSK in 1.28Mcps TDD:</u> <u>4 corresponds to 6 TFCI code word bits.</u> <u>8 corresponds to 12 TFCI code word bits.</u> <u>16 corresponds to 24 TFCI code word bits.</u> <u>32 corresponds to 48 TFCI code word bits.</u> 4 means 1 TFCI bit is coded with 4 bits. 8 means 2 TFCI bits are coded with 8 bits. 16 means 3—5 TFCI bits are coded with 16 bits. 32 means 6—10 TFCI bits coded with 32 bits.
Puncturing limit	MP		Real(0.40..1.0 by step of 0.04)	
Repetition period	MD		Integer(1, 2,4,8,16,32,64)	Default is continuous allocation. Value 1 indicate continuous
Repetition length	MP		Integer(1.. Repetition period -1)	Note that this is empty if repetition period is set to 1

CHANGE REQUEST

⌘ **25.331 CR 902** ⌘ ev **r1** ⌘ Current version: **4.0.0** ⌘

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

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

Title:	⌘ Structure and naming of information elements		
Source:	⌘ TSG-RAN WG2		
Work item code:	⌘ TEI4	Date:	⌘ 2001-05-25
Category:	⌘ F	Release:	⌘ REL-4
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ The structure of the ASN.1 needs some clean up, so that extensions are included in a similar way in all messages.
Summary of change:	⌘ The structure of the top level of the messages in ASN.1 has been updated to follow some common rules for all messages. The information elements that are introduced in release 4 get the suffix "-r4" or "-r4-ext" to be easily separated from existing ones, and reduce the possibility of errors. The rules are used here to produce a uniform structure in the ASN.1 messages. As other possibilities are FFS, the structure and the naming convention may change, in which case the ASN.1 will be updated.
Consequences if not approved:	⌘

Clauses affected:	⌘ 11
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> Test specifications <input type="checkbox"/> <input type="checkbox"/> O&M Specifications
Other comments:	⌘ See also CR018r1 to 25.921.

How to create CRs using this form:

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

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

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

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

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

11.1 General message structure

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

```
BEGIN
```

```
IMPORTS
```

```

ActiveSetUpdate-r3,
ActiveSetUpdate-r4,
ActiveSetUpdateComplete,
ActiveSetUpdateFailure,
AssistanceDataDelivery-r3,
CellChangeOrderFromUTRAN-r3,
CellChangeOrderFromUTRANFailure,
CellUpdate,
CellUpdateConfirm-CCCH-r3,
CellUpdateConfirm-CCCH-r4,
CellUpdateConfirm-r3,
CellUpdateConfirm-r4,
CounterCheck-r3,
CounterCheckResponse,
DownlinkDirectTransfer-r3,
HandoverToUTRANComplete,
InitialDirectTransfer,
HandoverFromUTRANCommand-GSM-r3,
HandoverFromUTRANCommand-CDMA2000-r3,
HandoverFromUTRANFailure,
MeasurementControl-r3,
MeasurementControl-r4,
MeasurementControlFailure,
MeasurementReport,
MeasurementReport-r4,
PagingType1,
PagingType2,
PhysicalChannelReconfiguration-r3,
PhysicalChannelReconfiguration-r4,
PhysicalChannelReconfigurationComplete,
PhysicalChannelReconfigurationFailure,
PhysicalSharedChannelAllocation-r3,
PhysicalSharedChannelAllocation-r4,
PUSCHCapacityRequest,
RadioBearerReconfiguration-r3,
RadioBearerReconfiguration-r4,
RadioBearerReconfigurationComplete,
RadioBearerReconfigurationFailure,
RadioBearerRelease-r3,
RadioBearerRelease-r4,
RadioBearerReleaseComplete,
RadioBearerReleaseFailure,
RadioBearerSetup-r3,
RadioBearerSetup-r4,
RadioBearerSetupComplete,
RadioBearerSetupFailure,
RRCConnectionReject-r3,
RRCConnectionRelease-r3,
RRCConnectionRelease-r4,
RRCConnectionRelease-CCCH-r3,
RRCConnectionRelease-CCCH-r4,
RRCConnectionReleaseComplete,
RRCConnectionRequest,
RRCConnectionSetup-r3,
RRCConnectionSetup-r4,
RRCConnectionSetupComplete,
RRCStatus,

```

```

SecurityModeCommand-#3,
SecurityModeComplete,
SecurityModeFailure,
SignallingConnectionRelease-#3,
SignallingConnectionReleaseRequest,
SystemInformation-BCH,
SystemInformation-FACH,
SystemInformationChangeIndication,
TransportChannelReconfiguration-#3,
TransportChannelReconfiguration-#4,
TransportChannelReconfigurationComplete,
TransportChannelReconfigurationFailure,
TransportFormatCombinationControl,
TransportFormatCombinationControlFailure,
UECapabilityEnquiry-#3,
UECapabilityInformation,
UECapabilityInformationConfirm-#3,
UplinkDirectTransfer,
UplinkPhysicalChannelControl-#3,
UplinkPhysicalChannelControl-#4,
URAUpdate,
URAUpdateConfirm-#3,
URAUpdateConfirm-CCCH-#3,
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-#3,
    assistanceDataDelivery         AssistanceDataDelivery-#3,
    cellChangeOrderFromUTRAN      CellChangeOrderFromUTRAN-#3,
    cellUpdateConfirm             CellUpdateConfirm-#3,
    counterCheck                  CounterCheck-#3,
    downlinkDirectTransfer        DownlinkDirectTransfer-#3,
    handoverFromUTRANCommand-GSM  HandoverFromUTRANCommand-GSM-#3,
    handoverFromUTRANCommand-CDMA2000 HandoverFromUTRANCommand-CDMA2000-#3,
    measurementControl            MeasurementControl-#3,
    pagingType2                   PagingType2,
    physicalChannelReconfiguration PhysicalChannelReconfiguration-#3,
    physicalSharedChannelAllocation PhysicalSharedChannelAllocation-#3,
    radioBearerReconfiguration    RadioBearerReconfiguration-#3,
    radioBearerRelease            RadioBearerRelease-#3,
    radioBearerSetup              RadioBearerSetup-#3,
    rrcConnectionRelease          RRCConnectionRelease-#3,
    securityModeCommand           SecurityModeCommand-#3,
    signallingConnectionRelease   SignallingConnectionRelease-#3,
    transportChannelReconfiguration TransportChannelReconfiguration-#3,
    transportFormatCombinationControl TransportFormatCombinationControl,
    ueCapabilityEnquiry           UECapabilityEnquiry-#3,
    ueCapabilityInformationConfirm UECapabilityInformationConfirm-#3,
    uplinkPhysicalChannelControl  UplinkPhysicalChannelControl-#3,
    uraUpdateConfirm              URAUpdateConfirm-#3,
    utranMobilityInformation      UTRANMobilityInformation,
    extension                     NULL
}

DL-DCCH-MessageType-r4 ::= CHOICE {
activeSetUpdate                ActiveSetUpdate-r4,
assistanceDataDelivery         AssistanceDataDelivery-r3,
cellChangeOrderFromUTRAN      CellChangeOrderFromUTRAN-r3,
cellUpdateConfirm             CellUpdateConfirm-r4,
counterCheck                  CounterCheck-r3,

```

```

downlinkDirectTransfer DownlinkDirectTransfer r3,
handoverFromUTRANCommand-GSM HandoverFromUTRANCommand-GSM r3,
handoverFromUTRANCommand-CDMA2000 HandoverFromUTRANCommand-CDMA2000 r3,
measurementControl MeasurementControl r4,
pagingType2 PagingType2,
physicalChannelReconfiguration PhysicalChannelReconfiguration r4,
physicalSharedChannelAllocation PhysicalSharedChannelAllocation r4,
radioBearerReconfiguration RadioBearerReconfiguration r4,
radioBearerRelease RadioBearerRelease r4,
radioBearerSetup RadioBearerSetup r4,
rrcConnectionRelease RRCConnectionRelease r4,
securityModeCommand SecurityModeCommand r3,
signallingConnectionRelease SignallingConnectionRelease r3,
transportChannelReconfiguration TransportChannelReconfiguration r4,
transportFormatCombinationControl TransportFormatCombinationControl,
ueCapabilityEnquiry UECapabilityEnquiry r3,
ueCapabilityInformationConfirm UECapabilityInformationConfirm r3,
uplinkPhysicalChannelControl UplinkPhysicalChannelControl r4,
uraUpdateConfirm URAUpdateConfirm r3,
utranMobilityInformation UTRANMobilityInformation,
extension NULL
}

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

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

UL-DCCH-MessageType ::= CHOICE {
    activeSetUpdateComplete      ActiveSetUpdateComplete,
    activeSetUpdateFailure       ActiveSetUpdateFailure,
    cellChangeOrderFromUTRANFailure CellChangeOrderFromUTRANFailure,
    counterCheckResponse         CounterCheckResponse,
    handoverToUTRANComplete      HandoverToUTRANComplete,
    initialDirectTransfer         InitialDirectTransfer,
    handoverFromUTRANFailure      HandoverFromUTRANFailure,
    measurementControlFailure     MeasurementControlFailure,
    measurementReport            MeasurementReport,
    physicalChannelReconfigurationComplete PhysicalChannelReconfigurationComplete,
    physicalChannelReconfigurationFailure PhysicalChannelReconfigurationFailure,
    radioBearerReconfigurationComplete RadioBearerReconfigurationComplete,
    radioBearerReconfigurationFailure RadioBearerReconfigurationFailure,
    radioBearerReleaseComplete    RadioBearerReleaseComplete,
    radioBearerReleaseFailure     RadioBearerReleaseFailure,
    radioBearerSetupComplete      RadioBearerSetupComplete,
    radioBearerSetupFailure       RadioBearerSetupFailure,
    rrcConnectionReleaseComplete  RRCConnectionReleaseComplete,
    rrcConnectionSetupComplete    RRCConnectionSetupComplete,
    rrcStatus                     RRCStatus,
    securityModeComplete          SecurityModeComplete,
    securityModeFailure           SecurityModeFailure,
    signallingConnectionReleaseRequest SignallingConnectionReleaseRequest,
    transportChannelReconfigurationComplete TransportChannelReconfigurationComplete,
    transportChannelReconfigurationFailure TransportChannelReconfigurationFailure,
    transportFormatCombinationControlFailure TransportFormatCombinationControlFailure,
    ueCapabilityInformation        UECapabilityInformation,
    uplinkDirectTransfer           UplinkDirectTransfer,
    utranMobilityInformationConfirm UTRANMobilityInformationConfirm,
    utranMobilityInformationFailure UTRANMobilityInformationFailure,
    extension                      NULL
}

UL-DCCH-MessageType r4 ::= CHOICE {
activeSetUpdateComplete ActiveSetUpdateComplete,
activeSetUpdateFailure ActiveSetUpdateFailure,
cellChangeOrderFromUTRANFailure CellChangeOrderFromUTRANFailure,
counterCheckResponse CounterCheckResponse,

```

```

handoverToUTRANComplete HandoverToUTRANComplete,
initialDirectTransfer InitialDirectTransfer,
handoverFromUTRANFailure HandoverFromUTRANFailure,
measurementControlFailure MeasurementControlFailure,
measurementReport MeasurementReport-r4,
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,
signallingConnectionReleaseRequest SignallingConnectionReleaseRequest,
transportChannelReconfigurationComplete
TransportChannelReconfigurationComplete,
transportChannelReconfigurationFailure
TransportChannelReconfigurationFailure,
transportFormatCombinationControlFailure
TransportFormatCombinationControlFailure,
ueCapabilityInformation UECapabilityInformation,
uplinkDirectTransfer UplinkDirectTransfer,
utranMobilityInformationConfirm UTRANMobilityInformationConfirm,
utranMobilityInformationFailure UTRANMobilityInformationFailure,
extension NULL
}

```

```

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

```

```

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

```

```

DL-CCCH-MessageType ::= CHOICE {
    cellUpdateConfirm CellUpdateConfirm-CCCH-r3,
    rrcConnectionReject RRCConnectionReject-r3,
    rrcConnectionRelease RRCConnectionRelease-CCCH-r3,
    rrcConnectionSetup RRCConnectionSetup-r3,
    uraUpdateConfirm URAUpdateConfirm-CCCH-r3,
    extension NULL
}

```

```

DL-CCCH-MessageType-r4 ::= CHOICE {
cellUpdateConfirm CellUpdateConfirm-CCCH-r4,
rrcConnectionReject RRCConnectionReject-r3,
rrcConnectionRelease RRCConnectionRelease-CCCH-r4,
rrcConnectionSetup RRCConnectionSetup-r4,
uraUpdateConfirm URAUpdateConfirm-CCCH-r3,
extension NULL
}

```

```

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

```

```

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

```

```

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

```

```

    extension                                NULL
  }
--*****
--
-- PCCH messages
--
--*****

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

PCCH-MessageType ::= CHOICE {
    pagingType1                            PagingType1,
    extension                                NULL
}
--*****
--
-- Downlink SHCCH messages
--
--*****

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

DL-SHCCH-MessageType ::= CHOICE {
    physicalSharedChannelAllocation        PhysicalSharedChannelAllocation-r3,
    extension                                NULL
}

DL-SHCCH-MessageType-r4 ::= CHOICE {
    physicalSharedChannelAllocation-r4    PhysicalSharedChannelAllocation-r4,
    extension                                NULL
}
--*****
--
-- Uplink SHCCH messages
--
--*****

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

UL-SHCCH-MessageType ::= CHOICE {
    puschCapacityRequest                  PUSCHCapacityRequest,
    extension                                NULL
}
--*****
--
-- BCCH messages sent on FACH
--
--*****

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

BCCH-FACH-MessageType ::= CHOICE {
    systemInformation                    SystemInformation-FACH,
    systemInformationChangeIndication    SystemInformationChangeIndication,
    extension                                NULL
}
--*****
--
-- BCCH messages sent on BCH
--
--*****

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

```

```
}

```

```
END

```

11.2 PDU definitions

```

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

BEGIN

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

IMPORTS

-- Core Network IES :
  CN-DomainIdentity,
  CN-InformationInfo,
  NAS-Message,
  PagingRecordTypeID,
-- UTRAN Mobility IES :
  URA-Identity,
-- User Equipment IES :
  ActivationTime,
  C-RNTI,
  CapabilityUpdateRequirement,
  CapabilityUpdateRequirement-r4,
  CapabilityUpdateRequirement-r4-Ext,
  CellUpdateCause,
  CipheringAlgorithm,
  CipheringModeInfo,
  EstablishmentCause,
  FailureCauseWithProtErr,
  FailureCauseWithProtErrTrId,
  InitialUE-Identity,
  IntegrityProtActivationInfo,
  IntegrityProtectionModeInfo,
  N-308,
  PagingCause,
  PagingRecordList,
  ProtocolErrorIndicator,
  ProtocolErrorIndicatorWithMoreInfo,
  Rb-timer-indicator,
  Re-EstablishmentTimer,
  RedirectionInfo,
  RejectionCause,
  ReleaseCause,
  RRC-StateIndicator,
  RRC-TransactionIdentifier,
  SecurityCapability,
  START-Value,
  STARTList,
  U-RNTI,
  U-RNTI-Short,
  UE-RadioAccessCapability,
  UE-RadioAccessCapability-r4-ext,
  UE-ConnTimersAndConstants,
  URA-UpdateCause,
  UTRAN-DRX-CycleLengthCoefficient,
  WaitTime,
-- Radio Bearer IES :
  DefaultConfigIdentity,
  DefaultConfigMode,
  DL-CounterSynchronisationInfo,
  PredefinedConfigIdentity,

```

```

RAB-Info,
RAB-Info-Post,
RAB-InformationList,
RAB-InformationReconfigList,
RAB-InformationSetupList,
RAB-InformationSetupList-r4,
RB-ActivationTimeInfo,
RB-ActivationTimeInfoList,
RB-COUNT-C-InformationList,
RB-COUNT-C-MSB-InformationList,
RB-IdentityList,
RB-InformationAffectedList,
RB-InformationReconfigList,
RB-InformationReconfigList-r4,
RB-InformationReleaseList,
RB-InformationSetupList,
RB-InformationSetupList-r4,
RB-WithPDCP-InfoList,
SRB-InformationSetupList,
SRB-InformationSetupList2,
UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
  CPCH-SetID,
  DL-AddReconfTransChInfo2List,
  DL-AddReconfTransChInfoList,
  DL-CommonTransChInfo,
  DL-DeletedTransChInfoList,
  DRAC-StaticInformationList,
  TFC-Subset,
  TFCS-Identity,
  UL-AddReconfTransChInfoList,
  UL-CommonTransChInfo,
  UL-DeletedTransChInfoList,
-- Physical Channel IEs :
  AllocationPeriodInfo,
  Alpha,
  CCTrCH-PowerControlInfo,
  CCTrCH-PowerControlInfo-r4,
  ConstantValue,
  CPCH-SetInfo,
  DL-CommonInformation,
  DL-CommonInformation-r4,
  DL-CommonInformationPost,
  DL-InformationPerRL,
  DL-InformationPerRL-List,
  DL-InformationPerRL-List-r4,
  DL-InformationPerRL-ListPostFDD,
  DL-InformationPerRL-PostTDD,
  DL-InformationPerRL-PostTDD-LCR-r4,
  DL-DPCH-PowerControlInfo,
  DL-PDSCH-Information,
  DPCH-CompressedModeStatusInfo,
  FrequencyInfo,
  FrequencyInfoFDD,
  FrequencyInfoTDD,
  IndividualTS-InterferenceList,
  MaxAllowedUL-TX-Power,
  OpenLoopPowerControl-IPDL-TDD-r4,
  PDSCH-CapacityAllocationInfo,
  PDSCH-CapacityAllocationInfo-r4,
  PDSCH-Identity,
  PDSCH-Info,
  PDSCH-Info-r4,
  PRACH-RACH-Info,
  PrimaryCCPCH-TX-Power,
  PUSCH-CapacityAllocationInfo,
  PUSCH-CapacityAllocationInfo-r4,
  PUSCH-Identity,
  RL-AdditionInformationList,
  RL-RemovalInformationList,
  SpecialBurstScheduling,
  SSDT-Information,
  TFC-ControlDuration,
  SSDT-UL-r4, REEL-4
  TimeslotList,
  TimeslotList-r4,
  TX-DiversityMode,
  UL-ChannelRequirement,

```

```

    UL-ChannelRequirement-r4,
    UL-ChannelRequirementWithCPCH-SetID,
    UL-ChannelRequirementWithCPCH-SetID-r4,
    UL-DPCH-Info,
    UL-DPCH-Info-r4,
    UL-DPCH-InfoPostFDD,
    UL-DPCH-InfoPostTDD,
    UL-DPCH-InfoPostTDD-LCR-r4,
    UL-SynchronisationParameters-r4,
    UL-TimingAdvance,
    UL-TimingAdvanceControl,
    UL-TimingAdvanceControl-r4,
-- Measurement IEs :
    AdditionalMeasurementID-List,
    Band-Indicator,
    EventResults,
    InterFreqEventResults-LCR-r4-ext,
    InterRAT-TargetCellDescription,
    MeasuredResults,
    MeasuredResultsList,
    MeasuredResultsList-LCR-r4-ext,
    MeasuredResultsOnRACH,
    MeasurementCommand,
    MeasurementCommand-r4,
    MeasurementIdentity,
    MeasurementReportingMode,
    PrimaryCCPCH-RSCP,
    TimeslotListWithISCP,
    TrafficVolumeMeasuredResultsList,
    UE-Positioning-GPS-AssistanceData,
    UE-Positioning-OTDOA-AssistanceData,
    UP-IPDL-Parameters-TDD-r4-ext,
-- Other IEs :
    BCCH-ModificationInfo,
    CDMA2000-MessageList,
    GSM-MessageList,
    InterRAT-ChangeFailureCause,
    InterRAT-HO-Failure,
    InterRAT-UE-RadioAccessCapabilityList,
    InterRAT-UE-SecurityCapList,
    InterRATMessage,
    IntraDomainNasNodeSelector,
    ProtocolErrorInformation,
    ProtocolErrorMoreInformation,
    Rplmn-Information,
    Rplmn-Information-r4,
    SegCount,
    SegmentIndex,
    SFN-Prime,
    SIB-Data-fixed,
    SIB-Data-variable,
    SIB-Type
FROM InformationElements

    maxSIBperMsg,
    maxSystemCapability
FROM Constant-definitions;

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

ActiveSetUpdate-r3 ::= CHOICE {
  r3 SEQUENCE {
    activeSetUpdate-r3 ActiveSetUpdate-r3-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  },
  criticalExtensions SEQUENCE {}
}

ActiveSetUpdate-r4 ::= CHOICE {
  r3 SEQUENCE {
    activeSetUpdate-r3 ActiveSetUpdate-r3-IEs,
    nonCriticalExtensions SEQUENCE {}
  } OPTIONAL
  activeSetUpdate-r4-ext ActiveSetUpdate-r4-ext-IEs,
  nonCriticalExtensions SEQUENCE {} OPTIONAL
} OPTIONAL

```



```

    },
    criticalExtensions          SEQUENCE {}
}

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

ActiveSetUpdate-r4-ext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- The following IE extends SSdT-Information. FDD only.
  ssdt-UL                      SSdT-UL-r4                          OPTIONAL
}

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

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

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

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

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

AssistanceDataDelivery-r3 ::= CHOICE {
  r3                             SEQUENCE {
    assistanceDataDelivery-r3    AssistanceDataDelivery-r3-IEs,
    nonCriticalExtensions        SEQUENCE {
      In case of TDD, the following IE is included instead of the IE
      up-IPDL-Parameters in up-OTDOA-AssistanceData
      up-IPDL-Parameters TDD UP-IPDL-Parameters TDD OPTIONAL,
      Extension mechanism for non-release4 information
      assistanceDataDelivery-r3-r4-ext
      AssistanceDataDelivery-r3-r4-ext-IEs,
      nonCriticalExtensions      SEQUENCE {} OPTIONAL
    }
  }
}

```

```

    } OPTIONAL
  },
  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   UE-Positioning-OTDOA-AssistanceData   OPTIONAL
}

AssistanceDataDelivery-r3-r4-ext-IEs ::= SEQUENCE {
  -- In case of TDD, the following IE is included instead of the IE
  -- up-IPDL-Parameters in up-OTDOA-AssistanceData
  up-IPDL-Parameters-TDD          UP-IPDL-Parameters-TDD-r4-ext          OPTIONAL
}

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

CellChangeOrderFromUTRAN-r3 ::= CHOICE {
  r3          SEQUENCE {
    cellChangeOrderFromUTRAN-IEs   CellChangeOrderFromUTRAN-r3-IEs,
    nonCriticalExtensions           SEQUENCE {} OPTIONAL
  },
  criticalExtensions          SEQUENCE {}
}

CellChangeOrderFromUTRAN-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier   RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo   OPTIONAL,
  activationTime              ActivationTime                 OPTIONAL,
  rab-InformationList          RAB-InformationList            OPTIONAL,
  interRAT-TargetCellDescription InterRAT-TargetCellDescription
}

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

CellChangeOrderFromUTRANFailure ::= CHOICE {
  r3          SEQUENCE {
    r3-IEcellChangeOrderFromUTRANFailure
    CellChangeOrderFromUTRANFailure-r3-IEs,
    nonCriticalExtensions           SEQUENCE {} OPTIONAL
  },
  criticalExtensions          SEQUENCE {}
}

CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier   RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo   OPTIONAL,
  interRAT-ChangeFailureCause InterRAT-ChangeFailureCause
}

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

CellUpdate ::= SEQUENCE {
  -- User equipment IEs
  u-RNTI          U-RNTI,
  startList       STARTList,
  am-RLC-ErrorIndicationRb2or3   BOOLEAN,
  am-RLC-ErrorIndicationRb4orAbove   BOOLEAN,
  cellUpdateCause          CellUpdateCause,
}

```

```

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

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

CellUpdateConfirm-r3 ::= CHOICE {
  r3                               SEQUENCE {
    cellUpdateConfirm-r3           CellUpdateConfirm-r3-IEs,
    nonCriticalExtensions          SEQUENCE {} OPTIONAL
  },
  criticalExtensions              SEQUENCE {}
}

CellUpdateConfirm-r4 ::= CHOICE {
  r3                               SEQUENCE {
    cellUpdateConfirm-r3           CellUpdateConfirm-r3-IEs,
    nonCriticalExtensions          SEQUENCE {
      cellUpdateConfirm-r3-r4-ext CellUpdateConfirm-r3-r4-ext-IEs,
      nonCriticalExtensions        SEQUENCE {} OPTIONAL
    }
  },
  criticalExtensions              CHOICE {
    r4                             SEQUENCE {
      cellUpdateConfirm-r4         CellUpdateConfirm-r4-IEs,
      nonCriticalExtensions        SEQUENCE {} OPTIONAL
    },
    criticalExtensions            SEQUENCE {}
  }
}

CellUpdateConfirm-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier        RRC-TransactionIdentifier,
  integrityProtectionModeInfo     IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo               CipheringModeInfo              OPTIONAL,
  activationTime                  ActivationTime                    OPTIONAL,
  new-U-RNTI                      U-RNTI                        OPTIONAL,
  new-C-RNTI                      C-RNTI                        OPTIONAL,
  rrc-StateIndicator              RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  rlc-Re-establishIndicatorRb2or3  BOOLEAN,
  rlc-Re-establishIndicatorRb4orAbove BOOLEAN,
  -- CN information elements
  cn-InformationInfo              CN-InformationInfo              OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                    URA-Identity                    OPTIONAL,
  -- Radio bearer IEs
  rb-InformationReleaseList        RB-InformationReleaseList      OPTIONAL,
  rb-InformationReconfigList       RB-InformationReconfigList     OPTIONAL,
  rb-InformationAffectedList       RB-InformationAffectedList     OPTIONAL,
  dl-CounterSynchronisationInfo    DL-CounterSynchronisationInfo  OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo            UL-CommonTransChInfo          OPTIONAL,
  ul-deletedTransChInfoList        UL-DeletedTransChInfoList     OPTIONAL,
  ul-AddReconfTransChInfoList      UL-AddReconfTransChInfoList   OPTIONAL,
  modeSpecificTransChInfo          CHOICE {
    fdd                            SEQUENCE {
      cpch-SetID                  CPCH-SetID                    OPTIONAL,
      addReconfTransChDRAC-Info    DRAC-StaticInformationList  OPTIONAL
    },
    tdd                            NULL
  },
  dl-CommonTransChInfo            DL-CommonTransChInfo          OPTIONAL,
  dl-DeletedTransChInfoList        DL-DeletedTransChInfoList     OPTIONAL,
  dl-AddReconfTransChInfoList      DL-AddReconfTransChInfoList   OPTIONAL,
  -- Physical channel IEs
  frequencyInfo                   FrequencyInfo                    OPTIONAL,
  maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power          OPTIONAL,
  ul-ChannelRequirement            UL-ChannelRequirement          OPTIONAL,

```

```

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

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

CellUpdateConfirm-r4-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-ResetIndicatorC-Plane  BOOLEAN,
  rlc-ResetIndicatorU-Plane  BOOLEAN,
  -- CN information elements
  cn-InformationInfo         CN-InformationInfo         OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity               URA-Identity              OPTIONAL,
  -- Radio bearer IEs
  rb-InformationReleaseList  RB-InformationReleaseList      OPTIONAL,
  rb-InformationReconfigList RB-InformationReconfigList-r4  OPTIONAL,
  rb-InformationAffectedList RB-InformationAffectedList     OPTIONAL,
  rb-WithPDCP-InfoList      RB-WithPDCP-InfoList          OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo       UL-CommonTransChInfo         OPTIONAL,
  ul-deletedTransChInfoList  UL-DeletedTransChInfoList     OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList   OPTIONAL,
  modeSpecificTransChInfo    CHOICE {
    fdd                        SEQUENCE {
      cpch-SetID              CPCH-SetID                OPTIONAL,
      addReconfTransChDRAC-Info DRAC-StaticInformationList  OPTIONAL
    },
    tdd                        NULL
  },
  dl-CommonTransChInfo       DL-CommonTransChInfo         OPTIONAL,
  dl-DeletedTransChInfoList  DL-DeletedTransChInfoList     OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList   OPTIONAL,
  -- Physical channel IEs
  frequencyInfo              FrequencyInfo                OPTIONAL,
  maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power      OPTIONAL,
  ul-ChannelRequirement      UL-ChannelRequirement-r4     OPTIONAL,
  modeSpecificPhysChInfo     CHOICE {
    fdd                        SEQUENCE {
      dl-PDSCH-Information     DL-PDSCH-Information      OPTIONAL
    },
    tdd                        NULL
  },
  dl-CommonInformation        DL-CommonInformation-r4     OPTIONAL,
  dl-InformationPerRL-List    DL-InformationPerRL-List-r4  OPTIONAL
}

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

CellUpdateConfirm-CCCH-r3 ::= 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,
nonCriticalExtensions SEQUENCE {} OPTIONAL
},
criticalExtensions SEQUENCE {}
}

CellUpdateConfirm-CCCH-r4 ::= 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,
    nonCriticalExtensions SEQUENCE {
      cellUpdateConfirm-r3-r4-ext CellUpdateConfirm-r3-r4-ext-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  criticalExtensions CHOICE {
    r4 SEQUENCE {
      -- User equipment IEs
      u-RNTI U-RNTI,
      -- The rest of the message is identical to the one sent on DCCH.
      cellUpdateConfirm-r4 CellUpdateConfirm-r4-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
    criticalExtensions SEQUENCE {}
  }
}

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

CounterCheck-r3 ::= CHOICE {
  r3 SEQUENCE {
    counterCheck-r3 CounterCheck-r3-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  },
  criticalExtensions SEQUENCE {}
}

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

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

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

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

DownlinkDirectTransfer-r3 ::= CHOICE {
  r3 SEQUENCE {
    downlinkDirectTransfer-r3 DownlinkDirectTransfer-r3-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  },
  criticalExtensions SEQUENCE {}
}

```

```

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

-- *****
--
-- HANOVER TO UTRAN COMMAND
--
-- *****

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

HandoverToUTRANCommand-r4 ::= CHOICE {
  r3 SEQUENCE {
    handoverToUTRANCommand-r3      HandoverToUTRANCommand-r3-IEs,
    nonCriticalExtensions           SEQUENCE {
      handoverToUTRANCommand-r3-r4-ext
      HandoverToUTRANCommand-r3-r4-ext-IEs,
    } OPTIONAL
  },
  criticalExtensions               CHOICE {
    r4 SEQUENCE {
      handoverToUTRANCommand-r4    HandoverToUTRANCommand-r4-IEs,
      nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
  }
}

HandoverToUTRANCommand-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  new-U-RNTI                       U-RNTI-Short,
  activationTime                    ActivationTime          OPTIONAL,
  cipheringAlgorithm                CipheringAlgorithm     OPTIONAL,
  -- Radio bearer IEs
  rab-Info                           RAB-Info-Post,
  -- Specification mode information
  specificationMode                  CHOICE {
    complete                          SEQUENCE {
      srb-InformationSetupList        SRB-InformationSetupList,
      rab-InformationSetupList        RAB-InformationSetupList          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,

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```

        defaultConfigIdentity          DefaultConfigIdentity
    },
    rab-Info                            RAB-Info-Post          OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                              SEQUENCE {
            ul-DPCH-Info                  UL-DPCH-InfoPostFDD,
            dl-CommonInformationPost      DL-CommonInformationPost,
            dl-InformationPerRL-List      DL-InformationPerRL-ListPostFDD,
            frequencyInfo                  FrequencyInfoFDD
        },
        tdd                              SEQUENCE {
            ul-DPCH-Info                  UL-DPCH-InfoPostTDD,
            dl-CommonInformationPost      DL-CommonInformationPost,
            dl-InformationPerRL           DL-InformationPerRL-PostTDD,
            frequencyInfo                  FrequencyInfoTDD,
            primaryCCPCH-TX-Power         PrimaryCCPCH-TX-Power
        }
    }
}

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

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

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

```

```

        frequencyInfo          FrequencyInfoTDD,
        primaryCCPCH-TX-Power  PrimaryCCPCH-TX-Power
    },
    tdd128                      SEQUENCE {
        ul-DPCH-Info            UL-DPCH-InfoPostTDD-LCR-r4,
        dl-InformationPerRL     DL-InformationPerRL-PostTDD-LCR-r4,
        frequencyInfo          FrequencyInfoTDD,
        primaryCCPCH-TX-Power  PrimaryCCPCH-TX-Power
    }
}
}
},
-- Physical channel IEs
    maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power
}

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

HandoverToUTRANComplete ::= SEQUENCE {
    --TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    -- TABULAR: the IE below is conditional on history.
    startList                  STARTList                OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions      SEQUENCE {}              OPTIONAL
}

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

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

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

HandoverFromUTRANCommand-GSM-r3 ::= CHOICE {
    r3                          SEQUENCE {
        handoverFromUTRANCommand-GSM-r3
        HandoverFromUTRANCommand-GSM-r3-IEs,
        nonCriticalExtensions    SEQUENCE {} OPTIONAL
    },
    criticalExtensions          SEQUENCE {}
}

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

```



```

        with-extension
        messages
    }
}

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

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

-- *****
--
-- HANOVER FROM UTRAN FAILURE
--
-- *****

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

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

MeasurementControl-r3 ::= CHOICE {

    r3
        SEQUENCE {
            measurementControl-r3
            MeasurementControl-r3-IEs,
            nonCriticalExtensions
            SEQUENCE {} OPTIONAL
        },
        criticalExtensions
        SEQUENCE {}
    }


MeasurementControl-r4 ::= CHOICE {
    r3
        SEQUENCE {
            measurementControl-r3
            MeasurementControl-r3-IEs,
            nonCriticalExtensions
            SEQUENCE {

                In case of TDD, the following IE is included instead of the IE
                up-IPDL-Parameters in up-OTDOA-AssistanceData
                up-IPDL-Parameters-TDD
                UP-IPDL-Parameters-TDD
                OPTIONAL,
                Extension mechanism for non- release4 information
            
            measurementControl-r3-r4-ext
            MeasurementControl-r3-r4-ext-IEs,
            nonCriticalExtensions
            SEQUENCE {}
            OPTIONAL
        },
        criticalExtensions
        CHOICE {
            r4
                SEQUENCE {
                    measurementControl-r4
                    MeasurementControl-r4-IEs,
                    nonCriticalExtensions
                    SEQUENCE {}
                    OPTIONAL
                },
            criticalExtensions
            SEQUENCE {}
        }
}

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

