

TSG-RAN Meeting #23
Phoenix, 10-12 March 2004

RP-040106

Title: Signalling of MAC-hs Reset: CRs on 25.331 (Rel-5 onwards)
Source: TSG-RAN WG2
Agenda item: 7.3.5

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level	Workitem
25.331	2264	2	Rel-5	Signalling of MAC-hs Reset	F	5.7.1	5.8.0	R2-040731	HSDPA-L23
25.331	2265	2	Rel-6	Signalling of MAC-hs Reset	A	6.0.1	6.1.0	R2-040732	HSDPA-L23

CHANGE REQUEST

25.331 CR 2264 # rev 2 # Current version: 5.7.1

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

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

Title:	# Signalling of MAC-hs Reset		
Source:	# RAN WG2		
Work item code:	# HSDPA-L23	Date:	# 01/03/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change: # The MAC-hs reset indication is currently signalled with Added or Reconfigured MAC-d flow and H-ARQ information within the Transport Information Elements sections of RRC procedures. In general these procedures are intended for service establishment or reconfiguration.

A primary consideration for MAC-hs reset is the case of HS-PDSCH serving cell change or hard handover. In these cases the UE MAC-hs reset provides reset of H-ARQ processes and the reordering queues that would not be known in the target cell Node-B, and for a more efficiently recovery of Node-B buffered data lost as a result of the cell change. The reset is mainly concerned with the Inter Node-B case, and depending on Node-B design may also be necessary for the Intra Node-B case.

When signalling a HS-DSCH cell change, identified in DL info for Each RL (10.3.6.27), in addition to new H-RNTI it is likely that a new HS-PDSCH info (10.3.6.23a) is required. These IE's are provided in the Physical Channel Reconfiguration procedure. Unfortunately when MAC-hs reset is needed it is currently not possible to use this procedure.

To signal MAC-hs reset in the case of serving HS-PDSCH cell change or hard handover it is necessary to initiate either the Transport Channel Reconfiguration or Radio Bearer Reconfiguration procedures just to include the single bit MAC-hs reset indication.

To avoid unnecessary signalling overhead it is proposed to move the MAC-hs Reset Indicator so that it is signalled with the Serving HS-PDSCH Radio Link Indicator (FDD) and P-CCPCH Info (TDD).

Summary of change:	⌘ The MAC-hs reset indicator is moved from Added or Reconfigured TrCH Info (10.3.5.1) to DL Information Common for all Radio Links (10.3.6.24).
Consequences if not approved:	⌘ Unnecessary signalling overhead is introduced for HSDPA serving HS-DSCH cell changes.

Clauses affected:	⌘ 8.6.5.6, 8.6.6.27, 10.3.5.1, 10.3.6.24, & 11.									
Other specs affected:	⌘ <table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table> Other core specifications	Y	N		X		X		X	⌘
	Y	N								
		X								
		X								
	X									
		⌘								
		⌘								
		⌘								
Other comments:	⌘									

How to create CRs using this form:

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

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

8.6.5.6 Added or Reconfigured DL TrCH information

If the IE "Added or Reconfigured DL TrCH information" is included then for the transport channel identified by the IE "DL Transport Channel Identity" the UE shall:

- 1> if the choice "DL parameters" is set to 'explicit':
 - 2> perform the actions for the IE "Transport Format Set" as specified in subclause 8.6.5.1.
- 1> if the choice "DL parameters" is set to 'same as uplink':
 - 2> if the IE "UL Transport Channel Identity" indicates an existing or a new UL Transport Channel:
 - 3> store as transport format for this transport channel the transport format associated with the transport channel identified by the IE "UL Transport Channel Identity".
 - 2> else:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the choice "DL parameters" is set to 'HSDSCH':
 - 2> if the IE "HARQ Info" is included:
 - 3> perform the actions specified in subclause 8.6.5.6b.

~~2> if the value of the IE "MAC-hs reset indicator" is TRUE:~~

~~3> reset the MAC-hs entity[15].~~

- 1> if the IE "DCH quality target" is included:
 - 2> perform the actions specified in subclause 8.6.5.4.

NOTE: The UE stores the DL transport channel configuration until it is explicitly deleted by a message containing the IE "Deleted DL TrCH information" or the UE leaves RRC connected mode.

8.6.6.27 Downlink information common for all radio links

If the IE "Downlink information common for all radio links" is included the UE shall:

- 1> if the IE "Downlink DPCH info common for all RL" is included:
 - 2> perform actions as specified in subclause 8.6.6.28.
- 1> if the IE choice "mode" is set to 'FDD':
 - 2> perform actions for the IE "DPCH compressed mode info" as specified in subclause 8.6.6.15;
 - 2> perform actions for the IE "Tx Diversity mode" as specified in subclause 8.6.6.24;
 - 2> if the IE "SSDT information" is included:
 - 3> perform actions as specified in subclause 8.6.6.25.
- 1> if the IE "Default DPCH Offset value" is included:
 - 2> perform actions as specified in the subclause 8.6.6.21.

1> if the IE "MAC-hs reset indicator" is included:

2> reset the MAC-hs entity[15].

10.3.5.1 Added or Reconfigured DL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Downlink transport channel type	MP		Enumerated(DCH,DSCH,HS-DSCH)		REL-5
DL Transport channel identity	MP		Transport channel identity 10.3.5.18		REL-5
	<i>CV-not HS-DSCH</i>				REL-5
<i>CHOICE DL parameters</i>					
<i>>Explicit</i>					
>>TFS	MP		Transport Format Set 10.3.5.23		
<i>>SameAsUL</i>					
>>Uplink transport channel type	MP		Enumerated(DCH,USCH)	USCH is TDD only	
>>UL TrCH identity	MP		Transport channel identity 10.3.5.18	Same TFS applies as specified for indicated UL TrCH	
<i>>HS-DSCH</i>					
>>HARQ Info	OP		HARQ info 10.3.5.7a		REL-5
>>MAC-hs-reset-indicator	MP		Boolean	TRUE Indicates the MAC-hs entity needs to be reset.	REL-5
>>Added or reconfigured MAC-d flow	OP		Added or reconfigured MAC-d flow 10.3.5.1a		REL-5
DCH quality target	OP		Quality target 10.3.5.10		
Transparent mode signalling info	CV-MessageType		Transparent mode signalling info 10.3.5.17	This IE is not used in RB RELEASE message nor RB RECONFIGURATION message	

Condition	Explanation
<i>MessageType</i>	This IE is not needed in Radio Bearer Release message and Radio Bearer Reconfiguration message. Otherwise it is optional.
<i>NotHS-DSCH</i>	If the downlink transport channel type is DCH or DSCH then this IE is mandatory otherwise it is not needed.

10.3.6.24 Downlink information common for all radio links

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Downlink DPCH info common for all RL	OP		Downlink DPCH info common for all RL 10.3.6.18		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE <i>mode</i>	MP				
>FDD					
>>DPCH compressed mode info	OP		DPCH compressed mode info 10.3.6.33		
>>TX Diversity Mode	MD		TX Diversity Mode 10.3.6.86	Default value is the existing value of TX Diversity mode	
>>SSDT information	OP		SSDT information 10.3.6.77		
>TDD				(no data)	
>>CHOICE <i>TDD option</i>	MP				REL-4
>>>3.84 Mcps TDD				(no data)	REL-4
>>>1.28 Mcps TDD					REL-4
>>>>TSTD indicator	MP		TSTD indicator 10.3.6.85a		REL-4
Default DPCH Offset Value	OP		Default DPCH Offset Value, 10.3.6.16		
MAC-hs reset indicator	OPCV-messageType		Enumerated (true)	TRUE Indicates the MAC-hs entity needs to be reset.	REL-5

Condition	Explanation
MessageType	The IE is not needed in the HANDOVER TO UTRAN COMMAND and the RRC CONNECTION SETUP messages. Otherwise, it is optional.

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

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

11.0 General

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

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

The UE shall only include the "variable length extension container" when it sends a non critical extension that according to this specification shall be transferred within this container.

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

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

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

11.1 General message structure

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

```
BEGIN
```

```
IMPORTS
```

```
    ActiveSetUpdate,  
    ActiveSetUpdateComplete,  
    ActiveSetUpdateFailure,  
    AssistanceDataDelivery,  
    CellChangeOrderFromUTRAN,  
    CellChangeOrderFromUTRANFailure,  
    CellUpdate,  
    CellUpdateConfirm-CCCH,  
    CellUpdateConfirm,  
    CounterCheck,  
    CounterCheckResponse,  
    DownlinkDirectTransfer,  
    HandoverToUTRANComplete,  
    InitialDirectTransfer,  
    HandoverFromUTRANCommand-GERANIu,  
    HandoverFromUTRANCommand-GSM,  
    HandoverFromUTRANCommand-CDMA2000,  
    HandoverFromUTRANFailure,  
    MeasurementControl,  
    MeasurementControlFailure,  
    MeasurementReport,  
    PagingType1,  
    PagingType2,  
    PhysicalChannelReconfiguration,  
    PhysicalChannelReconfigurationComplete,  
    PhysicalChannelReconfigurationFailure,  
    PhysicalSharedChannelAllocation,  
    PUSCHCapacityRequest,  
    RadioBearerReconfiguration,  
    RadioBearerReconfigurationComplete,  
    RadioBearerReconfigurationFailure,  
    RadioBearerRelease,  
    RadioBearerReleaseComplete,  
    RadioBearerReleaseFailure,  
    RadioBearerSetup,  
    RadioBearerSetupComplete,  
    RadioBearerSetupFailure,  
    RRCConnectionReject,  
    RRCConnectionRelease,  
    RRCConnectionRelease-CCCH,  
    RRCConnectionReleaseComplete,  
    RRCConnectionRequest,  
    RRCConnectionSetup,  
    RRCConnectionSetupComplete,  
    RRCStatus,  
    SecurityModeCommand,  
    SecurityModeComplete,  
    SecurityModeFailure,  
    SignallingConnectionRelease,  
    SignallingConnectionReleaseIndication,  
    SystemInformation-BCH,  
    SystemInformation-FACH,  
    SystemInformationChangeIndication,  
    TransportChannelReconfiguration,  
    TransportChannelReconfigurationComplete,
```

```

TransportChannelReconfigurationFailure,
TransportFormatCombinationControl,
TransportFormatCombinationControlFailure,
UECapabilityEnquiry,
UECapabilityInformation,
UECapabilityInformationConfirm,
UplinkDirectTransfer,
UplinkPhysicalChannelControl,
URAUUpdate,
URAUUpdateConfirm,
URAUUpdateConfirm-CCCH,
UTRANMobilityInformation,
UTRANMobilityInformationConfirm,
UTRANMobilityInformationFailure
FROM PDU-definitions

-- User Equipment IEs :
  IntegrityCheckInfo
FROM InformationElements;

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

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

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

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

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

UL-DCCH-MessageType ::= CHOICE {

```

```

activeSetUpdateComplete      ActiveSetUpdateComplete,
activeSetUpdateFailure      ActiveSetUpdateFailure,
cellChangeOrderFromUTRANFailure CellChangeOrderFromUTRANFailure,
counterCheckResponse        CounterCheckResponse,
handoverToUTRANComplete     HandoverToUTRANComplete,
initialDirectTransfer       InitialDirectTransfer,
handoverFromUTRANFailure    HandoverFromUTRANFailure,
measurementControlFailure   MeasurementControlFailure,
measurementReport           MeasurementReport,
physicalChannelReconfigurationComplete PhysicalChannelReconfigurationComplete,
physicalChannelReconfigurationFailure PhysicalChannelReconfigurationFailure,
radioBearerReconfigurationComplete RadioBearerReconfigurationComplete,
radioBearerReconfigurationFailure RadioBearerReconfigurationFailure,
radioBearerReleaseComplete  RadioBearerReleaseComplete,
radioBearerReleaseFailure   RadioBearerReleaseFailure,
radioBearerSetupComplete    RadioBearerSetupComplete,
radioBearerSetupFailure     RadioBearerSetupFailure,
rrcConnectionReleaseComplete RRCConnectionReleaseComplete,
rrcConnectionSetupComplete  RRCConnectionSetupComplete,
rrcStatus                    RRCStatus,
securityModeComplete        SecurityModeComplete,
securityModeFailure         SecurityModeFailure,
signallingConnectionReleaseIndication SignallingConnectionReleaseIndication,
transportChannelReconfigurationComplete TransportChannelReconfigurationComplete,
transportChannelReconfigurationFailure TransportChannelReconfigurationFailure,
transportFormatCombinationControlFailure TransportFormatCombinationControlFailure,
ueCapabilityInformation      UECapabilityInformation,
uplinkDirectTransfer         UplinkDirectTransfer,
utranMobilityInformationConfirm UTRANMobilityInformationConfirm,
utranMobilityInformationFailure UTRANMobilityInformationFailure,
spare2                       NULL,
spare1                       NULL
}

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

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

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

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

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

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

```

```

}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

END

```

11.2 PDU definitions

```

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

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS

-- Core Network IEs :
  CN-DomainIdentity,
  CN-InformationInfo,
  CN-InformationInfoFull,
  NAS-Message,
  PagingRecordTypeID,
-- UTRAN Mobility IEs :
  CellIdentity,
  CellIdentity-PerRL-List,
  URA-Identity,
-- User Equipment IEs :
  AccessStratumReleaseIndicator,
  ActivationTime,
  C-RNTI,
  CapabilityUpdateRequirement,
  CapabilityUpdateRequirement-r4,
  CapabilityUpdateRequirement-r4-ext,
  CellUpdateCause,
  CipheringAlgorithm,
  CipheringModeInfo,
  DSCH-RNTI,
  EstablishmentCause,
  FailureCauseWithProtErr,
  FailureCauseWithProtErrTrId,
  GroupReleaseInformation,
  H-RNTI,
  UESpecificBehaviourInformationIdle,
  UESpecificBehaviourInformationInterRAT,
  InitialUE-Identity,
  IntegrityProtActivationInfo,
  IntegrityProtectionModeInfo,
  N-308,
  PagingCause,
  PagingRecordList,
  PagingRecordList-r5,
  ProtocolErrorIndicator,
  ProtocolErrorIndicatorWithMoreInfo,
  Rb-timer-indicator,
  RedirectionInfo,
  RejectionCause,
  ReleaseCause,
  RF-CapabilityComp,
  RRC-StateIndicator,
  RRC-TransactionIdentifier,
  SecurityCapability,
  START-Value,
  STARTList,
  U-RNTI,
  U-RNTI-Short,
  UE-RadioAccessCapability,
  UE-RadioAccessCapability-v370ext,
  UE-RadioAccessCapability-v380ext,
  UE-RadioAccessCapability-v3a0ext,
  UE-RadioAccessCapability-v3g0ext,