```

```

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

```

```

MeasurementControl-r3-r4-ext-IEs ::= SEQUENCE {
  -- In case of TDD, the following IE is included instead of the IE
  -- up-IPDL-Parameters in up-OTDOA-AssistanceData
  up-IPDL-Parameters-TDD          UP-IPDL-Parameters-TDD-r4-ext          OPTIONAL
}

```

```

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

```

```

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

```

```

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

```

```

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

```

```

MeasurementReport ::= SEQUENCE {
  -- Measurement IEs
  measurementIdentity      MeasurementIdentity,
  measuredResults          MeasuredResults          OPTIONAL,
  measuredResultsOnRACH    MeasuredResultsOnRACH    OPTIONAL,
  additionalMeasuredResults MeasuredResultsList    OPTIONAL,
  eventResults             EventResults             OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions    SEQUENCE {}      OPTIONAL
}

```

```

MeasurementReport-r4 ::= SEQUENCE {
-- Measurement IEs
  measurementIdentity      MeasurementIdentity,
  measuredResults          MeasuredResults          OPTIONAL,
  measuredResultsOnRACH    MeasuredResultsOnRACH    OPTIONAL,
  additionalMeasuredResults MeasuredResultsList    OPTIONAL,
  eventResults             EventResults             OPTIONAL,
-- Extension mechanism for non- release99 information
  nonCriticalExtensions    SEQUENCE {
    interFreqEventResults LCR      InterFreqEventResults LCR      OPTIONAL,
    additionalMeasuredResults LCR  MeasuredResultsList LCR      OPTIONAL,
    measurementReport-r3-r4-ext    MeasurementReport-r3-r4-ext-IEs,
    nonCriticalExtensions    SEQUENCE {}      OPTIONAL
  }
}

```

```

MeasurementReport-r3-r4-ext-IEs ::= SEQUENCE {
  interFreqEventResults-LCR      InterFreqEventResults-LCR-r4-ext  OPTIONAL,
}

```

```

additionalMeasuredResults-LCR MeasuredResultsList-LCR-r4-ext OPTIONAL
}
-- *****
--
-- PAGING TYPE 1
--
-- *****

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

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

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

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

PhysicalChannelReconfiguration-r3 ::= CHOICE {
  r3 SEQUENCE {
    physicalChannelReconfiguration-r3
    PhysicalChannelReconfiguration-r3-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  },
  criticalExtensions SEQUENCE {}
}

PhysicalChannelReconfiguration-r4 ::= CHOICE {
  r3 SEQUENCE {
    physicalChannelReconfiguration-r3
    PhysicalChannelReconfiguration-r3-IEs,
    nonCriticalExtensions SEQUENCE {
      physicalChannelReconfiguration-r3-r4-ext
      PhysicalChannelReconfiguration-r3-r4-ext-IEs,
    } OPTIONAL
  },
  criticalExtensions CHOICE {
    r4 SEQUENCE {
      physicalChannelReconfiguration-r4
      PhysicalChannelReconfiguration-r4-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
    criticalExtensions SEQUENCE {}
  }
}

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

```

```

    rrc-StateIndicator          RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IES
  cn-InformationInfo           CN-InformationInfo           OPTIONAL,
-- UTRAN mobility IES
  ura-Identity                 URA-Identity                 OPTIONAL,
-- Radio bearer IES
  dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo  OPTIONAL,
-- Physical channel IES
  frequencyInfo                FrequencyInfo                OPTIONAL,
  maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power         OPTIONAL,
  ul-ChannelRequirement         UL-ChannelRequirementWithCPCH-SetID  OPTIONAL,
-- TABULAR: UL-ChannelRequirementWithCPCH-SetID contains the choice
-- between UL DPCH info, CPCH SET info and CPCH set ID.
  modeSpecificInfo             CHOICE {
    fdd                         SEQUENCE {
      dl-PDSCH-Information      DL-PDSCH-Information      OPTIONAL
    },
    tdd                         NULL
  },
  dl-CommonInformation          DL-CommonInformation          OPTIONAL,
  dl-InformationPerRL-List      DL-InformationPerRL-List      OPTIONAL
}

PhysicalChannelReconfiguration-r3-r4-ext-IES ::= SEQUENCE {
-- Physical channel IES
-- The following IE extends SSDT-Information, which is included in
-- DL-CommonInformation. FDD only.
  ssdt-UL                       SSDT-UL-r4-                 OPTIONAL
}

PhysicalChannelReconfiguration-r4-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
  rb-WithPDCP-InfoList           RB-WithPDCP-InfoList           OPTIONAL,
-- Physical channel IES
  frequencyInfo                  FrequencyInfo                  OPTIONAL,
  maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power           OPTIONAL,
  ul-ChannelRequirement           UL-ChannelRequirementWithCPCH-SetID-r4  OPTIONAL,
-- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r4 contains the choice
-- between UL DPCH info, CPCH SET info and CPCH set ID.
  modeSpecificInfo               CHOICE {
    fdd                           SEQUENCE {
      dl-PDSCH-Information        DL-PDSCH-Information        OPTIONAL
    },
    tdd                           NULL
  },
  dl-CommonInformation            DL-CommonInformation-r4        OPTIONAL,
  dl-InformationPerRL-List        DL-InformationPerRL-List-r4    OPTIONAL
}

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

PhysicalChannelReconfigurationComplete ::= SEQUENCE {
-- User equipment IES
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo      IntegrityProtActivationInfo      OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance               UL-TimingAdvance               OPTIONAL,
-- Radio bearer IES
  count-C-ActivationTime         ActivationTime                   OPTIONAL,
  rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList       OPTIONAL,

```

```

        ul-CounterSynchronisationInfo    UL-CounterSynchronisationInfo    OPTIONAL,
-- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}    OPTIONAL
    }

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

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

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

PhysicalSharedChannelAllocation-r3 ::= CHOICE {
    r3                                  SEQUENCE {
        physicalSharedChannelAllocation-r3
        PhysicalSharedChannelAllocation-r3-IEs,
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
    },
    criticalExtensions                 SEQUENCE {}
}

PhysicalSharedChannelAllocation-r4 ::= CHOICE {
    r3                                  SEQUENCE {
        physicalSharedChannelAllocation-r3
        PhysicalSharedChannelAllocation-r3-IEs,
        nonCriticalExtensions          SEQUENCE {}    OPTIONAL
    },
    criticalExtensions                 CHOICE {
        r4                              SEQUENCE {
            physicalSharedChannelAllocation-r4
            PhysicalSharedChannelAllocation-r4-IEs,
            nonCriticalExtensions      SEQUENCE {}    OPTIONAL
        },
        criticalExtensions             SEQUENCE {}
    }
}

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

PhysicalSharedChannelAllocation-r4-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall not be performed on this message.
-- User equipment IEs
    c-RNTI                             C-RNTI                             OPTIONAL,
    rrc-TransactionIdentifier            RRC-TransactionIdentifier,
-- Physical channel IEs
    ul-TimingAdvance                    UL-TimingAdvanceControl-r4          OPTIONAL,
    pusch-CapacityAllocationInfo         PUSCH-CapacityAllocationInfo-r4    OPTIONAL,
    pdsch-CapacityAllocationInfo         PDSCH-CapacityAllocationInfo-r4    OPTIONAL,
    confirmRequest                       ENUMERATED {
        confirmPDSCH, confirmPUSCH }    OPTIONAL,

```

```

-- TABULAR: If the above value is not present, the default value "No Confirm"
-- shall be used as specified in 10.2.25.
iscpTimeslotList          TimeslotList-r4          OPTIONAL
}

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

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

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

RadioBearerReconfiguration-r3 ::= CHOICE {
  r3 SEQUENCE {
  radioBearerReconfiguration-r3 RadioBearerReconfiguration-r3-IEs,
  nonCriticalExtensions SEQUENCE {} OPTIONAL
  },
  criticalExtensions SEQUENCE {}
}
}

RadioBearerReconfiguration-r4 ::= CHOICE {
  r3                      SEQUENCE {
    radioBearerReconfiguration-r3  RadioBearerReconfiguration-r3-IEs,
    nonCriticalExtensions           SEQUENCE {
      radioBearerReconfiguration-r3-r4-ext
    }
  } OPTIONAL
  },
  criticalExtensions        CHOICE {
    r4                      SEQUENCE {
      radioBearerReconfiguration-r4  RadioBearerReconfiguration-r4-IEs,
      nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    criticalExtensions        SEQUENCE {}
  }
}

RadioBearerReconfiguration-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier   RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo          CipheringModeInfo          OPTIONAL,
  activationTime              ActivationTime          OPTIONAL,
  new-U-RNTI                  U-RNTI                  OPTIONAL,
  new-C-RNTI                  C-RNTI                  OPTIONAL,
  rrc-StateIndicator          RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  -- Core network IEs
  cn-InformationInfo          CN-InformationInfo      OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                URA-Identity          OPTIONAL,
  -- Radio bearer IEs
  rab-InformationReconfigList RAB-InformationReconfigList  OPTIONAL,
  rb-InformationReconfigList  RB-InformationReconfigList,
  rb-InformationAffectedList  RB-InformationAffectedList  OPTIONAL,

```

```

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

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

RadioBearerReconfiguration-r4-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  integrityProtectionModeInfo   IntegrityProtectionModeInfo   OPTIONAL,
  cipheringModeInfo             CipheringModeInfo             OPTIONAL,
  activationTime                 ActivationTime                 OPTIONAL,
  new-U-RNTI                     U-RNTI                       OPTIONAL,
  new-C-RNTI                     C-RNTI                       OPTIONAL,
  rrc-StateIndicator            RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- Core network IEs
  cn-InformationInfo            CN-InformationInfo            OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                  URA-Identity                  OPTIONAL,
-- Radio bearer IEs
  rab-InformationReconfigList    RAB-InformationReconfigList    OPTIONAL,
  rb-InformationReconfigList     RB-InformationReconfigList-r4,
  rb-InformationAffectedList     RB-InformationAffectedList     OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo          UL-CommonTransChInfo          OPTIONAL,
  ul-deletedTransChInfoList     UL-DeletedTransChInfoList     OPTIONAL,
  ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList   OPTIONAL,
  modeSpecificTransChInfo       CHOICE {
    fdd                           SEQUENCE {
      cpch-SetID                  CPCH-SetID                  OPTIONAL,
      addReconfTransChDRAC-Info   DRAC-StaticInformationList  OPTIONAL
    },
    tdd                           NULL
  }
  dl-CommonTransChInfo          DL-CommonTransChInfo          OPTIONAL,
  dl-DeletedTransChInfoList     DL-DeletedTransChInfoList     OPTIONAL,
  dl-AddReconfTransChInfoList   DL-AddReconfTransChInfo2List  OPTIONAL,
-- Physical channel IEs
  frequencyInfo                 FrequencyInfo                 OPTIONAL,
  maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power        OPTIONAL,
  ul-ChannelRequirement         UL-ChannelRequirement-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
    }
-- *****
--
-- RADIO BEARER RECONFIGURATION COMPLETE
--
-- *****

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

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

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

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

RadioBearerRelease-r3 ::= CHOICE {
  r3 SEQUENCE {
  radioBearerRelease-r3             RadioBearerRelease-r3-IEs,
  nonCriticalExtensions             SEQUENCE {} OPTIONAL
  },
  criticalExtensions                SEQUENCE {}
}

RadioBearerRelease-r4 ::= CHOICE {
  r3                                SEQUENCE {
    radioBearerRelease-r3           RadioBearerRelease-r3-IEs,
    nonCriticalExtensions           SEQUENCE {
      radioBearerRelease-r3-r4-ext   RadioBearerRelease-r3-r4-ext-IEs,
      nonCriticalExtensions         SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  criticalExtensions                CHOICE {
    r4                                SEQUENCE {
      radioBearerRelease-r4         RadioBearerRelease-r4-IEs,
      nonCriticalExtensions         SEQUENCE {} OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
  }
}

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

```



```

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

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

RadioBearerRelease-r4-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,
    rb-WithPDCP-InfoList        RB-WithPDCP-InfoList        OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo        UL-CommonTransChInfo        OPTIONAL,
    ul-deletedTransChInfoList    UL-DeletedTransChInfoList    OPTIONAL,
    ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList  OPTIONAL,
    modeSpecificTransChInfo      CHOICE {
        fdd                      SEQUENCE {
            cpch-SetID            CPCH-SetID            OPTIONAL,
            addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
        },
        tdd                      NULL
    }
}

```

```

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

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

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

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

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

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

RadioBearerSetup-r3 ::= CHOICE {

    r3                         SEQUENCE {
        radioBearerSetup-r3    RadioBearerSetup-r3-IEs,
        nonCriticalExtensions  SEQUENCE {} OPTIONAL
    },
    criticalExtensions         SEQUENCE {}
}


RadioBearerSetup-r4 ::= CHOICE {
    r3                         SEQUENCE {
        radioBearerSetup-r3    RadioBearerSetup-r3-IEs,
        nonCriticalExtensions  SEQUENCE {
            radioBearerSetup-r3-r4-ext RadioBearerSetup-r3-r4-ext-IEs,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    criticalExtensions         CHOICE {
        r4                     SEQUENCE {
            radioBearerSetup-r4    RadioBearerSetup-r4-IEs,

```

```

        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    },
    criticalExtensions                  SEQUENCE {}
}
}

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

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

RadioBearerSetup-r4-IEs ::= SEQUENCE {
-- User equipment IEs
  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-r4    OPTIONAL,
  rb-InformationAffectedList           RB-InformationAffectedList     OPTIONAL,

```

```

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

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

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

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

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

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

RRCConnectionReject-r3 ::= CHOICE {
  r3                             SEQUENCE {
    rrcConnectionReject-r3      RRCConnectionReject-r3-IEs,
    nonCriticalExtensions        SEQUENCE {}                OPTIONAL
  },
  criticalExtensions             SEQUENCE {}
}

```

```

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

```

```

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

```

```

RRCConnectionRelease-r3 ::= CHOICE {
  r3 SEQUENCE {
    rrcConnectionRelease-r3 RRCConnectionRelease-r3-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  },
  criticalExtensions SEQUENCE {}
}

```

```

RRCConnectionRelease-r4 ::= CHOICE {
  r3 SEQUENCE {
    rrcConnectionRelease-r3 RRCConnectionRelease-r3-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  },
  criticalExtensions CHOICE {
    r4 SEQUENCE {
      rrcConnectionRelease-r4 RRCConnectionRelease-r4-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
    criticalExtensions SEQUENCE {}
  }
}

```

```

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

```

```

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

```

```

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

```

```

RRCConnectionRelease-CCCH-r3 ::= CHOICE {
  r3 SEQUENCE {
    rrcConnectionRelease-CCCH-r3 RRCConnectionRelease-CCCH-r3-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  },
  criticalExtensions SEQUENCE {}
}

```

```

RRCConnectionRelease-CCCH-r4 ::= CHOICE {
  r3 SEQUENCE {
    rrcConnectionRelease-CCCH-r3 RRCConnectionRelease-CCCH-r3-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  },
  criticalExtensions CHOICE {
    r4 SEQUENCE {

```

```

        rrcConnectionRelease-CCCH-r4      RRCConnectionRelease-CCCH-r4-IEs,
        nonCriticalExtensions              SEQUENCE {}          OPTIONAL
    },
    criticalExtensions                      SEQUENCE {}
}

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

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

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

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

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

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

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

RRCConnectionSetup-r3 ::= CHOICE {
    r3                                     SEQUENCE {
        rrcConnectionSetup-r3             RRCConnectionSetup-r3-IEs,
        nonCriticalExtensions             SEQUENCE {}          OPTIONAL
    },
    criticalExtensions                     SEQUENCE {}
}

RRCConnectionSetup-r4 ::= CHOICE {
    r3                                     SEQUENCE {
        rrcConnectionSetup-r3             RRCConnectionSetup-r3-IEs,
        nonCriticalExtensions             SEQUENCE {
            rrcConnectionSetup-r3-r4-Ext
            RRCConnectionSetup-r3-r4-Ext-IEs,
            -- Extension mechanism for non- release99 information
            nonCriticalExtensions         SEQUENCE {}          OPTIONAL
        }
    } OPTIONAL
}

```

```

    },
    criticalExtensions CHOICE {
        r4 SEQUENCE {
            rrcConnectionSetup-r4 RRCConnectionSetup-r4-IEs,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        },
        criticalExtensions SEQUENCE {}
    }
}

RRCConnectionSetup-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    initialUE-Identity InitialUE-Identity,
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    activationTime ActivationTime OPTIONAL,
    new-U-RNTI U-RNTI,
    new-c-RNTI C-RNTI OPTIONAL,
    rrc-StateIndicator RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient,
    capabilityUpdateRequirement CapabilityUpdateRequirement OPTIONAL,
    -- TABULAR: If the IE is not present, the default value defined in 10.3.3.2 shall
    -- be used.
    -- Radio bearer IEs
    srb-InformationSetupList SRB-InformationSetupList2,
    -- Transport channel IEs
    ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
    ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
    dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,
    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-r3-r4-Ext-IEs ::= SEQUENCE {
    capabilityUpdateRequirement-r4-Ext CapabilityUpdateRequirement-r4-Ext OPTIONAL,
    -- Physical channel IEs
    -- The following IE extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL SSDT-UL-r4 OPTIONAL
}

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

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

```

```

-- *****
RRCConnectionSetupComplete ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  startList                      STARTList,
  ue-RadioAccessCapability      UE-RadioAccessCapability          OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability      InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions-r3      SEQUENCE {
    rrcConnectionSetupComplete-r3-r4-ext-
    RRCConnectionSetupComplete-r3-r4-ext-IEs,
    nonCriticalExtensions-r4      SEQUENCE {}          OPTIONAL
  }
  OPTIONAL
}

RRCConnectionSetupComplete-r3-r4-ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-r4-ext  UE-RadioAccessCapability-r4-ext  OPTIONAL
}

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

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

SecurityModeCommand-r3 ::= CHOICE {
  r3                             SEQUENCE {
    securityModeCommand-r3      SecurityModeCommand-r3-IEs,
    nonCriticalExtensions        SEQUENCE {}          OPTIONAL
  },
  criticalExtensions            SEQUENCE {}
}

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

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

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

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

  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo     IntegrityProtActivationInfo  OPTIONAL,
  -- Radio bearer IEs

```



```

        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList    OPTIONAL,
-- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                OPTIONAL
    }
-- *****
--
-- SECURITY MODE FAILURE
--
-- *****

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

| SignallingConnectionRelease-r3 ::= CHOICE {
        r3                               SEQUENCE {
                signallingConnectionRelease-r3 SignallingConnectionRelease-r3-IEs,
                nonCriticalExtensions         SEQUENCE {}                OPTIONAL
        },
        criticalExtensions               SEQUENCE {}
    }

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

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

SystemInformation-BCH ::= SEQUENCE {
-- Other information elements
        sfn-Prime                       SFN-Prime,
        payload                           CHOICE {
                noSegment                NULL,
                firstSegment              FirstSegment,
                subsequentSegment          SubsequentSegment,
                lastSegmentShort           LastSegmentShort,
                lastAndFirst               SEQUENCE {
                        lastSegmentShort   LastSegmentShort,
                        firstSegment        FirstSegmentShort
                },
                lastAndComplete            SEQUENCE {
                        lastSegmentShort     LastSegmentShort,
                        completeSIB-List     CompleteSIB-List
                },
                lastAndCompleteAndFirst    SEQUENCE {
                        lastSegmentShort     LastSegmentShort,
                        completeSIB-List     CompleteSIB-List,

```

```

        firstSegment          FirstSegmentShort
    },
    completeSIB-List          CompleteSIB-List,
    completeAndFirst          SEQUENCE {
        completeSIB-List      CompleteSIB-List,
        firstSegment          FirstSegmentShort
    },
    completeSIB                CompleteSIB,
    lastSegment                LastSegment
}

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

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

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

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

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

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

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

```

```

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

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

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

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

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

CompleteSIBshort ::=          SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    sib-Data-variable       SIB-Data-variable
}
-- *****
--
-- SYSTEM INFORMATION CHANGE INDICATION
--
-- *****

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

TransportChannelReconfiguration-r3 ::= CHOICE {
    r3 SEQUENCE {
        transportChannelReconfiguration-r3
        transportChannelReconfiguration-r3-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL

```

```

},
criticalExtensions SEQUENCE {}
}

TransportChannelReconfiguration-r4 ::= CHOICE {
  r3
    SEQUENCE {
      transportChannelReconfiguration-r3
      TransportChannelReconfiguration-r3-IEs,
      nonCriticalExtensions
      SEQUENCE {
        transportChannelReconfiguration-r3-r4-ext
        TransportChannelReconfiguration-r3-r4-ext-IEs,
nonCriticalExtensions SEQUENCE {} OPTIONAL
      }
    } OPTIONAL
  },
  criticalExtensions
  CHOICE {
    r4
      SEQUENCE {
        transportChannelReconfiguration-r4
        TransportChannelReconfiguration-r4-IEs,
        nonCriticalExtensions
        SEQUENCE {} OPTIONAL
      },
    criticalExtensions
    SEQUENCE {}
  }
}

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

TransportChannelReconfiguration-r4-IEs ::= SEQUENCE {
  -- User equipment IEs
  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
  rb-WithPDCP-InfoList    RB-WithPDCP-InfoList    OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo    UL-CommonTransChInfo    OPTIONAL,
  ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList  OPTIONAL,
  modeSpecificTransChInfo  CHOICE {
    fdd                     SEQUENCE {
      cpch-SetID           CPCH-SetID           OPTIONAL,
      addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
    },
    tdd                     NULL
  }
  dl-CommonTransChInfo    DL-CommonTransChInfo    OPTIONAL,
  dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList  OPTIONAL,
-- Physical channel IEs
  frequencyInfo           FrequencyInfo           OPTIONAL,
  maxAllowedUL-TX-Power    MaxAllowedUL-TX-Power  OPTIONAL,
  ul-ChannelRequirement    UL-ChannelRequirement-r4  OPTIONAL,
  modeSpecificPhysChInfo  CHOICE {
    fdd                     SEQUENCE {
      dl-PDSCH-Information  DL-PDSCH-Information  OPTIONAL
    },
    tdd                     NULL
  },
  dl-CommonInformation    DL-CommonInformation-r4  OPTIONAL,
  dl-InformationPerRL-List  DL-InformationPerRL-List-r4  OPTIONAL
}

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

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

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

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

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

TransportFormatCombinationControl ::= SEQUENCE {

```

```

-- TABULAR: Integrity protection shall not be performed on this message when transmitting this
message
-- on the transparent mode signalling DCCH.
  rrc-TransactionIdentifier      RRC-TransactionIdentifier      OPTIONAL,
-- The information element is not included when transmitting the message
-- on the transparent mode signalling DCCH
modeSpecificInfo                CHOICE {
  fdd                            NULL,
  tdd                            SEQUENCE {
    tfcs-ID                      TFCS-Identity      OPTIONAL
  }
},
dpch-TFCS-InUplink              TFC-Subset,
activationTimeForTFCSsubset      ActivationTime
tfc-ControlDuration              TFC-ControlDuration      OPTIONAL,
-- The information element is not included when transmitting the message
-- on the transparent mode signalling DCCH and is optional otherwise
-- Extension mechanism for non- release99 information
  nonCriticalExtensions          SEQUENCE {}      OPTIONAL
}

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

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

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

UECapabilityEnquiry-r3 ::= CHOICE {
  r3                             SEQUENCE {
    ueCapabilityEnquiry-r3       UECapabilityEnquiry-r3-IEs,
    nonCriticalExtensions        SEQUENCE {
      ueCapabilityEnquiry-r3-r4-ext  UECapabilityEnquiry-r3-r4-Ext-IEs,
      nonCriticalExtensions        SEQUENCE {}      OPTIONAL
    }
  },
  criticalExtensions            SEQUENCE {}
}

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

UECapabilityEnquiry-r3-r4-Ext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4-Ext  CapabilityUpdateRequirement-r4-Ext
}

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

UECapabilityInformation ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier      OPTIONAL,
  ue-RadioAccessCapability       UE-RadioAccessCapability      OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList
  OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions-r3       SEQUENCE {
    ueCapabilityInformation-r3-r4-ext

```

```

| -----
|         nonCriticalExtensions-r4      UECapabilityInformation-r3-r4-ext,
|         }                            SEQUENCE {}          OPTIONAL
|     }
|
| UECapabilityInformation-r3-r4-ext ::= SEQUENCE {
|     -- User equipment IEs
|     ue-RadioAccessCapability-r4-ext  UE-RadioAccessCapability-r4-ext  OPTIONAL
| }
|
| -----
| -- *****
| --
| -- UE CAPABILITY INFORMATION CONFIRM
| --
| -- *****
|
| UECapabilityInformationConfirm-r3 ::= CHOICE {
|     r3                                SEQUENCE {
|         ueCapabilityInformationConfirm-r3
|         nonCriticalExtensions          UECapabilityInformationConfirm-r3-IEs,
|         }                            SEQUENCE {}          OPTIONAL
|     },
|     criticalExtensions                 SEQUENCE {}
| }
|
| UECapabilityInformationConfirm-r3-IEs ::= SEQUENCE {
|     -- User equipment IEs
|     rrc-TransactionIdentifier          RRC-TransactionIdentifier
| }
|
| -----
| -- *****
| --
| -- UPLINK DIRECT TRANSFER
| --
| -- *****
|
| UplinkDirectTransfer ::= SEQUENCE {
|     -- Core network IEs
|     cn-DomainIdentity                  CN-DomainIdentity,
|     nas-Message                         NAS-Message,
|     -- Measurement IEs
|     measuredResultsOnRACH              MeasuredResultsOnRACH          OPTIONAL,
|     -- Extension mechanism for non- release99 information
|     nonCriticalExtensions              SEQUENCE {}          OPTIONAL
| }
|
| -----
| -- *****
| --
| -- UPLINK PHYSICAL CHANNEL CONTROL
| --
| -- *****
|
| UplinkPhysicalChannelControl-r3 ::= CHOICE {
|   r3                                SEQUENCE {
|   uplinkPhysicalChannelControl-r3 UplinkPhysicalChannelControl-r3-IEs,
|   nonCriticalExtensions          SEQUENCE {}          OPTIONAL
|   },
|   criticalExtensions              SEQUENCE {}
| }
|
| UplinkPhysicalChannelControl-r4 ::= CHOICE {
|     r3                                SEQUENCE {
|         uplinkPhysicalChannelControl-r3 UplinkPhysicalChannelControl-r3-IEs,
|         nonCriticalExtensions          SEQUENCE {
|             -- In case of TDD, the following IE is included instead of the IE
|             -- up-IPDL-Parameters in up-OTDOA-AssistanceData
|             openLoopPowerControl-IPDL-TDD  OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL,
|             -- Extension mechanism for non- release4 information
|             noncriticalExtensions          SEQUENCE {}          OPTIONAL
|         }
|     },
|     criticalExtensions              CHOICE {
|         r4                            SEQUENCE {
|             uplinkPhysicalChannelControl-r4 UplinkPhysicalChannelControl-r4-IEs,
|             nonCriticalExtensions          SEQUENCE {}          OPTIONAL
|         },
|         criticalExtensions              SEQUENCE {}
|     }
| }

```

```

    }
}

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

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

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

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

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

URAUUpdateConfirm-r3 ::= CHOICE {
    r3                               SEQUENCE {
        uraUpdateConfirm-r3         URAUpdateConfirm-r3-IEs,
        nonCriticalExtensions        SEQUENCE {}          OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

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

```



```

}
-- *****
--
-- URA UPDATE CONFIRM for CCCH
--
-- *****
| URAUpdateConfirm-CCCH-r3 ::= CHOICE {
  r3 SEQUENCE {
    uraUpdateConfirm-CCCH-r3 URAUpdateConfirm-CCCH-r3-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  },
  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 ::= 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-InformationInfo OPTIONAL,
  -- UTRAN mobility IES
  ura-Identity URA-Identity OPTIONAL,
  -- Radio bearer IES
  count-C-ActivationTime ActivationTime OPTIONAL,
  dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions SEQUENCE {} OPTIONAL
}
-- *****
--
-- UTRAN MOBILITY INFORMATION CONFIRM
--
-- *****

UTRANMobilityInformationConfirm ::= SEQUENCE {
  -- User equipment IES
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo IntegrityProtActivationInfo OPTIONAL,
  -- Radio bearer IES
  rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfoList OPTIONAL,
  ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions SEQUENCE {} OPTIONAL
}
-- *****
--
-- UTRAN MOBILITY INFORMATION FAILURE
--
-- *****

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

```

END

11.3 Information element definitions

InformationElements DEFINITIONS AUTOMATIC TAGS ::=

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

BEGIN

IMPORTS

```
    hipDSCHIdentities,
    hiPUSCHIdentities,
    hiRM,
    maxAC,
    maxAdditionalMeas,
    maxASC,
    maxASCmap,
    maxASCPersist,
    maxCCTrCH,
    maxCellMeas,
    maxCellMeas-1,
    maxCNdomains,
    maxCPCHsets,
    maxDPCH-DLchan,
    maxDPCHcodesPerTS,
    maxDPDCH-UL,
    maxDRACclasses,
    maxFACH,
    maxFreq,
    maxFrequencybands,
    maxInterSysMessages,
    maxLoCHperRLC,
    maxMeasEvent,
    maxMeasIntervals,
    maxMeasParEvent,
    maxNumCDMA2000Freqs,
    maxNumFDDFreqs,
    maxNumGSMFreqRanges,
    maxNumTDDFreqs,
    maxOtherRAT,
    maxPage1,
    maxPCPCH-APsig,
    maxPCPCH-APsubCh,
    maxPCPCH-CDSig,
    maxPCPCH-CDSUBch,
    maxPCPCH-SF,
    maxPCPCHs,
    maxPDCPAlgoType,
    maxPDSCH,
    maxPDSCH-TFCIgroups,
    maxPRACH,
    maxPRACH-FPACH,
    maxPUSCH,
    maxRABsetup,
    maxRAT,
    maxRB,
    maxRBallRABs,
    maxRBMuxOptions,
    maxRBperRAB,
    maxReportedGSMCells,
    maxSRBsetup,
    maxRL,
    maxRL-1,
    maxROHC-PacketSizes-r4,
    maxROHC-Profile-r4,
    maxSCCPCH,
    maxSat,
    maxSIB,
    maxSIB-FACH,
    maxSig,
    maxSubCh,
```

```

maxSystemCapability,
maxTF,
maxTF-CPCH,
maxTFC,
maxTFCI-2-Combs,
maxTGPS,
maxTrCH,
maxTS,
maxTS-1,
maxTS-LCR,
maxTS-LCR-1,
maxURA
FROM Constant-definitions;

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

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

CN-DomainInformation ::=                       SEQUENCE {
    cn-DomainIdentity
    cn-DomainSpecificNAS-Info
}

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

CN-DomainSysInfo ::=                           SEQUENCE {
    cn-DomainIdentity
    cn-Type
        gsm-MAP
        ansi-41
    },
    cn-DRX-CycleLengthCoeff
}

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

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

Digit ::=                                     INTEGER (0..9)

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

```

```

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

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

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

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

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

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

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

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

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

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

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

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

PLMN-Identity ::= SEQUENCE {
  mcc
  mnc
}

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

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

RAI ::= SEQUENCE {
  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,
    cellReservedForSOLSA              ReservedIndicator,
    accessClassBarredList              AccessClassBarredList                OPTIONAL
}

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

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

CellSelectReselectInfoSIB-3-4 ::=                SEQUENCE {
    mappingInfo                        MappingInfo                OPTIONAL,
    cellSelectQualityMeasure            CHOICE {
        cpich-Ec-No                    SEQUENCE {
            q-HYST-2-S                    Q-Hyst-S                OPTIONAL
            -- Default value for q-HYST-2-S is q-HYST-1-S
        },
        cpich-RSCP                      NULL
    },
    modeSpecificInfo                    CHOICE {
        fdd                            SEQUENCE {
            s-Intrasearch                S-SearchQual                OPTIONAL,
            s-Intersearch                S-SearchQual                OPTIONAL,
            s-SearchHCS                  S-SearchRXLEV              OPTIONAL,
            rat-List                      RAT-FDD-InfoList            OPTIONAL,
            q-QualMin                    Q-QualMin,
            q-RxlevMin                    Q-RxlevMin
        },
        tdd                            SEQUENCE {
            s-Intrasearch                S-SearchRXLEV              OPTIONAL,
            s-Intersearch                S-SearchRXLEV              OPTIONAL,
            s-SearchHCS                  S-SearchRXLEV              OPTIONAL,
            rat-List                      RAT-TDD-InfoList            OPTIONAL,
            q-RxlevMin                    Q-RxlevMin
        }
    },
    q-Hyst-1-S                          Q-Hyst-S,
    t-Reselection-S                    T-Reselection-S,
    hcs-ServingCellInformation          HCS-ServingCellInformation    OPTIONAL,
    maxAllowedUL-TX-Power                MaxAllowedUL-TX-Power
}

MapParameter ::=                INTEGER (0..99)

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

```

```

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

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

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

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

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

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

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

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

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

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

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

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

ReservedIndicator ::= ENUMERATED {
    reserved,
    notReserved }

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

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

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

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

CipheringAlgorithm ::=                      ENUMERATED {
    uea0, uea1 }

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

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

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

CN-PagedUE-Identity ::=                   CHOICE {
    imsi-GSM-MAP                             IMSI-GSM-MAP,