```

```

UE-RadioAccessCapability-v4xyext,
UE-RadioAccessCapability-v5xyext,
UE-RadioAccessCapabilityComp,
DL-PhysChCapabilityFDD-v380ext,
UE-ConnTimersAndConstants,
UE-ConnTimersAndConstants-v3a0ext,
UE-ConnTimersAndConstants-r5,
UE-SecurityInformation,
URA-UpdateCause,
UTRAN-DRX-CycleLengthCoefficient,
WaitTime,
-- Radio Bearer IEs :
  DefaultConfigIdentity,
  DefaultConfigIdentity-r4,
  DefaultConfigIdentity-r5,
  DefaultConfigMode,
  DL-CounterSynchronisationInfo,
  DL-CounterSynchronisationInfo-r5,
  PredefinedConfigIdentity,
  PredefinedConfigStatusList,
  PredefinedConfigStatusListComp,
  PredefinedConfigSetWithDifferentValueTag,
  RAB-Info,
  RAB-Info-Post,
  RAB-InformationList,
  RAB-InformationReconfigList,
  RAB-InformationSetupList,
  RAB-InformationSetupList-r4,
  RB-ActivationTimeInfoList,
  RB-COUNT-C-InformationList,
  RB-COUNT-C-MSB-InformationList,
  RB-IdentityList,
  RB-InformationAffectedList,
  RB-InformationAffectedList-r5,
  RB-InformationReconfigList,
  RB-InformationReconfigList-r4,
  RB-InformationReconfigList-r5,
  RB-InformationReleaseList,
  RB-PDCPContextRelocationList,
  SRB-InformationSetupList,
  SRB-InformationSetupList2,
  UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
  CPCH-SetID,
  DL-AddReconfTransChInfo2List,
  DL-AddReconfTransChInfoList,
  DL-AddReconfTransChInfoList-r4,
  DL-AddReconfTransChInfoList-r5,
  DL-CommonTransChInfo,
  DL-CommonTransChInfo-r4,
  DL-DeletedTransChInfoList,
  DL-DeletedTransChInfoList-r5,
  DRAC-StaticInformationList,
  TFC-Subset,
  TFCS-Identity,
  UL-AddReconfTransChInfoList,
  UL-CommonTransChInfo,
  UL-CommonTransChInfo-r4,
  UL-DeletedTransChInfoList,
-- Physical Channel IEs :
  Alpha,
  CCTrCH-PowerControlInfo,
  CCTrCH-PowerControlInfo-r4,
  ConstantValue,
  ConstantValueTdd,
  CPCH-SetInfo,
  DL-CommonInformation,
  DL-CommonInformation-r4,
  DL-CommonInformation-r5,
  DL-CommonInformationPost,
  DL-HSPDSCH-Information,
  DL-InformationPerRL,
  DL-InformationPerRL-List,
  DL-InformationPerRL-List-r4,
  DL-InformationPerRL-List-r5,
  DL-InformationPerRL-ListPostFDD,
  DL-InformationPerRL-PostTDD,
  DL-InformationPerRL-PostTDD-LCR-r4,

```

```

DL-PDSCH-Information,
DPC-Mode,
DPCH-CompressedModeStatusInfo,
FrequencyInfo,
FrequencyInfoFDD,
FrequencyInfoTDD,
HS-SICH-Power-Control-Info-TDD384,
MaxAllowedUL-TX-Power,
OpenLoopPowerControl-IPDL-TDD-r4,
PDSCH-CapacityAllocationInfo,
PDSCH-CapacityAllocationInfo-r4,
PDSCH-Identity,
PrimaryCPICH-Info,
PrimaryCCPCH-TX-Power,
PUSCH-CapacityAllocationInfo,
PUSCH-CapacityAllocationInfo-r4,
PUSCH-Identity,
PUSCH-SysInfoList-HCR-r5,
PDSCH-SysInfoList-HCR-r5,
RL-AdditionInformationList,
RL-RemovalInformationList,
SpecialBurstScheduling,
SSDT-Information,
TFC-ControlDuration,
SSDT-UL-r4,
TimeslotList,
TimeslotList-r4,
TX-DiversityMode,
UL-ChannelRequirement,
UL-ChannelRequirement-r4,
UL-ChannelRequirement-r5,
UL-ChannelRequirementWithCPCH-SetID,
UL-ChannelRequirementWithCPCH-SetID-r4,
UL-ChannelRequirementWithCPCH-SetID-r5,
UL-DPCH-Info,
UL-DPCH-Info-r4,
UL-DPCH-InfoPostFDD,
UL-DPCH-InfoPostTDD,
UL-DPCH-InfoPostTDD-LCR-r4,
UL-SynchronisationParameters-r4,
UL-TimingAdvance,
UL-TimingAdvanceControl,
UL-TimingAdvanceControl-r4,
-- Measurement IEs :
AdditionalMeasurementID-List,
DeltaRSCP,
Frequency-Band,
EventResults,
Inter-FreqEventCriteriaList-v5xyext,
Intra-FreqEventCriteriaList-v5xyext,
IntraFreqReportingCriteria-lb-r5ext,
IntraFreqEvent-ld-r5ext,
InterFreqEventResults-LCR-r4-ext,
InterRAT-TargetCellDescription,
MeasuredResults,
MeasuredResults-v390ext,
MeasuredResults-v5xyext,
MeasuredResultsList,
MeasuredResultsList-LCR-r4-ext,
MeasuredResultsOnRACH,
MeasurementCommand,
MeasurementCommand-r4,
MeasurementIdentity,
MeasurementReportingMode,
PrimaryCCPCH-RSCP,
SFN-Offset-Validity,
TimeslotListWithISCP,
TrafficVolumeMeasuredResultsList,
UE-Positioning-GPS-AssistanceData,
UE-Positioning-Measurement-v390ext,
UE-Positioning-OTDOA-AssistanceData,
UE-Positioning-OTDOA-AssistanceData-r4ext,
UE-Positioning-OTDOA-AssistanceData-UEB,
UE-Positioning-IPDL-Parameters-TDD-r4-ext,
-- Other IEs :
BCCH-ModificationInfo,
CDMA2000-MessageList,
GERANIu-MessageList,
GERAN-SystemInformation,

```

```

GSM-MessageList,
InterRAT-ChangeFailureCause,
InterRAT-HO-FailureCause,
InterRAT-UE-RadioAccessCapabilityList,
InterRAT-UE-RadioAccessCapabilityList-r5,
InterRAT-UE-SecurityCapList,
IntraDomainNasNodeSelector,
ProtocolErrorMoreInformation,
Rplmn-Information,
Rplmn-Information-r4,
SegCount,
SegmentIndex,
SFN-Prime,
SIB-Data-fixed,
SIB-Data-variable,
SIB-Type
FROM InformationElements

maxSIBperMsg,
maxURNTI-Group
FROM Constant-definitions;

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

ActiveSetUpdate ::= CHOICE {
    r3
        SEQUENCE {
            activeSetUpdate-r3
                ActiveSetUpdate-r3-IEs,
            laterNonCriticalExtensions
                SEQUENCE {
                    -- Container for additional R99 extensions
                    activeSetUpdate-r3-add-ext
                        BIT STRING OPTIONAL,
                    v4xyNonCriticalExtensions
                        SEQUENCE {
                            activeSetUpdate-v4xyext
                                ActiveSetUpdate-v4xyext-IEs,
                            v5xynonCriticalExtensions
                                SEQUENCE {
                                    activeSetUpdate-v5xyext
                                        ActiveSetUpdate-v5xyext-IEs,
                                    nonCriticalExtensions
                                        SEQUENCE {} OPTIONAL
                                } OPTIONAL
                            } OPTIONAL
                } OPTIONAL
        },
    later-than-r3
        SEQUENCE {
            rrc-TransactionIdentifier
                RRC-TransactionIdentifier,
            criticalExtensions
                SEQUENCE {}
        }
}

ActiveSetUpdate-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier
        RRC-TransactionIdentifier,
    -- dummy and dummy2 are not used in this version of the specification, they should
    -- not be sent and if received they should be ignored.
    dummy
        IntegrityProtectionModeInfo
        OPTIONAL,
    dummy2
        CipheringModeInfo
        OPTIONAL,
    activationTime
        ActivationTime
        OPTIONAL,
    newU-RNTI
        U-RNTI
        OPTIONAL,
    -- Core network IEs
    cn-InformationInfo
        CN-InformationInfo
        OPTIONAL,
    -- Radio bearer IEs
    -- dummy3 is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy3
        DL-CounterSynchronisationInfo
        OPTIONAL,
    -- Physical channel IEs
    maxAllowedUL-TX-Power
        MaxAllowedUL-TX-Power
        OPTIONAL,
    rl-AdditionInformationList
        RL-AdditionInformationList
        OPTIONAL,
    rl-RemovalInformationList
        RL-RemovalInformationList
        OPTIONAL,
    tx-DiversityMode
        TX-DiversityMode
        OPTIONAL,
    ssdt-Information
        SSDT-Information
        OPTIONAL
}

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

```

```

}

ActiveSetUpdate-v5xyext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  dpc-Mode                               DPC-Mode
}

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

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

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

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

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

AssistanceDataDelivery ::= CHOICE {
  r3                                       SEQUENCE {
    assistanceDataDelivery-r3             AssistanceDataDelivery-r3-IEs,
    v3aoNonCriticalExtensions             SEQUENCE {
      assistanceDataDelivery-v3a0ext      AssistanceDataDelivery-v3a0ext,
      laterNonCriticalExtensions          SEQUENCE {
        -- Container for additional R99 extensions
        assistanceDataDelivery-r3-add-ext  BIT STRING                       OPTIONAL,
        v4xyNonCriticalExtensions         SEQUENCE {
          assistanceDataDelivery-v4xyext
        }
      }
      AssistanceDataDelivery-v4xyext-IEs,
    } SEQUENCE {} OPTIONAL
  } OPTIONAL
},
  later-than-r3                             SEQUENCE {
    rrc-TransactionIdentifier             RRC-TransactionIdentifier,
    criticalExtensions                    SEQUENCE {}
  }
}

AssistanceDataDelivery-r3-IEs ::= SEQUENCE {

```

```

-- User equipment IEs
rrc-TransactionIdentifier      RRC-TransactionIdentifier,
-- Measurement Information Elements
ue-positioning-GPS-AssistanceData      UE-Positioning-GPS-AssistanceData
OPTIONAL,
ue-positioning-OTDOA-AssistanceData-UEB      UE-Positioning-OTDOA-AssistanceData-UEB
OPTIONAL
}

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

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

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

CellChangeOrderFromUTRAN ::= CHOICE {
  r3          SEQUENCE {
    cellChangeOrderFromUTRAN-IEs      CellChangeOrderFromUTRAN-r3-IEs,
    laterNonCriticalExtensions      SEQUENCE {
      -- Container for additional R99 extensions
      cellChangeOrderFromUTRAN-r3-add-ext      BIT STRING      OPTIONAL,
      v5xyNonCriticalExtensions      SEQUENCE {
        cellChangeOrderFromUTRAN-v5xyext      CellChangeOrderFromUTRAN-v5xyext-IEs,
        nonCriticalExtensions      SEQUENCE {} OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  later-than-r3          SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions      SEQUENCE {}
  }
}

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

CellChangeOrderFromUTRAN-v5xyext-IEs ::= SEQUENCE {
  geran-SystemInfoType      CHOICE {
    sI          GERAN-SystemInformation,
    pSI          GERAN-SystemInformation
  } OPTIONAL
}

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

CellChangeOrderFromUTRANFailure ::= CHOICE {
  r3          SEQUENCE {
    cellChangeOrderFromUTRANFailure-r3
    laterNonCriticalExtensions      SEQUENCE {
      -- Container for additional R99 extensions
      cellChangeOrderFromUTRANFailure-r3-add-ext      BIT STRING      OPTIONAL,
      nonCriticalExtensions      SEQUENCE {} OPTIONAL
    } OPTIONAL
  },

```

```

-- dummy is not used in this version of the specification and it
-- should be ignored.
dummy          SEQUENCE {
  rrc-TransactionIdentifier  RRC-TransactionIdentifier,
  criticalExtensions         SEQUENCE {}
}
}

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

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

CellUpdate ::= SEQUENCE {
  -- User equipment IES
  u-RNTI                U-RNTI,
  startList              STARTList,
  am-RLC-ErrorIndicationRb2-3or4  BOOLEAN,
  am-RLC-ErrorIndicationRb5orAbove  BOOLEAN,
  cellUpdateCause        CellUpdateCause,
  -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
  failureCause            FailureCauseWithProtErrTrId          OPTIONAL,
  rb-timer-indicator      Rb-timer-indicator,
  -- Measurement IES
  measuredResultsOnRACH   MeasuredResultsOnRACH                OPTIONAL,
  laterNonCriticalExtensions  SEQUENCE {
    -- Container for additional R99 extensions
    cellUpdate-r3-add-ext    BIT STRING  OPTIONAL,
    v5xyNonCriticalExtensions  SEQUENCE {
      cellUpdate-v5xyext  CellUpdate-v5xyext,
      nonCriticalExtensions  SEQUENCE {}  OPTIONAL
    }
  } OPTIONAL
}

CellUpdate-v5xyext ::= SEQUENCE {
  establishmentCause      EstablishmentCause  OPTIONAL
}

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

CellUpdateConfirm ::= CHOICE {
  r3                      SEQUENCE {
    cellUpdateConfirm-r3  CellUpdateConfirm-r3-IEs,
    v3a0NonCriticalExtensions  SEQUENCE {
      cellUpdateConfirm-v3a0ext  CellUpdateConfirm-v3a0ext,
      laterNonCriticalExtensions  SEQUENCE {
        -- Container for additional R99 extensions
        cellUpdateConfirm-r3-add-ext  BIT STRING  OPTIONAL,
        v4xyNonCriticalExtensions  SEQUENCE {
          cellUpdateConfirm-v4xyext  CellUpdateConfirm-v4xyext-IEs,
          nonCriticalExtensions  SEQUENCE {}  OPTIONAL
        }
      } OPTIONAL
    }
  } OPTIONAL
},
  later-than-r3           SEQUENCE {
    rrc-TransactionIdentifier  RRC-TransactionIdentifier,
    criticalExtensions         CHOICE {
      r4                      SEQUENCE {
        cellUpdateConfirm-r4  CellUpdateConfirm-r4-IEs,
        nonCriticalExtensions  SEQUENCE {}  OPTIONAL
      },
      criticalExtensions      CHOICE {
        r5                      SEQUENCE {