```

```

tmsi-GSM-MAP                TMSI-GSM-MAP,
p-TMSI-GSM-MAP              P-TMSI-GSM-MAP,
imsi-DS-41                  IMSI-DS-41,
tmsi-DS-41                  TMSI-DS-41
}

CompressedModeMeasCapability ::= SEQUENCE {
    fdd-Measurements          BOOLEAN,
    -- TABULAR: The IEs below are made optional since they are conditional based
    -- on another information element. Their absence corresponds to the case where
    -- the condition is not true.
    -- tdd-Measurements indicates need for compressed mode for 3.84Mcps TDD measurements
    tdd-Measurements          BOOLEAN                                OPTIONAL,
    gsm-Measurements          GSM-Measurements                     OPTIONAL,
    multiCarrierMeasurements  BOOLEAN                                OPTIONAL
}

CompressedModeMeasCapability-LCR-r4 ::= SEQUENCE {
    tddl28-Measurements      BOOLEAN                                OPTIONAL
}

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

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

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

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

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

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

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

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

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

EstablishmentCause ::= ENUMERATED {

```



```

originatingConversationalCall,
originatingStreamingCall,
originatingInteractiveCall,
originatingBackgroundCall,
originatingSubscribedTrafficCall,
terminatingConversationalCall,
terminatingStreamingCall,
terminatingInteractiveCall,
terminatingBackgroundCall,
emergencyCall,
interRAT-CellReselection,
interRAT-CellChangeOrder,
registration,
detach,
originatingHighPrioritySignalling,
originatingLowPrioritySignalling,
callRe-establishment,
terminatingHighPrioritySignalling,
terminatingLowPrioritySignalling,
terminatingCauseUnknown,
spare1 }

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

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

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

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

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

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

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

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

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

```

```

    imsi-and-ESN-DS-41      IMSI-and-ESN-DS-41,
    tmsi-DS-41             TMSI-DS-41
}

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

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

IntegrityProtectionAlgorithm ::= ENUMERATED {
    uia1 }

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

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

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

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

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

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

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

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

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

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

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

MaxNoSCCPCH-RL ::=            ENUMERATED {
    r11 }

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

MaxNumberOfTFC-InTFCS-DL ::=  ENUMERATED {

```

```

tfc16, tfc32, tfc48, tfc64, tfc96,
tfc128, tfc256, tfc512, tfc1024 }

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

MaxPhysChPerFrame ::=            INTEGER (1..224)

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

MaxPhysChPerTimeslot ::=         ENUMERATED {
ts1, ts2 }

MaxPhysChPerTS ::=               INTEGER (1..16)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

N-312 ::=                        ENUMERATED {
s1, s50, s100, s200, s400,

```

```

        s600, s800, s1000 }

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PDCP-Capability ::=
    SEQUENCE {
        losslessSRNS-RelocationSupport
        supportForRfc2507
        notSupported
        supported
    }

PDCP-Capability-r4-ext ::=
    SEQUENCE {
        supportForRfc3095
        notSupported
        supported
        maxROHC-ContextSessions
        reverseCompressionDepth
    }
    CHOICE {
        NULL,
        SEQUENCE {
            MaxROHC-ContextSessions-r4
            INTEGER (0..65535)
        }
    }
    ---DEFAULT s16,
    DEFAULT 0

```

```

    }
  }
}

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

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

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

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

ProtocolErrorIndicator ::= ENUMERATED {
    noError, errorOccurred }

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

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

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

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

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

```

```

}

RedirectionInfo ::=
    frequencyInfo
    interRATInfo
}

RejectionCause ::=
    ENUMERATED {
        congestion,
        unspecified }

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

RF-Capability ::=
    fddRF-Capability
    ue-PowerClass
    txRxFrequencySeparation
}
tddRF-Capability
    ue-PowerClass
    radioFrequencyBandList
    chipRateCapability
}

RF-Capability-r4-Ext ::=
    tddRF-Capability
    ue-PowerClass
    radioFrequencyBandList
    chipRateCapability
}

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

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

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

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

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

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

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

SecurityCapability ::=
    cipheringAlgorithmCap
    integrityProtectionAlgorithmCap
}

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

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

```

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

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

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

SystemSpecificCapUpdateReq ::= ENUMERATED {
  gsm }

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

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

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

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

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

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

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

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

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

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

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

T-312 ::= INTEGER (0..15)

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

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

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

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

```

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

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

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

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

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

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

TransportChannelCapability ::=
    SEQUENCE {
        dl-TransChCapability
        ul-TransChCapability
    }

TurboSupport ::=
    CHOICE {
        notSupported
        supported
    }

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

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

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

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

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

```



```

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

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

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

UE-RadioAccessCapability-r4-ext ::= SEQUENCE {
    pdcp-Capability-r4-ext
    ICS-Version-r4
    RF-Capability
    PhysicalChannelCapability-LCR-r4
    MeasurementCapability-r4-ext OPTIONAL
}

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

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

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

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

UE-Positioning-Capability ::= SEQUENCE {
    standaloneLocMethodsSupported
    BOOLEAN,
    ue-BasedOTDOA-Supported
    BOOLEAN,
    networkAssistedGPS-Supported
    NetworkAssistedGPS-Supported,
    gps-ReferenceTimeCapable
    BOOLEAN,
    supportForIDL
    BOOLEAN
}

URA-UpdateCause ::= ENUMERATED {
    changeOfURA,
    periodicURAUpdate,
    re-enteredServiceArea,
    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
    }

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

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

DefaultConfigIdentity ::=
    INTEGER (0..9)

DefaultConfigMode ::=
    ENUMERATED {
        fdd,
        tdd }

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

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

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

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

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

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

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

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

ExpectReordering ::=
    ENUMERATED {
        reorderingNotExpected,
        reorderingExpected }

```

```

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

HeaderCompressionInfo ::=
    algorithmSpecificInfo
}
SEQUENCE {
    AlgorithmSpecificInfo
}

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

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

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

LogicalChannelIdentity ::=
INTEGER (1..15)

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

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

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

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

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

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

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

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

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

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

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

PDCP-InfoReconfig-r4 ::=
SEQUENCE {

```

```

    pdcp-Info                PDCP-Info-r4,
    pdcp-SN-Info             PDCP-SN-Info
}

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

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

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

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

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

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

PredefinedConfigIdentity ::= INTEGER (0..15)

PredefinedConfigValueTag ::= INTEGER (0..15)

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

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

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

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

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

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

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

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

```

```

}

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

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

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

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

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

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

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

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

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

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

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

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

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

RB-InformationReconfig ::= SEQUENCE {
    rb-Identity
    pdcp-Info
    pdcp-SN-Info
    rlc-Info
    rb-MappingInfo
    rb-StopContinue
}

RB-InformationReconfig-r4 ::= SEQUENCE {
    rb-Identity
    pdcp-Info
    rlc-Info
    rb-MappingInfo
    rb-StopContinue
}

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

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

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

```

```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

```

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

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

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

TransmissionRLC-Discard ::=
    timerBasedExplicit
    timerBasedNoExplicit
    maxDAT-Retransmissions
    noDiscard
}

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

UL-AM-RLC-Mode ::=
    transmissionRLC-Discard
    transmissionWindowSize
    timerRST
    max-RST
    pollingInfo
}

UL-CounterSynchronisationInfo ::=
    rB-WithPDCP-InfoList
    startList
}

UL-LogicalChannelMapping ::=
    -- TABULAR: UL-TransportChannelType contains TransportChannelIdentity as well.
    ul-TransportChannelType
    logicalChannelIdentity
    rlc-SizeList
    allSizes
    configured
    explicitList
    mac-LogicalChannelPriority
}

UL-LogicalChannelMappingList ::=
    rlc-LogicalChannelMappingIndicator
    ul-LogicalChannelMapping
}

UL-LogicalChannelMappings ::=
    oneLogicalChannel
    twoLogicalChannels
}

UL-RLC-Mode ::=
    ul-AM-RLC-Mode
    ul-UM-RLC-Mode
    ul-TM-RLC-Mode
    spare
}

```



```

}

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

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

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

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

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

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

BitModeRLC-SizeInfo ::=
    CHOICE {
    sizeType1                    INTEGER (0..127),
    sizeType2                    SEQUENCE {
        part1                    INTEGER (0..15),
        part2                    INTEGER (1..7)
        -- Actual size = (part1 * 8) + 128 + part2
    },
    sizeType3                    SEQUENCE {
        part1                    INTEGER (0..47),
        part2                    INTEGER (1..15)
        -- Actual size = (part1 * 16) + 256 + part2
    },
    sizeType4                    SEQUENCE {
        part1                    INTEGER (0..62),
        part2                    INTEGER (1..63)
        -- Actual size = (part1 * 64) + 1024 + part2
    }
    }
-- Actual value = IE value * 0.1
BLER-QualityValue ::=
    INTEGER (-63..0)

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

CodingRate ::=
    ENUMERATED {
    half,
    third
    }

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

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
}

DL-AddReconfTransChInfo2List ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    DL-AddReconfTransChInformation2

DL-AddReconfTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    DL-AddReconfTransChInformation

-- ASN.1 for IE "Added or Reconfigured DL TrCH information"
-- in case of messages other than: Radio Bearer Release message and
-- Radio Bearer Reconfiguration message
DL-AddReconfTransChInformation ::= SEQUENCE {

```

```

dl-TransportChannelType          DL-TrCH-Type,
dl-transportChannelIdentity      TransportChannelIdentity,
tfs-SignallingMode              CHOICE {
    explicit                      TransportFormatSet,
    sameAsULTrCH                 UL-TransportChannelIdentity
},
dch-QualityTarget               QualityTarget                OPTIONAL,
tm-SignallingInfo               TM-SignallingInfo           OPTIONAL
}

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

DL-CommonTransChInfo ::= SEQUENCE {
    sccpch-TFCS                  TFCS                OPTIONAL,
    modeSpecificInfo            CHOICE {
        fdd                      SEQUENCE {
            tfcs-SignallingMode   CHOICE {
                explicit          TFCS,
                sameAsUL         NULL
            }
        },
        tdd                      SEQUENCE {
            individualDL-CCTrCH-InfoList IndividualDL-CCTrCH-InfoList OPTIONAL
        }
    }
}

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

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

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

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

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

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

ExplicitTFCS-Configuration ::= CHOICE {
    complete                    TFCS-ReconfAdd,
    addition                    TFCS-ReconfAdd,
    removal                     TFCS-RemovalList,
    replacement                 SEQUENCE {
        tfcsRemoval            TFCS-RemovalList,
        tfcsAdd                 TFCS-ReconfAdd
    }
}

GainFactor ::= INTEGER (0..15)

GainFactorInformation ::= CHOICE {
    signalledGainFactors        SignalledGainFactors,
    computedGainFactors         ReferenceTFC-ID
}

IndividualDL-CCTrCH-Info ::= SEQUENCE {

```

```

dl-TFCS-Identity          TFCS-Identity,
tfcs-SignallingMode      CHOICE {
  explicit                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
}

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

LogicalChannelByRB      ::= SEQUENCE {
  rb-Identity            RB-Identity,
  logChOfRb              INTEGER (0..1)
}
OPTIONAL

LogicalChannelList ::= CHOICE {
  allSizes                NULL,
  configured              NULL,
  explicitList            SEQUENCE (SIZE (1..15)) OF
    LogicalChannelByRB
}

NumberOfTbSizeAndTTIList ::= SEQUENCE (SIZE (1..maxTF)) OF SEQUENCE {
  numberOfTransportBlocks  NumberOfTransportBlocks,
  transmissionTimeInterval TransmissionTimeInterval
}

MessType ::= ENUMERATED {
  transportFormatCombinationControl }

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

NumberOfTransportBlocks ::= CHOICE {
  zero                    NULL,
  one                      NULL,
  small                    INTEGER (2..17),
  large                    INTEGER (18..512)
}

OctetModeRLC-SizeInfoType1 ::= CHOICE {
  sizeType1                INTEGER (0..31),
  -- Actual size = (8 * sizeType1) + 16
  sizeType2                SEQUENCE {
    part1                    INTEGER (0..23),
    part2                    INTEGER (1..3)
  }
  -- Actual size = (32 * part1) + 272 + (part2 * 8)
  },
  sizeType3                SEQUENCE {
    part1                    INTEGER (0..61),
    part2                    INTEGER (1..7)
  }
  -- Actual size = (64 * part1) + 1040 + (part2 * 8)
}
OPTIONAL
OPTIONAL

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

PowerOffsetInformation ::= SEQUENCE {
  gainFactorInformation    GainFactorInformation,
  -- PowerOffsetPp-m is always absent in TDD
  powerOffsetPp-m         PowerOffsetPp-m
}
OPTIONAL

```

```

PowerOffsetPp-m ::=                               INTEGER (-5..10)

PreDefTransChConfiguration ::=                   SEQUENCE {
  ul-CommonTransChInfo                          UL-CommonTransChInfo,
  ul-AddReconfTrChInfoList                     UL-AddReconfTransChInfoList,
  dl-CommonTransChInfo                          DL-CommonTransChInfo,
  dl-TrChInfoList                              DL-AddReconfTransChInfoList
}

QualityTarget ::=                               SEQUENCE {
  bler-QualityValue                             BLER-QualityValue
}

RateMatchingAttribute ::=                       INTEGER (1..hiRM)

ReferenceTFC-ID ::=                             INTEGER (0..3)

RestrictedTrChInfo ::=                          SEQUENCE {
  ul-TransportChannelType                       UL-TrCH-Type,
  restrictedTrChIdentity                       TransportChannelIdentity,
  allowedTFI-List                              AllowedTFI-List                               OPTIONAL
}

RestrictedTrChInfoList ::=                      SEQUENCE (SIZE (1..maxTrCH)) OF
  RestrictedTrChInfo

SemistaticTF-Information ::=                   SEQUENCE {
  -- TABULAR: Transmission time interval has been included in the IE CommonTransChTFS.
  channelCodingType                           ChannelCodingType,
  rateMatchingAttribute                       RateMatchingAttribute,
  crc-Size                                    CRC-Size
}

SignalledGainFactors ::=                       SEQUENCE {
  modeSpecificInfo                             CHOICE {
    fdd                                         SEQUENCE {
      gainFactorBetaC                          GainFactor
    },
    tdd                                         NULL
  },
  gainFactorBetaD                              GainFactor,
  referenceTFC-ID                              ReferenceTFC-ID                               OPTIONAL
}

SplitTFCI-Signalling ::=                       SEQUENCE {
  splitType                                    SplitType                               OPTIONAL,
  tfci-Field2-Length                          INTEGER (1..10)                          OPTIONAL,
  tfci-Field1-Information                     ExplicitTFCS-Configuration                OPTIONAL,
  tfci-Field2-Information                     TFCI-Field2-Information                   OPTIONAL
}

SplitType ::=                                  ENUMERATED {
  hardSplit, logicalSplit }

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

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

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

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

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

```

```

TFCS ::=
    normalTFCI-Signalling
    splitTFCI-Signalling
}

TFCS-Identity ::=
    tfcs-ID
    sharedChannelIndicator
}

TFCS-IdentityPlain ::=
    INTEGER (1..8)

TFCS-InfoForDSDCH ::=
    ctfc2bit
    ctfc4bit
    ctfc6bit
    ctfc8bit
    ctfc12bit
    ctfc16bit
    ctfc24bit
}

TFCS-ReconfAdd ::=
    ctfcSize
        ctfc2Bit
            ctfc2
            gainFactorInformation
        },
        ctfc4Bit
            ctfc4
            gainFactorInformation
        },
        ctfc6Bit
            ctfc6
            gainFactorInformation
        },
        ctfc8Bit
            ctfc8
            gainFactorInformation
        },
        ctfc12Bit
            ctfc12
            gainFactorInformation
        },
        ctfc16Bit
            ctfc16
            gainFactorInformation
        },
        ctfc24Bit
            ctfc24
            gainFactorInformation
    }
}

TFCS-Removal ::=
    tfci
}

TFCS-RemovalList ::=
    SEQUENCE (SIZE (1..maxTFC)) OF
        TFCS-Removal

TimeDurationBeforeRetry ::=
    INTEGER (1..256)

TM-SignallingInfo ::=
    messType
    tm-SignallingMode
    mode1
    mode2
    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
}

UL-AddReconfTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    UL-AddReconfTransChInformation

UL-AddReconfTransChInformation ::= SEQUENCE {
    ul-TransportChannelType UL-TrCH-Type,
    transportChannelIdentity TransportChannelIdentity,
    transportFormatSet TransportFormatSet
}

UL-CommonTransChInfo ::= SEQUENCE {
    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,
            ul-TFCS TFCS
        }
    } OPTIONAL
}

UL-ControlledTrChList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    TransportChannelIdentity

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

UL-TransportChannelIdentity ::= SEQUENCE {
    ul-TransportChannelType UL-TrCH-Type,
    ul-TransportChannelIdentity TransportChannelIdentity
}

UL-TrCH-Type ::= ENUMERATED {dch, usch}

-- *****
--
-- PHYSICAL CHANNEL INFORMATION ELEMENTS (10.3.6)
--
-- *****

AC-To-ASC-Mapping ::= INTEGER (0..7)

AC-To-ASC-MappingTable ::= SEQUENCE (SIZE (maxASCmap)) OF
    AC-To-ASC-Mapping

AccessServiceClass-FDD ::= SEQUENCE {
    availableSignatureStartIndex INTEGER (0..15),
    availableSignatureEndIndex INTEGER (0..15),
    assignedSubChannelNumber BIT STRING (SIZE(4))
}

AccessServiceClass-TDD ::= SEQUENCE {
    channelisationCodeIndices BIT STRING (SIZE(8)) OPTIONAL,
    subchannelSize CHOICE {
        size1 NULL,
        size2 SEQUENCE {
            subchannels ENUMERATED { subch0, subch1 } OPTIONAL
        },
        size4 SEQUENCE {

```

```

        subchannels          BIT STRING (SIZE(4))          OPTIONAL
    },
    size8                    SEQUENCE {
        subchannels          BIT STRING (SIZE(8))          OPTIONAL
    }
}

| AccessServiceClass-TDD-LCR-r4 ::= SEQUENCE {
    availableSYNC-ULCodesIndics BIT STRING (SIZE(8))          OPTIONAL,
    subchannelSize             CHOICE {
        size1                  NULL,
-- in size2, subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'.
        size2                  SEQUENCE {
            subchannels        ENUMERATED { subch0, subch1 }  OPTIONAL
        },
        size4                  SEQUENCE {
            subchannels        BIT STRING (SIZE(4))          OPTIONAL
        },
        size8                  SEQUENCE {
            subchannels        BIT STRING (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)
}

Alpha ::= INTEGER (0..8)

AP-AICH-ChannelisationCode ::= INTEGER (0..255)

AP-PreambleScramblingCode ::= INTEGER (0..79)

AP-Signature ::= INTEGER (0..15)

AP-Signature-VCAM ::= SEQUENCE {
    ap-Signature                AP-Signature,
    availableAP-SubchannelList  AvailableAP-SubchannelList OPTIONAL
}

AP-Subchannel ::= INTEGER (0..11)

ASCSetting-FDD ::= SEQUENCE {
-- TABULAR: This is MD in tabular description
-- Default value is previous ASC
-- If this is the first ASC, the default value is all available signature and sub-channels
    accessServiceClass-FDD      AccessServiceClass-FDD  OPTIONAL
}

ASCSetting-TDD ::= SEQUENCE {
-- TABULAR: This is MD in tabular description
-- Default value is previous ASC
-- If this is the first ASC, the default value is all available channelisation codes and
-- all available sub-channels with subchannelSize=size1.
    accessServiceClass-TDD      AccessServiceClass-TDD  OPTIONAL
}

| ASCSetting-TDD-LCR-r4 ::= SEQUENCE {
-- TABULAR: This is MD in tabular description
-- Default value is previous ASC
-- If this is the first ASC, the default value is all available SYNC_UL codes and
-- all available sub-channels with subchannelSize=size1.
    accessServiceClass-TDD-LCR-r4 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(SIZE(16))

AvailableSubChannelNumbers ::= BIT STRING(SIZE(12))

BurstType ::= ENUMERATED {
    short1, long2 }

CCTrCH-PowerControlInfo ::= SEQUENCE {
    tfcs-Identity TFCS-Identity OPTIONAL,
    ul-DPCH-PowerControlInfo UL-DPCH-PowerControlInfo
}

CCTrCH-PowerControlInfo-r4 ::= SEQUENCE {
    tfcs-Identity TFCS-Identity OPTIONAL,
    ul-DPCH-PowerControlInfo-r4 UL-DPCH-PowerControlInfo-r4
}

CD-AccessSlotSubchannel ::= INTEGER (0..11)

CD-AccessSlotSubchannelList ::= SEQUENCE (SIZE (1..maxPCPCH-CDsubCh)) OF
    CD-AccessSlotSubchannel

CD-CA-ICH-ChannelisationCode ::= INTEGER (0..255)

CD-PreambleScramblingCode ::= INTEGER (0..79)

CD-SignatureCode ::= INTEGER (0..15)

CD-SignatureCodeList ::= SEQUENCE (SIZE (1..maxPCPCH-CDsig)) OF
    CD-SignatureCode

CellAndChannelIdentity ::= SEQUENCE {
    burstType BurstType,
    midambleShift MidambleShiftLong,
    basicMidambleNumber INTEGER (0..127)
}

CellParametersID ::= INTEGER (0..127)

Cfntargetsfnframeoffset ::= INTEGER(0..255)

ChannelAssignmentActive ::= CHOICE {
    notActive NULL,
    isActive AvailableMinimumSF-ListVCAM
}

ChannelisationCode256 ::= INTEGER (0..255)

ChannelReqParamsForUCSM ::= SEQUENCE {
    availableAP-SignatureList AvailableAP-SignatureList,
    availableAP-SubchannelList AvailableAP-SubchannelList OPTIONAL
}

ClosedLoopTimingAdjMode ::= ENUMERATED {
    slot1, slot2 }

CodeNumberDSCH ::= INTEGER (0..255)

```

```

CodeRange ::=                               SEQUENCE {
    pdsch-CodeMapList                         PDSCH-CodeMapList
}

CodeWordSet ::=                             ENUMERATED {
    longCWS,
    mediumCWS,
    shortCWS,
    ssdtOff }

CommonTimeslotInfo ::=                     SEQUENCE {
    -- TABULAR: The IE below is MD, but since it can be encoded in a single
    -- bit it is not defined as OPTIONAL.
    secondInterleavingMode                   SecondInterleavingMode,
    tfci-Coding                              TFCI-Coding                               OPTIONAL,
    puncturingLimit                          PuncturingLimit,
    repetitionPeriodAndLength                RepetitionPeriodAndLength                OPTIONAL
}

CommonTimeslotInfoSCCPCH ::=               SEQUENCE {
    -- TABULAR: The IE below is MD, but since it can be encoded in a single
    -- bit it is not defined as OPTIONAL.
    secondInterleavingMode                   SecondInterleavingMode,
    tfci-Coding                              TFCI-Coding                               OPTIONAL,
    puncturingLimit                          PuncturingLimit,
    repetitionPeriodLengthAndOffset          RepetitionPeriodLengthAndOffset          OPTIONAL
}

ConstantValue ::=                          INTEGER (-35..-10)

CPCH-PersistenceLevels ::=                 SEQUENCE {
    cpch-SetID                               CPCH-SetID,
    dynamicPersistenceLevelTF-List           DynamicPersistenceLevelTF-List
}

CPCH-PersistenceLevelsList ::=             SEQUENCE (SIZE (1..maxCPCHsets)) OF
    CPCH-PersistenceLevels

CPCH-SetInfo ::=                           SEQUENCE {
    cpch-SetID                               CPCH-SetID,
    transportFormatSet                       TransportFormatSet,
    tfcs                                      TFCS,
    ap-PreambleScramblingCode                AP-PreambleScramblingCode,
    ap-AICH-ChannelisationCode                AP-AICH-ChannelisationCode,
    cd-PreambleScramblingCode                 CD-PreambleScramblingCode,
    cd-CA-ICH-ChannelisationCode              CD-CA-ICH-ChannelisationCode,
    cd-AccessSlotSubchannelList              CD-AccessSlotSubchannelList              OPTIONAL,
    cd-SignatureCodeList                     CD-SignatureCodeList                    OPTIONAL,
    deltaPp-m                                DeltaPp-m,
    ul-DPCCH-SlotFormat                       UL-DPCCH-SlotFormat,
    n-StartMessage                           N-StartMessage,
    n-EOT                                     N-EOT,
    channelAssignmentActive                   ChannelAssignmentActive,
    -- TABULAR: VCAM info has been nested inside ChannelAssignmentActive,
    -- which in turn is mandatory since it's only a binary choice.
    cpch-StatusIndicationMode                CPCH-StatusIndicationMode,
    pcpch-ChannelInfoList                    PCPCH-ChannelInfoList
}

CPCH-SetInfoList ::=                       SEQUENCE (SIZE (1..maxCPCHsets)) OF
    CPCH-SetInfo

CPCH-StatusIndicationMode ::=              ENUMERATED {
    pa-mode,
    pamsf-mode }

CSICH-PowerOffset ::=                      INTEGER (-10..5)

-- DefaultDPCH-OffsetValueFDD and DefaultDPCH-OffsetValueTDD corresponds to
-- IE "Default DPCH Offset Value" depending on the mode.
-- Actual value = IE value * 512
DefaultDPCH-OffsetValueFDD ::=             INTEGER (0..599)

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

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

-- Actual value = IE value * 0.1

```

```

DeltaSIR ::= INTEGER (0..30)

DL-CCTrCh ::= SEQUENCE {
    tfcs-Identity          TFCS-IdentityPlain          OPTIONAL,
    timeInfo              TimeInfo,
    dl-CCTrCH-TimeslotsCodes DownlinkTimeslotsCodes  OPTIONAL,
    ul-CCTrChTPCList     UL-CCTrChTPCList            OPTIONAL
}

DL-CCTrCh-r4 ::= SEQUENCE {
    tfcs-Identity          TFCS-IdentityPlain          OPTIONAL,
    timeInfo              TimeInfo,
    tddOption             CHOICE {
        tdd384            SEQUENCE {
            dl-CCTrCH-TimeslotsCodes DownlinkTimeslotsCodes  OPTIONAL
        },
        tdd128            SEQUENCE {
            dl-CCTrCH-TimeslotsCodes DownlinkTimeslotsCodes-LCR-r4  OPTIONAL
        }
    },
    ul-CCTrChTPCList     UL-CCTrChTPCList            OPTIONAL
}

DL-CCTrChList ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
    DL-CCTrCh

DL-CCTrChList-r4 ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
    DL-CCTrCh-r4

DL-CCTrChTPCList ::= SEQUENCE (SIZE (0..maxCCTrCH)) OF
    TFCS-Identity

DL-ChannelisationCode ::= SEQUENCE {
    secondaryScramblingCode SecondaryScramblingCode  OPTIONAL,
    sf-AndCodeNumber       SF512-AndCodeNumber,
    scramblingCodeChange   ScramblingCodeChange  OPTIONAL
}

DL-ChannelisationCodeList ::= SEQUENCE (SIZE (1..maxDPCH-DLchan)) OF
    DL-ChannelisationCode

DL-CommonInformation ::= SEQUENCE {
    dl-DPCH-InfoCommon    DL-DPCH-InfoCommon          OPTIONAL,
    modeSpecificInfo      CHOICE {
        fdd               SEQUENCE {
            defaultDPCH-OffsetValue DefaultDPCH-OffsetValueFDD  OPTIONAL,
            dpch-CompressedModeInfo DPCH-CompressedModeInfo  OPTIONAL,
            tx-DiversityMode   TX-DiversityMode          OPTIONAL,
            ssdt-Information   SSDT-Information          OPTIONAL
        },
        tdd               SEQUENCE {
            defaultDPCH-OffsetValue DefaultDPCH-OffsetValueTDD  OPTIONAL
        }
    }
}

DL-CommonInformation-r4 ::= SEQUENCE {
    dl-DPCH-InfoCommon    DL-DPCH-InfoCommon          OPTIONAL,
    modeSpecificInfo      CHOICE {
        fdd               SEQUENCE {
            defaultDPCH-OffsetValue DefaultDPCH-OffsetValueFDD  OPTIONAL,
            dpch-CompressedModeInfo DPCH-CompressedModeInfo  OPTIONAL,
            tx-DiversityMode   TX-DiversityMode          OPTIONAL,
            ssdt-Information   SSDT-Information-r4        OPTIONAL
        },
        tdd               SEQUENCE {
            tddOption       CHOICE {
                tdd384      NULL,
                tdd128      SEQUENCE {
                    tstd-Indicator BOOLEAN
                }
            },
            defaultDPCH-OffsetValue DefaultDPCH-OffsetValueTDD  OPTIONAL
        }
    }
}

DL-CommonInformationPost ::= SEQUENCE {

```

```

    dl-DPCH-InfoCommon                DL-DPCH-InfoCommonPost
}

DL-CommonInformationPredef ::=      SEQUENCE {
    dl-DPCH-InfoCommon                DL-DPCH-InfoCommonPredef    OPTIONAL,
    modeSpecificInfo                  CHOICE {
        fdd                            SEQUENCE {
            defaultDPCH-OffsetValue    DefaultDPCH-OffsetValueFDD
        },
        tdd                            SEQUENCE {
            defaultDPCH-OffsetValue    DefaultDPCH-OffsetValueTDD
        }
    }
}

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-pdpch      PowerOffsetPilot-pdpch,
            dl-rate-matching-restriction DL-rate-matching-restriction    OPTIONAL,
            spreadingFactorAndPilot     SF512-AndPilot,
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            positionFixedOrFlexible     PositionFixedOrFlexible,
            tfci-Existence              BOOLEAN
        },
        tdd                            SEQUENCE {
            dl-DPCH-PowerControlInfo    DL-DPCH-PowerControlInfo    OPTIONAL,
            commonTimeslotInfo          CommonTimeslotInfo          OPTIONAL
        }
    }
}

DL-DPCH-InfoCommonPost ::=        SEQUENCE {
    dl-DPCH-PowerControlInfo          DL-DPCH-PowerControlInfo    OPTIONAL
}

DL-DPCH-InfoCommonPredef ::=      SEQUENCE {
    modeSpecificInfo                  CHOICE {
        fdd                            SEQUENCE {
            spreadingFactorAndPilot     SF512-AndPilot,
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            positionFixedOrFlexible     PositionFixedOrFlexible,
            tfci-Existence              BOOLEAN
        },
        tdd                            SEQUENCE {
            commonTimeslotInfo          CommonTimeslotInfo
        }
    }
}

DL-DPCH-InfoPerRL ::=            CHOICE {
    fdd                                SEQUENCE {
        pCPICH-UsageForChannelEst      PCPICH-UsageForChannelEst,
        dcph-FrameOffset               DPCH-FrameOffset,
        secondaryCPICH-Info             SecondaryCPICH-Info          OPTIONAL,
        dl-ChannelisationCodeList      DL-ChannelisationCodeList,
        tpc-CombinationIndex           TPC-CombinationIndex,
        ssdt-CellIdentity              SSDT-CellIdentity           OPTIONAL,
        closedLoopTimingAdjMode        ClosedLoopTimingAdjMode     OPTIONAL
    },
    tdd                                DL-CCTrChList
}

DL-DPCH-InfoPerRL-r4 ::=         CHOICE {
    fdd                                SEQUENCE {
        pCPICH-UsageForChannelEst      PCPICH-UsageForChannelEst,
        dcph-FrameOffset               DPCH-FrameOffset,

```

secondaryCPICH-Info	SecondaryCPICH-Info	OPTIONAL,
dl-ChannelisationCodeList	DL-ChannelisationCodeList,	
tpc-CombinationIndex	TPC-CombinationIndex,	
ssdt-CellIdentity	SSDT-CellIdentity	OPTIONAL,
closedLoopTimingAdjMode	ClosedLoopTimingAdjMode	OPTIONAL
},		
tdd	DL-CCTrChList-r4	
}		
DL-DPCH-InfoPerRL-PostFDD ::=	SEQUENCE {	
pCPICH-UsageForChannelEst	PCPICH-UsageForChannelEst,	
dl-ChannelisationCode	DL-ChannelisationCode,	
tpc-CombinationIndex	TPC-CombinationIndex	
}		
DL-DPCH-InfoPerRL-PostTDD ::=	SEQUENCE {	
dl-CCTrCH-TimeslotsCodes	DownlinkTimeslotsCodes	
}		
DL-DPCH-InfoPerRL-PostTDD-LCR-r4 ::=	SEQUENCE {	
dl-CCTrCH-TimeslotsCodes	 DownlinkTimeslotsCodes-LCR-r4	
}		
DL-DPCH-PowerControlInfo ::=	SEQUENCE {	
modeSpecificInfo	CHOICE {	
fdd	SEQUENCE {	
dpc-Mode	DPC-Mode	
},		
tdd	SEQUENCE {	
tpc-StepSizeTDD	TPC-StepSizeTDD	OPTIONAL
}		
}		
DL-FrameType ::=	ENUMERATED {	
	dl-FrameTypeA, dl-FrameTypeB }	
DL-InformationPerRL ::=	SEQUENCE {	
modeSpecificInfo	CHOICE {	
fdd	SEQUENCE {	
primaryCPICH-Info	PrimaryCPICH-Info,	
pdsch-SHO-DCH-Info	PDSCH-SHO-DCH-Info	OPTIONAL,
pdsch-CodeMapping	PDSCH-CodeMapping	OPTIONAL
},		
tdd	PrimaryCCPCH-Info	
},		
dl-DPCH-InfoPerRL	DL-DPCH-InfoPerRL	OPTIONAL,
secondaryCCPCH-Info	SecondaryCCPCH-Info	OPTIONAL
}		
DL-InformationPerRL-r4 ::=	SEQUENCE {	
modeSpecificInfo	CHOICE {	
fdd	SEQUENCE {	
primaryCPICH-Info	PrimaryCPICH-Info,	
pdsch-SHO-DCH-Info	PDSCH-SHO-DCH-Info	OPTIONAL,
pdsch-CodeMapping	PDSCH-CodeMapping	OPTIONAL
},		
tdd	PrimaryCCPCH-Info-r4	
},		
dl-DPCH-InfoPerRL	DL-DPCH-InfoPerRL-r4	OPTIONAL,
secondaryCCPCH-Info	SecondaryCCPCH-Info-r4	OPTIONAL
}		
DL-InformationPerRL-List ::=	SEQUENCE (SIZE (1..maxRL)) OF	
	DL-InformationPerRL	
DL-InformationPerRL-List-r4 ::=	SEQUENCE (SIZE (1..maxRL)) OF	
	DL-InformationPerRL-r4	
DL-InformationPerRL-ListPostFDD ::=	SEQUENCE (SIZE (1..maxRL)) OF	
	DL-InformationPerRL-PostFDD	
DL-InformationPerRL-PostFDD ::=	SEQUENCE {	
primaryCPICH-Info	PrimaryCPICH-Info,	
dl-DPCH-InfoPerRL	DL-DPCH-InfoPerRL-PostFDD	
}		
DL-InformationPerRL-PostTDD ::=	SEQUENCE {	

```

    primaryCCPCH-Info          PrimaryCCPCH-InfoPost,
    dl-DPCH-InfoPerRL          DL-DPCH-InfoPerRL-PostTDD
}

DL-InformationPerRL-PostTDD-LCR-r4 ::= SEQUENCE {
    primaryCCPCH-Info          PrimaryCCPCH-InfoPostTDD-LCR-r4,
    dl-DPCH-InfoPerRL          DL-DPCH-InfoPerRL-PostTDD-LCR-r4
}

DL-PDSCH-Information ::= SEQUENCE {
    pdsch-SHO-DCH-Info        PDSCH-SHO-DCH-Info          OPTIONAL,
    pdsch-CodeMapping          PDSCH-CodeMapping          OPTIONAL
}

Dl-rate-matching-restriction ::= SEQUENCE {
    restrictedTrCH-InfoList    RestrictedTrCH-InfoList    OPTIONAL
}

DL-TS-ChannelisationCode ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

DL-TS-ChannelisationCodesShort ::= SEQUENCE {
    codesRepresentation        CHOICE {
        consecutive            SEQUENCE {
            firstChannelisationCode    DL-TS-ChannelisationCode,
            lastChannelisationCode     DL-TS-ChannelisationCode
        },
        bitmap                  BIT STRING (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-r4-1),

```

```

        timeslotList
    }
}
DPC-Mode ::=
    ENUMERATED {
        singleTPC,
        tpcTripletInSoft }
-- The actual value of DPCCH power offset is the value of this IE * 2.
DPCCH-PowerOffset ::=
    INTEGER (-82..-3)
-- The actual value of DPCCH power offset is the value of this (2 + IE * 4).
DPCCH-PowerOffset2 ::=
    INTEGER (-28..-13)
DPCH-CompressedModeInfo ::=
    SEQUENCE {
        tgp-SequenceList
    }
DPCH-CompressedModeStatusInfo ::=
    SEQUENCE (SIZE (1..maxTGPS)) OF
        TGP-SequenceShort
-- TABULAR: Actual value = IE value * 256
DPCH-FrameOffset ::=
    INTEGER (0..149)
DSCH-Mapping ::=
    SEQUENCE {
        maxTFCI-Field2Value
        spreadingFactor
        codeNumber
        multiCodeInfo
    }
DSCH-MappingList ::=
    SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
        DSCH-Mapping
DSCH-RadioLinkIdentifier ::=
    INTEGER (0..511)
DurationTimeInfo ::=
    INTEGER (1..4096)
-- TABULAR : value [Duration = infinite] is the value by default,
-- and is encoded by absence of the full sequence. If the sequence is present,
-- thefield is absent, the default is respectivelyinfinite. Presence of the
-- field absent should not be used, but shall be understood as if the
-- sequence was absent.
DynamicPersistenceLevel ::=
    INTEGER (1..8)
DynamicPersistenceLevelList ::=
    SEQUENCE (SIZE (1..maxPRACH)) OF
        DynamicPersistenceLevel
DynamicPersistenceLevelTF-List ::=
    SEQUENCE (SIZE (1..maxTF-CPCH)) OF
        DynamicPersistenceLevel
FACH-PCH-Information ::=
    SEQUENCE {
        transportFormatSet
        transportChannelIdentity
        ctch-Indicator
    }
FACH-PCH-InformationList ::=
    SEQUENCE (SIZE (1..maxFACH)) OF
        FACH-PCH-Information
FPACH-Info-r4 ::=
    SEQUENCE {
        timeslot
        channelisationCode
        midambleShiftAndBurstType
    }
FrequencyInfo ::=
    SEQUENCE {
        modeSpecificInfo
        fdd
        tdd
    }
FrequencyInfoFDD ::=
    SEQUENCE {
        uarfcn-UL
        UARFCN
        OPTIONAL,

```

```

    uarfcn-DL                                UARFCN
}

FrequencyInfoTDD ::=                        SEQUENCE {
    uarfcn-Nt                                UARFCN
}

IndividualTimeslotInfo ::=                  SEQUENCE {
    timeslotNumber                          TimeslotNumber,
    tfci-Existence                          BOOLEAN,
    midambleShiftAndBurstType               MidambleShiftAndBurstType
}

IndividualTimeslotInfo-LCR-r4 ::=          SEQUENCE {
    timeslotNumber                          TimeslotNumber-LCR-r4,
    tfci-Existence                          BOOLEAN,
    midambleShiftAndBurstType               MidambleShiftAndBurstType-LCR-r4,
    modulation                              ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols                          ENUMERATED { zero, one, sixteenOverSF }
}

IndividualTimeslotInfo-LCR-r4-Ext ::=      SEQUENCE {
-- timeslotNumber and tfci-Existence is taken from IndividualTimeslotInfo.
-- midambleShiftAndBurstType in IndividualTimeslotInfo shall be ignored.
    midambleShiftAndBurstType               MidambleShiftAndBurstType-LCR-r4,
    modulation                              ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols                          ENUMERATED { zero, one, sixteenOverSF }
}

IndividualTS-Interference ::=              SEQUENCE {
    timeslot                                 TimeslotNumber,
    ul-TimeslotInterference                 UL-Interference
}

IndividualTS-Interference-LCR-r4 ::=      SEQUENCE {
    timeslot                                 TimeslotNumber-LCR-r4,
    ul-TimeslotInterference                 UL-Interference
}

IndividualTS-InterferenceList ::=          SEQUENCE (SIZE (1..maxTS)) OF
    IndividualTS-Interference

IndividualTS-InterferenceList-r4 ::=       CHOICE {
    tdd384                                  SEQUENCE (SIZE (1..maxTS)) OF
        IndividualTS-Interference,
    tdd128                                  SEQUENCE (SIZE (1..maxTS-LCR-r4)) OF
        IndividualTS-Interference-LCR-r4
}

ITP ::=                                    ENUMERATED {
    mode0, mode1
}

NIdentifyAbort ::= INTEGER (1..128)

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

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

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

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

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

MidambleConfigurationBurstType2 ::=        ENUMERATED {ms3, ms6}

MidambleShiftAndBurstType ::=              SEQUENCE {
    burstType                                CHOICE {
        type1                                SEQUENCE {
            midambleConfigurationBurstTypeLand3 MidambleConfigurationBurstTypeLand3,
            midambleAllocationMode              CHOICE {
                defaultMidamble                NULL,
                commonMidamble                 NULL,
                ueSpecificMidamble              SEQUENCE {
                    midambleShift                MidambleShiftLong
                }
            }
        }
    }
},

```



```

type2
midambleConfigurationBurstType2 SEQUENCE {
midambleAllocationMode MidambleConfigurationBurstType2,
CHOICE {
defaultMidamble NULL,
commonMidamble NULL,
ueSpecificMidamble SEQUENCE {
midambleShift MidambleShiftShort
}
}
},
type3 SEQUENCE {
midambleConfigurationBurstType2and3 MidambleConfigurationBurstType2and3,
midambleAllocationMode CHOICE {
defaultMidamble NULL,
ueSpecificMidamble SEQUENCE {
midambleShift MidambleShiftLong
}
}
}
}
}
}
}

MidambleShiftAndBurstType-LCR-r4 ::= SEQUENCE {
midambleAllocationMode CHOICE {
defaultMidamble NULL,
ueSpecificMidamble SEQUENCE {
midambleShift INTEGER (0..15)
}
},
midambleConfiguration INTEGER (1..8) -- Actual value = IE value * 2
}

MidambleShiftLong ::= INTEGER (0..15)

MidambleShiftShort ::= INTEGER (0..5)

MinimumSpreadingFactor ::= ENUMERATED {
sf4, sf8, sf16, sf32,
sf64, sf128, sf256 }

MultiCodeInfo ::= INTEGER (1..16)

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

N-GAP ::= ENUMERATED {
f2, f4, f8 }

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

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

NB01 ::= INTEGER (0..50)

NF-Max ::= INTEGER (1..64)

NumberOfDPDCH ::= INTEGER (1..maxDPDCH-UL)

NumberOfFBI-Bits ::= INTEGER (1..2)

OpenLoopPowerControl-TDD ::= SEQUENCE {
primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power,
-- The following IEs shall be ignored in 1.28Mcps TDD mode.
alpha Alpha OPTIONAL,
prach-ConstantValue ConstantValue,
dpch-ConstantValue ConstantValue,
pusch-ConstantValue ConstantValue OPTIONAL
}

OpenLoopPowerControl-IPDL-TDD-r4 ::= SEQUENCE {
ipdl-alpha Alpha,
maxPowerIncrease MaxPowerIncrease-r4
}

PagingIndicatorLength ::= ENUMERATED {
pi4, pi8, pi16 }

```

```

PC-Preamble ::= INTEGER (0..7)

For 1.28Meps TDD, the following IE includes elements for the PCCPCH Info additional to those
in PrimaryCCPCH-Info
PCCPCH-LCR-Extensions ::= SEQUENCE {
tstd-Indicator BOOLEAN
}

PCP-Length ::= ENUMERATED {
as0, as8 }

PCPCH-ChannelInfo ::= SEQUENCE {
pcpch-UL-ScramblingCode INTEGER (0..79),
pcpch-DL-ChannelisationCode INTEGER (0..511),
pcpch-DL-ScramblingCode SecondaryScramblingCode OPTIONAL,
pcp-Length PCP-Length,
ucsm-Info UCSM-Info OPTIONAL
}

PCPCH-ChannelInfoList ::= SEQUENCE (SIZE (1..maxPCPCHs)) OF
PCPCH-ChannelInfo

PCPICH-UsageForChannelEst ::= ENUMERATED {
mayBeUsed,
shallNotBeUsed }

PDSCH-CapacityAllocationInfo ::= SEQUENCE {
pdsch-PowerControlInfo PDSCH-PowerControlInfo OPTIONAL,
pdsch-AllocationPeriodInfo AllocationPeriodInfo,
tfcs-Identity TFCS-IdentityPlain OPTIONAL,
configuration CHOICE {
old-Configuration SEQUENCE {
pdsch-Identity
},
new-Configuration SEQUENCE {
pdsch-Info
pdsch-Identity
}
}
}

PDSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
pdsch-PowerControlInfo PDSCH-PowerControlInfo OPTIONAL,
pdsch-AllocationPeriodInfo AllocationPeriodInfo,
tfcs-Identity TFCS-IdentityPlain OPTIONAL,
configuration CHOICE {
old-Configuration SEQUENCE {
pdsch-Identity
},
new-Configuration SEQUENCE {
pdsch-Info-r4
pdsch-Identity
}
}
}

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 {

```

<pre> codeRange tfci-Range explicit replace } } PDSCH-Identity ::= </pre>	<pre> CodeRange, DSCH-MappingList, PDSCH-CodeInfoList, ReplacedPDSCH-CodeInfoList </pre>	
<pre> PDSCH-Info ::= tfcs-Identity commonTimeslotInfo pdsch-TimeslotsCodes } </pre>	<pre> SEQUENCE { TFCS-IdentityPlain CommonTimeslotInfo DownlinkTimeslotsCodes } </pre>	<pre> OPTIONAL, OPTIONAL, OPTIONAL </pre>
<pre> PDSCH-Info-r4 ::= tfcs-Identity commonTimeslotInfo tddOption tdd384 pdsch-TimeslotsCodes }, tdd128 pdsch-TimeslotsCodes } } </pre>	<pre> SEQUENCE { TFCS-IdentityPlain CommonTimeslotInfo CHOICE { SEQUENCE { DownlinkTimeslotsCodes }, SEQUENCE { DownlinkTimeslotsCodes-<u>LCR-r4</u> } } } </pre>	<pre> OPTIONAL, OPTIONAL, OPTIONAL OPTIONAL </pre>
<pre> PDSCH-Info-<u>LCR-r4</u> ::= tfcs-Identity commonTimeslotInfo pdsch-TimeslotsCodes } </pre>	<pre> SEQUENCE { TFCS-IdentityPlain CommonTimeslotInfo DownlinkTimeslotsCodes-<u>LCR-r4</u> } </pre>	<pre> OPTIONAL, OPTIONAL, OPTIONAL </pre>
<pre> PDSCH-PowerControlInfo ::= tpc-StepSizeTDD ul-CCTrChTPCList } </pre>	<pre> SEQUENCE { TPC-StepSizeTDD UL-CCTrChTPCList } </pre>	<pre> OPTIONAL, OPTIONAL </pre>
<pre> PDSCH-SHO-DCH-Info ::= dsch-RadioLinkIdentifier rl-IdentifierList } </pre>	<pre> SEQUENCE { DSCH-RadioLinkIdentifier, RL-IdentifierList } </pre>	<pre> OPTIONAL </pre>
<pre> PDSCH-SysInfo ::= pdsch-Identity pdsch-Info dsch-TFS dsch-TFCS } </pre>	<pre> SEQUENCE { PDSCH-Identity, PDSCH-Info, TransportFormatSet TFCS } </pre>	<pre> OPTIONAL, OPTIONAL </pre>
<pre> PDSCH-SysInfo-<u>LCR-r4</u> ::= pdsch-Identity pdsch-Info dsch-TFS dsch-TFCS } </pre>	<pre> SEQUENCE { PDSCH-Identity, PDSCH-Info-<u>LCR-r4</u>, TransportFormatSet TFCS } </pre>	<pre> OPTIONAL, OPTIONAL </pre>
<pre> PDSCH-SysInfoList ::= </pre>	<pre> SEQUENCE (SIZE (1..maxPDSCH)) OF PDSCH-SysInfo </pre>	
<pre> PDSCH-SysInfoList-<u>LCR-r4</u> ::= </pre>	<pre> SEQUENCE (SIZE (1..maxPDSCH)) OF PDSCH-SysInfo-<u>LCR-r4</u> </pre>	
<pre> PDSCH-SysInfoList-SFN ::= pdsch-SysInfo sfn-TimeInfo } </pre>	<pre> SEQUENCE (SIZE (1..maxPDSCH)) OF SEQUENCE { PDSCH-SysInfo, SFN-TimeInfo } </pre>	<pre> OPTIONAL </pre>
<pre> PDSCH-SysInfoList-SFN-<u>LCR-r4</u> ::= pdsch-SysInfo sfn-TimeInfo } </pre>	<pre> SEQUENCE (SIZE (1..maxPDSCH)) OF SEQUENCE { PDSCH-SysInfo-<u>LCR-r4</u>, SFN-TimeInfo } </pre>	<pre> OPTIONAL </pre>
<pre> PersistenceScalingFactor ::= </pre>	<pre> ENUMERATED { </pre>	

```

        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 }

PICH-Info ::= CHOICE {
    fdd SEQUENCE {
        channelisationCode256 ChannelisationCode256,
        pi-CountPerFrame PI-CountPerFrame,
        sttd-Indicator BOOLEAN
    },
    tdd SEQUENCE {
        channelisationCode TDD-PICH-CCode OPTIONAL,
        timeslot TimeslotNumber OPTIONAL,
        burstType CHOICE {
            type-1 MidambleShiftLong,
            type-2 MidambleShiftShort
        }
        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,
    midambleShiftAndBurstType MidambleShiftAndBurstType-LCR-r4,
    repetitionPeriodLengthOffset RepPerLengthOffset-PICH OPTIONAL,
    pagingIndicatorLength PagingIndicatorLength DEFAULT pi4,
    n-GAP N-GAP DEFAULT f4,
    n-PCH N-PCH DEFAULT 2
}

PICH-PowerOffset ::= INTEGER (-10..5)

PilotBits128 ::= ENUMERATED {
    pb4, pb8 }

PilotBits256 ::= ENUMERATED {
    pb2, pb4, pb8 }

PositionFixedOrFlexible ::= ENUMERATED {
    fixed,
    flexible }

PowerControlAlgorithm ::= CHOICE {
    algorithm1 TPC-StepSizeFDD,
    algorithm2 NULL
}

PowerOffsetPilot-pdpdch ::= INTEGER (0..24)

PowerRampStep ::= INTEGER (1..8)

PRACH-ChanCodes-LCR-r4 ::= SEQUENCE (SIZE (1..2)) OF
    TDD-PRACH-CCode-LCR-r4

PRACH-Definition-LCR-r4 ::= SEQUENCE {
    timeslot TimeslotNumber-PRACH-LCR-r4,
    prach-ChanCodes-LCR-r4 PRACH-ChanCodes-LCR-r4,
    midambleShiftAndBurstType MidambleShiftAndBurstType-LCR-r4,
    fpach-Info FPACH-Info-r4
}

PRACH-Midamble ::= ENUMERATED {
    direct,
    direct-Inverted }

PRACH-Partitioning ::= CHOICE {
    fdd SEQUENCE (SIZE (1..maxASC)) OF
        ASCSetting-FDD,
    tdd SEQUENCE (SIZE (1..maxASC)) OF
        ASCSetting-TDD
}

```

```

}
PRACH-Partitioning-LCR-r4 ::= SEQUENCE (SIZE (1..maxASC)) OF
    ASCSetting-TDD-LCR-r4

PRACH-PowerOffset ::= SEQUENCE {
    powerRampStep PowerRampStep,
    preambleRetransMax PreambleRetransMax
}

PRACH-RACH-Info ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            availableSignatures AvailableSignatures,
            availableSF SF-PRACH,
            preambleScramblingCodeWordNumber PreambleScramblingCodeWordNumber,
            puncturingLimit PuncturingLimit,
            availableSubChannelNumbers AvailableSubChannelNumbers
        },
        tdd SEQUENCE {
            timeslot TimeslotNumber,
            channelisationCodeList TDD-PRACH-CCodeList,
            prach-Midamble PRACH-Midamble OPTIONAL
        }
    }
}

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
    }
}

-- For 1.28Mcps TDD, the following list shall include only one PRACH-SystemInformation.
PRACH-SystemInformationList ::= SEQUENCE (SIZE (1..maxPRACH)) OF
    PRACH-SystemInformation

PreambleRetransMax ::= INTEGER (1..64)

PreambleScramblingCodeWordNumber ::= INTEGER (0..15)

PreDefPhyChConfiguration ::= SEQUENCE {
    ul-DPCH-InfoPredef UL-DPCH-InfoPredef,
    dl-CommonInformationPredef DL-CommonInformationPredef OPTIONAL
}

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

```

```

    }
    cellParametersID          CellParametersID          OPTIONAL,
    blockSTTD-Indicator       BOOLEAN                   OPTIONAL,
  }
}

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

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

| -- For 1.28Mcps TDD, the following IE includes elements for the PCCPCH Info additional to those
| -- in PrimaryCCPCH-Info
| PrimaryCCPCH-Info-LCR-r4-ext ::= SEQUENCE {
|   tstd-Indicator              BOOLEAN
| }

PrimaryCCPCH-InfoPost ::=        SEQUENCE {
  syncCase                    CHOICE {
    syncCase1                 SEQUENCE {
      timeslot                TimeslotNumber
    },
    syncCase2                 SEQUENCE {
      timeslotSync2           TimeslotSync2
    }
  },
  cellParametersID            CellParametersID,
  blockSTTD-Indicator         BOOLEAN
}

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

PrimaryCCPCH-TX-Power ::=        INTEGER (6..43)

PrimaryCPICH-Info ::=           SEQUENCE {
  primaryScramblingCode      PrimaryScramblingCode
}

PrimaryCPICH-TX-Power ::=        INTEGER (-10..50)

PrimaryScramblingCode ::=        INTEGER (0..511)

PuncturingLimit ::=             ENUMERATED {
  p10-40, p10-44, p10-48, p10-52, p10-56,
  p10-60, p10-64, p10-68, p10-72, p10-76,
  p10-80, p10-84, p10-88, p10-92, p10-96, p11 }

```

```

PUSCH-CapacityAllocationInfo ::= SEQUENCE {
  pusch-Allocation CHOICE {
    pusch-AllocationPending NULL,
    pusch-AllocationAssignment SEQUENCE {
      pdsch-AllocationPeriodInfo AllocationPeriodInfo,
      pusch-PowerControlInfo UL-TargetSIR OPTIONAL,
      tfcs-Identity TFCS-IdentityPlain OPTIONAL,
      configuration CHOICE {
        old-Configuration SEQUENCE {
          pusch-Identity PUSCH-Identity
        },
        new-Configuration SEQUENCE {
          pusch-Info PUSCH-Info,
          pusch-Identity PUSCH-Identity OPTIONAL
        }
      }
    }
  }
}

PUSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
  pusch-Allocation CHOICE {
    pusch-AllocationPending NULL,
    pusch-AllocationAssignment SEQUENCE {
      pdsch-AllocationPeriodInfo AllocationPeriodInfo,
      pusch-PowerControlInfo-r4 PUSCH-PowerControlInfo-r4 OPTIONAL,
      tfcs-Identity TFCS-IdentityPlain OPTIONAL,
      configuration CHOICE {
        old-Configuration SEQUENCE {
          pusch-Identity PUSCH-Identity
        },
        new-Configuration SEQUENCE {
          pusch-Info-r4 PUSCH-Info-r4,
          pusch-Identity PUSCH-Identity OPTIONAL
        }
      }
    }
  }
}

PUSCH-Identity ::= INTEGER (1..hiPUSCHidentities)

PUSCH-Info ::= SEQUENCE {
  tfcs-Identity TFCS-IdentityPlain OPTIONAL,
  commonTimeslotInfo CommonTimeslotInfo OPTIONAL,
  pusch-TimeslotsCodes UplinkTimeslotsCodes OPTIONAL
}

PUSCH-Info-r4 ::= SEQUENCE {
  tfcs-Identity TFCS-IdentityPlain OPTIONAL,
  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-Identity TFCS-IdentityPlain OPTIONAL,
  commonTimeslotInfo CommonTimeslotInfo OPTIONAL,
  pusch-TimeslotsCodes UplinkTimeslotsCodes-LCR-r4 OPTIONAL
}

PUSCH-PowerControlInfo-r4 ::= SEQUENCE {
  ul-TargetSIR UL-TargetSIR,
  tddOption CHOICE {
    tdd384 NULL,
    tdd128 SEQUENCE {
      tpc-StepSize TPC-StepSizeTDD OPTIONAL,
      dl-CCTrChTPCList DL-CCTrChTPCList OPTIONAL
    }
  }
}

```

```

PUSCH-SysInfo ::=
    pusch-Identity
    pusch-Info
    usch-TFS
    usch-TFCS
}
SEQUENCE {
    PUSCH-Identity,
    PUSCH-Info,
    TransportFormatSet
    TFCS
OPTIONAL,
OPTIONAL
}

PUSCH-SysInfo-LCR-r4 ::=
    pusch-Identity
    pusch-Info
    usch-TFS
    usch-TFCS
}
SEQUENCE {
    PUSCH-Identity,
    PUSCH-Info-LCR-r4,
    TransportFormatSet
    TFCS
OPTIONAL,
OPTIONAL
}

PUSCH-SysInfoList ::=
SEQUENCE (SIZE (1..maxPUSCH)) OF
    PUSCH-SysInfo

PUSCH-SysInfoList-LCR-r4 ::=
SEQUENCE (SIZE (1..maxPUSCH)) OF
    PUSCH-SysInfo-LCR-r4

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

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

RACH-TransmissionParameters ::=
SEQUENCE {
    mmax
    nb01Min
    nb01Max
}

ReducedScramblingCodeNumber ::=
INTEGER (0..8191)

RepetitionPeriodAndLength ::=
CHOICE {
    repetitionPeriod1
    repetitionPeriod2
    -- repetitionPeriod2 could just as well be NULL also.
    repetitionPeriod4
    repetitionPeriod8
    repetitionPeriod16
    repetitionPeriod32
    repetitionPeriod64
}

RepetitionPeriodLengthAndOffset ::= CHOICE {
    repetitionPeriod1
    repetitionPeriod2
        length
        offset
    },
    repetitionPeriod4
        length
        offset
    },
    repetitionPeriod8
        length
        offset
    },
    repetitionPeriod16
        length
        offset
    },
    repetitionPeriod32
        length
        offset
    },
    repetitionPeriod64
        length
        offset
    }
}

```



```

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

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

RepPerLengthOffset-PICH ::= CHOICE {
    rpp4-2             INTEGER (0..3),
    rpp8-2             INTEGER (0..7),
    rpp8-4             INTEGER (0..7),
    rpp16-2            INTEGER (0..15),
    rpp16-4            INTEGER (0..15),
    rpp32-2            INTEGER (0..31),
    rpp32-4            INTEGER (0..31),
    rpp64-2            INTEGER (0..63),
    rpp64-4            INTEGER (0..63)
}

RestrictedTrCH ::= SEQUENCE {
    dl-restrictedTrCh-Type DL-TrCH-Type,
    restrictedDL-TrCH-Identity TransportChannelIdentity,
    allowedTFIList         AllowedTFI-List
}

RestrictedTrCH-InfoList ::= SEQUENCE (SIZE(1..maxTrCH)) OF
    RestrictedTrCH

RL-AdditionInformation ::= SEQUENCE {
    primaryCPICH-Info      PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL     DL-DPCH-InfoPerRL,
    tfci-CombiningIndicator BOOLEAN,
    sccpch-InfoForFACH     SCCPCH-InfoForFACH OPTIONAL
}

RL-AdditionInformationList ::= SEQUENCE (SIZE (1..maxRL-1)) OF
    RL-AdditionInformation

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

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

RPP ::= ENUMERATED {
    mode0, mode1 }

S-Field ::= ENUMERATED {
    e1bit, e2bits }

SCCPCH-ChannelisationCode ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

SCCPCH-ChannelisationCodeList ::= SEQUENCE (SIZE (1..16)) OF
    SCCPCH-ChannelisationCode

SCCPCH-InfoForFACH ::= SEQUENCE {
    secondaryCCPCH-Info      SecondaryCCPCH-Info,
    tfcs                     TFCS,
    fach-PCH-InformationList FACH-PCH-InformationList,
    sib-ReferenceListFACH    SIB-ReferenceListFACH
}

```

```

SCCPCH-LCR-Extensions ::= SEQUENCE {
    secondaryCCPCH-LCR-Extensions SecondaryCCPCH-LCR-Extensions,
    pich-Info in the SCCPCH-SystemInformation IE shall be absent, and instead the following used.
    pich-Info PICH-Info LCR OPTIONAL
}

```

```

The following list includes elements additional to those in
SCCPCH-SystemInformationList for the 1.28Meps TDD. The order of the IEs

```

~~indicates which SCCPCH LCR Extensions IE extends which SCCPCH SystemInformation IE.~~
~~SCCPCH LCR ExtensionsList ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF~~
~~SCCPCH LCR Extensions~~

```
SCCPCH-SystemInformation ::= SEQUENCE {
    secondaryCCPCH-Info      SecondaryCCPCH-Info,
    tfcs                     TFCS                               OPTIONAL,
    fach-PCH-InformationList FACH-PCH-InformationList          OPTIONAL,
    pich-Info                PICH-Info                          OPTIONAL
}
```

~~SCCPCH-SystemInformation-LCR-r4-ext ::= SEQUENCE {~~
~~secondaryCCPCH-LCR-Extensions SecondaryCCPCH-Info-LCR-r4-ext,~~
~~-- pich-Info in the SCCPCH-SystemInformation IE shall be absent, and instead the following used.~~
~~pich-Info PICH-Info-LCR-r4 OPTIONAL~~
~~}~~

```
SCCPCH-SystemInformationList ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
    SCCPCH-SystemInformation
```

~~-- The following list includes elements additional to those in~~
~~-- SCCPCH-SystemInformationList for the 1.28Mcps TDD. The order of the IEs~~
~~-- indicates which SCCPCH-SystemInformation-LCR-r4-ext IE extends which~~
~~-- SCCPCH-SystemInformation IE.~~

~~SCCPCH-SystemInformationList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF~~
~~SCCPCH-SystemInformation-LCR-r4-ext~~

```
ScramblingCodeChange ::= ENUMERATED {
    codeChange, noCodeChange }
```

```
ScramblingCodeType ::= ENUMERATED {
    shortSC,
    longSC }
```

```
SecondaryCCPCH-Info ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            pCPICH-UsageForChannelEst PCPICH-UsageForChannelEst,
            secondaryCPICH-Info        SecondaryCPICH-Info           OPTIONAL,
            secondaryScramblingCode    SecondaryScramblingCode       OPTIONAL,
            sttd-Indicator              BOOLEAN,
            sf-AndCodeNumber            SF256-AndCodeNumber,
            pilotSymbolExistence        BOOLEAN,
            tfci-Existence              BOOLEAN,
            positionFixedOrFlexible     PositionFixedOrFlexible,
            timingOffset                TimingOffset                   DEFAULT 0
        },
        tdd SEQUENCE {
            -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
            commonTimeslotInfo          CommonTimeslotInfoSCCPCH,
            individualTimeslotInfo      IndividualTimeslotInfo,
            channelisationCode          SCCPCH-ChannelisationCodeList
        }
    }
}
```

```
SecondaryCCPCH-Info-r4 ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            pCPICH-UsageForChannelEst PCPICH-UsageForChannelEst,
            secondaryCPICH-Info        SecondaryCPICH-Info           OPTIONAL,
            secondaryScramblingCode    SecondaryScramblingCode       OPTIONAL,
            sttd-Indicator              BOOLEAN,
            sf-AndCodeNumber            SF256-AndCodeNumber,
            pilotSymbolExistence        BOOLEAN,
            tfci-Existence              BOOLEAN,
            positionFixedOrFlexible     PositionFixedOrFlexible,
            timingOffset                TimingOffset                   DEFAULT 0
        },
        tdd SEQUENCE {
            -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
            commonTimeslotInfo          CommonTimeslotInfoSCCPCH,
            tddOption                   CHOICE {
                tdd384 SEQUENCE {
                    individualTimeslotInfo IndividualTimeslotInfo
                },
                tdd128 SEQUENCE {
                    individualTimeslotInfo IndividualTimeslotInfo-LCR-r4
                }
            }
        }
    }
}
```

```

    },
    channelisationCode          SCCPCH-ChannelisationCodeList
  }
}

SecondaryCCPCH-Info-LCR-r4-extExtensions ::= SEQUENCE {
  individualTimeslotLCR-Ext      IndividualTimeslotInfo-LCR-r4-Ext
}

SecondaryCPICH-Info ::= SEQUENCE {
  secondaryDL-ScramblingCode     SecondaryScramblingCode          OPTIONAL,
  channelisationCode             ChannelisationCode256
}

SecondaryScramblingCode ::= INTEGER (1..15)

SecondInterleavingMode ::= ENUMERATED {
  frameRelated, timeslotRelated }

-- SF256-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF256-AndCodeNumber ::= CHOICE {
  sf4          INTEGER (0..3),
  sf8          INTEGER (0..7),
  sf16         INTEGER (0..15),
  sf32         INTEGER (0..31),
  sf64         INTEGER (0..63),
  sf128        INTEGER (0..127),
  sf256        INTEGER (0..255)
}

-- SF512-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF512-AndCodeNumber ::= CHOICE {
  sf4          INTEGER (0..3),
  sf8          INTEGER (0..7),
  sf16         INTEGER (0..15),
  sf32         INTEGER (0..31),
  sf64         INTEGER (0..63),
  sf128        INTEGER (0..127),
  sf256        INTEGER (0..255),
  sf512        INTEGER (0..511)
}

-- SF512-AndPilot encodes both "Spreading factor" and "Number of bits for Pilot bits"
SF512-AndPilot ::= CHOICE {
  sfd4         NULL,
  sfd8         NULL,
  sfd16        NULL,
  sfd32        NULL,
  sfd64        NULL,
  sfd128       PilotBits128,
  sfd256       PilotBits256,
  sfd512       NULL
}

SF-PDSCH ::= ENUMERATED {
  sfp4, sfp8, sfp16, sfp32,
  sfp64, sfp128, sfp256 }

SF-PRACH ::= ENUMERATED {
  sfpr32, sfpr64, sfpr128, sfpr256 }

SFN-TimeInfo ::= SEQUENCE {
  activationTimeSFN      INTEGER (0..4095),
  physChDuration         DurationTimeInfo
}

SpecialBurstScheduling ::= INTEGER (0..7)

SpreadingFactor ::= ENUMERATED {
  sf4, sf8, sf16, sf32,
  sf64, sf128, sf256 }

SRB-delay ::= INTEGER (0..7)

SSDT-CellIdentity ::= ENUMERATED {
  ssdt-id-a, ssdt-id-b, ssdt-id-c,
  ssdt-id-d, ssdt-id-e, ssdt-id-f,

```