```

```

        cellUpdateConfirm-r5
        nonCriticalExtensions
    },
    criticalExtensions
}
}
}

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

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

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

CellUpdateConfirm-r4-IEs ::= SEQUENCE {
-- User equipment IES
    integrityProtectionModeInfo      IntegrityProtectionModeInfo        OPTIONAL,
    cipheringModeInfo                 CipheringModeInfo                  OPTIONAL,
    activationTime                     ActivationTime                      OPTIONAL,
    new-U-RNTI                         U-RNTI                            OPTIONAL,

```

```

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

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

```

```

    dl-AddReconfTransChInfoList      DL-AddReconfTransChInfoList-r5      OPTIONAL,
-- Physical channel IEs
    frequencyInfo                    FrequencyInfo                    OPTIONAL,
    maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power            OPTIONAL,
    ul-ChannelRequirement            UL-ChannelRequirement-r5        OPTIONAL,
    modeSpecificPhysChInfo          CHOICE {
        fdd                          SEQUENCE {
            dl-PDSCH-Information      DL-PDSCH-Information          OPTIONAL,
        },
        tdd                          NULL
    },
    dl-HSPDSCH-Information            DL-HSPDSCH-Information          OPTIONAL,
    dl-CommonInformation             DL-CommonInformation-r54        OPTIONAL,
    dl-InformationPerRL-List         DL-InformationPerRL-List-r5    OPTIONAL
}

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

CellUpdateConfirm-CCCH ::= CHOICE {
    r3                               SEQUENCE {
        -- User equipment IEs
        u-RNTI                       U-RNTI,
        -- The rest of the message is identical to the one sent on DCCH.
        cellUpdateConfirm-r3         CellUpdateConfirm-r3-IEs,
        laterNonCriticalExtensions   SEQUENCE {
            -- Container for additional R99 extensions
            cellUpdateConfirm-CCCH-r3-add-ext BIT STRING OPTIONAL,
            v4xyNonCriticalExtensions SEQUENCE {
                cellUpdateConfirm-v4xyext CellUpdateConfirm-v4xyext-IEs,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        u-RNTI                       U-RNTI,
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions            CHOICE {
            r4                       SEQUENCE {
                -- The rest of the message is identical to the one sent on DCCH.
                cellUpdateConfirm-r4   CellUpdateConfirm-r4-IEs,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            },
            criticalExtensions        SEQUENCE {}
        }
    }
}

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

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

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

```

```

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

CounterCheckResponse ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- Radio bearer IEs
  rb-COUNT-C-InformationList     RB-COUNT-C-InformationList          OPTIONAL,
  laterNonCriticalExtensions     SEQUENCE {
    -- Container for additional R99 extensions
    counterCheckResponse-r3-add-ext  BIT STRING OPTIONAL,
    nonCriticalExtensions           SEQUENCE {} OPTIONAL
  } OPTIONAL
}

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

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

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

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

HandoverToUTRANCommand ::= CHOICE {
  r3
    SEQUENCE {
      handoverToUTRANCommand-r3      HandoverToUTRANCommand-r3-IEs,
      v4xyNonCriticalExtensions       SEQUENCE {
        handoverToUTRANCommand-v4xyext  HandoverToUTRANCommand-v4xyext-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
      } OPTIONAL
    },
  criticalExtensions             CHOICE {
    r4
      SEQUENCE {
        handoverToUTRANCommand-r4      HandoverToUTRANCommand-r4-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
      },
    criticalExtensions             CHOICE {
      r5
        SEQUENCE {
          handoverToUTRANCommand-r5      HandoverToUTRANCommand-r5-IEs,
          nonCriticalExtensions           SEQUENCE {} OPTIONAL
        },
        criticalExtensions             SEQUENCE {}
      }
    }
}
}

```

```

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

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

HandoverToUTRANCommand-r4-IEs ::= SEQUENCE {
  -- User equipment IEs
  new-U-RNTI                U-RNTI-Short,
  cipheringAlgorithm        CipheringAlgorithm          OPTIONAL,
  -- Radio bearer IEs
  -- 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.
    preConfigMode CHOICE {
      predefinedConfigIdentity PredefinedConfigIdentity,
      defaultConfig SEQUENCE {
        defaultConfigMode DefaultConfigMode,
        defaultConfigIdentity DefaultConfigIdentity-r4
      }
    },
    rab-Info RAB-Info-Post OPTIONAL,
    modeSpecificInfo CHOICE {
      fdd SEQUENCE {
        ul-DPCH-Info UL-DPCH-InfoPostFDD,
        dl-CommonInformationPost DL-CommonInformationPost,
        dl-InformationPerRL-List DL-InformationPerRL-ListPostFDD,
        frequencyInfo FrequencyInfoFDD
      },
      tdd CHOICE {
        tdd384 SEQUENCE {
          ul-DPCH-Info UL-DPCH-InfoPostTDD,
          dl-InformationPerRL DL-InformationPerRL-PostTDD,
          frequencyInfo FrequencyInfoTDD,
          primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power
        },
        tdd128 SEQUENCE {
          ul-DPCH-Info UL-DPCH-InfoPostTDD-LCR-r4,
          dl-InformationPerRL DL-InformationPerRL-PostTDD-LCR-r4,
          frequencyInfo FrequencyInfoTDD,
          primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power
        }
      }
    }
  }
},
-- Physical channel IEs
maxAllowedUL-TX-Power MaxAllowedUL-TX-Power
}

HandoverToUTRANCommand-r5-IEs ::= SEQUENCE {
-- User equipment IEs
new-U-RNTI U-RNTI-Short,
cipheringAlgorithm CipheringAlgorithm OPTIONAL,
-- Radio bearer IEs
-- Specification mode information
specificationMode CHOICE {
  complete SEQUENCE {
    srb-InformationSetupList SRB-InformationSetupList,
    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.
    preConfigMode           CHOICE {
        predefinedConfigIdentity    PredefinedConfigIdentity,
        defaultConfig              SEQUENCE {
            defaultConfigMode        DefaultConfigMode,
            defaultConfigIdentity    DefaultConfigIdentity-r5
        }
    },
    rab-Info                 RAB-Info-Post          OPTIONAL,
    modeSpecificInfo         CHOICE {
        fdd                   SEQUENCE {
            ul-DPCH-Info        UL-DPCH-InfoPostFDD,
            dl-CommonInformationPost    DL-CommonInformationPost,
            dl-InformationPerRL-List    DL-InformationPerRL-ListPostFDD,
            frequencyInfo        FrequencyInfoFDD
        },
        tdd                   CHOICE {
            tdd384              SEQUENCE {
                ul-DPCH-Info        UL-DPCH-InfoPostTDD,
                dl-InformationPerRL    DL-InformationPerRL-PostTDD,
                frequencyInfo        FrequencyInfoTDD,
                primaryCCPCH-TX-Power    PrimaryCCPCH-TX-Power
            },
            tdd128              SEQUENCE {
                ul-DPCH-Info        UL-DPCH-InfoPostTDD-LCR-r4,
                dl-InformationPerRL    DL-InformationPerRL-PostTDD-LCR-r4,
                frequencyInfo        FrequencyInfoTDD,
                primaryCCPCH-TX-Power    PrimaryCCPCH-TX-Power
            }
        }
    }
},
},
-- Physical channel IEs
    maxAllowedUL-TX-Power    MaxAllowedUL-TX-Power
}

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

HandoverToUTRANComplete ::= SEQUENCE {
--TABULAR: Integrity protection shall not be performed on this message.
-- User equipment IEs
-- TABULAR: startList is conditional on history.
    startList                STARTList                OPTIONAL,
-- Radio bearer IEs
    count-C-ActivationTime    ActivationTime          OPTIONAL,
    laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions
        handoverToUTRANComplete-r3-add-ext    BIT STRING OPTIONAL,
        nonCriticalExtensions                SEQUENCE {}    OPTIONAL
    }    OPTIONAL
}

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

InitialDirectTransfer ::= SEQUENCE {
-- Core network IEs
    cn-DomainIdentity        CN-DomainIdentity,
    intraDomainNasNodeSelector    IntraDomainNasNodeSelector,

```

```

    nas-Message                NAS-Message,
-- Measurement IEs
    measuredResultsOnRACH      MeasuredResultsOnRACH                OPTIONAL,
    v3a0NonCriticalExtensions  SEQUENCE {
    initialDirectTransfer-v3a0ext InitialDirectTransfer-v3a0ext,
    laterNonCriticalExtensions  SEQUENCE {
        -- Container for additional R99 extensions
        initialDirectTransfer-r3-add-ext BIT STRING OPTIONAL,
        v5xyNonCriticalExtensions SEQUENCE {
            initialDirectTransfer-v5xyext InitialDirectTransfer-v5xyext,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        }
    } OPTIONAL
} OPTIONAL
}

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

InitialDirectTransfer-v5xyext ::= SEQUENCE {
    establishmentCause          EstablishmentCause OPTIONAL
}

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

HandoverFromUTRANCommand-GSM ::= CHOICE {
    r3                          SEQUENCE {
        handoverFromUTRANCommand-GSM-r3
        HandoverFromUTRANCommand-GSM-r3-IEs,
        laterNonCriticalExtensions SEQUENCE {
            -- Container for additional R99 extensions
            handoverFromUTRANCommand-GSM-r3-add-ext BIT STRING OPTIONAL,
            -- UTRAN should not include the IE nonCriticalExtensions when it sets
            -- the IE gsm-message included in handoverFromUTRANCommand-GSM-r3 to single-GSM-Message
            -- The UE behaviour upon receiving a message including this combination of IE values is
            -- not specified
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        }
    },
    later-than-r3              SEQUENCE {
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
        criticalExtensions        SEQUENCE {}
    }
}

HandoverFromUTRANCommand-GSM-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    activationTime            ActivationTime                OPTIONAL,
    -- Radio bearer IEs
    toHandover-Info          RAB-Info                    OPTIONAL,
    -- Measurement IEs
    frequency-band           Frequency-Band,
    -- Other IEs
    gsm-message              CHOICE {
        -- In the single-GSM-Message case the following rules apply:
        -- 1> the GSM message directly follows the basic production; the final padding that
        -- results when PER encoding the abstract syntax value is removed prior to appending
        -- the GSM message.
        -- 2> the RRC message excluding the GSM part, does not contain a length determinant;
        -- there is no explicit parameter indicating the size of the included GSM message.
        -- 3> depending on need, final padding (all "0"s) is added to ensure the final result
        -- comprises a full number of octets
        single-GSM-Message    SEQUENCE {},
        gsm-MessageList       SEQUENCE {
            gsm-Messages      GSM-MessageList
        }
    }
}

HandoverFromUTRANCommand-GERANIu ::= CHOICE {
    r5                          SEQUENCE {

```

```

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

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

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

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

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

HandoverFromUTRANFailure ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
-- Other IEs
    interRAT-HO-FailureCause      InterRAT-HO-FailureCause          OPTIONAL,
-- In case the interRATMessage to be transferred is for GERAN Iu mode, the
-- message should be placed in the HandoverFromUtranFailure-v5xyext-IEs
-- non-critical extension container.
    interRATMessage               CHOICE {
        gsm                       SEQUENCE {
            gsm-MessageList        GSM-MessageList
        }
    }
}

```

```

    },
    cdma2000
        cdma2000-MessageList
    }
    } OPTIONAL,
    laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions
        handoverFromUTRANFailure-r3-add-ext BIT STRING OPTIONAL,
        v560NonCriticalExtensions SEQUENCE {
            handoverFromUTRANFailure-v5xyext HandoverFromUtranFailure-v560ext-IEs,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
    } OPTIONAL
}

HandoverFromUtranFailure-v560ext-IEs ::= SEQUENCE {
    geranIu-MessageList GERANIu-MessageList
}

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

InterRATHandoverInfo ::= SEQUENCE {
    -- This structure is defined for historical reasons, backward compatibility with 04.18
    predefinedConfigStatusList CHOICE {
        absent NULL,
        present PredefinedConfigStatusList
    },
    uE-SecurityInformation CHOICE {
        absent NULL,
        present UE-SecurityInformation
    },
    ue-CapabilityContainer CHOICE {
        absent NULL,
        -- present is an octet aligned string containing IE UE-RadioAccessCapabilityInfo
        present OCTET STRING (SIZE (0..63))
    },
    -- Non critical extensions
    v390NonCriticalExtensions CHOICE {
        absent NULL,
        present SEQUENCE {
            interRATHandoverInfo-v390ext InterRATHandoverInfo-v390ext-IEs,
            v3a0NonCriticalExtensions SEQUENCE {
                interRATHandoverInfo-v3a0ext InterRATHandoverInfo-v3a0ext,
                laterNonCriticalExtensions SEQUENCE {
                    interRATHandoverInfo-v3d0ext InterRATHandoverInfo-v3d0ext-IEs,
                    -- Container for additional R99 extensions
                    interRATHandoverInfo-r3-add-ext BIT STRING OPTIONAL,
                    v3g0NonCriticalExtensions SEQUENCE {
                        interRATHandoverInfo-v3g0ext InterRATHandoverInfo-v3g0ext-IEs,
                        v4xyNonCriticalExtensions SEQUENCE {
                            interRATHandoverInfo-v4xyext InterRATHandoverInfo-v4xyext-IEs,
                            -- Reserved for future non critical extension
                            v5xyNonCriticalExtensions SEQUENCE {
                                interRATHandoverInfo-v5xyext InterRATHandoverInfo-v5xyext-IEs,
                                nonCriticalExtensions SEQUENCE {} OPTIONAL
                            } OPTIONAL
                        } OPTIONAL
                    } OPTIONAL
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    } OPTIONAL
}

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

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