```

                                ssdt-id-g, ssdt-id-h }

SSDT-Information ::=
  s-Field
  codeWordSet
}

SSDT-Information-r4 ::=
  s-Field
  codeWordSet
  ssdt-UL
}

-- The following information element is used to extend the
-- SSDT-Information IE from Release 4 onwards.
SSDT-UL-r4 ::=
  ENUMERATED {
    ul, ul-AndDL }

SynchronisationParameters-r4 ::=
  sync-UL-CodesBitmap
  fpach-Info
  sync-UL-Procedure
}

SYNC-UL-Procedure-r4 ::=
  max-SYNC-UL-Transmissions
  powerRampingStep
}

SYNC-UL-Info-r4 ::=
  sync-UL-Codes-Bitmap
  ul-TargetSIR
  powerRampingStep
  max-SYNC-UL-Transmissions
}

TDD-FPACH-CCode16-r4 ::=
  ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PICH-CCode ::=
  ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode8 ::=
  ENUMERATED {
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8 }

TDD-PRACH-CCode16 ::=
  ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode-LCR-r4 ::=
  ENUMERATED {
    cc4-1, cc4-2, cc4-3, cc4-4,
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8,
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCodeList ::=
  sf8
  sf16
}

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 {
        tfc-bits-4, tfc-bits-8,
        tfc-bits-16, tfc-bits-32 }

TGCFN ::=
    INTEGER (0..255)

-- The value 270 represents "undefined" in the tabular description.
TGD ::=
    INTEGER (15..270)

TGL ::=
    INTEGER (1..14)

TGMP ::=
    ENUMERATED {
        tdd-Measurement, fdd-Measurement,
        gsm-CarrierRSSIMeasurement,
        gsm-initialBSICIdentification, gsmBSICReconfirmation }

TGP-Sequence ::=
    SEQUENCE {
        tgpsi
        tgps-Status
            activate
                TGCFN
            },
        deactivate
            NULL
    },
    tgps-ConfigurationParams
        TGPS-ConfigurationParams
    OPTIONAL
}

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

TGP-SequenceShort ::=
    SEQUENCE {
        tgpsi
        tgps-Status
            activate
                TGCFN
            },
        deactivate
            NULL
    }
}

TGPL ::=
    INTEGER (1..144)

-- TABULAR: The value 0 represents "infinity" in the tabular description.
TGPRC ::=
    INTEGER (0..511)

TGPS-ConfigurationParams ::=
    SEQUENCE {
        tgmp
            TGMP,
        tgprc
            TGPRC,
        tgsn
            TGSN,
        tgl1
            TGL,
        tgl2
            TGL
            OPTIONAL,
        tgd
            TGD,
        tgpl1
            TGPL,
        tgpl2
            TGPL
            OPTIONAL,
        rpp
            RPP,
        itp
            ITP,
        ul-DL-Mode
            UL-DL-Mode,
        -- TABULAR: Compressed mode method is nested inside UL-DL-Mode
        dl-FrameType
            DL-FrameType,
        deltaSIR1
            DeltaSIR,
        deltaSIRAfter1
            DeltaSIR,
        deltaSIR2
            DeltaSIR
            OPTIONAL,
        deltaSIRAfter2
            DeltaSIR
            OPTIONAL,
        nidentifyAbort
            NidentifyAbort
            OPTIONAL,
        treconfirmAbort
            TreconfirmAbort
            OPTIONAL
    }
}

TGPSI ::=
    INTEGER (1..maxTGPS)

TGSN ::=
    INTEGER (0..14)

TimeInfo ::=
    SEQUENCE {
        activationTime
            ActivationTime
            OPTIONAL,
        durationTimeInfo
            DurationTimeInfo
            OPTIONAL
    }
}

```

```

TimeslotList ::=
    SEQUENCE (SIZE (1..maxTS)) OF
        TimeslotNumber

TimeslotList-r4 ::=
    CHOICE {
        tdd384
            SEQUENCE (SIZE (1..maxTS)) OF
                TimeslotNumber,
        tdd128
            SEQUENCE (SIZE (1..maxTS-LCR)) OF
                TimeslotNumber-LCR-r4
    }

-- If TimeslotNumber is included for a 1.28Mcps TDD description, it shall take values from 0..6
TimeslotNumber ::=
    INTEGER (0..14)

TimeslotNumber-LCR-r4 ::=
    INTEGER (0..6)

TimeslotNumber-PRACH-LCR-r4 ::=
    INTEGER (1..6)

TimeslotSync2 ::=
    INTEGER (0..6)

-- Actual value = IE value * 256
TimingOffset ::=
    INTEGER (0..149)

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

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

TPC-StepSizeTDD ::=
    INTEGER (1..3)

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

TX-DiversityMode ::=
    ENUMERATED {
        noDiversity,
        sttd,
        closedLoopModel1,
        closedLoopMode2 }

UARFCN ::=
    INTEGER (0..16383)

UCSM-Info ::=
    SEQUENCE {
        minimumSpreadingFactor
            MinimumSpreadingFactor,
        nf-Max
            NF-Max,
        channelReqParamsForUCSM
            ChannelReqParamsForUCSM
    }

UL-CCTrCH ::=
    SEQUENCE {
        tfcs-Identity
            TFCS-IdentityPlain
            OPTIONAL,
        timeInfo
            TimeInfo,
        commonTimeslotInfo
            CommonTimeslotInfo
            OPTIONAL,
        ul-CCTrCH-TimeslotsCodes
            UplinkTimeslotsCodes
            OPTIONAL
    }

UL-CCTrCH-r4 ::=
    SEQUENCE {
        tfcs-Identity
            TFCS-IdentityPlain
            OPTIONAL,
        timeInfo
            TimeInfo,
        commonTimeslotInfo
            CommonTimeslotInfo
            OPTIONAL,
        tddOption
            CHOICE {
                tdd384
                    SEQUENCE {
                        ul-CCTrCH-TimeslotsCodes
                            UplinkTimeslotsCodes
                            OPTIONAL
                    },
                tdd128
                    SEQUENCE {
                        ul-CCTrCH-TimeslotsCodes
                            UplinkTimeslotsCodes-LCR-r4
                            OPTIONAL
                    }
            }
    }

UL-CCTrCHList ::=
    SEQUENCE (SIZE (1..maxCCTrCH)) OF
        UL-CCTrCH

UL-CCTrCHList-r4 ::=
    SEQUENCE (SIZE (1..maxCCTrCH)) OF
        UL-CCTrCH-r4

UL-CCTrChTPCList ::=
    SEQUENCE (SIZE (0..maxCCTrCH)) OF
        TFCS-Identity

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

```

```

}

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

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

UL-DL-Mode ::= CHOICE {
    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    NumberOfFBI-Bits    OPTIONAL,
            -- The IE above is conditional based on history
            puncturingLimit     PuncturingLimit
        },
        tdd                    SEQUENCE {
            ul-TimingAdvance    UL-TimingAdvanceControl  OPTIONAL,
            ul-CCTrCHList       UL-CCTrCHList
        }
    }
}

UL-DPCH-Info-r4 ::= 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    NumberOfFBI-Bits    OPTIONAL,
            -- The IE above is conditional based on history
            puncturingLimit     PuncturingLimit
        },
        tdd                    SEQUENCE {
            ul-TimingAdvance    UL-TimingAdvanceControl-r4  OPTIONAL,
            ul-CCTrCHList       UL-CCTrCHList-r4
        }
    }
}

UL-DPCH-InfoPostFDD ::= SEQUENCE {
    ul-DPCH-PowerControlInfo  UL-DPCH-PowerControlInfoPostFDD,
    scramblingCodeType        ScramblingCodeType,
    reducedScramblingCodeNumber ReducedScramblingCodeNumber,
    spreadingFactor           SpreadingFactor
}

```

```

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

SEQUENCE {
    UL-DPCH-PowerControlInfoPostTDD,
    UL-TimingAdvanceControl
    UplinkTimeslotsCodes
    OPTIONAL,
}

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

SEQUENCE {
    UL-DPCH-PowerControlInfoPostTDD-LCR-r4,
    UL-TimingAdvanceControl-LCR-r4
    UplinkTimeslotsCodes-LCR-r4
    OPTIONAL,
}

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

SEQUENCE {
    UL-DPCH-PowerControlInfoPredef,
    CHOICE {
        SEQUENCE {
            BOOLEAN,
            PuncturingLimit
        },
        SEQUENCE {
            CommonTimeslotInfo
        }
    }
}

UL-DPCH-PowerControlInfo ::=
    fdd
        dpcch-PowerOffset
        pc-Preamble
        sRB-delay
        powerControlAlgorithm
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
    },
    tdd
        ul-TargetSIR
        ul-OL-PC-Signalling
        broadcast-UL-OL-PC-info
        handoverGroup
            individualTS-InterferenceList
            dpch-ConstantValue
            primaryCCPCH-TX-Power
        }
    }
}

CHOICE {
    SEQUENCE {
        DPCCH-PowerOffset,
        PC-Preamble,
        SRB-delay,
        PowerControlAlgorithm
    },
    SEQUENCE {
        UL-TargetSIR,
        CHOICE {
            NULL,
            SEQUENCE {
                IndividualTS-InterferenceList,
                ConstantValue,
                PrimaryCCPCH-TX-Power
            }
        }
    }
}
OPTIONAL

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

CHOICE {
    SEQUENCE {
        DPCCH-PowerOffset,
        PC-Preamble,
        PowerControlAlgorithm
    },
    SEQUENCE {
        UL-TargetSIR,
        CHOICE {
            NULL,
            SEQUENCE {
                CHOICE {
                    SEQUENCE {
                        IndividualTS-InterferenceList,
                        ConstantValue
                    },
                    SEQUENCE {
                        TPC-StepSizeTDD
                    }
                }
            }
        }
    }
}

UL-DPCH-PowerControlInfoPostFDD ::= SEQUENCE {
    dpcch-PowerOffset
    pc-Preamble
    sRB-delay
    DPCCH-PowerOffset2, -- smaller range to save bits
    PC-Preamble,
    SRB-delay
}

```



```

}

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

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

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

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

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

| UL-SynchronisationParameters-r4 ::= SEQUENCE {
    stepSize                     INTEGER (1..8),
    frequency                    INTEGER (1..8)
}

-- Actual value = (IE value * 0.5) - 11
UL-TargetSIR ::= INTEGER (0..62)

UL-TimingAdvance ::= INTEGER (0..63)

UL-TimingAdvanceControl ::= CHOICE {
    disabled                     NULL,
    enabled                      SEQUENCE {
        ul-TimingAdvance         UL-TimingAdvance           OPTIONAL,
        activationTime           ActivationTime             OPTIONAL
    }
}

UL-TimingAdvanceControl-r4 ::= CHOICE {
    disabled                     NULL,
    enabled                      SEQUENCE {
        tddOption                CHOICE {
            tdd384               SEQUENCE {
                ul-TimingAdvance UL-TimingAdvance           OPTIONAL,
                activationTime   ActivationTime             OPTIONAL
            },
            tdd128               SEQUENCE {
                ul-SynchronisationParameters UL-SynchronisationParameters-r4 OPTIONAL,
                synchronisationParameters SynchronisationParameters-r4 OPTIONAL
            }
        }
    }
}

| UL-TimingAdvanceControl-LCR-r4 ::= CHOICE {
    disabled                     NULL,
    enabled                      SEQUENCE {
        ul-SynchronisationParameters UL-SynchronisationParameters-r4 OPTIONAL,
        synchronisationParameters SynchronisationParameters-r4 OPTIONAL
    }
}

UL-TS-ChannelisationCode ::= ENUMERATED {
    cc1-1, cc2-1, cc2-2,
    cc4-1, cc4-2, cc4-3, cc4-4,
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8,
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

```

```

UL-TS-ChannelisationCodeList ::= SEQUENCE (SIZE (1..2)) OF
    UL-TS-ChannelisationCode

UplinkAdditionalTimeslots ::= SEQUENCE {
    parameters CHOICE {
        sameAsLast SEQUENCE {
            timeslotNumber TimeslotNumber
        },
        newParameters SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo,
            ul-TS-ChannelisationCodeList UL-TS-ChannelisationCodeList
        }
    }
}

| UplinkAdditionalTimeslots-LCR-r4 ::= SEQUENCE {
    parameters CHOICE {
        sameAsLast SEQUENCE {
            timeslotNumber TimeslotNumber
        },
        newParameters SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo-LCR-r4,
            ul-TS-ChannelisationCodeList UL-TS-ChannelisationCodeList
        }
    }
}

UplinkTimeslotsCodes ::= SEQUENCE {
    dynamicSFusage BOOLEAN,
    firstIndividualTimeslotInfo IndividualTimeslotInfo,
    ul-TS-ChannelisationCodeList UL-TS-ChannelisationCodeList,
    moreTimeslots CHOICE {
        noMore NULL,
        additionalTimeslots CHOICE {
            consecutive SEQUENCE {
                numAdditionalTimeslots INTEGER (1..maxTS-1)
            },
            timeslotList SEQUENCE (SIZE (1..maxTS-1)) OF
                UplinkAdditionalTimeslots
        }
    }
}

| UplinkTimeslotsCodes-LCR-r4 ::= SEQUENCE {
    dynamicSFusage BOOLEAN,
    firstIndividualTimeslotInfo IndividualTimeslotInfo-LCR-r4,
    ul-TS-ChannelisationCodeList UL-TS-ChannelisationCodeList,
    moreTimeslots CHOICE {
        noMore NULL,
        additionalTimeslots CHOICE {
            consecutive SEQUENCE {
                numAdditionalTimeslots INTEGER (1..maxTS-LCR-1)
            },
            timeslotList SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                UplinkAdditionalTimeslots-LCR-r4
        }
    }
}

-- *****
--
-- MEASUREMENT INFORMATION ELEMENTS (10.3.7)
--
-- *****

AcquisitionSatInfo ::= SEQUENCE {
    satID SatID,
    doppler0thOrder INTEGER (-2048..2047),
    extraDopplerInfo ExtraDopplerInfo OPTIONAL,
    codePhase INTEGER (0..1022),
    integerCodePhase INTEGER (0..19),
    gps-BitNumber INTEGER (0..3),
    codePhaseSearchWindow CodePhaseSearchWindow,
    azimuthAndElevation AzimuthAndElevation OPTIONAL
}

AcquisitionSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF

```

AcquisitionSatInfo

```

AdditionalMeasurementID-List ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasurementIdentity

AlmanacSatInfo ::= SEQUENCE {
    dataID          INTEGER (0..3),
    satID           SatID,
    e               BIT STRING (SIZE (16)),
    t-oa            BIT STRING (SIZE (8)),
    deltaI          BIT STRING (SIZE (16)),
    omegaDot        BIT STRING (SIZE (16)),
    satHealth       BIT STRING (SIZE (8)),
    a-Sqrt          BIT STRING (SIZE (24)),
    omega0          BIT STRING (SIZE (24)),
    m0              BIT STRING (SIZE (24)),
    omega           BIT STRING (SIZE (24)),
    af0             BIT STRING (SIZE (11)),
    af1             BIT STRING (SIZE (11))
}

AlmanacSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF
    AlmanacSatInfo

AverageRLC-BufferPayload ::= ENUMERATED {
    pla0, pla4, pla8, pla16, pla32,
    pla64, pla128, pla256, pla512,
    pla1024, pla2k, pla4k, pla8k, pla16k,
    pla32k, pla64k, pla128k, pla256k,
    pla512k, pla1024k }

AzimuthAndElevation ::= SEQUENCE {
    azimuth         INTEGER (0..31),
    elevation        INTEGER (0..7)
}

BadSatList ::= SEQUENCE (SIZE (1..maxSat)) OF
    INTEGER (0..63)

Band-Indicator ::= ENUMERATED {
    dcs1800BandUsed, pcs1900BandUsed }

BCCH-ARFCN ::= INTEGER (0..1023)

BLER-MeasurementResults ::= SEQUENCE {
    transportChannelIdentity
    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 {
    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
    periodicalReportingCriteria
}

CellDCH-ReportCriteria-LCR-r4 ::= CHOICE {
    intraFreqReportingCriteria-LCR-r4,
    periodicalReportingCriteria
}

```

```

}

-- Actual value = IE value * 0.5
CellIndividualOffset ::= INTEGER (-20..20)

CellInfo ::= SEQUENCE {
    cellIndividualOffset           CellIndividualOffset           DEFAULT 0,
    referenceTimeDifferenceToCell ReferenceTimeDifferenceToCell OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            primaryCPICH-Info           PrimaryCPICH-Info           OPTIONAL,
            primaryCPICH-TX-Power       PrimaryCPICH-TX-Power       OPTIONAL,
            readSFN-Indicator            BOOLEAN,
            tx-DiversityIndicator        BOOLEAN
        },
        tdd SEQUENCE {
            primaryCCPCH-Info           PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power       PrimaryCCPCH-TX-Power       OPTIONAL,
            timeslotInfoList            TimeslotInfoList            OPTIONAL,
            readSFN-Indicator            BOOLEAN
        }
    }
}

CellInfo-r4 ::= SEQUENCE {
    cellIndividualOffset           CellIndividualOffset           DEFAULT 0,
    referenceTimeDifferenceToCell ReferenceTimeDifferenceToCell OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            primaryCPICH-Info           PrimaryCPICH-Info           OPTIONAL,
            primaryCPICH-TX-Power       PrimaryCPICH-TX-Power       OPTIONAL,
            readSFN-Indicator            BOOLEAN,
            tx-DiversityIndicator        BOOLEAN
        },
        tdd SEQUENCE {
            primaryCCPCH-Info           PrimaryCCPCH-Info-r4,
            primaryCCPCH-TX-Power       PrimaryCCPCH-TX-Power       OPTIONAL,
            timeslotInfoList            TimeslotInfoList-r4        OPTIONAL
        }
    }
}

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,
    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,

```

<pre> primaryCPICH-TX-Power readSFN-Indicator tx-DiversityIndicator }, tdd primaryCCPCH-Info primaryCCPCH-TX-Power timeslotInfoList readSFN-Indicator } }, cellSelectionReselectionInfo </pre>	<pre> PrimaryCPICH-TX-Power BOOLEAN, BOOLEAN SEQUENCE { PrimaryCCPCH-Info, PrimaryCCPCH-TX-Power TimeslotInfoList BOOLEAN } CellSelectReselectInfoSIB-11-12-ECN0 </pre>	<pre> OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL </pre>
<pre> CellInfoSI-ECN0-LCR-r4 ::=— cellIndividualOffset referenceTimeDifferenceToCell primaryCCPCH-Info primaryCCPCH-TX-Power timeslotInfoList cellSelectionReselectionInfo } </pre>	<pre> SEQUENCE { CellIndividualOffset ReferenceTimeDifferenceToCell PrimaryCCPCH-Info-LCR-r4, PrimaryCCPCH-TX-Power TimeslotInfoList-LCR-r4 CellSelectReselectInfoSIB-11-12-ECN0 } </pre>	<pre> DEFAULT 0, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL </pre>
<pre> CellInfoSI-HCS-RSCP ::= cellIndividualOffset referenceTimeDifferenceToCell modeSpecificInfo fdd primaryCPICH-Info primaryCPICH-TX-Power readSFN-Indicator tx-DiversityIndicator }, tdd primaryCCPCH-Info primaryCCPCH-TX-Power timeslotInfoList readSFN-Indicator } }, cellSelectionReselectionInfo } </pre>	<pre> SEQUENCE { CellIndividualOffset ReferenceTimeDifferenceToCell CHOICE { SEQUENCE { PrimaryCPICH-Info PrimaryCPICH-TX-Power BOOLEAN, BOOLEAN } SEQUENCE { PrimaryCCPCH-Info, PrimaryCCPCH-TX-Power TimeslotInfoList BOOLEAN } } CellSelectReselectInfoSIB-11-12-HCS-RSCP </pre>	<pre> DEFAULT 0, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL </pre>
<pre> CellInfoSI-HCS-RSCP-LCR-r4 ::=— cellIndividualOffset referenceTimeDifferenceToCell primaryCCPCH-Info primaryCCPCH-TX-Power timeslotInfoList cellSelectionReselectionInfo } </pre>	<pre> SEQUENCE { CellIndividualOffset ReferenceTimeDifferenceToCell PrimaryCCPCH-Info-LCR-r4, PrimaryCCPCH-TX-Power TimeslotInfoList-LCR-r4 CellSelectReselectInfoSIB-11-12-HCS-RSCP } </pre>	<pre> DEFAULT 0, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL </pre>
<pre> CellInfoSI-HCS-ECN0 ::= cellIndividualOffset referenceTimeDifferenceToCell modeSpecificInfo fdd primaryCPICH-Info primaryCPICH-TX-Power readSFN-Indicator tx-DiversityIndicator }, tdd primaryCCPCH-Info primaryCCPCH-TX-Power timeslotInfoList readSFN-Indicator } }, cellSelectionReselectionInfo } </pre>	<pre> SEQUENCE { CellIndividualOffset ReferenceTimeDifferenceToCell CHOICE { SEQUENCE { PrimaryCPICH-Info PrimaryCPICH-TX-Power BOOLEAN, BOOLEAN } SEQUENCE { PrimaryCCPCH-Info, PrimaryCCPCH-TX-Power TimeslotInfoList BOOLEAN } } CellSelectReselectInfoSIB-11-12-HCS-ECN0 </pre>	<pre> DEFAULT 0, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL </pre>
<pre> CellInfoSI-HCS-ECN0-LCR-r4 ::= cellIndividualOffset referenceTimeDifferenceToCell primaryCCPCH-Info primaryCCPCH-TX-Power timeslotInfoList } </pre>	<pre> SEQUENCE { CellIndividualOffset ReferenceTimeDifferenceToCell PrimaryCCPCH-Info-LCR-r4, PrimaryCCPCH-TX-Power TimeslotInfoList-LCR-r4 } </pre>	<pre> DEFAULT 0, OPTIONAL, OPTIONAL, OPTIONAL, OPTIONAL </pre>

```

    cellSelectionReselectionInfo          CellSelectReselectInfoSIB-11-12-HCS-ECN0    OPTIONAL
}

CellMeasuredResults ::=                SEQUENCE {
    cellIdentity                        CellIdentity                            OPTIONAL,
    sfN-SFN-ObsTimeDifference           SFN-SFN-ObsTimeDifference           OPTIONAL,
    cellSynchronisationInfo             CellSynchronisationInfo             OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                             SEQUENCE {
            primaryCPICH-Info           PrimaryCPICH-Info,
            cpich-Ec-N0                 CPICH-Ec-N0                        OPTIONAL,
            cpich-RSCP                  CPICH-RSCP                          OPTIONAL,
            pathloss                     Pathloss                             OPTIONAL
        },
        tdd                             SEQUENCE {
            cellParametersID            CellParametersID,
            proposedTGSN                TGSN                                OPTIONAL,
            primaryCCPCH-RSCP           PrimaryCCPCH-RSCP                   OPTIONAL,
            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

CellPosition ::=                       SEQUENCE {
    relativeNorth                       INTEGER (-32767..32767),
    relativeEast                         INTEGER (-32767..32767),
    relativeAltitude                     INTEGER (-4095..4095)
}

CellReportingQuantities ::=            SEQUENCE {
    sfN-SFN-OTD-Type                    SFN-SFN-OTD-Type,
    cellIdentity-reportingIndicator      BOOLEAN,
    cellSynchronisationInfoReportingIndicator  BOOLEAN,
    modeSpecificInfo                    CHOICE {
        fdd                             SEQUENCE {
            cpich-Ec-N0-reportingIndicator  BOOLEAN,
            cpich-RSCP-reportingIndicator  BOOLEAN,
            pathloss-reportingIndicator     BOOLEAN
        },
        tdd                             SEQUENCE {
            timeslotISCP-reportingIndicator  BOOLEAN,
            proposedTGSN-ReportingRequired  BOOLEAN,
            primaryCCPCH-RSCP-reportingIndicator  BOOLEAN,
            pathloss-reportingIndicator     BOOLEAN
        }
    }
}

CellSelectReselectInfoSIB-11-12 ::= SEQUENCE {
    q-Offset1S-N                        Q-OffsetS-N                        DEFAULT 0,
    q-Offset2S-N                        Q-OffsetS-N                        OPTIONAL,
    maxAllowedUL-TX-Power                MaxAllowedUL-TX-Power              OPTIONAL,
    hcs-NeighbouringCellInformation-RSCP  HCS-NeighbouringCellInformation-RSCP
    OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                             SEQUENCE {
            q-QualMin                    Q-QualMin                            OPTIONAL,
            q-RxlevMin                    Q-RxlevMin                            OPTIONAL
        },
        tdd                             SEQUENCE {
            q-RxlevMin                    Q-RxlevMin                            OPTIONAL
        },
        gsm                             SEQUENCE {
            q-RxlevMin                    Q-RxlevMin                            OPTIONAL
        }
    }
}

```

```

CellSelectReselectInfoSIB-11-12-RSCP ::= SEQUENCE {
  q-OffsetS-N          Q-OffsetS-N          DEFAULT 0,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
  modeSpecificInfo    CHOICE {
    fdd                SEQUENCE {
      q-QualMin        Q-QualMin            OPTIONAL,
      q-RxlevMin       Q-RxlevMin          OPTIONAL
    },
    tdd                SEQUENCE {
      q-RxlevMin       Q-RxlevMin          OPTIONAL
    },
    gsm                SEQUENCE {
      q-RxlevMin       Q-RxlevMin          OPTIONAL
    }
  }
}

```

```

CellSelectReselectInfoSIB-11-12-ECN0 ::= SEQUENCE {
  q-Offset1S-N        Q-OffsetS-N          DEFAULT 0,
  q-Offset2S-N        Q-OffsetS-N          DEFAULT 0,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
  modeSpecificInfo    CHOICE {
    fdd                SEQUENCE {
      q-QualMin        Q-QualMin            OPTIONAL,
      q-RxlevMin       Q-RxlevMin          OPTIONAL
    },
    tdd                SEQUENCE {
      q-RxlevMin       Q-RxlevMin          OPTIONAL
    },
    gsm                SEQUENCE {
      q-RxlevMin       Q-RxlevMin          OPTIONAL
    }
  }
}

```

```

CellSelectReselectInfoSIB-11-12-HCS-RSCP ::= SEQUENCE {
  q-OffsetS-N          Q-OffsetS-N          DEFAULT 0,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
  hcs-NeighbouringCellInformation-RSCP HCS-NeighbouringCellInformation-RSCP OPTIONAL,
  modeSpecificInfo    CHOICE {
    fdd                SEQUENCE {
      q-QualMin        Q-QualMin            OPTIONAL,
      q-RxlevMin       Q-RxlevMin          OPTIONAL
    },
    tdd                SEQUENCE {
      q-RxlevMin       Q-RxlevMin          OPTIONAL
    },
    gsm                SEQUENCE {
      q-RxlevMin       Q-RxlevMin          OPTIONAL
    }
  }
}

```

```

CellSelectReselectInfoSIB-11-12-HCS-ECN0 ::= SEQUENCE {
  q-Offset1S-N        Q-OffsetS-N          DEFAULT 0,
  q-Offset2S-N        Q-OffsetS-N          DEFAULT 0,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
  hcs-NeighbouringCellInformation-ECN0 HCS-NeighbouringCellInformation-ECN0 OPTIONAL,
  modeSpecificInfo    CHOICE {
    fdd                SEQUENCE {
      q-QualMin        Q-QualMin            OPTIONAL,
      q-RxlevMin       Q-RxlevMin          OPTIONAL
    },
    tdd                SEQUENCE {
      q-RxlevMin       Q-RxlevMin          OPTIONAL
    },
    gsm                SEQUENCE {
      q-RxlevMin       Q-RxlevMin          OPTIONAL
    }
  }
}

```

```

CellsForInterFreqMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  InterFreqCellID
CellsForInterRATMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  InterRATCellID

```

```

CellsForIntraFreqMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                IntraFreqCellID

CellSynchronisationInfo ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            countC-SFN-Frame-difference CountC-SFN-Frame-difference OPTIONAL,
            tm INTEGER(0..38399)
        },
        tdd SEQUENCE {
            countC-SFN-Frame-difference CountC-SFN-Frame-difference OPTIONAL
        }
    }
}

CellToMeasure ::= SEQUENCE {
    sfn-sfn-Drift INTEGER (0..30) OPTIONAL,
    primaryCPICH-Info PrimaryCPICH-Info,
    frequencyInfo FrequencyInfo OPTIONAL,
    sfn-SFN-ObservedTimeDifference SFN-SFN-ObsTimeDifference1,
    fineSFN-SFN FineSFN-SFN,
    cellPosition CellPosition OPTIONAL
}

CellToMeasureInfoList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellToMeasure

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

CPICH-Ec-N0 ::= INTEGER (0..50)

-- IE value 0 = <-24 dB, 1 = between -24 and -23 and so on
CPICH-Ec-N0-OTDOA ::= INTEGER (0..26)

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

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

DeltaRRC ::= INTEGER (-7..7)

DGPS-CorrectionSatInfo ::= SEQUENCE {
    satID SatID,
    iode BIT STRING (SIZE (8)),
    udre UDRE,
    prc PRC,
    rrc RRC,
    deltaPRC2 DeltaPRC,
    deltaRRC2 DeltaRRC,
    deltaPRC3 DeltaPRC OPTIONAL,
    deltaRRC3 DeltaRRC OPTIONAL
}

DGPS-CorrectionSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF
    DGPS-CorrectionSatInfo

DiffCorrectionStatus ::= ENUMERATED {
    udre-1-0, udre-0-75, udre-0-5, udre-0-3,
    udre-0-2, udre-0-1, noData, invalidData }

-- Actual value = IE value * 0.02
DL-PhysicalChannelBER ::= INTEGER (0..255)

```



```

DL-TransportChannelBLER ::=          INTEGER (0..63)

DopplerUncertainty ::=              ENUMERATED {
    hz12-5, hz25, hz50, hz100, hz200 }

EllipsoidPoint ::=                  SEQUENCE {
    latitudeSign          ENUMERATED { north, south },
    latitude              INTEGER (0..8388607),
    longitude            INTEGER (-8388608..8388607)
}

EllipsoidPointAltitude ::=          SEQUENCE {
    latitudeSign          ENUMERATED { north, south },
    latitude              INTEGER (0..8388607),
    longitude            INTEGER (-8388608..8388607),
    altitudeDirection    ENUMERATED {height, depth},
    altitude              INTEGER (0..16383)
}

EllipsoidPointAltitudeEllipsoide ::= SEQUENCE {
    latitudeSign          ENUMERATED { north, south },
    latitude              INTEGER (0..8388607),
    longitude            INTEGER (-8388608..8388607),
    altitudeDirection    ENUMERATED {height, depth},
    altitude              INTEGER (0..16383),
    uncertaintySemiMajor  INTEGER (0..127),
    uncertaintySemiMinor  INTEGER (0..127),
    orientationMajorAxis  INTEGER (0..89),
    uncertaintyAltitude   INTEGER (0..127),
    confidence            INTEGER (0..100)
}

EllipsoidPointUncertCircle ::=      SEQUENCE {
    latitudeSign          ENUMERATED { north, south },
    latitude              INTEGER (0..8388607),
    longitude            INTEGER (-8388608..8388607),
    uncertaintyCode       INTEGER (0..127)
}

EllipsoidPointUncertEllipse ::=     SEQUENCE {
    latitudeSign          ENUMERATED { north, south },
    latitude              INTEGER (0..8388607),
    longitude            INTEGER (-8388608..8388607),
    uncertaintySemiMajor  INTEGER (0..127),
    uncertaintySemiMinor  INTEGER (0..127),
    orientationMajorAxis  INTEGER (0..89),
    confidence            INTEGER (0..100)
}

EnvironmentCharacterisation ::=     ENUMERATED {
    possibleHeavyMultipathNLOS,
    lightMultipathLOS,
    notDefined }

Event1a ::=                          SEQUENCE {
    triggeringCondition    TriggeringCondition2,
    reportingRange        ReportingRange,
    forbiddenAffectCellList ForbiddenAffectCellList          OPTIONAL,
    w                      W,
    reportDeactivationThreshold ReportDeactivationThreshold,
    reportingAmount        ReportingAmount,
    reportingInterval      ReportingInterval
}

Event1a-r4 ::=                       SEQUENCE {
    triggeringCondition    TriggeringCondition2,
    reportingRange        ReportingRange,
    forbiddenAffectCellList ForbiddenAffectCellList-r4      OPTIONAL,
    w                      W,
    reportDeactivationThreshold ReportDeactivationThreshold,
    reportingAmount        ReportingAmount,
    reportingInterval      ReportingInterval
}

```

<pre> Event1a-LCR-r4 ::= triggeringCondition reportingRange forbiddenAffectCellList w reportDeactivationThreshold reportingAmount reportingInterval } </pre>	<pre> SEQUENCE { TriggeringCondition2, ReportingRange, ForbiddenAffectCellList-LCR-r4 OPTIONAL, W, ReportDeactivationThreshold, ReportingAmount, ReportingInterval } </pre>
<pre> Event1b ::= triggeringCondition reportingRange forbiddenAffectCellList w } </pre>	<pre> SEQUENCE { TriggeringCondition1, ReportingRange, ForbiddenAffectCellList OPTIONAL, W } </pre>
<pre> Event1b-r4 ::= triggeringCondition reportingRange forbiddenAffectCellList w } </pre>	<pre> SEQUENCE { TriggeringCondition1, ReportingRange, ForbiddenAffectCellList-r4 OPTIONAL, W } </pre>
<pre> Event1b-LCR-r4 ::= triggeringCondition reportingRange forbiddenAffectCellList w } </pre>	<pre> SEQUENCE { TriggeringCondition1, ReportingRange, ForbiddenAffectCellList-LCR-r4 OPTIONAL, W } </pre>
<pre> Event1c ::= replacementActivationThreshold reportingAmount reportingInterval } </pre>	<pre> SEQUENCE { ReplacementActivationThreshold, ReportingAmount, ReportingInterval } </pre>
<pre> Event1e ::= triggeringCondition thresholdUsedFrequency } </pre>	<pre> SEQUENCE { TriggeringCondition2, ThresholdUsedFrequency } </pre>
<pre> Event1f ::= triggeringCondition thresholdUsedFrequency } </pre>	<pre> SEQUENCE { TriggeringCondition1, ThresholdUsedFrequency } </pre>
<pre> Event2a ::= usedFreqThreshold usedFreqW hysteresis timeToTrigger reportingCellStatus nonUsedFreqParameterList } </pre>	<pre> SEQUENCE { Threshold, W, HysteresisInterFreq, TimeToTrigger, ReportingCellStatus OPTIONAL, NonUsedFreqParameterList OPTIONAL } </pre>
<pre> Event2b ::= usedFreqThreshold usedFreqW hysteresis timeToTrigger reportingCellStatus nonUsedFreqParameterList } </pre>	<pre> SEQUENCE { Threshold, W, HysteresisInterFreq, TimeToTrigger, ReportingCellStatus OPTIONAL, NonUsedFreqParameterList OPTIONAL } </pre>
<pre> Event2c ::= hysteresis timeToTrigger reportingCellStatus nonUsedFreqParameterList } </pre>	<pre> SEQUENCE { HysteresisInterFreq, TimeToTrigger, ReportingCellStatus OPTIONAL, NonUsedFreqParameterList OPTIONAL } </pre>
<pre> Event2d ::= usedFreqThreshold usedFreqW hysteresis timeToTrigger } </pre>	<pre> SEQUENCE { Threshold, W, HysteresisInterFreq, TimeToTrigger, } </pre>

```

    reportingCellStatus          ReportingCellStatus          OPTIONAL
}

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

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

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

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

Event3c ::=
    thresholdOtherSystem         Threshold,
    hysteresis                    Hysteresis,
    timeToTrigger                 TimeToTrigger,
    reportingCellStatus           ReportingCellStatus          OPTIONAL
}

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

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

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

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

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

ExtraDopplerInfo ::=
    SEQUENCE {
        doppler1stOrder           INTEGER (-42..21),
        dopplerUncertainty        DopplerUncertainty
    }

FACH-MeasurementOccasionInfo ::=
    SEQUENCE {
        fACH-meas-occasion-coeff  INTEGER (1..12)          OPTIONAL,
        inter-freq-FDD-meas-ind   BOOLEAN,
        -- The following IE is for 3.84Mcps TDD. For 1.28Mcps TDD, the IE in
        -- FACH-MeasurementOccasionInfo-LCR-r4-Exext 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 }

FineSFN-SFN ::=                ENUMERATED {
                                fs0, fs0-25, fs0-5, fs0-75 }

ForbiddenAffectCell ::=        CHOICE {
                                fdd
                                PrimaryCPICH-Info,
                                tdd
                                PrimaryCCPCH-Info
}

ForbiddenAffectCell-r4 ::=     CHOICE {
                                fdd
                                PrimaryCPICH-Info,
                                tdd
                                PrimaryCCPCH-Info-r4
}

ForbiddenAffectCell-LCR-r4 ::= SEQUENCE {
                                tdd
                                PrimaryCCPCH-Info-LCR-r4
}

ForbiddenAffectCellList ::=    SEQUENCE (SIZE (1..maxCellMeas)) OF
                                ForbiddenAffectCell

ForbiddenAffectCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                ForbiddenAffectCell-r4

ForbiddenAffectCellList-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                ForbiddenAffectCell-LCR-r4

FreqQualityEstimateQuantity-FDD ::= ENUMERATED {
                                cpich-Ec-N0,
                                cpich-RSCP }

FreqQualityEstimateQuantity-TDD ::= ENUMERATED {
                                primaryCCPCH-RSCP }

GPS-MeasurementParam ::=      SEQUENCE {
                                satelliteID
                                INTEGER (0..63),
                                c-N0
                                INTEGER (0..63),
                                doppler
                                INTEGER (-32768..32768),
                                wholeGPS-Chips
                                INTEGER (0..1023),
                                fractionalGPS-Chips
                                INTEGER (0..1023),
                                multipathIndicator
                                MultipathIndicator,
                                pseudorangeRMS-Error
                                INTEGER (0..63)
}

GPS-MeasurementParamList ::=  SEQUENCE (SIZE (1..maxSat)) OF
                                GPS-MeasurementParam

GSM-CarrierRSSI ::=           BIT STRING (SIZE (6))

GSM-MeasuredResults ::=       SEQUENCE {
                                gsm-CarrierRSSI
                                GSM-CarrierRSSI
                                OPTIONAL,
                                pathloss
                                Pathloss
                                OPTIONAL,
                                bsicReported
                                BSICReported,
                                observedTimeDifferenceToGSM
                                ObservedTimeDifferenceToGSM
                                OPTIONAL
}

GSM-MeasuredResultsList ::=   SEQUENCE (SIZE (1..maxReportedGSMCells)) OF
                                GSM-MeasuredResults

-- **TODO**, not defined yet
GSM-OutputPower ::=          SEQUENCE {
}

GPS-TOW-1msec ::=            INTEGER (0..604799999)

```

```

GPS-TOW-Assist ::= SEQUENCE {
    satID SatID,
    tlm-Message BIT STRING (SIZE (14)),
    tlm-Reserved BIT STRING (SIZE (2)),
    antiSpoof BOOLEAN,
    alert BOOLEAN
}

GPS-TOW-AssistList ::= SEQUENCE (SIZE (1..maxSat)) OF
    GPS-TOW-Assist

GPS-TOW-rem-usec ::= INTEGER (0..999)

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

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

HCS-NeighbouringCellInformation-RSCP ::= SEQUENCE {
    hcs-PRIO HCS-PRIO DEFAULT 0,
    q-HCS Q-HCS DEFAULT 0,
    hcs-CellReselectInformation HCS-CellReselectInformation-RSCP
}

HCS-NeighbouringCellInformation-ECNO ::= SEQUENCE {
    hcs-PRIO HCS-PRIO DEFAULT 0,
    q-HCS Q-HCS DEFAULT 0,
    hcs-CellReselectInformation HCS-CellReselectInformation-ECNO
}

HCS-PRIO ::= INTEGER (0..7)

HCS-ServingCellInformation ::= SEQUENCE {
    hcs-PRIO HCS-PRIO DEFAULT 0,
    q-HCS Q-HCS DEFAULT 0,
    t-CR-Max T-CRMax OPTIONAL
}

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

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

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

InterFreqCell-LCR-r4 ::= SEQUENCE {
    frequencyInfo FrequencyInfo,
    nonFreqRelatedEventResults CellMeasurementEventResults-LCR-r4
}

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

InterFreqCellInfoList ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellList OPTIONAL,
    cellsForInterFreqMeasList CellsForInterFreqMeasList OPTIONAL
}

InterFreqCellInfoList-r4 ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellList-r4 OPTIONAL
}

InterFreqCellInfoSI-List-RSCP ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-RSCP OPTIONAL
}

```

```

InterFreqCellInfoSI-List-ECN0 ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-ECN0 OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-HCS-RSCP OPTIONAL
}

InterFreqCellInfoSI-List-HCS-ECN0 ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-HCS-ECN0 OPTIONAL
}

InterFreqCellInfoSI-List-RSCP-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-RSCP-LCR-r4 OPTIONAL
}

InterFreqCellInfoSI-List-ECN0-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-ECN0-LCR-r4 OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 OPTIONAL
}

InterFreqCellInfoSI-List-HCS-ECN0-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-HCS-ECN0-LCR-r4 OPTIONAL
}

InterFreqCellList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqCell

InterFreqCellList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqCell-LCR-r4

InterFreqCellMeasuredResultsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellMeasuredResults

InterFreqEvent ::= CHOICE {
    event2a Event2a,
    event2b Event2b,
    event2c Event2c,
    event2d Event2d,
    event2e Event2e,
    event2f Event2f
}

InterFreqEventList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    InterFreqEvent

InterFreqEventResults ::= SEQUENCE {
    eventID EventIDInterFreq,
    interFreqCellList InterFreqCellList OPTIONAL
}

InterFreqEventResults-LCR-r4-ext ::= SEQUENCE {
    eventID EventIDInterFreq,
    interFreqCellList InterFreqCellList-LCR-r4-ext OPTIONAL
}

InterFreqMeasQuantity ::= SEQUENCE {
    reportingCriteria CHOICE {
        intraFreqReportingCriteria SEQUENCE {
            intraFreqMeasQuantity IntraFreqMeasQuantity
        },
        interFreqReportingCriteria SEQUENCE {
            filterCoefficient FilterCoefficient DEFAULT fc0,
            modeSpecificInfo CHOICE {
                fdd SEQUENCE {
                    freqQualityEstimateQuantity-FDD FreqQualityEstimateQuantity-FDD
                },
                tdd SEQUENCE {
                    freqQualityEstimateQuantity-TDD FreqQualityEstimateQuantity-TDD
                }
            }
        }
    }
}

```

```

    }
  }
}

InterFreqMeasuredResults ::= SEQUENCE {
    frequencyInfo           FrequencyInfo           OPTIONAL,
    ultra-CarrierRSSI       UTRA-CarrierRSSI         OPTIONAL,
    interFreqCellMeasuredResultsList InterFreqCellMeasuredResultsList OPTIONAL
}

InterFreqMeasuredResultsList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqMeasuredResults

InterFreqMeasurementSysInfo-RSCP ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-RSCP OPTIONAL
}

InterFreqMeasurementSysInfo-ECNO ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-ECNO OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-HCS-RSCP OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-ECNO ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-HCS-ECNO OPTIONAL
}

| InterFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-RSCP-LCR OPTIONAL
}

| InterFreqMeasurementSysInfo-ECNO-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-ECNO-LCR OPTIONAL
}

| InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-HCS-RSCP-LCR OPTIONAL
}

| InterFreqMeasurementSysInfo-HCS-ECNO-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-HCS-ECNO-LCR OPTIONAL
}

InterFreqReportCriteria ::= CHOICE {
    intraFreqReportingCriteria IntraFreqReportingCriteria,
    interFreqReportingCriteria InterFreqReportingCriteria,
    periodicalReportingCriteria PeriodicalWithReportingCellStatus,
    noReporting ReportingCellStatusOpt
}

InterFreqReportCriteria-r4 ::= CHOICE {
    intraFreqReportingCriteria IntraFreqReportingCriteria-r4,
    interFreqReportingCriteria InterFreqReportingCriteria,
    periodicalReportingCriteria PeriodicalWithReportingCellStatus,
    noReporting ReportingCellStatusOpt
}

InterFreqReportingCriteria ::= SEQUENCE {
    interFreqEventList InterFreqEventList OPTIONAL
}

InterFreqReportingQuantity ::= SEQUENCE {
    ultra-Carrier-RSSI BOOLEAN,
    frequencyQualityEstimate BOOLEAN,
    nonFreqRelatedQuantities CellReportingQuantities
}

InterFrequencyMeasurement ::= SEQUENCE {
    interFreqCellInfoList InterFreqCellInfoList,
    interFreqMeasQuantity InterFreqMeasQuantity OPTIONAL,
    interFreqReportingQuantity InterFreqReportingQuantity OPTIONAL,
    measurementValidity MeasurementValidity OPTIONAL,
    interFreqSetUpdate UE-AutonomousUpdateMode OPTIONAL,
}

```

```

    reportCriteria                InterFreqReportCriteria
}

InterFrequencyMeasurement-r4 ::= SEQUENCE {
    interFreqCellInfoList        InterFreqCellInfoList-r4,
    interFreqMeasQuantity        InterFreqMeasQuantity                OPTIONAL,
    interFreqReportingQuantity    InterFreqReportingQuantity        OPTIONAL,
    measurementValidity           MeasurementValidity                OPTIONAL,
    interFreqSetUpdate            UE-AutonomousUpdateMode            OPTIONAL,
    reportCriteria                InterFreqReportCriteria-r4
}

InterRAT-TargetCellDescription ::= SEQUENCE {
    technologySpecificInfo        CHOICE {
        gsm                       SEQUENCE {
            bsic                   BSIC,
            band-Indicator         Band-Indicator,
            bcch-ARFCN             BCCH-ARFCN,
            ncMode                  NC-Mode                OPTIONAL
        },
        is-2000                    NULL,
        spare                       NULL
    }
}

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

InterRATCellInfoList ::= SEQUENCE {
    removedInterRATCellList       RemovedInterRATCellList,
    newInterRATCellList           NewInterRATCellList,
    cellsForInterRATMeasList      CellsForInterRATMeasList        OPTIONAL
}

InterRATCellInfoList-HCS ::= SEQUENCE {
    removedInterRATCellList       RemovedInterRATCellList,
    newInterRATCellList           NewInterRATCellList-HCS
}

InterRATCellIndividualOffset ::= INTEGER (-50..50)

InterRATEvent ::= CHOICE {
    event3a                       Event3a,
    event3b                       Event3b,
    event3c                       Event3c,
    event3d                       Event3d
}

InterRATEventList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    InterRATEvent

InterRATEventResults ::= SEQUENCE {
    eventID                       EventIDInterRAT,
    cellToReportList              CellToReportList
}

InterRATInfo ::= ENUMERATED {
    gsm
}

InterRATMeasQuantity ::= SEQUENCE {
    measQuantityUTRAN-QualityEstimate IntraFreqMeasQuantity        OPTIONAL,
    ratSpecificInfo                CHOICE {
        gsm                       SEQUENCE {
            measurementQuantity    MeasurementQuantityGSM,
            filterCoefficient       FilterCoefficient            DEFAULT fcl,
            bsic-VerificationRequired BSIC-VerificationRequired
        },
        is-2000                    SEQUENCE {
            tadd-EcIo              INTEGER (0..63),
            tcomp-EcIo             INTEGER (0..15),
            softSlope               INTEGER (0..63)                OPTIONAL,
            addIntercept            INTEGER (0..63)                OPTIONAL
        }
    }
}

InterRATMeasuredResults ::= CHOICE {
    gsm                            GSM-MeasuredResultsList,
    spare                          NULL
}

```



```

}

InterRATMeasuredResultsList ::= SEQUENCE (SIZE (1..maxOtherRAT)) OF
                                InterRATMeasuredResults

InterRATMeasurement ::= SEQUENCE {
    interRATCellInfoList      InterRATCellInfoList      OPTIONAL,
    interRATMeasQuantity      InterRATMeasQuantity      OPTIONAL,
    interRATReportingQuantity  InterRATReportingQuantity  OPTIONAL,
    reportCriteria            InterRATReportCriteria
}

InterRATMeasurementSysInfo ::= SEQUENCE {
    interRATCellInfoList      InterRATCellInfoList      OPTIONAL
}

InterRATMeasurementSysInfo-HCS ::= SEQUENCE {
    interRATCellInfoList      InterRATCellInfoList-HCS  OPTIONAL
}

InterRATReportCriteria ::= CHOICE {
    interRATReportingCriteria  InterRATReportingCriteria,
    periodicalReportingCriteria  PeriodicalWithReportingCellStatus,
    noReporting                ReportingCellStatusOpt
}

InterRATReportingCriteria ::= SEQUENCE {
    interRATEventList          InterRATEventList          OPTIONAL
}

InterRATReportingQuantity ::= SEQUENCE {
    utran-EstimatedQuality      BOOLEAN,
    ratSpecificInfo             CHOICE {
        gsm                     SEQUENCE {
            pathloss             BOOLEAN,
            observedTimeDifferenceGSM  BOOLEAN,
            gsm-Carrier-RSSI      BOOLEAN
        }
    }
}

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

IntraFreqCellInfoList ::= SEQUENCE {
    removedIntraFreqCellList    RemovedIntraFreqCellList    OPTIONAL,
    newIntraFreqCellList        NewIntraFreqCellList        OPTIONAL,
    cellsForIntraFreqMeasList    CellsForIntraFreqMeasList    OPTIONAL
}

IntraFreqCellInfoList-r4 ::= SEQUENCE {
    removedIntraFreqCellList    RemovedIntraFreqCellList    OPTIONAL,
    newIntraFreqCellList        NewIntraFreqCellList-r4        OPTIONAL
}

IntraFreqCellInfoSI-List-RSCP ::= SEQUENCE {
    removedIntraFreqCellList    RemovedIntraFreqCellList    OPTIONAL,
    newIntraFreqCellList        NewIntraFreqCellSI-List-RSCP
}

IntraFreqCellInfoSI-List-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
| }

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```

| 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 {
|   Event1a-LCR-r4,
|   Event1b-LCR-r4,
|   Event1c,
|   NULL,
|   Event1e,
|   Event1f,
|   NULL,
|   ThresholdUsedFrequency,
|   ThresholdUsedFrequency
| }

IntraFreqEventCriteria ::= SEQUENCE {
  event      IntraFreqEvent,
  hysteresis Hysteresis,
  timeToTrigger TimeToTrigger,
  reportingCellStatus ReportingCellStatus      OPTIONAL
}

IntraFreqEventCriteria-r4 ::= SEQUENCE {
  event      IntraFreqEvent-r4,
  hysteresis Hysteresis,
  timeToTrigger TimeToTrigger,
  reportingCellStatus ReportingCellStatus      OPTIONAL
}

| IntraFreqEventCriteria-LCR-r4 ::= SEQUENCE {
|   IntraFreqEvent-LCR-r4,
|   Hysteresis,
|   TimeToTrigger,
|   ReportingCellStatus      OPTIONAL
| }

IntraFreqEventCriteriaList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
  IntraFreqEventCriteria

IntraFreqEventCriteriaList-r4 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
  IntraFreqEventCriteria-r4

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IntraFreqEventCriteriaList-LCR-r4 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria-LCR-r4

IntraFreqEventResults ::= SEQUENCE {
    eventID EventIDIntraFreq,
    cellMeasurementEventResults CellMeasurementEventResults
}

IntraFreqMeasQuantity ::= SEQUENCE {
    filterCoefficient FilterCoefficient DEFAULT fcl,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            intraFreqMeasQuantity-FDD IntraFreqMeasQuantity-FDD
        },
        tdd SEQUENCE {
            intraFreqMeasQuantity-TDDList IntraFreqMeasQuantity-TDDList
        }
    }
}

IntraFreqMeasQuantity-FDD ::= ENUMERATED {
    cpich-EC-NO,
    cpich-RSCP,
    pathloss,
    ultra-CarrierRSSI }

IntraFreqMeasQuantity-TDD ::= ENUMERATED {
    primaryCCPCH-RSCP,
    pathloss,
    timeslotISCP,
    ultra-CarrierRSSI }

IntraFreqMeasQuantity-TDDList ::= SEQUENCE (SIZE (1..4)) OF
    IntraFreqMeasQuantity-TDD

IntraFreqMeasuredResultsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellMeasuredResults

IntraFreqMeasurementSysInfo-RSCP ::= SEQUENCE {
    intraFreqMeasurementID MeasurementIdentity DEFAULT 1,
    intraFreqCellInfoSI-List IntraFreqCellInfoSI-List-RSCP OPTIONAL,
    intraFreqMeasQuantity IntraFreqMeasQuantity OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH OPTIONAL,
    maxReportedCellsOnRACH MaxReportedCellsOnRACH OPTIONAL,
    reportingInfoForCellDCH ReportingInfoForCellDCH OPTIONAL
}

IntraFreqMeasurementSysInfo-ECNO ::= SEQUENCE {
    intraFreqMeasurementID MeasurementIdentity DEFAULT 1,
    intraFreqCellInfoSI-List IntraFreqCellInfoSI-List-ECNO OPTIONAL,
    intraFreqMeasQuantity IntraFreqMeasQuantity OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH OPTIONAL,
    maxReportedCellsOnRACH MaxReportedCellsOnRACH OPTIONAL,
    reportingInfoForCellDCH ReportingInfoForCellDCH OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP ::= SEQUENCE {
    intraFreqMeasurementID MeasurementIdentity DEFAULT 1,
    intraFreqCellInfoSI-List IntraFreqCellInfoSI-List-HCS-RSCP OPTIONAL,
    intraFreqMeasQuantity IntraFreqMeasQuantity OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH OPTIONAL,
    maxReportedCellsOnRACH MaxReportedCellsOnRACH OPTIONAL,
    reportingInfoForCellDCH ReportingInfoForCellDCH OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-ECNO ::= SEQUENCE {
    intraFreqMeasurementID MeasurementIdentity DEFAULT 1,
    intraFreqCellInfoSI-List IntraFreqCellInfoSI-List-HCS-ECNO OPTIONAL,
    intraFreqMeasQuantity IntraFreqMeasQuantity OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH OPTIONAL,
    maxReportedCellsOnRACH MaxReportedCellsOnRACH OPTIONAL,
    reportingInfoForCellDCH ReportingInfoForCellDCH OPTIONAL
}

IntraFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID MeasurementIdentity DEFAULT 1,
    intraFreqCellInfoSI-List IntraFreqCellInfoSI-List-RSCP-LCR-r4 OPTIONAL,

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    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,
    periodicalReportingCriteria,
    noReporting
}

IntraFreqReportCriteria-r4 ::= CHOICE {
    IntraFreqReportingCriteria-r4,
    PeriodicalWithReportingCellStatus,
    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 }

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IntraFreqRepQuantityRACH-TDD ::= ENUMERATED {
    timeslotISCP,
    primaryCCPCH-RSCP,
    noReport }

IntraFreqRepQuantityRACH-TDDList ::= SEQUENCE (SIZE (1..2)) OF
    IntraFreqRepQuantityRACH-TDD

IntraFrequencyMeasurement ::= SEQUENCE {
    intraFreqCellInfoList          IntraFreqCellInfoList          OPTIONAL,
    intraFreqMeasQuantity          IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantity     IntraFreqReportingQuantity     OPTIONAL,
    measurementValidity            MeasurementValidity            OPTIONAL,
    reportCriteria                 IntraFreqReportCriteria        OPTIONAL
}

IntraFrequencyMeasurement-r4 ::= SEQUENCE {
    intraFreqCellInfoList-r4      IntraFreqCellInfoList-r4      OPTIONAL,
    intraFreqMeasQuantity-r4      IntraFreqMeasQuantity-r4      OPTIONAL,
    intraFreqReportingQuantity-r4 IntraFreqReportingQuantity-r4 OPTIONAL,
    measurementValidity-r4        MeasurementValidity-r4         OPTIONAL,
    reportCriteria-r4             IntraFreqReportCriteria-r4    OPTIONAL
}

IODE ::= INTEGER (0..255)

IP-Length ::= ENUMERATED {
    ip15, ip110 }

| IP-PCCPCH-r4 ::= ----- BOOLEAN

IP-Spacing ::= ENUMERATED {
    e5, e7, e10, e15, e20,
    e30, e40, e50 }

IS-2000SpecificMeasInfo ::= ENUMERATED {
    frequency, timeslot, colourcode,
    outputpower, pn-Offset }

MaxNumberOfReportingCellsType1 ::= ENUMERATED {
    e1, e2, e3, e4, e5, e6}

MaxNumberOfReportingCellsType2 ::= ENUMERATED {
    e1, e2, e3, e4, e5, e6, e7, e8, e9, e10, e11, e12}

MaxNumberOfReportingCellsType3 ::= ENUMERATED {
    viactCellsPlus1,
    viactCellsPlus2,
    viactCellsPlus3,
    viactCellsPlus4,
    viactCellsPlus5,
    viactCellsPlus6 }

MaxReportedCellsOnRACH ::= ENUMERATED {
    noReport,
    currentCell,
    currentAnd-1-BestNeighbour,
    currentAnd-2-BestNeighbour,
    currentAnd-3-BestNeighbour,
    currentAnd-4-BestNeighbour,
    currentAnd-5-BestNeighbour,
    currentAnd-6-BestNeighbour }

MeasuredResults ::= CHOICE {
    intraFreqMeasuredResultsList      IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList      InterFreqMeasuredResultsList,
    interRATMeasuredResultsList        InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList   TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults              QualityMeasuredResults,
    ue-InternalMeasuredResults         UE-InternalMeasuredResults,
    ue-positioning-MeasuredResults      UE-Positioning-MeasuredResults
}

| MeasuredResults-LCR-r4 ::= ----- CHOICE {
    IntraFreqMeasuredResultsList,
    InterFreqMeasuredResultsList,
    InterRATMeasuredResultsList,

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    trafficVolumeMeasuredResultsList      TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults                 QualityMeasuredResults,
    ue-InternalMeasuredResults             UE-InternalMeasuredResults-LCR-r4,
    ue-positioning-MeasuredResults         UE-Positioning-MeasuredResults
}

MeasuredResultsList ::=                      SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
                                             MeasuredResults

MeasuredResultsList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
                                     MeasuredResults-LCR-r4

MeasuredResultsOnRACH ::=                   SEQUENCE {
    currentCell                             SEQUENCE {
        modeSpecificInfo                     CHOICE {
            fdd                               SEQUENCE {
                measurementQuantity           CHOICE {
                    cpich-Ec-N0              CPICH-Ec-N0,
                    cpich-RSCP               CPICH-RSCP,
                    pathloss                 Pathloss
                }
            },
            tdd                               SEQUENCE {
                timeslotISCP                 TimeslotISCP-List      OPTIONAL,
                primaryCCPCH-RSCP           PrimaryCCPCH-RSCP     OPTIONAL
            }
        },
        monitoredCells                       MonitoredCellRACH-List  OPTIONAL
    }

MeasurementCommand ::=                     CHOICE {
    setup                                    MeasurementType,
    modify                                   SEQUENCE {
        measurementType                      MeasurementType      OPTIONAL
    },
    release                                  NULL
}

MeasurementCommand-r4 ::=                  CHOICE {
    setup                                    MeasurementType-r4,
    modify                                   SEQUENCE {
        measurementType                      MeasurementType-r4  OPTIONAL
    },
    release                                  NULL
}

MeasurementControlSysInfo ::=              SEQUENCE {
    use-of-HCS                               CHOICE {
        hcs-not-used                         SEQUENCE {
            cellSelectQualityMeasure         CHOICE {
                cpich-RSCP                   SEQUENCE {
                    intraFreqMeasurementSysInfo  IntraFreqMeasurementSysInfo-RSCP
                }
            },
            interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-RSCP  OPTIONAL
        },
        cpich-Ec-No                          SEQUENCE {
            intraFreqMeasurementSysInfo      IntraFreqMeasurementSysInfo-ECNO
        }
        OPTIONAL,
        interFreqMeasurementSysInfo          InterFreqMeasurementSysInfo-ECNO  OPTIONAL
    },
    interRATMeasurementSysInfo               InterRATMeasurementSysInfo-HCS    OPTIONAL
},
    hcs-used                                  SEQUENCE {
        cellSelectQualityMeasure             CHOICE {
            cpich-RSCP                       SEQUENCE {
                intraFreqMeasurementSysInfo  IntraFreqMeasurementSysInfo-HCS-RSCP
            }
            interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-HCS-RSCP
        },
        cpich-Ec-No                          SEQUENCE {
            intraFreqMeasurementSysInfo      IntraFreqMeasurementSysInfo-HCS-ECNO
        }
        OPTIONAL,
        interFreqMeasurementSysInfo          InterFreqMeasurementSysInfo-HCS-ECNO
        OPTIONAL
    },
}

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        interRATMeasurementSysInfo      InterRATMeasurementSysInfo      OPTIONAL
    },
    trafficVolumeMeasSysInfo            TrafficVolumeMeasSysInfo      OPTIONAL,
    ue-InternalMeasurementSysInfo       UE-InternalMeasurementSysInfo  OPTIONAL
}

MeasurementControlSysInfo-LCR-r4-ext ::= SEQUENCE {
-- The following CHOICE shall have the same value as the use-of-HCS in MeasurementControlSysInfo
  use-of-HCS                           CHOICE {
    hcs-not-used                         SEQUENCE {
-- The following CHOICE 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-No                     SEQUENCE {
          intraFreqMeasurementSysInfo    IntraFreqMeasurementSysInfo-ECN0-LCR-r4 OPTIONAL,
          interFreqMeasurementSysInfo    InterFreqMeasurementSysInfo-ECN0-LCR-r4 OPTIONAL
        }
      }
    },
    hcs-used                             SEQUENCE {
-- The following CHOICE shall have the same value as the cellSelectQualityMeasure in
-- MeasurementControlSysInfo
      cellSelectQualityMeasure          CHOICE {
        cpich-RSCP                      SEQUENCE {
          intraFreqMeasurementSysInfo    IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4
OPTIONAL,
          interFreqMeasurementSysInfo    InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 OPTIONAL
        },
        cpich-Ec-No                     SEQUENCE {
          intraFreqMeasurementSysInfo    IntraFreqMeasurementSysInfo-HCS-ECN0-LCR-r4
OPTIONAL,
          interFreqMeasurementSysInfo    InterFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 OPTIONAL
        }
      }
    }
  }
}

MeasurementIdentity ::= INTEGER (1..16)

MeasurementQuantityGSM ::= ENUMERATED {
    gsm-CarrierRSSI,
    pathloss }

MeasurementReportingMode ::= SEQUENCE {
    measurementReportTransferMode      TransferMode,
    periodicalOrEventTrigger           PeriodicalOrEventTrigger
}

MeasurementType ::= CHOICE {
    intraFrequencyMeasurement          IntraFrequencyMeasurement,
    interFrequencyMeasurement          InterFrequencyMeasurement,
    interRATMeasurement                InterRATMeasurement,
    ue-positioning-Measurement          UE-Positioning-Measurement,
    trafficVolumeMeasurement           TrafficVolumeMeasurement,
    qualityMeasurement                  QualityMeasurement,
    ue-InternalMeasurement              UE-InternalMeasurement
}

MeasurementType-r4 ::= CHOICE {
    intraFrequencyMeasurement-r4       IntraFrequencyMeasurement-r4,
    interFrequencyMeasurement-r4       InterFrequencyMeasurement-r4,
    interRATMeasurement                InterRATMeasurement,
    up-Measurement                      UE-Positioning-Measurement-r4,
    trafficVolumeMeasurement-r4        TrafficVolumeMeasurement,
    qualityMeasurement                  QualityMeasurement,
    ue-InternalMeasurement-r4          UE-InternalMeasurement-r4
}

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

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}

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

MonitoredCellRACH-Result ::=        SEQUENCE {
    sfn-SFN-ObsTimeDifference        OPTIONAL,
    modeSpecificInfo                 CHOICE {
        fdd                           SEQUENCE {
            primaryCPICH-Info          PrimaryCPICH-Info,
            measurementQuantity        CHOICE {
                cpich-Ec-NO            CPICH-Ec-NO,
                cpich-RSCP             CPICH-RSCP,
                pathloss                Pathloss
            }
        }
    },
    tdd                               SEQUENCE {
        cellParametersID              CellParametersID,
        primaryCCPCH-RSCP             PrimaryCCPCH-RSCP
    }
}

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

N-CR-T-CRMaxHyst ::=               SEQUENCE {
    n-CR                              INTEGER (1..16)
    t-CRMaxHyst                       DEFAULT 8,
}

NavigationModelSatInfo ::=          SEQUENCE {
    satID                              SatID,
    satelliteStatus                    SatelliteStatus,
    navModel                            NavModel OPTIONAL
}

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

NavModel ::=                        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)),
    sflRevId                           SubFrameReserved,
    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
            neighbourIdentity          SEQUENCE {
                                        PrimaryCPICH-Info          OPTIONAL
            },
        tdd
            neighbourAndChannelIdentity CellAndChannelIdentity    OPTIONAL
    },
    neighbourQuantity                  NeighbourQuantity,
    sfm-SFN-ObsTimeDifference2         SFN-SFN-ObsTimeDifference2,
    ue-RX-TX-TimeDifferenceType2      UE-RX-TX-TimeDifferenceType2    OPTIONAL
}

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

-- **TODO**, to be defined fully
NeighbourQuantity ::=
    SEQUENCE {

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

NewInterFreqCellSI-List-ECNO ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-ECNO

NewInterFreqCellSI-List-HCS-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-HCS-RSCP

NewInterFreqCellSI-List-HCS-ECNO ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-HCS-ECNO

NewInterFreqCellSI-List-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-RSCP

NewInterFreqCellSI-List-ECNO-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-ECNO-LCR-r4

NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-HCS-RSCP-LCR-r4

NewInterFreqCellSI-List-HCS-ECNO-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-HCS-ECNO-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,
            band-Indicator Band-Indicator,
            bcch-ARFCN BCCH-ARFCN,
            gsm-OutputPower GSM-OutputPower OPTIONAL
        },
        is-2000 SEQUENCE {
            is-2000SpecificMeasInfo IS-2000SpecificMeasInfo
        },
        spare1 NULL,
        spare2 NULL
    }
}

NewInterRATCell-HCS ::= SEQUENCE {
    interRATCellID          InterRATCellID          OPTIONAL,
    technologySpecificInfo CHOICE {
        gsm SEQUENCE {
            cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12 OPTIONAL,
            interRATCellIndividualOffset InterRATCellIndividualOffset,
            bsic BSIC,
            band-Indicator Band-Indicator,
            bcch-ARFCN BCCH-ARFCN,
            gsm-OutputPower GSM-OutputPower OPTIONAL
        },
        is-2000 SEQUENCE {
            is-2000SpecificMeasInfo IS-2000SpecificMeasInfo
        },
        spare1 NULL,
        spare2 NULL
    }
}

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

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

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
NodeB-ClockDrift ::= INTEGER (0..15)
NonUsedFreqParameter ::= SEQUENCE {

```

```

    nonUsedFreqThreshold      Threshold,
    nonUsedFreqW              W
}

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

ObservedTimeDifferenceToGSM ::= INTEGER (0..4095)

OTDOA-SearchWindowSize ::= ENUMERATED {
                                c10, c20, c30, c40, c50,
                                c60, c70, moreThan70 }

Pathloss ::= INTEGER (46..158)

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

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

PendingTimeAfterTrigger ::= ENUMERATED {
                                ptat0-25, ptat0-5, ptat1,
                                ptat2, ptat4, ptat8, ptat16 }

PeriodicalOrEventTrigger ::= ENUMERATED {
                                periodical,
                                eventTrigger }