```

```

InterRATHandoverInfo-v3d0ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ueSpecificBehaviourInformationInterRAT    UESpecificBehaviourInformationInterRAT
  OPTIONAL
}

InterRATHandoverInfo-v3g0ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v3g0ext    UE-RadioAccessCapability-v3g0ext    OPTIONAL
}
InterRATHandoverInfo-v4xyext-IEs ::= SEQUENCE {
  -- User equipment IEs
  accessStratumReleaseIndicator    AccessStratumReleaseIndicator
}

InterRATHandoverInfo-v5xyext-IEs ::= SEQUENCE {
  -- User equipment IEs

  predefinedConfigStatusListComp    PredefinedConfigStatusListComp    OPTIONAL,
  ue-RadioAccessCapabilityComp    UE-RadioAccessCapabilityComp    OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability-r5    InterRAT-UE-RadioAccessCapabilityList-r5    OPTIONAL
}

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

MeasurementControl ::= CHOICE {
  r3
  measurementControl-r3    SEQUENCE {
    measurementControl-r3    MeasurementControl-r3-IEs,
    v390nonCriticalExtensions    SEQUENCE {
      measurementControl-v390ext    MeasurementControl-v390ext,
      v3a0NonCriticalExtensions    SEQUENCE {
        measurementControl-v3a0ext    MeasurementControl-v3a0ext,
        laterNonCriticalExtensions    SEQUENCE {
          -- Container for additional R99 extensions
          measurementControl-r3-add-ext    BIT STRING OPTIONAL,
          v4xyNonCriticalExtensions    SEQUENCE {
            measurementControl-v4xyext    MeasurementControl-v4xyext-IEs,
            v5xyNonCriticalExtensions    SEQUENCE {
              measurementControl-v5xyext    MeasurementControl-v5xyext-IEs,
              nonCriticalExtensions    SEQUENCE {}
            }
          }
        }
      }
    }
  }
  OPTIONAL
},
  later-than-r3
  rrc-TransactionIdentifier    RRC-TransactionIdentifier,
  criticalExtensions    CHOICE {
    r4
    measurementControl-r4    MeasurementControl-r4-IEs,
    v5xyNonCriticalExtensions    SEQUENCE {
      measurementControl-v5xyext    MeasurementControl-v5xyext-IEs,
      nonCriticalExtensions    SEQUENCE {}    OPTIONAL
    }
  }
  OPTIONAL
},
  criticalExtensions    SEQUENCE {}
}
}

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

```

```

-- Physical channel IEs
  dpch-CompressedModeStatusInfo    DPCH-CompressedModeStatusInfo    OPTIONAL
}
MeasurementControl-v4xyext-IEs ::= SEQUENCE {
  ue-Positioning-OTDOA-AssistanceData-r4ext    UE-Positioning-OTDOA-AssistanceData-r4ext    OPTIONAL
}
MeasurementControl-v390ext ::= SEQUENCE {
  ue-Positioning-Measurement-v390ext    UE-Positioning-Measurement-v390ext    OPTIONAL
}
MeasurementControl-v3a0ext ::= SEQUENCE {
  sfn-Offset-Validity                SFN-Offset-Validity                OPTIONAL
}
MeasurementControl-r4-IEs ::= SEQUENCE {
  -- Measurement IEs
  measurementIdentity                MeasurementIdentity,
  -- TABULAR: The measurement type is included in measurementCommand.
  measurementCommand                MeasurementCommand-r4,
  measurementReportingMode            MeasurementReportingMode            OPTIONAL,
  additionalMeasurementList            AdditionalMeasurementID-List            OPTIONAL,
  -- Physical channel IEs
  dpch-CompressedModeStatusInfo    DPCH-CompressedModeStatusInfo    OPTIONAL
}
MeasurementControl-v5xyext-IEs ::= SEQUENCE {
  measurementCommand-v5xyext        CHOICE {
    -- the choice "intra-frequency" shall be used for the case of intra-frequency measurement,
    -- as well as when intra-frequency events are configured for inter-frequency measurement
    intra-frequency                    Intra-FreqEventCriteriaList-v5xyext,
    inter-frequency                    Inter-FreqEventCriteriaList-v5xyext
  }
  OPTIONAL,
  intraFreqReportingCriteria-lb-r5ext    IntraFreqReportingCriteria-lb-r5ext    OPTIONAL,
  intraFreqEvent-lb-r5ext                IntraFreqEvent-lb-r5ext                OPTIONAL,
  -- most significant part of "RRC transaction identifier" (MSP),
  -- "RRC transaction identifier" = rrc-TransactionIdentifier-MSP-v5xyext * 4 +
  -- rrc-TransactionIdentifier
  rrc-TransactionIdentifier-MSP-v5xyext    RRC-TransactionIdentifier
}
-- *****
--
-- MEASUREMENT CONTROL FAILURE
--
-- *****

MeasurementControlFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier            RRC-TransactionIdentifier,
  failureCause                        FailureCauseWithProtErr,
  laterNonCriticalExtensions            SEQUENCE {
    -- Container for additional R99 extensions
    measurementControlFailure-r3-add-ext    BIT STRING            OPTIONAL,
    v5xyNonCriticalExtensions            SEQUENCE {
      measurementControlFailure-v5xyext    MeasurementControlFailure-v5xyext-IEs,
      nonCriticalExtensions                SEQUENCE {}            OPTIONAL
    }
  }
  OPTIONAL
}
MeasurementControlFailure-v5xyext-IEs ::= SEQUENCE {
  -- most significant part of "RRC transaction identifier" (MSP),
  -- "RRC transaction identifier" = rrc-TransactionIdentifier-MSP-v5xyext * 4 +
  -- rrc-TransactionIdentifier
  -- If the rrc-TransactionIdentifier-MSP-v5xyext was not received in the MEASUREMENT CONTROL
  -- message, then the rrc-TransactionIdentifier-MSP-v5xyext shall be set to zero
  rrc-TransactionIdentifier-MSP-v5xyext    RRC-TransactionIdentifier
}
-- *****
--
-- MEASUREMENT REPORT
--
-- *****

MeasurementReport ::= SEQUENCE {
  -- Measurement IEs

```

```

    measurementIdentity      MeasurementIdentity,
    measuredResults          MeasuredResults          OPTIONAL,
    measuredResultsOnRACH    MeasuredResultsOnRACH    OPTIONAL,
    additionalMeasuredResults MeasuredResultsList     OPTIONAL,
    eventResults             EventResults             OPTIONAL,
-- Non-critical extensions
    v390nonCriticalExtensions SEQUENCE {
        measurementReport-v390ext MeasurementReport-v390ext,
        laterNonCriticalExtensions SEQUENCE {
            -- Container for additional R99 extensions
            measurementReport-r3-add-ext BIT STRING OPTIONAL,
            v4xyNonCriticalExtensions SEQUENCE {
                measurementReport-v4xyext MeasurementReport-v4xyext-IEs,
                -- Extension mechanism for non-Rel4 information
                v5xyNonCriticalExtensions SEQUENCE {
                    measurementReport-v5xyext MeasurementReport-v5xyext-IEs,
                    nonCriticalExtensions SEQUENCE {} OPTIONAL
                }
            } OPTIONAL
        } OPTIONAL
    } OPTIONAL
}

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

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

MeasurementReport-v5xyext-IEs ::= SEQUENCE {
    measuredResults-v5xyext MeasuredResults-v5xyext OPTIONAL
}

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

PagingType1 ::= SEQUENCE {
    -- User equipment IEs
    pagingRecordList PagingRecordList OPTIONAL,
    -- Other IEs
    bcch-ModificationInfo BCCH-ModificationInfo OPTIONAL,
    laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions
        pagingType1-r3-add-ext BIT STRING OPTIONAL,
        v4xyNonCriticalExtensions SEQUENCE {
            pagingType1-v5xyext PagingType1-v5xyext-IEs,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
    } OPTIONAL
}

PagingType1-v5xyext-IEs ::= SEQUENCE {
    -- User equipment IEs
    pagingRecordList PagingRecordList-r5 OPTIONAL
}

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

PagingType2 ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    pagingCause PagingCause,
    -- Core network IEs
    cn-DomainIdentity CN-DomainIdentity,
    pagingRecordTypeID PagingRecordTypeID,
    laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions

```

```

        pagingType2-r3-add-ext          BIT STRING          OPTIONAL,
        nonCriticalExtensions           SEQUENCE {}         OPTIONAL
    }
}

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

PhysicalChannelReconfiguration ::= CHOICE {
    r3                               SEQUENCE {
        physicalChannelReconfiguration-r3
        PhysicalChannelReconfiguration-r3-IEs,
        v3a0NonCriticalExtensions     SEQUENCE {
            physicalChannelReconfiguration-v3a0ext     PhysicalChannelReconfiguration-v3a0ext,
            laterNonCriticalExtensions SEQUENCE {
                -- Container for additional R99 extensions
                pagingType2-r3-add-ext          BIT STRING          OPTIONAL,
                v4xyNonCriticalExtensions     SEQUENCE {
                    physicalChannelReconfiguration-v4xyext
                    PhysicalChannelReconfiguration-v4xyext-IEs,
                    nonCriticalExtensions     SEQUENCE {} OPTIONAL
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3                     SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                           SEQUENCE {
                physicalChannelReconfiguration-r4
                PhysicalChannelReconfiguration-r4-IEs,
                nonCriticalExtensions     SEQUENCE {} OPTIONAL
            },
            criticalExtensions          CHOICE {
                r5                       SEQUENCE {
                    physicalChannelReconfiguration-r5
                    PhysicalChannelReconfiguration-r5-IEs,
                    nonCriticalExtensions SEQUENCE {} OPTIONAL
                },
                criticalExtensions      SEQUENCE {}
            }
        }
    }
}

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

```

```

}

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

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

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

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

```

```

    dl-CommonInformation          DL-CommonInformation-r54          OPTIONAL,
    dl-InformationPerRL-List      DL-InformationPerRL-List-r5      OPTIONAL
  }
-- *****
--
-- PHYSICAL CHANNEL RECONFIGURATION COMPLETE
--
-- *****

PhysicalChannelReconfigurationComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo     IntegrityProtActivationInfo          OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance              UL-TimingAdvance          OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime        ActivationTime          OPTIONAL,
  rb-UL-ClphActivationTimeInfo  RB-ActivationTimeInfoList          OPTIONAL,
  ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo          OPTIONAL,
  laterNonCriticalExtensions     SEQUENCE {
    -- Container for additional R99 extensions
    physicalChannelReconfigurationComplete-r3-add-ext  BIT STRING          OPTIONAL,
    nonCriticalExtensions      SEQUENCE {}          OPTIONAL
  }          OPTIONAL
}

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

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

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

PhysicalSharedChannelAllocation ::= CHOICE {
  r3                             SEQUENCE {
    physicalSharedChannelAllocation-r3
    PhysicalSharedChannelAllocation-r3-IEs,
    laterNonCriticalExtensions    SEQUENCE {
      -- Container for additional R99 extensions
      physicalSharedChannelAllocation-r3-add-ext  BIT STRING          OPTIONAL,
      nonCriticalExtensions      SEQUENCE {}          OPTIONAL
    }          OPTIONAL
  },
  later-than-r3                  SEQUENCE {
    dsch-RNTI                    DSCH-RNTI          OPTIONAL,
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions            CHOICE {
      r4                          SEQUENCE {
        physicalSharedChannelAllocation-r4
        PhysicalSharedChannelAllocation-r4-IEs,
        nonCriticalExtensions      SEQUENCE {}          OPTIONAL
      },
      criticalExtensions          SEQUENCE {}
    }
  }
}

PhysicalSharedChannelAllocation-r3-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  dsch-RNTI                      DSCH-RNTI          OPTIONAL,

```

```

    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
-- Physical channel IEs
    ul-TimingAdvance              UL-TimingAdvanceControl          OPTIONAL,
    pusch-CapacityAllocationInfo   PUSCH-CapacityAllocationInfo  OPTIONAL,
    pdsch-CapacityAllocationInfo   PDSCH-CapacityAllocationInfo  OPTIONAL,
-- TABULAR: If the above value is not present, the default value "No Confirm"
-- shall be used as specified in 10.2.25.
    confirmRequest                 ENUMERATED {
                                     confirmPDSCH, confirmPUSCH }    OPTIONAL,
    trafficVolumeReportRequest     INTEGER (0..255)              OPTIONAL,
    iscpTimeslotList               TimeslotList                  OPTIONAL,
    requestPCCPCHRSCP              BOOLEAN
}

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

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

PUSCHCapacityRequest ::= SEQUENCE {
-- User equipment IEs
    dsch-RNTI                     DSCH-RNTI                       OPTIONAL,
-- Measurement IEs
    trafficVolume                  TrafficVolumeMeasuredResultsList,
    timeslotListWithISCP           TimeslotListWithISCP             OPTIONAL,
    primaryCCPCH-RSCP              PrimaryCCPCH-RSCP                 OPTIONAL,
    allocationConfirmation          CHOICE {
        pdschConfirmation          PDSCH-Identity,
        puschConfirmation          PUSCH-Identity
    }                               OPTIONAL,
    protocolErrorIndicator          ProtocolErrorIndicatorWithMoreInfo,
    laterNonCriticalExtensions      SEQUENCE {
        -- Container for additional R99 extensions
        puschCapacityRequest-r3-add-ext  BIT STRING          OPTIONAL,
        v5xyNonCriticalExtensions      SEQUENCE {
            puschCapacityRequest-v5xyext  PUSCHCapacityRequest-v5xyext,
            nonCriticalExtensions        SEQUENCE {} OPTIONAL
        }
    }
}

PUSCHCapacityRequest-v5xyext ::= SEQUENCE {
    primaryCCPCH-RSCP-delta        DeltaRSCP                        OPTIONAL
}

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

RadioBearerReconfiguration ::= CHOICE {
    r3                             SEQUENCE {
        radioBearerReconfiguration-r3  RadioBearerReconfiguration-r3-IEs,
        v3a0NonCriticalExtensions      SEQUENCE {
            radioBearerReconfiguration-v3a0ext  RadioBearerReconfiguration-v3a0ext,
            laterNonCriticalExtensions      SEQUENCE {
                -- Container for additional R99 extensions
                radioBearerReconfiguration-r3-add-ext  BIT STRING          OPTIONAL,
                v4xyNonCriticalExtensions      SEQUENCE {
                    radioBearerReconfiguration-v4xyext
                }
            }
        }
    }
}