PeriodicalReportingCriteria ::= SEQUENCE {
    reportingAmount        ReportingAmount                DEFAULT ra-Infinity,
    reportingInterval      ReportingIntervalLong
}

PeriodicalWithReportingCellStatus ::= SEQUENCE {
    periodicalReportingCriteria    PeriodicalReportingCriteria,
    reportingCellStatus            ReportingCellStatus        OPTIONAL
}

PLMNIdentitiesOfNeighbourCells ::= SEQUENCE {
    plmnsOfIntraFreqCellsList     PLMNsOfIntraFreqCellsList    OPTIONAL,
    plmnsOfInterFreqCellsList     PLMNsOfInterFreqCellsList    OPTIONAL,
    plmnsOfInterRATCellsList      PLMNsOfInterRATCellsList     OPTIONAL
}

PLMNsOfInterFreqCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                               SEQUENCE {
    plmn-Identity                PLMN-Identity                OPTIONAL
}

PLMNsOfIntraFreqCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                               SEQUENCE {
    plmn-Identity                PLMN-Identity                OPTIONAL
}

PLMNsOfInterRATCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                               SEQUENCE {
    plmn-Identity                PLMN-Identity                OPTIONAL
}

PositionEstimate ::= CHOICE {
    ellipsoidPoint                EllipsoidPoint,
    ellipsoidPointUncertCircle     EllipsoidPointUncertCircle,
    ellipsoidPointUncertEllipse    EllipsoidPointUncertEllipse,
}

```

```

    ellipsoidPointAltitude      EllipsoidPointAltitude,
    ellipsoidPointAltitudeEllipse EllipsoidPointAltitudeEllipse
}

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

PRC ::=                        INTEGER (-2047..2047)

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

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

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

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

-- Actual value = (IE value * 2) + 1
Q-RxlevMin ::=                INTEGER (-58..-13)

QualityEventResults ::=       SEQUENCE (SIZE (1..maxTrCH)) OF
                                TransportChannelIdentity

QualityMeasuredResults ::=     SEQUENCE {
    blerMeasurementResultsList  BLER-MeasurementResultsList      OPTIONAL,
    modeSpecificInfo            CHOICE {
        fdd                     NULL,
        tdd                     SEQUENCE {
            sir-MeasurementResults  SIR-MeasurementList      OPTIONAL
        }
    }
}

QualityMeasurement ::=        SEQUENCE {
    qualityReportingQuantity     QualityReportingQuantity      OPTIONAL,
    reportCriteria               QualityReportCriteria
}

QualityReportCriteria ::=     CHOICE {
    qualityReportingCriteria     QualityReportingCriteria,
    periodicalReportingCriteria PeriodicalReportingCriteria,
    noReporting                  NULL
}

QualityReportingCriteria ::=   SEQUENCE (SIZE (1..maxTrCH)) OF
                                QualityReportingCriteriaSingle

QualityReportingCriteriaSingle ::= SEQUENCE {
    transportChannelIdentity     TransportChannelIdentity,
    totalCRC                     INTEGER (1..512),
    badCRC                       INTEGER (1..512),
    pendingAfterTrigger          INTEGER (1..512)
}

QualityReportingQuantity ::=   SEQUENCE {
    dl-TransChBLER              BOOLEAN,
    bler-dl-TransChIdList       BLER-TransChIdList                OPTIONAL,
    modeSpecificInfo            CHOICE {
        fdd                     NULL,
        tdd                     SEQUENCE {
            sir-TFCS-List        SIR-TFCS-List                OPTIONAL
        }
    }
}

QualityType ::=               ENUMERATED {
                                std-10, std-50, cpich-Ec-N0 }

RAT-Type ::=                  ENUMERATED {
                                gsm, is2000 }

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

```

```

ReferenceCellRelation ::=          ENUMERATED {
                                     first-12-second-3,
                                     first-13-second-2,
                                     first-1-second-23 }

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

ReferenceQuality ::=          ENUMERATED {
    m0-19, m20-39, m40-79,
    m80-159, m160-319, m320-639,
    m640-1319, m1320Plus }

-- Actual value = IE value * 10
ReferenceQuality10 ::=          INTEGER (1..32)

-- Actual value = IE value * 50
ReferenceQuality50 ::=          INTEGER (1..32)

ReferenceSFN ::=          INTEGER (0..4095)

-- Actual value = IE value * 512
ReferenceTimeDifferenceToCell ::= CHOICE {
    -- Actual value = IE value * 40
    accuracy40          INTEGER (0..960),
    -- Actual value = IE value * 256
    accuracy256          INTEGER (0..150),
    -- Actual value = IE value * 2560
    accuracy2560          INTEGER (0..15)
}

RemovedInterFreqCellList ::= CHOICE {
    removeAllInterFreqCells          NULL,
    removeSomeInterFreqCells          SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        InterFreqCellID,
    removeNoInterFreqCells          NULL
}

RemovedInterRATCellList ::= CHOICE {
    removeAllInterRATCells          NULL,
    removeSomeInterRATCells          SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        InterRATCellID,
    removeNoInterRATCells          NULL
}

RemovedIntraFreqCellList ::= CHOICE {
    removeAllIntraFreqCells          NULL,
    removeSomeIntraFreqCells          SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        IntraFreqCellID,
    removeNoIntraFreqCells          NULL
}

ReplacementActivationThreshold ::= ENUMERATED {
    notApplicable, t1, t2,
    t3, t4, t5, t6, t7 }

ReportDeactivationThreshold ::= ENUMERATED {
    notApplicable, t1, t2,
    t3, t4, t5, t6, t7 }

ReportingAmount ::=          ENUMERATED {
    ra1, ra2, ra4, ra8, ra16, ra32,
    ra64, ra-Infinity }

ReportingCellStatus ::=          CHOICE{
    withinActiveSet          MaxNumberOfReportingCellsType1,
    withinMonitoredSetUsedFreq          MaxNumberOfReportingCellsType1,
    withinActiveAndOrMonitoredUsedFreq          MaxNumberOfReportingCellsType1,
    withinDetectedSetUsedFreq          MaxNumberOfReportingCellsType1,
    withinMonitoredAndOrDetectedUsedFreq          MaxNumberOfReportingCellsType1,
    allActiveplusMonitoredSet          MaxNumberOfReportingCellsType3,
    allActivePlusDetectedSet          MaxNumberOfReportingCellsType3,
    allActivePlusMonitoredAndOrDetectedSet          MaxNumberOfReportingCellsType3,
}

```

```

withinVirtualActSet                MaxNumberOfReportingCellsType1,
withinMonitoredSetNonUsedFreq      MaxNumberOfReportingCellsType1,
withinMonitoredAndOrActiveSetNonUsedFreq
                                   MaxNumberOfReportingCellsType1,
allVirtualActSetplusMonitoredSetNonUsedFreq
                                   MaxNumberOfReportingCellsType3,
withinActSetOrVirtualActSet        MaxNumberOfReportingCellsType2,
withinActSetAndOrMonitoredUsedFreqOrMonitoredNonUsedFreq
                                   MaxNumberOfReportingCellsType2
}

ReportingCellStatusOpt ::=          SEQUENCE {
    reportingCellStatus              ReportingCellStatus              OPTIONAL
}

ReportingInfoForCellDCH ::=        SEQUENCE {
    intraFreqReportingQuantity       IntraFreqReportingQuantity,
    measurementReportingMode         MeasurementReportingMode,
    reportCriteria                   CellDCH-ReportCriteria
}

ReportingInfoForCellDCH-LCR-r4 ::= SEQUENCE {
    intraFreqReportingQuantity       IntraFreqReportingQuantity,
    measurementReportingMode         MeasurementReportingMode,
    reportCriteria                   CellDCH-ReportCriteria-LCR-r4
}

ReportingInterval ::=              ENUMERATED {
    noPeriodicalreporting, ri0-25,
    ri0-5, ril, ri2, ri4, ri8, ril6 }

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

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

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

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

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

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

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,
    es-NN-C,
    rev }

SatID ::=                          INTEGER (0..63)

SFN-SFN-ObsTimeDifference ::=      CHOICE {

```

```

    type1                SFN-SFN-ObsTimeDifference1,
    -- Actual value for type2 = IE value * 0.0625 - 1280
    type2                SFN-SFN-ObsTimeDifference2
}

SFN-SFN-ObsTimeDifference1 ::=    INTEGER (0..9830399)

SFN-SFN-ObsTimeDifference2 ::=    INTEGER (0..40961)

SFN-SFN-OTD-Type ::=            ENUMERATED {
                                noReport,
                                type1,
                                type2 }

SFN-SFN-RelTimeDifference1 ::=    INTEGER (0..9830399)

SFN-TOW-Uncertainty ::=         ENUMERATED {
                                lessThan10,
                                moreThan10 }

SIR ::=                        INTEGER (0..63)

SIR-MeasurementList ::=         SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                SIR-MeasurementResults

SIR-MeasurementResults ::=      SEQUENCE {
    tfcs-ID                    TFCS-IdentityPlain,
    sir-TimeslotList           SIR-TimeslotList
}

SIR-TFCS ::=                    TFCS-IdentityPlain

SIR-TFCS-List ::=              SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                SIR-TFCS

SIR-TimeslotList ::=           SEQUENCE (SIZE (1..maxTS)) OF
                                SIR

-- Reserved bits in subframe 1 of the GPS navigation message
SubFrame1Reserved ::=          SEQUENCE {
    reserved1                  BIT STRING (SIZE (23)),
    reserved2                  BIT STRING (SIZE (24)),
    reserved3                  BIT STRING (SIZE (24)),
    reserved4                  BIT STRING (SIZE (16))
}

T-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 }

TemporaryOffset ::=           ENUMERATED {
                                to10, to20, to30, to40, to50,
                                to60, to70, infinite }

TemporaryOffsetList ::=       SEQUENCE {
    temporaryOffset1          TemporaryOffset,
    temporaryOffset2          TemporaryOffset
}

Threshold ::=                 INTEGER (-115..0)

ThresholdPositionChange ::=    ENUMERATED {
                                pc10, pc20, pc30, pc40, pc50,
                                pc100, pc200, pc300, pc500,
                                pc1000, pc2000, pc5000, pc10000,
                                pc20000, pc50000, pc100000 }

```



```

ThresholdSFN-GPS-TOW ::=          ENUMERATED {
                                    ms1, ms2, ms3, ms5, ms10,
                                    ms20, ms50, ms100 }

ThresholdSFN-SFN-Change ::=      ENUMERATED {
                                    c0-25, c0-5, c1, c2, c3, c4, c5,
                                    c10, c20, c50, c100, c200, c500,
                                    c1000, c2000, c5000 }

ThresholdUsedFrequency ::=       INTEGER (-115..165)

-- Actual value = IE value * 20.
TimeInterval ::=                 INTEGER (1..13)

TimeslotInfo ::=                 SEQUENCE {
                                    timeslotNumber,
                                    burstType
                                }

TimeslotInfo-LCR-r4 ::=          SEQUENCE {
                                    timeslotNumber-LCR-r4,
                                    burstType
                                }

TimeslotInfoList ::=            SEQUENCE (SIZE (1..maxTS)) OF
                                    TimeslotInfo

TimeslotInfoList-LCR-r4 ::=      SEQUENCE (SIZE (1..maxTS-LCR)) OF
                                    TimeslotInfo-LCR-r4

TimeslotInfoList-r4 ::=          CHOICE {
                                    tdd384
                                        SEQUENCE (SIZE (1..maxTS)) OF
                                            TimeslotInfo,
                                    tdd128
                                        SEQUENCE (SIZE (1..maxTS-LCR)) OF
                                            TimeslotInfo-LCR-r4
                                }

TimeslotISCP ::=                INTEGER (0..91)

-- The following list shall not include more than 6 elements in 1.28Mcps TDD mode.
TimeslotISCP-List ::=           SEQUENCE (SIZE (1..maxTS)) OF
                                    TimeslotISCP

TimeslotListWithISCP ::=        SEQUENCE (SIZE (1..maxTS)) OF
                                    TimeslotWithISCP

TimeslotWithISCP ::=            SEQUENCE {
                                    timeslot
                                        TimeslotNumber,
                                    timeslotISCP
                                        TimeslotISCP
                                }

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

TrafficVolumeEventParam ::=     SEQUENCE {
                                    eventID
                                        TrafficVolumeEventType,
                                    reportingThreshold
                                        TrafficVolumeThreshold,
                                    timeToTrigger
                                        TimeToTrigger
                                        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,
    trafficVolumeMeasRepCriteria      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 {
    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,
        ue-RX-TX-TimeDifferenceThreshold  UE-RX-TX-TimeDifferenceThreshold
}

UE-AutonomousUpdateMode ::=      CHOICE {
        on                          NULL,
        onWithNoReporting           NULL,
        off                         RL-InformationLists
}

UE-InternalEventParam ::=        CHOICE {
        event6a                     UE-6AB-Event,
        event6b                     UE-6AB-Event,
        event6c                     TimeToTrigger,
        event6d                     TimeToTrigger,
        event6e                     TimeToTrigger,
        event6f                     UE-6FG-Event,
        event6g                     UE-6FG-Event
}

UE-InternalEventParamList ::=    SEQUENCE (SIZE (1..maxMeasEvent)) OF
        UE-InternalEventParam

UE-InternalEventResults ::=      CHOICE {
        event6a                     NULL,
        event6b                     NULL,
        event6c                     NULL,
        event6d                     NULL,
        event6e                     NULL,
        event6f                     PrimaryCPICH-Info,
        event6g                     PrimaryCPICH-Info
}

UE-InternalMeasQuantity ::=      SEQUENCE {
        measurementQuantity         UE-MeasurementQuantity,
        filterCoefficient           FilterCoefficient           DEFAULT fc1
}

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
        appliedTA
    }
}
| UE-InternalMeasuredResults-LCR-r4 ::= SEQUENCE {
    ue-TransmittedPowerTDD-List    UE-TransmittedPowerTDD-List    OPTIONAL,
    upPCH-ADV                       INTEGER (0..352)                 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-r4 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-TimeDifferece    BOOLEAN
        },
        tdd                          SEQUENCE {
            appliedTA                  BOOLEAN
        }
    }
}

UE-InternalReportingQuantity-r4 ::= SEQUENCE {
    ue-TransmittedPower             BOOLEAN,
    modeSpecificInfo                CHOICE {
        fdd                          SEQUENCE {
            ue-RX-TX-TimeDifferece    BOOLEAN
        },
        tdd                          SEQUENCE {
            tddOption                  CHOICE {
                tdd384                 SEQUENCE {
                    appliedTA           BOOLEAN
                },
                tdd128                 SEQUENCE {
                    upPTS-ADV           BOOLEAN
                }
            }
        }
    }
}

-- TABULAR: For TDD only the first two values are used.
UE-MeasurementQuantity ::= ENUMERATED {
    ue-TransmittedPower,
    ultra-Carrier-RSSI,
    ue-RX-TX-TimeDifference }

UE-RX-TX-ReportEntry ::= SEQUENCE {
    primaryCPICH-Info              PrimaryCPICH-Info,
    ue-RX-TX-TimeDifferenceType1    UE-RX-TX-TimeDifferenceType1
}

```

```

}
UE-RX-TX-ReportEntryList ::=          SEQUENCE (SIZE (1..maxRL)) OF
                                        UE-RX-TX-ReportEntry

UE-RX-TX-TimeDifferenceType1 ::=          INTEGER (768..1280)
-- Actual value = IE value * 0.0625 + 768
UE-RX-TX-TimeDifferenceType2 ::=          INTEGER (0..8191)

UE-RX-TX-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,
    rach                                    NULL,
    usch                                    TransportChannelIdentity
}

UE-Positioning-Accuracy ::=               BIT STRING (SIZE (7))

UE-Positioning-CipherParameters ::=       SEQUENCE {
    cipheringKeyFlag                       BIT STRING (SIZE (1)),
    cipheringSerialNumber                   INTEGER (0..65535)
}

UE-Positioning-Error ::=                  SEQUENCE {
    errorReason                             UE-Positioning-ErrorCause,
    ue-positioning-GPS-additionalAssistanceDataRequest  UE-Positioning-GPS-
AdditionalAssistanceDataRequest OPTIONAL
}

UE-Positioning-ErrorCause ::=             ENUMERATED {
    notEnoughOTDOA-Cells,
    notEnoughGPS-Satellites,
    assistanceDataMissing,
    methodNotSupported,
    undefinedError,
    requestDeniedByUser,
    notProcessedAndTimeout }

UE-Positioning-EventID ::=                ENUMERATED {
    e7a, e7b, e7c }

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 {
    referenceTime                             CHOICE {
        utran-ReferenceTime                 UTRAN-ReferenceTime,
        gps-ReferenceTimeOnly                INTEGER (0..604799999)
    },
    satelliteInformationList                   AcquisitionSatInfoList
}

UE-Positioning-GPS-AdditionalAssistanceDataRequest ::= SEQUENCE {
    almanacRequest                           BOOLEAN,
    utcModelRequest                           BOOLEAN,
    ionosphericModelRequest                   BOOLEAN,
    navigationModelRequest                   BOOLEAN,

```

```

dgpsCorrectionsRequest          BOOLEAN,
referenceLocationRequest        BOOLEAN,
referenceTimeRequest            BOOLEAN,
aquisitionAssistanceRequest    BOOLEAN,
realTimeIntegrityRequest       BOOLEAN,
navModelAddDataRequest         UE-Positioning-GPS-NavModelAddDataReq  OPTIONAL
}

UE-Positioning-GPS-Almanac ::=          SEQUENCE {
    wn-a                            BIT STRING (SIZE (8)),
    almanacSatInfoList             AlmanacSatInfoList,
    sv-GlobalHealth                BIT STRING (SIZE (364))          OPTIONAL
}

UE-Positioning-GPS-AssistanceData ::=  SEQUENCE {
    ue-positioning-GPS-ReferenceTime UE-Positioning-GPS-ReferenceTime
    OPTIONAL,
    ue-positioning-GPS-ReferenceLocation ReferenceLocation          OPTIONAL,
    ue-positioning-GPS-DGPS-Corrections UE-Positioning-GPS-DGPS-Corrections
    OPTIONAL,
    ue-positioning-GPS-NavigationModel UE-Positioning-GPS-NavigationModel
    OPTIONAL,
    ue-positioning-GPS-IonosphericModel UE-Positioning-GPS-IonosphericModel
    OPTIONAL,
    ue-positioning-GPS-UTC-Model       UE-Positioning-GPS-UTC-Model
    OPTIONAL,
    ue-positioning-GPS-Almanac         UE-Positioning-GPS-Almanac
    OPTIONAL,
    ue-positioning-GPS-AcquisitionAssistance UE-Positioning-GPS-AcquisitionAssistance
    OPTIONAL,
    ue-positioning-GPS-Real-timeIntegrity BadSatList                OPTIONAL
}

UE-Positioning-GPS-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-Measurement ::=      SEQUENCE {
    referenceSFN                      ReferenceSFN                OPTIONAL,
    gps-TOW-lmsec                     GPS-TOW-lmsec,
    gps-TOW-rem-usec                  GPS-TOW-rem-usec          OPTIONAL,
    gps-MeasurementParamList          GPS-MeasurementParamList
}

UE-Positioning-GPS-NavigationModel ::=  SEQUENCE {
    navigationModelSatInfoList       NavigationModelSatInfoList
}

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

UE-Positioning-GPS-ReferenceTime ::=    SEQUENCE {
    gps-Week                          INTEGER (0..1023),
    gps-tow-lmsec                     GPS-TOW-lmsec,
    gps-tow-rem-usec                  GPS-TOW-rem-usec          OPTIONAL,
    sfn                              INTEGER (0..4095),
    sfn-tow-Uncertainty               SFN-TOW-Uncertainty        OPTIONAL,
    nodeBClockDrift                  NodeB-ClockDrift          OPTIONAL,
    gps-TOW-AssistList                GPS-TOW-AssistList        OPTIONAL
}

```

```

UE-Positioning-GPS-UTC-Model ::=
    a1
    a0
    t-ot
    wn-t
    delta-t-LS
    wn-lsf
    dn
    delta-t-LSF
    SEQUENCE {
        BIT STRING (SIZE (24)),
        BIT STRING (SIZE (32)),
        BIT STRING (SIZE (8)),
        BIT STRING (SIZE (8)),
        BIT STRING (SIZE (8)),
        BIT STRING (SIZE (8)),
        BIT STRING (SIZE (8)),
        BIT STRING (SIZE (8))
    }

UE-Positioning-IPDL-Parameters ::=
    ip-Spacing
    ip-Length
    ip-Offset
    seed
    burstModeParameters
    SEQUENCE {
        IP-Spacing,
        IP-Length,
        INTEGER (0..9),
        INTEGER (0..63),
        BurstModeParameters
    }

UE-Positioning-IPDL-Parameters-r4 ::=
    ip-Spacing
    modeSpecificInfo
        fdd
            ip-Length
            ip-Offset
            seed
        },
        tdd
            ip-slot
            ip-Start
            ip-PCCPCG
    },
    burstModeParameters
    SEQUENCE {
        IP-Spacing,
        CHOICE {
            SEQUENCE {
                IP-Length,
                INTEGER (0..9),
                INTEGER (0..63)
            },
            SEQUENCE {
                INTEGER (0..14),
                INTEGER (0..4095),
                IP-PCCPCH-r4
            }
        }
    } OPTIONAL

UP-IPDL-Parameters-TDD-r4-ext ::=
    ip-Spacing
    ip-slot
    ip-Start
    ip-PCCPCG
    burstModeParameters
    SEQUENCE {
        IP-Spacing,
        INTEGER (0..14),
        INTEGER (0..4095),
        IP-PCCPCH-r4
    } OPTIONAL,
    BurstModeParameters

UE-Positioning-MeasuredResults ::=
    ue-positioning-MultipleSets
    ue-positioning-ReferenceCellIdentity
    ue-positioning-OTDOA-Measurement
    ue-positioning-PositionEstimateInfo
    ue-positioning-GPS-Measurement
    ue-positioning-Error
    SEQUENCE {
        UE-Positioning-MultipleSets
        PrimaryCPICH-Info
        UE-Positioning-OTDOA-Measurement
        UE-Positioning-PositionEstimateInfo
        UE-Positioning-GPS-Measurement
        UE-Positioning-Error
    } OPTIONAL, OPTIONAL,

UE-Positioning-Measurement ::=
    ue-positioning-ReportingQuantity
    reportCriteria
    ue-positioning-OTDOA-AssistanceData
    ue-positioning-GPS-AssistanceData
    SEQUENCE {
        UE-Positioning-ReportingQuantity,
        UE-Positioning-ReportCriteria,
        UE-Positioning-OTDOA-AssistanceData
        UE-Positioning-GPS-AssistanceData
    } OPTIONAL

UE-Positioning-Measurement-r4 ::=
    ue-positioning-ReportingQuantity
    reportCriteria
    ue-positioning-OTDOA-AssistanceData
    ue-positioning-GPS-AssistanceData
    SEQUENCE {
        UE-Positioning-ReportingQuantity,
        UE-Positioning-ReportCriteria,
        UE-Positioning-OTDOA-AssistanceData-r4
        UE-Positioning-GPS-AssistanceData
    } OPTIONAL

UE-Positioning-MeasurementEventResults ::=
    event7a
    CHOICE {
        UE-Positioning-PositionEstimateInfo,
    }

```

```

event7b
event7c
}

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-MultipleSets ::=
    SEQUENCE {
        numberOfOTDOA-IPDL-GPS-Sets
        INTEGER (2..3),
        numberOfReferenceCells
        INTEGER (1..3),
        referenceCellRelation
        ReferenceCellRelation
    }

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-Measurement ::=
    SEQUENCE {
        sfn
        INTEGER (0..4095),
        ue-RX-TX-TimeDifferenceType2
        UE-RX-TX-TimeDifferenceType2,
        qualityChoice
        CHOICE {
            std-10
            ReferenceQuality10,
            std-50
            ReferenceQuality50,
            cpich-EcN0
            CPICH-Ec-N0-OTDOA,
            defaultQuality
            ReferenceQuality
        },
        neighbourList
        NeighbourList
        OPTIONAL
    }

UE-Positioning-OTDOA-NeighbourCellInfo ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd
        SEQUENCE {
            primaryCPICH-Info
            PrimaryCPICH-Info
        },
        tdd
        SEQUENCE {
            cellAndChannelIdentity
            CellAndChannelIdentity
        }
    },
    frequencyInfo
    FrequencyInfo
    OPTIONAL,
    ue-positioning-IPDL-Parameters
    UE-Positioning-IPDL-Parameters
    OPTIONAL,
    sfn-SFN-RelTimeDifference
    SFN-SFN-RelTimeDifference1,
    sfn-SFN-Drift
    INTEGER (0..30),
    searchWindowSize
    OTDOA-SearchWindowSize,
    positioningMode CHOICE {
        ueBased
        SEQUENCE {
            relativeNorth
            INTEGER (-20000..20000)
            OPTIONAL,
            relativeEast
            INTEGER (-20000..20000)
            OPTIONAL,
            relativeAltitude
            INTEGER (-4000..4000)
            OPTIONAL,
            fineSFN-SFN
            FineSFN-SFN
            OPTIONAL,
            roundTripTime
            INTEGER (0..32765)
            OPTIONAL
        },
        ueAssisted
        SEQUENCE {}
    }
}

UE-Positioning-OTDOA-NeighbourCellInfo-r4 ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd
        SEQUENCE {
            primaryCPICH-Info
            PrimaryCPICH-Info
        },

```



```

        tdd
            cellAndChannelIdentity
        },
    },
    frequencyInfo
    ue-positioning-IPDL-Parameters
    OPTIONAL,
    sfn-SFN-RelTimeDifference
    sfn-SFN-Drift
    searchWindowSize
    positioningMode CHOICE{
        ueBased
            relativeNorth
            relativeEast
            relativeAltitude
            fineSFN-SFN
            roundTripTime
        },
        ueAssisted
    }
}

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-ReferenceCellInfo ::= SEQUENCE {
    sfn
    OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd
            primaryCPICH-Info
        },
        tdd
            cellAndChannelIdentity
    },
    frequencyInfo
    positioningMode CHOICE {
        ueBased
            cellPosition
            roundTripTime
        },
        ueAssisted
    },
    ue-positioning-IPDL-Parameters
}

UE-Positioning-OTDOA-ReferenceCellInfo-r4 ::= SEQUENCE {
    sfn
    OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd
            primaryCPICH-Info
        },
        tdd
            cellAndChannelIdentity
    },
    frequencyInfo
    positioningMode CHOICE {
        ueBased
            cellPosition
            roundTripTime
        },
        ueAssisted
    },
    ue-positioning-IPDL-Parameters
}

UE-Positioning-PositionEstimateInfo ::= SEQUENCE {
    referenceSFN
    gps-tow-1msec
    gps-tow-rem-usec
    positionEstimate
}

```

```

UE-Positioning-ReportCriteria ::=
    ue-positioning-ReportCriteria
    periodicalReportingCriteria
    noReporting
}
CHOICE {
    UE-Positioning-EventParamList,
    PeriodicalReportingCriteria,
    NULL
}

UE-Positioning-ReportingQuantity ::=
    methodType
    positioningMethod
    responseTime
    accuracy
    gps-TimingOfCellWanted
    multipleSets
    environmentCharacterisation
}
SEQUENCE {
    UE-Positioning-MethodType,
    PositioningMethod,
    UE-Positioning-ResponseTime,
    UE-Positioning-Accuracy
    BOOLEAN,
    BOOLEAN,
    EnvironmentCharacterisation
}
OPTIONAL,
OPTIONAL

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

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

UTRAN-ReferenceTime ::=
    gps-tow-lmsec
    gps-tow-rem-usec
    INTEGER (0..4095)
}
SEQUENCE {
    GPS-TOW-lmsec,
    GPS-TOW-rem-usec,
    sfn

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

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

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

BCC ::=
    INTEGER (0..7)

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

-- Actual value = IE value * 8
BCCH-ModificationTime ::=
    INTEGER (0..511)

BSIC ::=
    ncc
    bcc
}
SEQUENCE {
    NCC,
    BCC

CBS-DRX-Level1Information ::=
    ctch-AllocationPeriod
    cbs-FrameOffset
}
SEQUENCE {
    INTEGER (1..256),
    INTEGER (0..255)

CDMA2000-Message ::=
    msg-Type
    payload
}
SEQUENCE {
    BIT STRING (SIZE (8)),
    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)

```

```

ExpirationTimerFactor ::= INTEGER (1..8)

FDD-UMTS-Frequency-List ::= SEQUENCE (SIZE (1..maxNumFDDFreqs)) OF
    FrequencyInfoFDD

FrequencyInfoCDMA2000 ::= SEQUENCE {
    band-Class BIT STRING (SIZE (5)),
    cdma-Freq BIT STRING (SIZE(11))
}

GSM-BA-Range ::= SEQUENCE {
    gsmLowRangeUARFCN UARFCN,
    gsmUpRangeUARFCN UARFCN
}

GSM-BA-Range-List ::= SEQUENCE (SIZE (1..maxNumGSMFreqRanges)) OF
    GSM-BA-Range

GSM-Classmark2 ::= OCTET STRING (SIZE (5))

GSM-Classmark3 ::= OCTET STRING (SIZE (1..32))

GSM-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
    BIT STRING (SIZE (1..512))

GsmSecurityCapability ::= BIT STRING (SIZE (7))

IdentificationOfReveivedMessage ::= SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    receivedMessageType ReceivedMessageType
}

InterRAT-ChangeFailureCause ::= CHOICE {
    configurationUnacceptable NULL,
    physicalChannelFailure NULL,
    protocolError ProtocolErrorInformation,
    unspecified NULL,
    spare1 NULL,
    spare2 NULL,
    spare3 NULL
}

InterRAT-UE-RadioAccessCapability ::= CHOICE {
    gsm SEQUENCE {
        gsm-Classmark2 GSM-Classmark2,
        gsm-Classmark3 GSM-Classmark3
    },
    cdma2000 SEQUENCE {
        cdma2000-MessageList CDMA2000-MessageList
    }
}

InterRAT-UE-RadioAccessCapabilityList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
    InterRAT-UE-RadioAccessCapability

InterRAT-UE-SecurityCapability ::= CHOICE {
    gsm SEQUENCE {
        gsmSecurityCapability GsmSecurityCapability
    }
}

InterRAT-UE-SecurityCapList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
    InterRAT-UE-SecurityCapability

InterRAT-HO-Failure ::= SEQUENCE {
    interRAT-HO-FailureCause InterRAT-HO-FailureCause OPTIONAL,
    interRATMessage InterRATMessage OPTIONAL
}

InterRAT-HO-FailureCause ::= CHOICE {
    configurationUnacceptable NULL,
    physicalChannelFailure NULL,
    protocolError ProtocolErrorInformation,
    interRAT-ProtocolError NULL,
    unspecified NULL,
    spare1 NULL,
    spare2 NULL,
    spare3 NULL,
}

```

```

    spare4                                NULL
}

InterRATMessage ::=                       CHOICE {
    gsm                                    SEQUENCE {
        gsm-MessageList                    GSM-MessageList
    },
    cdma2000                                SEQUENCE {
        cdma2000-MessageList                CDMA2000-MessageList
    }
}

InterRATMessageList ::=                   SEQUENCE (SIZE (1..maxSystemCapability)) OF
                                           InterRATMessage

MasterInformationBlock ::=                SEQUENCE {
    mib-ValueTag                            MIB-ValueTag,
    plmn-Type                                PLMN-Type,
    -- TABULAR: The PLMN identity and ANSI-41 core network information
    -- are included in PLMN-Type.
    sibSb-ReferenceList                      SIBSb-ReferenceList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions                    SEQUENCE {} OPTIONAL
}

MIB-ValueTag ::=                          INTEGER (1..8)

NCC ::=                                    INTEGER (0..7)

PLMN-ValueTag ::=                         INTEGER (1..256)

PredefinedConfigIdentityAndValueTag ::= SEQUENCE {
    predefinedConfigIdentity                 PredefinedConfigIdentity,
    predefinedConfigValueTag                PredefinedConfigValueTag
}

ProtocolErrorInformation ::=               SEQUENCE {
    diagnosticsType                          CHOICE {
        type1                                SEQUENCE {
            protocolErrorCause                ProtocolErrorCause
        },
        spare                                NULL
    }
}

ReceivedMessageType ::=                    ENUMERATED {
    activeSetUpdate,
    cellChangeOrderFromUTRAN,
    cellUpdateConfirm,
    counterCheck,
    downlinkDirectTransfer,
    interRATHandoverCommand,
    measurementControl,
    pagingType2,
    physicalChannelReconfiguration,
    physicalSharedChannelAllocation,
    radioBearerReconfiguration,
    radioBearerRelease,
    radioBearerSetup,
    rrcConnectionRelease,
    rrcConnectionReject,
    rrcConnectionSetup,
    securityModeCommand,
    signallingConnectionRelease,
    transportChannelReconfiguration,
    transportFormatCombinationControl,
    ueCapabilityEnquiry,
    ueCapabilityInformationConfirm,
    uplinkPhysicalChannelControl,
    uraUpdateConfirm,
    utranMobilityInformation,
    assistanceDataDelivery,
    spare1, spare2, spare3, spare4,
    spare5
}

Rplmn-Information ::=                     SEQUENCE {

```

```

OPTIONAL,
OPTIONAL,
List OPTIONAL
}

Rplmn-Information-r4 ::= SEQUENCE {
    gsm-BA-Range-List GSM-BA-Range-List OPTIONAL,
    fdd-UMTS-Frequency-List FDD-UMTS-Frequency-List OPTIONAL,
    tdd384-UMTS-Frequency-List TDD-UMTS-Frequency-List OPTIONAL,
    tdd128-UMTS-Frequency-List TDD-UMTS-Frequency-List OPTIONAL,
    cdma2000-UMTS-Frequency-List CDMA2000-UMTS-Frequency-
}

SchedulingInformation ::= SEQUENCE {
    scheduling SEQUENCE {
        segCount SegCount DEFAULT 1,
        sib-Pos CHOICE {
            -- The element name indicates the repetition period and the value
            -- (multiplied by two) indicates the position of the first segment.
            rep4 INTEGER (0..1),
            rep8 INTEGER (0..3),
            rep16 INTEGER (0..7),
            rep32 INTEGER (0..15),
            rep64 INTEGER (0..31),
            rep128 INTEGER (0..63),
            rep256 INTEGER (0..127),
            rep512 INTEGER (0..255),
            rep1024 INTEGER (0..511),
            rep2048 INTEGER (0..1023),
            rep4096 INTEGER (0..2047)
        },
        sib-PosOffsetInfo SibOFF-List OPTIONAL
    }
}

SchedulingInformationSIB ::= SEQUENCE {
    sib-Type SIB-TypeAndTag,
    scheduling SchedulingInformation
}

SchedulingInformationSIBSb ::= SEQUENCE {
    sibSb-Type SIBSb-TypeAndTag,
    scheduling SchedulingInformation
}

SegCount ::= INTEGER (1..16)

SegmentIndex ::= INTEGER (1..15)

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

SIB-TypeAndTag ::=
    sysInfoType1
    sysInfoType2
    sysInfoType3
    sysInfoType4
    sysInfoType5
    sysInfoType6
    sysInfoType7
    sysInfoType8
    sysInfoType9
    sysInfoType10
    sysInfoType11
    sysInfoType12
    sysInfoType13
    sysInfoType13-1
    sysInfoType13-2
    sysInfoType13-3
    sysInfoType13-4
    sysInfoType14
    sysInfoType15
    sysInfoType16
    sysInfoType17
    sysInfoType15-1
    sysInfoType15-2
    sysInfoType15-3
    sysInfoType15-4
    sysInfoType18
}

SIBSb-TypeAndTag ::=
    sysInfoType1
    sysInfoType2
    sysInfoType3
    sysInfoType4
    sysInfoType5
    sysInfoType6
    sysInfoType7
    sysInfoType8
    sysInfoType9
    sysInfoType10
    sysInfoType11
    sysInfoType12
    sysInfoType13
    sysInfoType13-1
    CHOICE {
        PLMN-ValueTag,
        CellValueTag,
        CellValueTag,
        CellValueTag,
        CellValueTag,
        NULL,
        CellValueTag,
        NULL,
        NULL,
        CellValueTag,
        CellValueTag,
        CellValueTag,
        CellValueTag,
        CellValueTag,
        CellValueTag,
        NULL,
        CellValueTag,
        PredefinedConfigIdentityAndValueTag,
        NULL,
        CellValueTag,
        SIBOccurrenceIdentityAndValueTag,
        SIBOccurrenceIdentityAndValueTag,
        CellValueTag,
        CellValueTag
    }

SIBSb-TypeAndTag ::=
    CHOICE {
        PLMN-ValueTag,
        CellValueTag,
        CellValueTag,
        CellValueTag,
        CellValueTag,
        CellValueTag,
        NULL,
        CellValueTag,
        NULL,
        NULL,
        CellValueTag,
        CellValueTag,
        CellValueTag,
        CellValueTag,
        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
}

SibOFF ::=
    ENUMERATED {
        so2, so4, so6, so8, so10,
        so12, so14, so16, so18,
        so20, so22, so24, so26,
        so28, so30, so32 }

SibOFF-List ::=
    SEQUENCE (SIZE (1..15)) OF
        SibOFF

SysInfoType1 ::=
    SEQUENCE {
        -- Core network IEs
        cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP,
        cn-DomainSysInfoList            CN-DomainSysInfoList,
        -- User equipment IEs
        ue-ConnTimersAndConstants        UE-ConnTimersAndConstants        OPTIONAL,
        ue-IdleTimersAndConstants        UE-IdleTimersAndConstants        OPTIONAL,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}                        OPTIONAL
    }

SysInfoType2 ::=
    SEQUENCE {
        -- UTRAN mobility IEs
        ura-IdentityList                URA-IdentityList,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {}                        OPTIONAL
    }

SysInfoType3 ::=
    SEQUENCE {
        sib4indicator                    BOOLEAN,
        -- UTRAN mobility IEs
        cellIdentity                    CellIdentity,
        cellSelectReselectInfo          CellSelectReselectInfoSIB-3-4,
        cellAccessRestriction          CellAccessRestriction,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {
            sysInfoType3-r3-r4-ext      SysInfoType3-r3-r4-ext-IEs,
            mapping-ICR                Mapping-ICR                OPTIONAL,
            nonCriticalExtensions        SEQUENCE {}                        OPTIONAL
        }
    }

SysInfoType3-r3-r4-ext-IEs ::= SEQUENCE {
    mapping-ICR                Mapping-ICR-r4                OPTIONAL
}

SysInfoType4 ::=
    SEQUENCE {
        -- UTRAN mobility IEs
        cellIdentity                    CellIdentity,
        cellSelectReselectInfo          CellSelectReselectInfoSIB-3-4,
        cellAccessRestriction          CellAccessRestriction,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions            SEQUENCE {
            sysInfoType4-r3-r4-ext      SysInfoType4-r3-r4-ext-IEs,
            mapping-ICR                Mapping-ICR                OPTIONAL,
            nonCriticalExtensions        SEQUENCE {}                        OPTIONAL
        }
    }

SysInfoType4-r3-r4-ext-IEs ::= SEQUENCE {
    mapping-ICR                Mapping-ICR-r4                OPTIONAL
}

```

```

SysInfoType5 ::=
    sib6indicator                               SEQUENCE {
        -- Physical channel IEs
        pich-PowerOffset                       PICH-PowerOffset,
        modeSpecificInfo                       CHOICE {
            fdd                                 SEQUENCE {
                aich-PowerOffset               AICH-PowerOffset
            },
            tdd                                 SEQUENCE {
                -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, the following IEs should be absent
                -- and the info included in the tdd128SpecificInfo instead.
                pusch-SysInfoList-SFN          PUSCH-SysInfoList-SFN          OPTIONAL,
                pdsch-SysInfoList-SFN          PDSCH-SysInfoList-SFN          OPTIONAL,
                openLoopPowerControl-TDD       OpenLoopPowerControl-TDD
            }
        },
        primaryCCPCH-Info                      PrimaryCCPCH-Info                      OPTIONAL,
        prach-SystemInformationList            PRACH-SystemInformationList,
        sCCPCH-SystemInformationList          SCCPCH-SystemInformationList,
        cbs-DRX-Level1Information             CBS-DRX-Level1Information             OPTIONAL,
        -- Conditional on any of the CTCH indicator IEs in
        -- sCCPCH-SystemInformationList
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions                 SEQUENCE {
            sysInfoType5-r3-r4-ext          SysInfoType5-r3-r4-ext-IEs,
            pNBSCCH-Allocation-r4          PNBSCCH-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   OPTIONAL,
            If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included in
            PRACH-SystemInformationList shall be ignored, and the following IE shall describe
            the PRACH-RACH-Information.
            prach-RACH-Info-LCR              PRACH-RACH-Info-LCR              OPTIONAL,
            If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-Partitioning in
            PRACH-SystemInformationList shall be absent, and the following IE shall describe
            the PRACH-Partitioning.
            prach-Partitioning-LCR          PRACH-Partitioning-LCR          OPTIONAL,
            tdd128SpecificInfo                    SEQUENCE {
            pusch-SysInfoList-SFN                PUSCH-SysInfoList-SFN-LCR      OPTIONAL,
            pdsch-SysInfoList-SFN                PDSCH-SysInfoList-SFN-LCR      OPTIONAL,
            pCCPCH-LCR-Extensions                PCCPCH-LCR-Extensions          OPTIONAL,
            sCCPCH-LCR-ExtensionsList            SCCPCH-LCR-ExtensionsList
            }                                          OPTIONAL,
        }
        -- Extension mechanism for non- rel-4 information
        nonCriticalExtensions                 SEQUENCE {}                               OPTIONAL
    }
}

```

```

SysInfoType5-r3-r4-ext-IEs ::= SEQUENCE {
    pNBSCCH-Allocation-r4          PNBSCCH-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, and the following IE shall describe
    -- the PRACH-RACH-Information.
    prach-RACH-Info-LCR              PRACH-RACH-Info-LCR-r4          OPTIONAL,
    -- If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-Partitioning in
    -- PRACH-SystemInformationList shall be absent, and the following IE shall describe
    -- the PRACH-Partitioning.
    prach-Partitioning-LCR          PRACH-Partitioning-LCR-r4          OPTIONAL,
    tdd128SpecificInfo                    SEQUENCE {
    pusch-SysInfoList-SFN                PUSCH-SysInfoList-SFN-LCR-r4  OPTIONAL,
    pdsch-SysInfoList-SFN                PDSCH-SysInfoList-SFN-LCR-r4  OPTIONAL,
    pCCPCH-LCR-Extensions                PrimaryCCPCH-Info-LCR-r4-ext    OPTIONAL,
    sCCPCH-LCR-ExtensionsList            SCCPCH-SystemInformationList-LCR-r4-ext
    }                                          OPTIONAL
}

```

```

SysInfoType6 ::=
    -- Physical channel IEs
    pich-PowerOffset                       PICH-PowerOffset,
    modeSpecificInfo                       CHOICE {
        fdd                                 SEQUENCE {
            aich-PowerOffset               AICH-PowerOffset,
            csich-PowerOffset              CSICH-PowerOffset             OPTIONAL
        }
    }

```



```

    },
    tdd
        SEQUENCE {
-- If PDSCH/PUSCH is configured for 1.28Mcps TDD, the following IEs should be absent
-- and the info included in the tdd128SpecificInfo instead.
    pusch-SysInfoList-SFN          PUSCH-SysInfoList-SFN          OPTIONAL,
    pdsch-SysInfoList-SFN          PDSCH-SysInfoList-SFN          OPTIONAL,
    openLoopPowerControl-TDD       OpenLoopPowerControl-TDD
        },
    primaryCCPCH-Info              PrimaryCCPCH-Info              OPTIONAL,
    prach-SystemInformationList     PRACH-SystemInformationList     OPTIONAL,
    sCCPCH-SystemInformationList     SCCPCH-SystemInformationList     OPTIONAL,
    cbs-DRX-Level1Information        CBS-DRX-Level1Information        OPTIONAL,
-- Conditional on any of the CTCH indicator IEs in
-- sCCPCH-SystemInformationList
-- Extension mechanism for non- release99 information
    nonCriticalExtensions           SEQUENCE {
        sysInfoType6-r3-r4-ext      SysInfoType6-r3-r4-ext-IEs,
        This IE is present only if IPDLs are applied for TDD
        openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD OPTIONAL,
-- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included in
-- PRACH SystemInformationList shall be ignored, and the following IE shall describe
-- the PRACH RACH Information.
        prach RACH Info LCR          PRACH RACH Info LCR          OPTIONAL,
-- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH Partitioning in
-- PRACH SystemInformationList shall be absent, and the following IE shall describe
-- the PRACH Partitioning.
        prach Partitioning LCR        PRACH Partitioning LCR        OPTIONAL,
        tdd128SpecificInfo           SEQUENCE {
            pusch SysInfoList SFN      PUSCH SysInfoList SFN LCR    OPTIONAL,
            pdsch SysInfoList SFN      PDSCH SysInfoList SFN LCR    OPTIONAL,
            pCCPCH LCR Extensions      PCCPCH LCR Extensions      OPTIONAL,
            sCCPCH LCR ExtensionsList   SCCPCH LCR ExtensionsList   OPTIONAL,
        }
        }
    }
}

```

```

SysInfoType6-r3-r4-ext-IEs ::= SEQUENCE {
    -- This IE is present only if IPDLs are applied for TDD
    openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4 OPTIONAL,
    -- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included in
    -- PRACH SystemInformationList shall be ignored, and the following IE shall describe
    -- the PRACH-RACH-Information.
    prach-RACH-Info-LCR            PRACH-RACH-Info-LCR-r4      OPTIONAL,
    -- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-Partitioning in
    -- PRACH SystemInformationList shall be absent, and the following IE shall describe
    -- the PRACH-Partitioning.
    prach-Partitioning-LCR        PRACH-Partitioning-LCR-r4  OPTIONAL,
    tdd128SpecificInfo           SEQUENCE {
        pusch-SysInfoList-SFN        PUSCH-SysInfoList-SFN-LCR-r4 OPTIONAL,
        pdsch-SysInfoList-SFN        PDSCH-SysInfoList-SFN-LCR-r4 OPTIONAL,
        pCCPCH-LCR-Extensions        PrimaryCCPCH-Info-LCR-r4-ext OPTIONAL,
        sCCPCH-LCR-ExtensionsList    SCCPCH-SystemInformationList-LCR-r4-ext OPTIONAL,
    }
}

```

```

SysInfoType7 ::= SEQUENCE {
-- Physical channel IEs
    modeSpecificInfo              CHOICE {
        fdd                        SEQUENCE {
            ul-Interference        UL-Interference
        },
        tdd                        NULL
    },
    prach-Information-SIB5-List    DynamicPersistenceLevelList,
    prach-Information-SIB6-List    DynamicPersistenceLevelList OPTIONAL,
    expirationTimeFactor           ExpirationTimerFactor        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,
}

```

```

-- Extension mechanism for non- release99 information
nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}

SysInfoType9 ::=
-- Physical channel IEs
cpch-PersistenceLevelsList    CPCH-PersistenceLevelsList,
-- Extension mechanism for non- release99 information
nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}

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

SysInfoType11 ::=
sibl2indicator                BOOLEAN,
-- Measurement IEs
fach-MeasurementOccasionInfo  FACH-MeasurementOccasionInfo          OPTIONAL,
measurementControlSysInfo     MeasurementControlSysInfo,
-- Extension mechanism for non- release99 information
nonCriticalExtensions          SEQUENCE {
sysInfoType11-r3-r4-ext      SysInfoType11-r3-r4-ext-IEs,
fach-MeasurementOccasionInfo-LCR-Ext FACH-MeasurementOccasionInfo-LCR-Ext
OPTIONAL,
measurementControlSysInfo-LCR MeasurementControlSysInfo-LCR,
nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}
}

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

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

SysInfoType12-r3-r4-ext-IEs ::= SEQUENCE {
fach-MeasurementOccasionInfo-LCR-Ext FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
measurementControlSysInfo-LCR      MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType13 ::=
-- Core network IEs
cn-DomainSysInfoList          CN-DomainSysInfoList,
-- User equipment IEs
ue-IdleTimersAndConstants     UE-IdleTimersAndConstants          OPTIONAL,
capabilityUpdateRequirement    CapabilityUpdateRequirement          OPTIONAL,
-- Extension mechanism for non- release99 information
nonCriticalExtensions          SEQUENCE {
sysInfoType13-r3-r4-ext      SysInfoType13-r3-r4-ext-IEs,
capabilityUpdateRequirement-r4Ext CapabilityUpdateRequirement-r4Ext OPTIONAL,
-- Extension mechanism for non- release99 information
nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}
}

SysInfoType13-r3-r4-ext-IEs ::= SEQUENCE {
capabilityUpdateRequirement-r4Ext CapabilityUpdateRequirement-r4-ext OPTIONAL
}

SysInfoType13-1 ::=
-- ANSI-41 IEs

```

```

    ansi-41-RAND-Information      ANSI-41-RAND-Information,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType13-2 ::=              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,
    expirationTimerFactor          ExpirationTimerFactor                OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}

SysInfoType15 ::=                SEQUENCE {
-- Measurement IEs

    ue-positioning-GPS-CipherParameters UE-Positioning-CipherParameters  OPTIONAL,
    ue-positioning-GPS-ReferenceLocation ReferenceLocation,
    ue-positioning-GPS-ReferenceTime    UE-Positioning-GPS-ReferenceTime,

    ue-positioning-GPS-Real-timeIntegrity BadSatList                    OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions            SEQUENCE {
        sysInfoType15-r3-r4-ext      SysInfoType15-r3-r4-ext-IEs,
        up Ipdl Parameters TDD      UP-IPDL-Parameters TDD OPTIONAL,
-- Extension mechanism for non- release4 information
        nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
    }
}

SysInfoType15-r3-r4-ext-IEs ::= SEQUENCE {
    up-IPDL-Parameters-TDD      UP-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,
    navModel                        NavModel,

-- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}

SysInfoType15-3 ::=              SEQUENCE {
-- Almanac and other data
    transmissionTOW                INTEGER (0.. 604799),

```

```

    ue-positioning-GPS-Almanac                UE-Positioning-GPS-Almanac
OPTIONAL,
    ue-positioning-GPS-IonosphericModel      UE-Positioning-GPS-IonosphericModel
OPTIONAL,
    ue-positioning-GPS-UTC-Model             UE-Positioning-GPS-UTC-Model
OPTIONAL,
    satMask                                  BIT STRING (SIZE (1..32))  OPTIONAL,
    lsbTOW                                    BIT STRING (SIZE (8))    OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions                    SEQUENCE {}              OPTIONAL
}

SysInfoType15-4 ::=                          SEQUENCE {
-- Measurement IEs
    ue-positioning-OTDOA-CipherParameters    UE-Positioning-CipherParameters    OPTIONAL,
    ue-positioning-OTDOA-AssistanceData      UE-Positioning-OTDOA-AssistanceData,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions                    SEQUENCE {}              OPTIONAL
}

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

SysInfoType17 ::=                          SEQUENCE {
-- Physical channel IEs
-- If PDSCH/PUSCH is configured for 1.28Mcps TDD, the following IEs should be absent
-- and the info included in the tdd128SpecificInfo instead.
    pusch-SysInfoList                       PUSCH-SysInfoList          OPTIONAL,
    pdsch-SysInfoList                       PDSCH-SysInfoList          OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions                    SEQUENCE {
        sysInfoType17-r3-r4-ext            SysInfoType17-r3-r4-ext-IEs,
        tdd128SpecificInfo                SEQUENCE {
            pusch-SysInfoList                PUSCH-SysInfoList-LCR    OPTIONAL,
            pdsch-SysInfoList                PDSCH-SysInfoList-LCR    OPTIONAL,
            nonCriticalExtensions            SEQUENCE {}              OPTIONAL
        }
    }
}
OPTIONAL

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

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

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

SysInfoTypeSB2 ::=                         SEQUENCE {
-- Other IEs
    sib-ReferenceList                       SIB-ReferenceList,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions                    SEQUENCE {}              OPTIONAL
}

TDD-UMTS-Frequency-List ::=                SEQUENCE (SIZE (1..maxNumTDDFreqs)) OF
                                            FrequencyInfoTDD

-- *****
--
-- ANSI-41 INFORMATION ELEMENTS (10.3.9)
--

```

```
-- *****
ANSI-41-GlobalServiceRedirectInfo ::= ANSI-41-NAS-Parameter
ANSI-41-PrivateNeighbourListInfo ::= ANSI-41-NAS-Parameter
ANSI-41-RAND-Information ::= ANSI-41-NAS-Parameter
ANSI-41-UserZoneID-Information ::= ANSI-41-NAS-Parameter
ANSI-41-NAS-Parameter ::= BIT STRING (SIZE (1..2048))

Min-P-REV ::= BIT STRING (SIZE (8))

NAS-SystemInformationANSI-41 ::= ANSI-41-NAS-Parameter
NID ::= BIT STRING (SIZE (16))

P-REV ::= BIT STRING (SIZE (8))

SID ::= BIT STRING (SIZE (15))

END
```

11.4 Constant definitions

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

```
BEGIN
```

```
hiPDSCHidentities INTEGER ::= 64
hiPUSCHidentities INTEGER ::= 64
hiRM INTEGER ::= 256
maxAC INTEGER ::= 16
maxAdditionalMeas INTEGER ::= 4
maxASC INTEGER ::= 8
maxASCmap INTEGER ::= 7
maxASCpersist INTEGER ::= 6
maxCCTrCH INTEGER ::= 8
maxCellMeas INTEGER ::= 32
maxCellMeas-1 INTEGER ::= 31
maxCNDomains INTEGER ::= 4
maxCPCHsets INTEGER ::= 16
maxDPCH-DLchan INTEGER ::= 8
maxDPCHcodesPerTS INTEGER ::= 16
-- **TODO**
maxDPDCH-UL INTEGER ::= 6
maxDRACclasses INTEGER ::= 8
-- **TODO**
maxFACH INTEGER ::= 8
maxFreq INTEGER ::= 8
maxFrequencybands INTEGER ::= 4
maxInterSysMessages INTEGER ::= 4
maxLoCHperRLC INTEGER ::= 2
maxMeasEvent INTEGER ::= 8
maxMeasIntervals INTEGER ::= 3
maxMeasParEvent INTEGER ::= 2
maxNumCDMA2000Freqs INTEGER ::= 8
maxNumGSMFreqRanges INTEGER ::= 32
maxNumFDDFreqs INTEGER ::= 8
maxNumTDDFreqs INTEGER ::= 8
maxNoOfMeas INTEGER ::= 16
maxOtherRAT INTEGER ::= 15
maxPage1 INTEGER ::= 8
maxPCPCH-APsig INTEGER ::= 16
maxPCPCH-APsubCh INTEGER ::= 12
maxPCPCH-CDsig INTEGER ::= 16
maxPCPCH-CDsubCh INTEGER ::= 12
maxPCPCH-SF INTEGER ::= 7
maxPCPCHs INTEGER ::= 64
maxPDCPAlgoType INTEGER ::= 8
maxPDSCH INTEGER ::= 8
maxPDSCH-TFCIgroups INTEGER ::= 256
maxPRACH INTEGER ::= 16
maxPRACH-FPACH INTEGER ::= 8
maxPredefConfig INTEGER ::= 16
maxPUSCH INTEGER ::= 8
maxRABsetup INTEGER ::= 16
maxRAT INTEGER ::= 16
maxRB INTEGER ::= 32
maxRBallRBs INTEGER ::= 27
maxRBMuxOptions INTEGER ::= 8
```

```

maxRBperRAB                INTEGER ::= 8
maxReportedGSMCells        INTEGER ::= 6
maxRL                       INTEGER ::= 8
maxRL-1                    INTEGER ::= 7
maxROHC-PacketSizes-r4---  INTEGER ::= 16
maxROHC-Profile-r4---      INTEGER ::= 8
maxSat                      INTEGER ::= 16
maxSCCPCH                  INTEGER ::= 16
maxSIB                     INTEGER ::= 32
-- **TODO**
maxSIB-FACH                INTEGER ::= 8
maxSIBperMsg               INTEGER ::= 16
maxSig                     INTEGER ::= 16
maxSRBsetup                INTEGER ::= 8
maxSubCh                   INTEGER ::= 12
maxSystemCapability        INTEGER ::= 16
maxTF                      INTEGER ::= 32
maxTF-CPCH                 INTEGER ::= 16
maxTFC                     INTEGER ::= 1024
maxTFCI-2-Combs           INTEGER ::= 512
maxTGPS                    INTEGER ::= 6
maxTrCH                   INTEGER ::= 32
maxTrCHpreconf            INTEGER ::= 16
maxTS                      INTEGER ::= 14
maxTS-1                   INTEGER ::= 13
maxTS-LCR                  INTEGER ::= 6
maxTS-LCR-1               INTEGER ::= 5
maxURA                    INTEGER ::= 8

```

END

11.5 RRC information between network nodes

Internode-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

```

    HandoverToUTRANCommand-r3,
    MeasurementReport,
    PhysicalChannelReconfiguration-r3,
    RadioBearerReconfiguration-r3,
    RadioBearerRelease-r3,
    RadioBearerSetup-r3,
    TransportChannelReconfiguration-r3,
    UECapabilityInformation
FROM PDU-definitions

```

```

-- Core Network IEs :
    CN-DomainIdentity,
    CN-DomainInformationList,
    NAS-SystemInformationGSM-MAP,
-- UTRAN Mobility IEs :
    CellIdentity,
    URA-Identity,
-- User Equipment IEs :
    C-RNTI,
    RRC-MessageSequenceNumber,
    U-RNTI,
    UE-RadioAccessCapability,
-- Radio Bearer IEs :
    PDCP-InfoReconfig,
    PredefinedConfigValueTag,
    RAB-InformationSetupList,
    RB-Identity,
    RB-MappingInfo,
    RLC-Info,
    SRB-InformationSetupList,
-- Transport Channel IEs :
    CPCH-SetID,
    DL-CommonTransChInfo,
    DL-AddReconfTransChInfoList,
    DRAC-StaticInformationList,
    UL-CommonTransChInfo,
    UL-AddReconfTransChInfoList,
-- Measurement IEs :

```

```

    MeasurementIdentity,
    MeasurementReportingMode,
    MeasurementType,
    MeasurementType-r4,
    AdditionalMeasurementID-List,
-- Other IEs :
    InterRATMessage
FROM InformationElements

    maxCNdomains,
    maxNoOfMeas,
    maxPredefConfig,
    maxRABsetup,
    maxRB,
    maxSRBsetup,
    maxTrCH
FROM Constant-definitions;

-- RRC information transferred between network nodes,
-- per group of information transfers having same endpoint
-- Alike class definitions for RRC PDUs

-- *****
--
-- RRC information, to target RNC
--
-- *****

-- *****
--
-- RRC information, target RNC to source RNC
--
-- *****

T-RNC-ToSRNC-Container ::= SEQUENCE {
    message          T-RNC-ToSRNC-ContainerType
}

T-RNC-ToSRNC-ContainerType ::= CHOICE {
    radioBearerSetup          RadioBearerSetup-r3,
    radioBearerReconfiguration RadioBearerReconfiguration-r3,
    radioBearerRelease        RadioBearerRelease-r3,
    transportChannelReconfiguration TransportChannelReconfiguration-r3,
    physicalChannelReconfiguration PhysicalChannelReconfiguration-r3,
    extension                  NULL
}

-- *****
--
-- RRC information, target RNC to source RAT
--
-- *****

-- Container definitions, alike PDU definitions
-- RRC Container definition, to target RNC

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

SRNC-RelocationInfo ::= SEQUENCE {
-- Non-RRC IEs
    stateOfRRC          StateOfRRC,
    stateOfRRC-Procedure StateOfRRC-Procedure,
    cipheringStatus     CipheringStatus,
    calculationTimeForCiphering CalculationTimeForCiphering OPTIONAL,
    cipheringInfoPerRB-List CipheringInfoPerRB-List OPTIONAL,
    count-C-List        COUNT-C-List OPTIONAL,
    integrityProtectionStatus IntegrityProtectionStatus,
    srb-SpecificIntegrityProtInfo SRB-SpecificIntegrityProtInfoList,
    implementationSpecificParams ImplementationSpecificParams OPTIONAL,
-- User equipment IEs
    u-RNTI              U-RNTI,
    c-RNTI              C-RNTI OPTIONAL,
    ue-RadioAccessCapability UE-RadioAccessCapability,

```

```

-- Other IEs
  interRATMessage          InterRATMessage          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
  preConfigStatusInfo     PreConfigStatusInfo,
  srb-InformationList     SRB-InformationSetupList,
  rab-InformationList     RAB-InformationSetupList  OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo    UL-CommonTransChInfo      OPTIONAL,
  ul-TransChInfoList     UL-AddReconfTransChInfoList  OPTIONAL,
  modeSpecificInfo       CHOICE {
    fdd                   SEQUENCE {
      cpch-SetID          CPCH-SetID                OPTIONAL,
      transChDRAC-Info   DRAC-StaticInformationList  OPTIONAL
    },
    tdd                   NULL
  },
  dl-CommonTransChInfo    DL-CommonTransChInfo      OPTIONAL,
  dl-TransChInfoList     DL-AddReconfTransChInfoList  OPTIONAL,
-- Measurement report
  measurementReport       MeasurementReport          OPTIONAL,
  nonCriticalExtensions   SEQUENCE {
    -- In case of TDD only this IE is present otherwise this IE is absent
    up-IPDL-Parameters-TDD  UP-IPDL-Parameters-TDD-r4-ext  OPTIONAL,
    -- Extension mechanism for non- release4 information
    nonCriticalExtensions   SEQUENCE {}
  }
}

SRNC-RelocationInfo-r4 ::= SEQUENCE {
  -- Non-RRC IEs
  stateOfRRC              StateOfRRC,
  stateOfRRC-Procedure    StateOfRRC-Procedure,
  cipheringStatus         CipheringStatus,
  calculationTimeForCiphering CalculationTimeForCiphering  OPTIONAL,
  cipheringInfoPerRB-List CipheringInfoPerRB-List  OPTIONAL,
  integrityProtectionStatus IntegrityProtectionStatus,
  srb-SpecificIntegrityProtInfo SRB-SpecificIntegrityProtInfoList,
  implementationSpecificParams ImplementationSpecificParams  OPTIONAL,
-- User equipment IEs
  u-RNTI                  U-RNTI,
  c-RNTI                  C-RNTI                OPTIONAL,
  ue-RadioAccessCapability UE-RadioAccessCapability,
-- Other IEs
  interRATMessage          InterRATMessage          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-r4   OngoingMeasRepList-r4   OPTIONAL,
-- Radio bearer IEs
  preConfigStatusInfo     PreConfigStatusInfo,
  srb-InformationList     SRB-InformationSetupList,
  rab-InformationList     RAB-InformationSetupList  OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo    UL-CommonTransChInfo      OPTIONAL,
  ul-TransChInfoList     UL-AddReconfTransChInfoList  OPTIONAL,
  modeSpecificInfo       CHOICE {
    fdd                   SEQUENCE {
      cpch-SetID          CPCH-SetID                OPTIONAL,
      transChDRAC-Info   DRAC-StaticInformationList  OPTIONAL
    },
    tdd                   NULL
  },
  dl-CommonTransChInfo    DL-CommonTransChInfo      OPTIONAL,
  dl-TransChInfoList     DL-AddReconfTransChInfoList  OPTIONAL,
-- Measurement report
  measurementReport       MeasurementReport          OPTIONAL,
  nonCriticalExtensions   SEQUENCE {
    -- In case of TDD only this IE is present otherwise this IE is absent

```



```

    up-IpdL-Parameters-TDD          UP-IPDL-Parameters-TDD-r4-ext  ----- OPTIONAL,
-- Extension mechanism for non- release4 information
    nonCriticalExtensions           SEQUENCE {}                   OPTIONAL
}                                                                           OPTIONAL
}

-- RRC Container definition, target RNC to source RNC
-- Nothing new, only re-using RRC PDUs
--
-- RRC Container definition, target RNC to source system
-- Nothing new, re-using RRC PDUs (HandoverToUTRANCommand)

-- IE definitions

CalculationTimeForCipherng ::=      SEQUENCE {
    cell-Id                          CellIdentity,
    sfn                              INTEGER (0..4095)
}

CipherngInfoPerRB ::=              SEQUENCE {
    dl-HFN                           BIT STRING (SIZE (20..25)),
    ul-HFN                           BIT STRING (SIZE (20..25))
}

-- TABULAR: Multiplicity value numberOfRadioBearers has been replaced
-- with maxRB.
CipherngInfoPerRB-List ::=         SEQUENCE (SIZE (1..maxRB)) OF
    CipherngInfoPerRB

CipherngStatus ::=                ENUMERATED {
    started, notStarted }

COUNT-C-List ::=                 SEQUENCE (SIZE (1..maxCNDomains)) OF
    COUNT-CSingle

COUNT-CSingle ::=                SEQUENCE {
    cn-DomainIdentity                CN-DomainIdentity,
    count-C                          BIT STRING (SIZE (32))
}

ImplementationSpecificParams ::=   BIT STRING (SIZE (1..512))

IntegrityProtectionStatus ::=      ENUMERATED {
    started, notStarted }

MeasurementCommandWithType ::=     CHOICE {
    setup                            MeasurementType,
    modify                           NULL,
    release                           NULL
}

MeasurementCommandWithType-r4 ::=  CHOICE {
    setup                            MeasurementType-r4,
    modify                           NULL,
    release                           NULL
}

OngoingMeasRep ::=                SEQUENCE {
    measurementIdentity               MeasurementIdentity,
    measurementCommandWithType        MeasurementCommandWithType,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in the IE above.
    measurementReportingMode          MeasurementReportingMode          OPTIONAL,
    additionalMeasurementID-List      AdditionalMeasurementID-List      OPTIONAL
}

OngoingMeasRep-r4 ::=             SEQUENCE {
    measurementIdentity               MeasurementIdentity,
    measurementCommandWithType        MeasurementCommandWithType-r4,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in the IE above.
    measurementReportingMode          MeasurementReportingMode          OPTIONAL,
    additionalMeasurementID-List      AdditionalMeasurementID-List      OPTIONAL
}

OngoingMeasRepList ::=            SEQUENCE (SIZE (1..maxNoOfMeas)) OF
    OngoingMeasRep

```

```
OngoingMeasRepList-r4 ::= SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                           OngoingMeasRep-r4

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

SRB-SpecificIntegrityProtInfo ::= SEQUENCE {
    ul-RRC-HFN                BIT STRING (SIZE (28)),
    dl-RRC-HFN                BIT STRING (SIZE (28)),
    ul-RRC-SequenceNumber     RRC-MessageSequenceNumber,
    dl-RRC-SequenceNumber     RRC-MessageSequenceNumber
}

SRB-SpecificIntegrityProtInfoList ::= SEQUENCE (SIZE (4..maxSRBsetup)) OF
                                        SRB-SpecificIntegrityProtInfo

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

StateOfRRC-Procedure ::= ENUMERATED {
    awaitNoRRC-Message,
    awaitRRC-ConnectionRe-establishmentComplete,
    awaitRB-SetupComplete,
    awaitRB-ReconfigurationComplete,
    awaitTransportCH-ReconfigurationComplete,
    awaitPhysicalCH-ReconfigurationComplete,
    awaitActiveSetUpdateComplete,
    awaitHandoverComplete,
    sendCellUpdateConfirm,
    sendUraUpdateConfirm,
    sendRrcConnectionReestablishment,
    otherStates
}

END
```