```



```

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

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

RadioBearerReconfiguration-r5-IEs ::= SEQUENCE {
-- User equipment IEs
  integrityProtectionModeInfo           IntegrityProtectionModeInfo                 OPTIONAL,
  cipheringModeInfo                     CipheringModeInfo                           OPTIONAL,
  activationTime                         ActivationTime                               OPTIONAL,
  new-U-RNTI                             U-RNTI                                     OPTIONAL,
  new-C-RNTI                             C-RNTI                                     OPTIONAL,
  new-DSCH-RNTI                         DSCH-RNTI                                  OPTIONAL,
  new-H-RNTI                             H-RNTI                                     OPTIONAL,
  rrc-StateIndicator                     RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff            UTRAN-DRX-CycleLengthCoefficient          OPTIONAL,
-- Core network IEs
  cn-InformationInfo                     CN-InformationInfo                         OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                           URA-Identity                               OPTIONAL,
-- Specification mode information
  specificationMode                       CHOICE {
    complete                               SEQUENCE {
      -- Radio bearer IEs
      rab-InformationReconfigList         RAB-InformationReconfigList               OPTIONAL,
      rb-InformationReconfigList         RB-InformationReconfigList-r5             OPTIONAL,
      rb-InformationAffectedList         RB-InformationAffectedList-r5            OPTIONAL,
      rb-PDCPContextRelocationList       RB-PDCPContextRelocationList             OPTIONAL,
      -- Transport channel IEs
      ul-CommonTransChInfo               UL-CommonTransChInfo-r4                  OPTIONAL,

```

```

ul-deletedTransChInfoList      UL-DeletedTransChInfoList      OPTIONAL,
ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList    OPTIONAL,
modeSpecificTransChInfo        CHOICE {
    fdd                          SEQUENCE {
        cpch-SetID               CPCH-SetID                   OPTIONAL,
        addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd                          NULL
}
dl-CommonTransChInfo           DL-CommonTransChInfo-r4         OPTIONAL,
dl-DeletedTransChInfoList      DL-DeletedTransChInfoList-r5   OPTIONAL,
dl-AddReconfTransChInfoList    DL-AddReconfTransChInfoList-r5 OPTIONAL
},
preconfiguration                SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
preConfigMode                  CHOICE {
    predefinedConfigIdentity      PredefinedConfigIdentity,
    defaultConfig                 SEQUENCE {
        defaultConfigMode         DefaultConfigMode,
        defaultConfigIdentity     DefaultConfigIdentity-r5
    }
}
},
-- Physical channel IEs
frequencyInfo                   FrequencyInfo                   OPTIONAL,
maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power         OPTIONAL,
ul-ChannelRequirement           UL-ChannelRequirement-r5     OPTIONAL,
modeSpecificPhysChInfo         CHOICE {
    fdd                          SEQUENCE {
        dl-PDSCH-Information      DL-PDSCH-Information         OPTIONAL
    },
    tdd                          NULL
},
dl-HSPDSCH-Information          DL-HSPDSCH-Information        OPTIONAL,
dl-CommonInformation            DL-CommonInformation-r54      OPTIONAL,
dl-InformationPerRL-List        DL-InformationPerRL-List-r5   OPTIONAL
}

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

RadioBearerReconfigurationComplete ::= SEQUENCE {
-- User equipment IEs
rrc-TransactionIdentifier       RRC-TransactionIdentifier,
ul-IntegProtActivationInfo      IntegrityProtActivationInfo    OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
ul-TimingAdvance               UL-TimingAdvance              OPTIONAL,
-- Radio bearer IEs
count-C-ActivationTime         ActivationTime                 OPTIONAL,
rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList     OPTIONAL,
ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo OPTIONAL,
laterNonCriticalExtensions      SEQUENCE {
-- Container for additional R99 extensions
radioBearerReconfigurationComplete-r3-add-ext BIT STRING    OPTIONAL,
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,
laterNonCriticalExtensions      SEQUENCE {
-- Container for additional R99 extensions
}
}

```

```

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

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

RadioBearerRelease ::= CHOICE {
    r3                               SEQUENCE {
        radioBearerRelease-r3        RadioBearerRelease-r3-IEs,
        v3a0NonCriticalExtensions    SEQUENCE {
            radioBearerRelease-v3a0ext  RadioBearerRelease-v3a0ext,
            laterNonCriticalExtensions  SEQUENCE {
                -- Container for additional R99 extensions
                radioBearerRelease-r3-add-ext  BIT STRING          OPTIONAL,
                v4xyNonCriticalExtensions    SEQUENCE {
                    radioBearerRelease-v4xyext  RadioBearerRelease-v4xyext-IEs,
                    nonCriticalExtensions      SEQUENCE {} OPTIONAL
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3                    SEQUENCE {
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions             CHOICE {
            r4                          SEQUENCE {
                radioBearerRelease-r4      RadioBearerRelease-r4-IEs,
                nonCriticalExtensions      SEQUENCE {}          OPTIONAL
            },
            criticalExtensions          CHOICE {
                r5                          SEQUENCE {
                    radioBearerRelease-r5      RadioBearerRelease-r5-IEs,
                    nonCriticalExtensions      SEQUENCE {}          OPTIONAL
                }
            },
            criticalExtensions          SEQUENCE {}
        }
    }
}

RadioBearerRelease-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier         RRC-TransactionIdentifier,
    integrityProtectionModeInfo      IntegrityProtectionModeInfo          OPTIONAL,
    cipheringModeInfo                CipheringModeInfo                    OPTIONAL,
    activationTime                    ActivationTime                        OPTIONAL,
    new-U-RNTI                        U-RNTI                                OPTIONAL,
    new-C-RNTI                        C-RNTI                                OPTIONAL,
    rrc-StateIndicator                RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff        UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    -- Core network IEs
    cn-InformationInfo                CN-InformationInfo                    OPTIONAL,
    signallingConnectionRelIndication CN-DomainIdentity                    OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                      URA-Identity                            OPTIONAL,
    -- Radio bearer IEs
    rab-InformationReconfigList       RAB-InformationReconfigList          OPTIONAL,
    rb-InformationReleaseList         RB-InformationReleaseList            OPTIONAL,
    rb-InformationAffectedList        RB-InformationAffectedList           OPTIONAL,
    dl-CounterSynchronisationInfo     DL-CounterSynchronisationInfo        OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo              UL-CommonTransChInfo                 OPTIONAL,
    ul-deletedTransChInfoList         UL-DeletedTransChInfoList            OPTIONAL,
    ul-AddReconfTransChInfoList       UL-AddReconfTransChInfoList          OPTIONAL,
    modeSpecificTransChInfo           CHOICE {
        fdd                             SEQUENCE {
            cpch-SetID                   CPCH-SetID                            OPTIONAL,
            addReconfTransChDRAC-Info     DRAC-StaticInformationList            OPTIONAL
        },
        tdd                             NULL
    }
    dl-CommonTransChInfo              DL-CommonTransChInfo                 OPTIONAL,
    dl-DeletedTransChInfoList         DL-DeletedTransChInfoList            OPTIONAL,
    dl-AddReconfTransChInfoList       DL-AddReconfTransChInfo2List         OPTIONAL,

```

```

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

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

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

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

RadioBearerRelease-r5-IEs ::= SEQUENCE {
    -- User equipment IEs

```

```

    integrityProtectionModeInfo      IntegrityProtectionModeInfo      OPTIONAL,
    cipheringModeInfo                CipheringModeInfo                OPTIONAL,
    activationTime                    ActivationTime                     OPTIONAL,
    new-U-RNTI                        U-RNTI                           OPTIONAL,
    new-C-RNTI                        C-RNTI                           OPTIONAL,
    new-DSCH-RNTI                     DSCH-RNTI                         OPTIONAL,
    new-H-RNTI                        H-RNTI                            OPTIONAL,
    rrc-StateIndicator                RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff        UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IES
    cn-InformationInfo                CN-InformationInfo                OPTIONAL,
    signallingConnectionRelIndication CN-DomainIdentity                OPTIONAL,
-- UTRAN mobility IES
    ura-Identity                      URA-Identity                     OPTIONAL,
-- Radio bearer IES
    rab-InformationReconfigList       RAB-InformationReconfigList       OPTIONAL,
    rb-InformationReleaseList         RB-InformationReleaseList,
    rb-InformationAffectedList        RB-InformationAffectedList-r5      OPTIONAL,
    dl-CounterSynchronisationInfo     DL-CounterSynchronisationInfo-r5  OPTIONAL,
-- Transport channel IES
    ul-CommonTransChInfo              UL-CommonTransChInfo-r4           OPTIONAL,
    ul-deletedTransChInfoList         UL-DeletedTransChInfoList         OPTIONAL,
    ul-AddReconfTransChInfoList       UL-AddReconfTransChInfoList       OPTIONAL,
    modeSpecificTransChInfo           CHOICE {
        fdd                            SEQUENCE {
            cpch-SetID                 CPCH-SetID                         OPTIONAL,
            addReconfTransChDRAC-Info  DRAC-StaticInformationList        OPTIONAL
        },
        tdd                            NULL
    }
    dl-CommonTransChInfo              DL-CommonTransChInfo-r4           OPTIONAL,
    dl-DeletedTransChInfoList         DL-DeletedTransChInfoList-r5      OPTIONAL,
    dl-AddReconfTransChInfoList       DL-AddReconfTransChInfoList-r5    OPTIONAL,
-- Physical channel IES
    frequencyInfo                     FrequencyInfo                       OPTIONAL,
    maxAllowedUL-TX-Power              MaxAllowedUL-TX-Power              OPTIONAL,
    ul-ChannelRequirement              UL-ChannelRequirement-r5           OPTIONAL,
    modeSpecificPhysChInfo             CHOICE {
        fdd                            SEQUENCE {
            dl-PDSCH-Information        DL-PDSCH-Information              OPTIONAL
        },
        tdd                            NULL
    },
    dl-HSPDSCH-Information             DL-HSPDSCH-Information            OPTIONAL,
    dl-CommonInformation               DL-CommonInformation-r54          OPTIONAL,
    dl-InformationPerRL-List           DL-InformationPerRL-List-r5       OPTIONAL
}

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

RadioBearerReleaseComplete ::= SEQUENCE {
-- User equipment IES
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo         IntegrityProtActivationInfo        OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance                  UL-TimingAdvance                   OPTIONAL,
-- Radio bearer IES
    count-C-ActivationTime             ActivationTime                       OPTIONAL,
    rb-UL-CiphActivationTimeInfo       RB-ActivationTimeInfoList          OPTIONAL,
    ul-CounterSynchronisationInfo      UL-CounterSynchronisationInfo      OPTIONAL,
    laterNonCriticalExtensions         SEQUENCE {
        -- Container for additional R99 extensions
        radioBearerReleaseComplete-r3-add-ext BIT STRING  OPTIONAL,
        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,
  laterNonCriticalExtensions      SEQUENCE {
    -- Container for additional R99 extensions
    radioBearerReleaseFailure-r3-add-ext BIT STRING              OPTIONAL,
    nonCriticalExtensions          SEQUENCE {}                    OPTIONAL
  }
}

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

RadioBearerSetup ::= CHOICE {
  r3
    SEQUENCE {
      radioBearerSetup-r3          RadioBearerSetup-r3-IEs,
      v3a0NonCriticalExtensions    SEQUENCE {
        radioBearerSetup-v3a0ext   RadioBearerSetup-v3a0ext,
        laterNonCriticalExtensions SEQUENCE {
          -- Container for additional R99 extensions
          radioBearerSetup-r3-add-ext BIT STRING              OPTIONAL,
          v4xyNonCriticalExtensions SEQUENCE {
            radioBearerSetup-v4xyext RadioBearerSetup-v4xyext-IEs,
            nonCriticalExtensions    SEQUENCE {}              OPTIONAL
          }
        } OPTIONAL
      } OPTIONAL
    },
  later-than-r3
    SEQUENCE {
      rrc-TransactionIdentifier      RRC-TransactionIdentifier,
      criticalExtensions             CHOICE {
        r4
          SEQUENCE {
            radioBearerSetup-r4      RadioBearerSetup-r4-IEs,
            nonCriticalExtensions    SEQUENCE {}                  OPTIONAL
          },
        r5
          CHOICE {
            radioBearerSetup-r5      RadioBearerSetup-r5-IEs,
            nonCriticalExtensions    SEQUENCE {}                  OPTIONAL
          },
        criticalExtensions          SEQUENCE {}
      }
    }
}

RadioBearerSetup-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  integrityProtectionModeInfo   IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo             CipheringModeInfo                      OPTIONAL,
  activationTime                 ActivationTime                        OPTIONAL,
  new-U-RNTI                     U-RNTI                               OPTIONAL,
  new-C-RNTI                     C-RNTI                               OPTIONAL,
  rrc-StateIndicator             RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                   URA-Identity                          OPTIONAL,
  -- Core network IEs
  cn-InformationInfo             CN-InformationInfo                    OPTIONAL,
  -- Radio bearer IEs
  srb-InformationSetupList       SRB-InformationSetupList            OPTIONAL,
  rab-InformationSetupList       RAB-InformationSetupList            OPTIONAL,
  rb-InformationAffectedList     RB-InformationAffectedList          OPTIONAL,
  dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo  OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo          UL-CommonTransChInfo              OPTIONAL,
  ul-deletedTransChInfoList      UL-DeletedTransChInfoList        OPTIONAL,
  ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList      OPTIONAL,
  modeSpecificTransChInfo        CHOICE {
    fdd
      SEQUENCE {
        cpch-SetID                  CPCH-SetID                    OPTIONAL,

```

```

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

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

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

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

```

```

    dl-CommonInformation          DL-CommonInformation-r4          OPTIONAL,
    dl-InformationPerRL-List      DL-InformationPerRL-List-r4      OPTIONAL
}

RadioBearerSetup-r5-IEs ::= SEQUENCE {
-- User equipment IEs
    integrityProtectionModeInfo  IntegrityProtectionModeInfo      OPTIONAL,
    cipheringModeInfo            CipheringModeInfo                 OPTIONAL,
    activationTime                ActivationTime                     OPTIONAL,
    new-U-RNTI                    U-RNTI                           OPTIONAL,
    new-C-RNTI                    C-RNTI                           OPTIONAL,
    new-DSCH-RNTI                 DSCH-RNTI                        OPTIONAL,
    new-H-RNTI                    H-RNTI                           OPTIONAL,
    rrc-StateIndicator            RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                  URA-Identity                     OPTIONAL,
-- Core network IEs
    cn-InformationInfo            CN-InformationInfo               OPTIONAL,
-- Radio bearer IEs
    srb-InformationSetupList      SRB-InformationSetupList         OPTIONAL,
    rab-InformationSetupList      RAB-InformationSetupList-r4      OPTIONAL,
    rb-InformationAffectedList    RB-InformationAffectedList-r5    OPTIONAL,
    dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5 OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo         UL-CommonTransChInfo-r4         OPTIONAL,
    ul-deletedTransChInfoList    UL-DeletedTransChInfoList       OPTIONAL,
    ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList     OPTIONAL,
    modeSpecificTransChInfo      CHOICE {
        fdd                      SEQUENCE {
            cpch-SetID            CPCH-SetID                      OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList    OPTIONAL
        },
        tdd                      NULL
    }
    dl-CommonTransChInfo         DL-CommonTransChInfo-r4         OPTIONAL,
    dl-DeletedTransChInfoList    DL-DeletedTransChInfoList-r5    OPTIONAL,
    dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList-r5  OPTIONAL,
-- Physical channel IEs
    frequencyInfo                FrequencyInfo                     OPTIONAL,
    maxAllowedUL-TX-Power        MaxAllowedUL-TX-Power           OPTIONAL,
    ul-ChannelRequirement        UL-ChannelRequirement-r5        OPTIONAL,
    modeSpecificPhysChInfo      CHOICE {
        fdd                      SEQUENCE {
            dl-PDSCH-Information  DL-PDSCH-Information           OPTIONAL
        },
        tdd                      NULL
    },
    dl-HSPDSCH-Information       DL-HSPDSCH-Information          OPTIONAL,
    dl-CommonInformation         DL-CommonInformation-r54        OPTIONAL,
    dl-InformationPerRL-List     DL-InformationPerRL-List-r5    OPTIONAL
}

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

RadioBearerSetupComplete ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier     RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo    IntegrityProtActivationInfo      OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance             UL-TimingAdvance                 OPTIONAL,
    start-Value                  START-Value                      OPTIONAL,
-- Radio bearer IEs
    count-C-ActivationTime       ActivationTime                    OPTIONAL,
    rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList        OPTIONAL,
    ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo    OPTIONAL,
    laterNonCriticalExtensions    SEQUENCE {
        -- Container for additional R99 extensions
        radioBearerSetupComplete-r3-add-ext BIT STRING OPTIONAL,
        nonCriticalExtensions      SEQUENCE {} OPTIONAL
    }
    } OPTIONAL
}

-- *****

```

```

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

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

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

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

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

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

RRCConnectionRelease ::= CHOICE {
  r3                               SEQUENCE {
    rrcConnectionRelease-r3         RRCConnectionRelease-r3-IEs,
    laterNonCriticalExtensions       SEQUENCE {
      -- Container for additional R99 extensions
      rrcConnectionRelease-r3-add-ext BIT STRING              OPTIONAL,
      nonCriticalExtensions          SEQUENCE {}                OPTIONAL
    } OPTIONAL
  },
  later-than-r3                     SEQUENCE {
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    criticalExtensions               CHOICE {
      r4                               SEQUENCE {
        rrcConnectionRelease-r4       RRCConnectionRelease-r4-IEs,
        nonCriticalExtensions          SEQUENCE {}              OPTIONAL
      },
      criticalExtensions               SEQUENCE {}
    }
  }
}

RRCConnectionRelease-r3-IEs ::= SEQUENCE {

```

```

-- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- n-308 is conditional on the UE state
  n-308                          N-308                                OPTIONAL,
  releaseCause                   ReleaseCause,
  rplmn-information               Rplmn-Information                OPTIONAL
}

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

RRCCConnectionRelease-r5-IEs ::= SEQUENCE {
  -- User equipment IEs
  -- n-308 is conditional on the UE state.
  n-308                          N-308                                OPTIONAL,
  releaseCause                   ReleaseCause,
  rplmn-information               Rplmn-Information-r4            OPTIONAL
}

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

RRCCConnectionRelease-CCCH ::= CHOICE {
  r3                             SEQUENCE {
    rrcConnectionRelease-CCCH-r3  RRCCConnectionRelease-CCCH-r3-IEs,
    laterNonCriticalExtensions     SEQUENCE {
      -- Container for additional R99 extensions
      rrcConnectionRelease-CCCH-r3-add-ext  BIT STRING      OPTIONAL,
      nonCriticalExtensions                SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  later-than-r3                   SEQUENCE {
    u-RNTI                          U-RNTI,
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    criticalExtensions               CHOICE {
      r4                             SEQUENCE {
        rrcConnectionRelease-CCCH-r4  RRCCConnectionRelease-CCCH-r4-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
      },
      later-than-r4                   CHOICE {
        r5                             SEQUENCE {
          rrcConnectionRelease-CCCH-r5  RRCCConnectionRelease-CCCH-r5-IEs,
          nonCriticalExtensions          SEQUENCE {} OPTIONAL
        },
        criticalExtensions             SEQUENCE {}
      }
    }
  }
}

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

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

RRCCConnectionRelease-CCCH-r5-IEs ::= SEQUENCE {
  --
  -- TABULAR:
  -- CHOICE IdentityType (U-RNTI, GroupIdentity) is replaced with
  -- an optional IE GroupIdentity, since the U-RNTI is mandatory in ASN.1.
  -- In case CHOICE IdentityType is equal to GroupIdentity
  -- the value of the U-RNTI shall be ignored by a UE
  -- complying with this version of the message.

```

```

--
-- User equipment IEs
  groupIdentity                SEQUENCE ( SIZE (1 .. maxURNTI-Group) ) OF
                                GroupReleaseInformation OPTIONAL,
-- The rest of the message is identical to the one sent on DCCH.
  rrcConnectionRelease        RRCCConnectionRelease-r5-IEs
}

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

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

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

RRCCConnectionRequest ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  initialUE-Identity           InitialUE-Identity,
  establishmentCause           EstablishmentCause,
  -- protocolErrorIndicator is MD, but for compactness reasons no default value
  -- has been assigned to it.
  protocolErrorIndicator       ProtocolErrorIndicator,
  -- Measurement IEs
  measuredResultsOnRACH        MeasuredResultsOnRACH          OPTIONAL,
  -- Non critical Extensions
  v3d0NonCriticalExtensions    SEQUENCE {
    rrcConnectionRequest-v3d0ext  RRCCConnectionRequest-v3d0ext-IEs,
    -- Reserved for future non critical extension
    v4xyNonCriticalExtensions     SEQUENCE {
      rrcConnectionRequest-v4xyext  RRCCConnectionRequest-v4xyext-IEs,
      v5xyNonCriticalExtensions     SEQUENCE {
        rrcConnectionRequest-v5xyext  RRCCConnectionRequest-v5xyext-IEs,
        -- Reserved for future non critical extension
        nonCriticalExtensions         SEQUENCE {}        OPTIONAL
      }
    }
  }
}

RRCCConnectionRequest-v3d0ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ueSpecificBehaviourInformationIdle  UESpecificBehaviourInformationIdle  OPTIONAL
}

RRCCConnectionRequest-v4xyext-IEs ::= SEQUENCE {
  -- User equipment IEs
  accessStratumReleaseIndicator       AccessStratumReleaseIndicator
}

RRCCConnectionRequest-v5xyext-IEs ::= SEQUENCE {
  -- User equipment IEs
  predefinedConfigStatusInfo          BOOLEAN
}

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

RRCCConnectionSetup ::= CHOICE {

```

```

r3          SEQUENCE {
  rrcConnectionSetup-r3          RRCConnectionSetup-r3-IEs,
  laterNonCriticalExtensions      SEQUENCE {
    -- Container for additional R99 extensions
    rrcConnectionSetup-r3-add-ext  BIT STRING          OPTIONAL,
    v4xyNonCriticalExtensions      SEQUENCE {
      rrcConnectionSetup-v4xyext  RRCConnectionSetup-v4xyext-IEs,
      nonCriticalExtensions        SEQUENCE {}          OPTIONAL
    } OPTIONAL
  } OPTIONAL
},
later-than-r3          SEQUENCE {
  initialUE-Identity             InitialUE-Identity,
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  criticalExtensions              CHOICE {
    r4          SEQUENCE {
      rrcConnectionSetup-r4          RRCConnectionSetup-r4-IEs,
      nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    },
    later-than-r4          CHOICE {
      r5          SEQUENCE {
        rrcConnectionSetup-r5          RRCConnectionSetup-r5-IEs,
        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
      },
      criticalExtensions              SEQUENCE {}
    }
  }
}
}
}

```

```

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

```

```

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

```

```

RRCConnectionSetup-r4-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  activationTime                  ActivationTime          OPTIONAL,
  new-U-RNTI                     U-RNTI,
  new-c-RNTI                      C-RNTI              OPTIONAL,

```

```

rrc-StateIndicator          RRC-StateIndicator,
utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient,
-- TABULAR: If capabilityUpdateRequirements is not present, the default value
-- defined in 10.3.3.2 shall be used.
capabilityUpdateRequirement  CapabilityUpdateRequirement-r4      OPTIONAL,
-- Radio bearer IEs
  srb-InformationSetupList    SRB-InformationSetupList2,
-- Transport channel IEs
  ul-CommonTransChInfo       UL-CommonTransChInfo          OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList      OPTIONAL,
  dl-CommonTransChInfo       DL-CommonTransChInfo-r4        OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList      OPTIONAL,
-- Physical channel IEs
  frequencyInfo              FrequencyInfo                OPTIONAL,
  maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power          OPTIONAL,
  ul-ChannelRequirement      UL-ChannelRequirement-r4      OPTIONAL,
  dl-CommonInformation       DL-CommonInformation-r4        OPTIONAL,
  dl-InformationPerRL-List    DL-InformationPerRL-List-r4    OPTIONAL
}

RRCConnectionSetup-r5-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall not be performed on this message.
  activationTime              ActivationTime                OPTIONAL,
  new-U-RNTI                  U-RNTI,
  new-c-RNTI                  C-RNTI                    OPTIONAL,
  rrc-StateIndicator          RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient,
-- TABULAR: If capabilityUpdateRequirements is not present, the default value
-- defined in 10.3.3.2 shall be used.
  capabilityUpdateRequirement  CapabilityUpdateRequirement-r4  OPTIONAL,
-- Specification mode information
  specificationMode           CHOICE {
    complete                   SEQUENCE {
-- Radio bearer IEs
      srb-InformationSetupList  SRB-InformationSetupList2,
-- Transport channel IEs
      ul-CommonTransChInfo      UL-CommonTransChInfo          OPTIONAL,
      ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList  OPTIONAL,
      dl-CommonTransChInfo      DL-CommonTransChInfo-r4        OPTIONAL,
      dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList  OPTIONAL
    },
    preconfiguration           SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
      preConfigMode            CHOICE {
        predefinedConfigIdentity  PredefinedConfigIdentity,
        defaultConfig            SEQUENCE {
          defaultConfigMode      DefaultConfigMode,
          defaultConfigIdentity  DefaultConfigIdentity-r5
        }
      }
    }
  },
-- Physical channel IEs
  frequencyInfo              FrequencyInfo                OPTIONAL,
  maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power          OPTIONAL,
  ul-ChannelRequirement      UL-ChannelRequirement-r4      OPTIONAL,
  dl-CommonInformation       DL-CommonInformation-r4        OPTIONAL,
  dl-InformationPerRL-List    DL-InformationPerRL-List-r4    OPTIONAL
}

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

RRCConnectionSetupComplete ::= SEQUENCE {
-- TABULAR: Integrity protection shall not be performed on this message.
-- User equipment IEs
  rrc-TransactionIdentifier    RRC-TransactionIdentifier,
  startList                    STARTList,
  ue-RadioAccessCapability     UE-RadioAccessCapability      OPTIONAL,
-- Other IEs
  ue-RATSpecificCapability     InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
-- Non critical extensions
  v370NonCriticalExtensions    SEQUENCE {

```



```

-- Non-RRC IEs
  failureCauseWithProtErr          FailureCauseWithProtErr
}
-- *****
--
-- RRC STATUS
-- *****

RRCStatus ::= SEQUENCE {
  -- Other IEs
  -- TABULAR: Identification of received message is nested in
  -- ProtocolErrorMoreInformation
  protocolErrorInformation          ProtocolErrorMoreInformation,
  laterNonCriticalExtensions        SEQUENCE {
    -- Container for additional R99 extensions
    rrcStatus-r3-add-ext            BIT STRING          OPTIONAL,
    nonCriticalExtensions            SEQUENCE {}          OPTIONAL
  } OPTIONAL
}

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

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

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

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

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

  -- User equipment IEs
  rrc-TransactionIdentifier          RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo          IntegrityProtActivationInfo    OPTIONAL,
  -- Radio bearer IEs
  rb-UL-CiphActivationTimeInfo        RB-ActivationTimeInfoList    OPTIONAL,
  laterNonCriticalExtensions          SEQUENCE {
    -- Container for additional R99 extensions
    securityModeComplete-r3-add-ext   BIT STRING          OPTIONAL,
    nonCriticalExtensions              SEQUENCE {}          OPTIONAL
  } OPTIONAL
}

-- *****

```

```

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

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

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

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

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

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

SignallingConnectionReleaseIndication ::= SEQUENCE {
  -- Core network IEs
  cn-DomainIdentity              CN-DomainIdentity,
  laterNonCriticalExtensions     SEQUENCE {
    -- Container for additional R99 extensions
    signallingConnectionReleaseIndication-r3-add-ext  BIT STRING      OPTIONAL,
    nonCriticalExtensions           SEQUENCE {}      OPTIONAL
  } OPTIONAL
}

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

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

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

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

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

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

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

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

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

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

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

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

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

SystemInformationChangeIndication ::=              SEQUENCE {

```

```

-- Other IEs
  bcch-ModificationInfo          BCCH-ModificationInfo,
  laterNonCriticalExtensions      SEQUENCE {
    -- Container for additional R99 extensions
    systemInformationChangeIndication-r3-add-ext  BIT STRING      OPTIONAL,
    nonCriticalExtensions          SEQUENCE {}      OPTIONAL
  }
}

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

TransportChannelReconfiguration ::= CHOICE {
  r3          SEQUENCE {
    transportChannelReconfiguration-r3
    v3a0NonCriticalExtensions      SEQUENCE {
      transportChannelReconfiguration-v3a0ext
      laterNonCriticalExtensions  SEQUENCE {
        -- Container for additional R99 extensions
        transportChannelReconfiguration-r3-add-ext  BIT STRING      OPTIONAL,
        v4xyNonCriticalExtensions  SEQUENCE {
          transportChannelReconfiguration-v4xyext
          nonCriticalExtensions    SEQUENCE {}      OPTIONAL
        }
      }
    }
  } OPTIONAL,
  later-than-r3 SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions             CHOICE {
      r4          SEQUENCE {
        transportChannelReconfiguration-r4
        nonCriticalExtensions      SEQUENCE {}      OPTIONAL
      },
      criticalExtensions          CHOICE {
        r5          SEQUENCE {
          transportChannelReconfiguration-r5
          nonCriticalExtensions    SEQUENCE {}      OPTIONAL
        },
        criticalExtensions        SEQUENCE {}
      }
    }
  }
}

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

```

```

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

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

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

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

TransportChannelReconfiguration-r5-IEs ::= SEQUENCE {
-- User equipment IEs
  integrityProtectionModeInfo    IntegrityProtectionModeInfo  OPTIONAL,
  cipheringModeInfo              CipheringModeInfo            OPTIONAL,
  activationTime                  ActivationTime                 OPTIONAL,

```

```

    new-U-RNTI                U-RNTI                OPTIONAL,
    new-C-RNTI                C-RNTI                OPTIONAL,
    new-DSCH-RNTI            DSCH-RNTI            OPTIONAL,
    new-H-RNTI                H-RNTI                OPTIONAL,
    rrc-StateIndicator        RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- Core network IEs
  cn-InformationInfo          CN-InformationInfo          OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                URA-Identity                OPTIONAL,
-- Radio bearer IEs
  dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5 OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo        UL-CommonTransChInfo-r4        OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList    OPTIONAL,
  modeSpecificTransChInfo     CHOICE {
    fdd                        SEQUENCE {
      cpch-SetID              CPCH-SetID              OPTIONAL,
      addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd                        NULL
  }
  dl-CommonTransChInfo        DL-CommonTransChInfo-r4        OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r5  OPTIONAL,
-- Physical channel IEs
  frequencyInfo               FrequencyInfo                 OPTIONAL,
  maxAllowedUL-TX-Power       MaxAllowedUL-TX-Power        OPTIONAL,
  ul-ChannelRequirement        UL-ChannelRequirement-r5      OPTIONAL,
  modeSpecificPhysChInfo      CHOICE {
    fdd                        SEQUENCE {
      dl-PDSCH-Information    DL-PDSCH-Information    OPTIONAL
    },
    tdd                        NULL
  },
  dl-HSPDSCH-Information      DL-HSPDSCH-Information        OPTIONAL,
  dl-CommonInformation         DL-CommonInformation-r54      OPTIONAL,
  dl-InformationPerRL-List     DL-InformationPerRL-List-r5   OPTIONAL
}

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

TransportChannelReconfigurationComplete ::= SEQUENCE {
-- User equipment IEs
  rrc-TransactionIdentifier    RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo   IntegrityProtActivationInfo   OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance             UL-TimingAdvance             OPTIONAL,
-- Radio bearer IEs
  count-C-ActivationTime       ActivationTime                 OPTIONAL,
  rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfoList     OPTIONAL,
  ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo OPTIONAL,
  laterNonCriticalExtensions    SEQUENCE {
    -- Container for additional R99 extensions
    transportChannelReconfigurationComplete-r3-add-ext BIT STRING OPTIONAL,
    nonCriticalExtensions       SEQUENCE {} OPTIONAL
  }
}

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

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

```

```

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

TransportFormatCombinationControl ::= SEQUENCE {
  -- rrc-TransactionIdentifier is always included in this message
  rrc-TransactionIdentifier      RRC-TransactionIdentifier      OPTIONAL,
  modeSpecificInfo              CHOICE {
    fdd                          NULL,
    tdd                          SEQUENCE {
      tfcs-ID                    TFCS-Identity      OPTIONAL
    }
  },
  dpch-TFCS-InUplink            TFC-Subset,
  activationTimeForTFCSsubset   ActivationTime              OPTIONAL,
  tfc-ControlDuration           TFC-ControlDuration          OPTIONAL,
  laterNonCriticalExtensions    SEQUENCE {
    -- Container for additional R99 extensions
    transportFormatCombinationControl-r3-add-ext  BIT STRING      OPTIONAL,
    nonCriticalExtensions          SEQUENCE {}          OPTIONAL
  }
}

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

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

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

UECapabilityEnquiry ::= CHOICE {
  r3                             SEQUENCE {
    ueCapabilityEnquiry-r3       UECapabilityEnquiry-r3-IEs,
    laterNonCriticalExtensions   SEQUENCE {
      -- Container for additional R99 extensions
      ueCapabilityEnquiry-r3-add-ext  BIT STRING      OPTIONAL,
      v4xyNonCriticalExtensions     SEQUENCE {
        ueCapabilityEnquiry-v4xyext  UECapabilityEnquiry-v4xyext-IEs,
        nonCriticalExtensions        SEQUENCE {}          OPTIONAL
      }
    }
  } OPTIONAL,
  later-than-r3                 SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions            SEQUENCE {}
  }
}

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

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

-- *****

```

```

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

UECapabilityInformation ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier      OPTIONAL,
  ue-RadioAccessCapability       UE-RadioAccessCapability       OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability       InterRAT-UE-RadioAccessCapabilityList
OPTIONAL,
  v370NonCriticalExtensions      SEQUENCE {
    ueCapabilityInformation-v370ext UECapabilityInformation-v370ext,
    v380NonCriticalExtensions      SEQUENCE {
      ueCapabilityInformation-v380ext UECapabilityInformation-v380ext-IEs,
      v3a0NonCriticalExtensions      SEQUENCE {
        ueCapabilityInformation-v3a0ext UECapabilityInformation-v3a0ext,
        laterNonCriticalExtensions      SEQUENCE {
          -- Container for additional R99 extensions
          ueCapabilityInformation-r3-add-ext BIT STRING OPTIONAL,
          -- Reserved for future non critical extension
          v4xyNonCriticalExtensions      SEQUENCE {
            ueCapabilityInformation-v4xyext UECapabilityInformation-v4xyext,
            v5xyNonCriticalExtensions      SEQUENCE {
              ueCapabilityInformation-v5xyext UECapabilityInformation-v5xyext,
              nonCriticalExtensions      SEQUENCE {} OPTIONAL
            } OPTIONAL
          } OPTIONAL
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  } OPTIONAL
}

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

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

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

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

UECapabilityInformation-v5xyext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v5xyext UE-RadioAccessCapability-v5xyext OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability-r5 InterRAT-UE-RadioAccessCapabilityList-r5 OPTIONAL
}

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

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

```

```

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

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

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

UplinkDirectTransfer ::= SEQUENCE {
    -- Core network IEs
    cn-DomainIdentity              CN-DomainIdentity,
    nas-Message                     NAS-Message,
    -- Measurement IEs
    measuredResultsOnRACH           MeasuredResultsOnRACH      OPTIONAL,
    laterNonCriticalExtensions      SEQUENCE {
        -- Container for additional R99 extensions
        uplinkDirectTransfer-r3-add-ext BIT STRING      OPTIONAL,
        nonCriticalExtensions        SEQUENCE {}      OPTIONAL
    } OPTIONAL
}

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

UplinkPhysicalChannelControl ::= CHOICE {
    r3                               SEQUENCE {
        uplinkPhysicalChannelControl-r3 UplinkPhysicalChannelControl-r3-IEs,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            uplinkPhysicalChannelControl-r3-add-ext BIT STRING      OPTIONAL,
            v4xyNonCriticalExtensions    SEQUENCE {
                uplinkPhysicalChannelControl-v4xyext UplinkPhysicalChannelControl-v4xyext-IEs,
                -- Extension mechanism for non- release4 information
                noncriticalExtensions    SEQUENCE {}      OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3                     SEQUENCE {
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                           SEQUENCE {
                uplinkPhysicalChannelControl-r4 UplinkPhysicalChannelControl-r4-IEs,
                nonCriticalExtensions      SEQUENCE {}      OPTIONAL
            },
            later-than-r4                 CHOICE {
                r5                         SEQUENCE {
                    uplinkPhysicalChannelControl-r5 UplinkPhysicalChannelControl-r5-IEs,
                    nonCriticalExtensions      SEQUENCE {}      OPTIONAL
                },
                criticalExtensions        SEQUENCE {}
            }
        }
    }
}

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

```

```

    prach-ConstantValue          ConstantValueTdd          OPTIONAL,
    pusch-ConstantValue          ConstantValueTdd          OPTIONAL
}

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

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

UplinkPhysicalChannelControl-r5-IEs ::= SEQUENCE {
-- Physical channel IEs
ccTrCH-PowerControlInfo        CcTrCH-PowerControlInfo-r4        OPTIONAL,
specialBurstScheduling         SpecialBurstScheduling              OPTIONAL,
tddOption                       CHOICE {
    tdd384                       SEQUENCE {
        timingAdvance            UL-TimingAdvanceControl-r4        OPTIONAL,
        alpha                     Alpha                                OPTIONAL,
        prach-ConstantValue       ConstantValueTdd                  OPTIONAL,
        pusch-ConstantValue       ConstantValueTdd                  OPTIONAL,
        openLoopPowerControl-IPDL-TDD  OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL,
        hs-SICH-PowerControl       HS-SICH-Power-Control-Info-TDD384  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,
laterNonCriticalExtensions      SEQUENCE {
-- Container for additional R99 extensions
uraUpdate-r3-add-ext           BIT STRING          OPTIONAL,
nonCriticalExtensions          SEQUENCE {}          OPTIONAL
}
}

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

URAUUpdateConfirm ::= CHOICE {
    r3                           SEQUENCE {
        uraUpdateConfirm-r3      URAUpdateConfirm-r3-IEs,
        laterNonCriticalExtensions  SEQUENCE {
-- Container for additional R99 extensions
uraUpdateConfirm-r3-add-ext     BIT STRING          OPTIONAL,
nonCriticalExtensions            SEQUENCE {}          OPTIONAL
        }
    }
}

```

```

    } OPTIONAL
  },
  later-than-r3 SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions CHOICE {
      r5 SEQUENCE {
        uraUpdateConfirm-r5 URAUpdateConfirm-r5-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
      },
      criticalExtensions SEQUENCE {}
    }
  }
}

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

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

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

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

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

-- *****

```

```

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

UTRANMobilityInformation ::= CHOICE {
  r3          SEQUENCE {
    utranMobilityInformation-r3          UTRANMobilityInformation-r3-IEs,
    v3a0NonCriticalExtensions            SEQUENCE {
      utranMobilityInformation-v3a0ext    UTRANMobilityInformation-v3a0ext-IEs,
      laterNonCriticalExtensions          SEQUENCE {
        -- Container for additional R99 extensions
        utranMobilityInformation-r3-add-ext  BIT STRING      OPTIONAL,
        nonCriticalExtensions                SEQUENCE {}      OPTIONAL
      }
    }
  },
  later-than-r3 SEQUENCE {
    rrc-TransactionIdentifier            RRC-TransactionIdentifier,
    criticalExtensions                   CHOICE {
      r5          SEQUENCE {
        utranMobilityInformation-r5      UTRANMobilityInformation-r5-IEs,
        nonCriticalExtensions            SEQUENCE {}      OPTIONAL
      },
      criticalExtensions                   SEQUENCE {}
    }
  }
}

UTRANMobilityInformation-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier            RRC-TransactionIdentifier,
  integrityProtectionModeInfo          IntegrityProtectionModeInfo      OPTIONAL,
  cipheringModeInfo                    CipheringModeInfo                  OPTIONAL,
  new-U-RNTI                            U-RNTI                            OPTIONAL,
  new-C-RNTI                            C-RNTI                            OPTIONAL,
  ue-ConnTimersAndConstants             UE-ConnTimersAndConstants         OPTIONAL,
  -- CN information elements
  cn-InformationInfo                    CN-InformationInfoFull            OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                           URA-Identity                       OPTIONAL,
  -- Radio bearer IEs
  dl-CounterSynchronisationInfo          DL-CounterSynchronisationInfo      OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions                  SEQUENCE {}      OPTIONAL
}

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

UTRANMobilityInformation-r5-IEs ::= SEQUENCE {
  -- User equipment IEs
  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-r5     OPTIONAL,
  -- CN information elements
  cn-InformationInfo                    CN-InformationInfoFull            OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                           URA-Identity                       OPTIONAL,
  -- Radio bearer IEs
  dl-CounterSynchronisationInfo          DL-CounterSynchronisationInfo-r5  OPTIONAL
}

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

UTRANMobilityInformationConfirm ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier            RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo           IntegrityProtActivationInfo        OPTIONAL,
  -- Radio bearer IEs

```

```

count-C-ActivationTime      ActivationTime      OPTIONAL,
rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList  OPTIONAL,
ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo  OPTIONAL,
laterNonCriticalExtensions      SEQUENCE {
  -- Container for additional R99 extensions
  utranNMobilityInformationConfirm-r3-add-ext  BIT STRING  OPTIONAL,
  nonCriticalExtensions      SEQUENCE {}  OPTIONAL
}
}

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

UTRANMobilityInformationFailure ::= SEQUENCE {
  -- UE information elements
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause      FailureCauseWithProtErr,
  laterNonCriticalExtensions      SEQUENCE {
    -- Container for additional R99 extensions
    utranNMobilityInformationFailure-r3-add-ext  BIT STRING  OPTIONAL,
    nonCriticalExtensions      SEQUENCE {}  OPTIONAL
  }  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,
maxDPCH-UL,
maxDRACclasses,
maxFACHPCH,
maxFreq,
maxFreqBandsFDD,
maxFreqBandsTDD,
maxFreqBandsGSM,
maxGERAN-SI,
maxHProcesses,
maxHSDSCHTBIndex,
maxHSDSCHTBIndex-tdd384,
maxHSSCCHs,
maxInterSysMessages,
maxLoCHperRLC,
maxMAC-d-PDU sizes,
maxMeasEvent,
maxMeasIntervals,
maxMeasParEvent,
maxNumCDMA2000Freqs,
maxNumFDDFreqs,
maxNumGSMFreqRanges,

```

```

maxNumTDDFreqs,
maxOtherRAT,
maxOtherRAT-16,
maxPage1,
maxPCPCH-APsig,
maxPCPCH-APsubCh,
maxPCPCH-CDSig,
maxPCPCH-CDsubCh,
maxPCPCH-SF,
maxPCPCHs,
maxPDCPAlgoType,
maxPDSCH,
maxPDSCH-TFCIgroups,
maxPRACH,
maxPRACH-FPACH,
maxPredefConfig,
maxPUSCH,
maxQueueIDs,
maxRABsetup,
maxRAT,
maxRB,
maxRBallRABs,
maxRBMuxOptions,
maxRBperRAB,
maxReportedGSMCells,
maxSRBsetup,
maxRL,
maxRL-1,
maxROHC-PacketSizes-r4,
maxROHC-Profile-r4,
maxSCCPCH,
maxSat,
maxSIB,
maxSIB-FACH,
maxSystemCapability,
maxTF,
maxTF-CPCH,
maxTFC,
maxTFCsub,
maxTFCI-2-Combs,
maxTGPS,
maxTrCH,
maxTrCHpreconf,
maxTS,
maxTS-1,
maxTS-LCR,
maxTS-LCR-1,
maxURA,
maxURNTI-Group
FROM Constant-definitions;

```

```

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

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

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

CN-DomainInformationFull ::= SEQUENCE {
    cn-DomainIdentity
    cn-DomainSpecificNAS-Info
    cn-DRX-CycleLengthCoeff
}

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

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

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

```

```

    },
    cn-DRX-CycleLengthCoeff          CN-DRX-CycleLengthCoefficient
}

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

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

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

Digit ::=
INTEGER (0..9)

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

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

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

AccessClassBarred ::=               ENUMERATED {
                                       barred, notBarred }

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

AllowedIndicator ::=                ENUMERATED {
                                       allowed, notAllowed }

CellAccessRestriction ::=           SEQUENCE {
  cellBarred
}

```

```

cellReservedForOperatorUse      ReservedIndicator,
cellReservationExtension         ReservedIndicator,
-- NOTE: IE accessClassBarredList should not be included if the IE CellAccessRestriction
-- is included in the IE SysInfoType4
accessClassBarredList           AccessClassBarredList           OPTIONAL
}

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

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

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

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

MapParameter ::=               INTEGER (0..99)

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

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

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

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

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

```

```

        functionType4 }

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

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

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

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

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

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

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

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

ReservedIndicator ::=
    ENUMERATED {
        reserved,
        notReserved }

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

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

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

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

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

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

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

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

AccessStratumReleaseIndicator ::=
    ENUMERATED {
        rel-4, rel-5, spare14, spare13,
        spare12, spare11, spare10, spare9, spare8,
        spare7, spare6, spare5, spare4, spare3,
        spare2, spare1 }

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

```

```

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

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

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

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

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

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

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

CipheringAlgorithm ::=          ENUMERATED {
    uea0, uea1 }

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

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

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

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

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

```

```

    gsm-Measurements                GSM-Measurements                OPTIONAL,
    multiCarrierMeasurements        BOOLEAN                          OPTIONAL
}

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

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

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

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

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

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

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

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

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

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

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

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

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

SupportOfDedicatedPilotsForChEstimation ::= ENUMERATED { true }

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

DL-PhysChCapabilityTDD-LCR-r4 ::= SEQUENCE {
    maxTS-PerSubFrame               MaxTS-PerSubFrame-r4,
    maxPhysChPerFrame               MaxPhysChPerSubFrame-r4,
    minimumSF                        MinimumSF-DL,

```

```

supportOfPDSCH          BOOLEAN,
maxPhysChPerTS         MaxPhysChPerTS,
supportOf8PSK          BOOLEAN
}

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

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

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

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

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

EstablishmentCause ::=
  ENUMERATED {
    originatingConversationalCall,
    originatingStreamingCall,
    originatingInteractiveCall,
    originatingBackgroundCall,
    originatingSubscribedTrafficCall,
    terminatingConversationalCall,
    terminatingStreamingCall,
    terminatingInteractiveCall,
    terminatingBackgroundCall,
    emergencyCall,
    interRAT-CellReselection,
    interRAT-CellChangeOrder,
    registration,
    detach,
    originatingHighPrioritySignalling,
    originatingLowPrioritySignalling,
    callRe-establishment,
    terminatingHighPrioritySignalling,
    terminatingLowPrioritySignalling,
    terminatingCauseUnknown,
    spare12,
    spare11,
    spare10,
    spare9,
    spare8,
    spare7,
    spare6,
    spare5,
    spare4,
    spare3,
    spare2,
    spare1 }

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

```

```

    spare2                NULL,
    spare1                NULL
}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

IntegrityProtectionAlgorithm ::= ENUMERATED {
    uia1 }

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

IntegrityProtectionModeInfo ::= SEQUENCE {
    -- TABULAR: DL integrity protection activation info and Integrity

```

```

-- protection intialisation number have been nested inside
-- IntegrityProtectionModeCommand.
integrityProtectionModeCommand IntegrityProtectionModeCommand,
integrityProtectionAlgorithm IntegrityProtectionAlgorithm OPTIONAL
}

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

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

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

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

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

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

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

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

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

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

MaxNoSCCPCH-RL ::= ENUMERATED {
    r11 }

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

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

MaxNumberOfTFC-UL ::= ENUMERATED {
    dummy1, dummy2, tfc16, tfc32, tfc48, tfc64,
    tfc96, tfc128, tfc256, tfc512, tfc1024 }

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

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

MaxPhysChPerTimeslot ::= ENUMERATED {
    ts1, ts2 }

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

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

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

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

MultiModeRAT-Capability-v5xyext ::= SEQUENCE {
    supportOfUTRAN-ToGERAN-NACC      BOOLEAN
}

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

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

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

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

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

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

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

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

N-312-r5 ::=                      ENUMERATED {
                                    s1, s2, s4, s10, s20,
                                    s50, s100, s200, s400,
                                    s600, s800, s1000 }

N-313 ::=                         ENUMERATED {
                                    s1, s2, s4, s10, s20,

```

```

s50, s100, s200 }

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

```

GroupIdentityWithReleaseInformation
}

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

PagingRecordList-r5 ::= SEQUENCE (SIZE (1..maxPage1)) OF
    PagingRecord-r5

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

PDCP-Capability-r4-ext ::= SEQUENCE {
    supportForRfc3095                  CHOICE {
        notSupported                    NULL,
        supported                        SEQUENCE {
            maxROHC-ContextSessions     MaxROHC-ContextSessions-r4  DEFAULT s16,
            reverseCompressionDepth     INTEGER (0..65535)          DEFAULT 0
        }
    }
}

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

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

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

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

PNBSCH-Allocation-r4 ::= SEQUENCE {

```

```

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

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

ProtocolErrorIndicator ::=
    ENUMERATED {
        noError, errorOccurred }

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

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

RadioFrequencyBandFDD ::=
    ENUMERATED {
        fdd2100,
        fdd1900,
        fdd1800, spare5, spare4, spare3, spare2, spare1 }

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

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

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

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

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

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

```

```

RejectionCause ::=
    ENUMERATED {
        congestion,
        unspecified }

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

RF-Capability ::=
    SEQUENCE {
        fddRF-Capability
            SEQUENCE {
                ue-PowerClass
                TxRxFrequencySeparation
            }
        tddRF-Capability
            SEQUENCE {
                ue-PowerClass
                radioFrequencyBandTDDList
                chipRateCapability
            }
    }

RF-Capability-r4-ext ::=
    SEQUENCE {
        tddRF-Capability
            SEQUENCE {
                ue-PowerClass
                radioFrequencyBandTDDList
                chipRateCapability
            }
    }

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

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

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

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

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

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

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

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

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

SecurityCapability ::=
    SEQUENCE {
        cipheringAlgorithmCap
            BIT STRING {
                -- For each bit value "0" means false/ not supported
                spare15(0),
                spare14(1),
                spare13(2),
                spare12(3),
                spare11(4),
                spare10(5),
                spare9(6),
                spare8(7),
            }
    }

```

```

        spare7(8),
        spare6(9),
        spare5(10),
        spare4(11),
        spare3(12),
        spare2(13),
        uea1(14),
        uea0(15)
    } (SIZE (16)),
integrityProtectionAlgorithmCap BIT STRING {
    -- For each bit value "0" means false/ not supported
    spare15(0),
    spare14(1),
    spare13(2),
    spare12(3),
    spare11(4),
    spare10(5),
    spare9(6),
    spare8(7),
    spare7(8),
    spare6(9),
    spare5(10),
    spare4(11),
    spare3(12),
    spare2(13),
    uia1(14),
    spare0(15)
} (SIZE (16))
}

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

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

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

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

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

SystemSpecificCapUpdateReq ::=          ENUMERATED {
    gsm }

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

TransportChannelCapability ::=
    SEQUENCE {
        dl-TransChCapability
        ul-TransChCapability
    }

```

```

TurboSupport ::=
    notSupported
    supported
}

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

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

U-RNTI-Group ::=
    CHOICE {
-- TABULAR: not following the tabular strictly, but this will most likely save bits
    all
        NULL,
    u-RNTI-BitMaskIndex-b1
        BIT STRING (SIZE (31)),
    u-RNTI-BitMaskIndex-b2
        BIT STRING (SIZE (30)),
    u-RNTI-BitMaskIndex-b3
        BIT STRING (SIZE (29)),
    u-RNTI-BitMaskIndex-b4
        BIT STRING (SIZE (28)),
    u-RNTI-BitMaskIndex-b5
        BIT STRING (SIZE (27)),
    u-RNTI-BitMaskIndex-b6
        BIT STRING (SIZE (26)),
    u-RNTI-BitMaskIndex-b7
        BIT STRING (SIZE (25)),
    u-RNTI-BitMaskIndex-b8
        BIT STRING (SIZE (24)),
    u-RNTI-BitMaskIndex-b9
        BIT STRING (SIZE (23)),
    u-RNTI-BitMaskIndex-b10
        BIT STRING (SIZE (22)),
    u-RNTI-BitMaskIndex-b11
        BIT STRING (SIZE (21)),
    u-RNTI-BitMaskIndex-b12
        BIT STRING (SIZE (20)),
    u-RNTI-BitMaskIndex-b13
        BIT STRING (SIZE (19)),
    u-RNTI-BitMaskIndex-b14
        BIT STRING (SIZE (18)),
    u-RNTI-BitMaskIndex-b15
        BIT STRING (SIZE (17)),
    u-RNTI-BitMaskIndex-b16
        BIT STRING (SIZE (16)),
    u-RNTI-BitMaskIndex-b17
        BIT STRING (SIZE (15)),
    u-RNTI-BitMaskIndex-b18
        BIT STRING (SIZE (14)),
    u-RNTI-BitMaskIndex-b19
        BIT STRING (SIZE (13)),
    u-RNTI-BitMaskIndex-b20
        BIT STRING (SIZE (12)),
    u-RNTI-BitMaskIndex-b21
        BIT STRING (SIZE (11)),
    u-RNTI-BitMaskIndex-b22
        BIT STRING (SIZE (10)),
    u-RNTI-BitMaskIndex-b23
        BIT STRING (SIZE (9)),
    u-RNTI-BitMaskIndex-b24
        BIT STRING (SIZE (8)),
    u-RNTI-BitMaskIndex-b25
        BIT STRING (SIZE (7)),
    u-RNTI-BitMaskIndex-b26
        BIT STRING (SIZE (6)),
    u-RNTI-BitMaskIndex-b27
        BIT STRING (SIZE (5)),
    u-RNTI-BitMaskIndex-b28
        BIT STRING (SIZE (4)),
    u-RNTI-BitMaskIndex-b29
        BIT STRING (SIZE (3)),
    u-RNTI-BitMaskIndex-b30
        BIT STRING (SIZE (2)),
    u-RNTI-BitMaskIndex-b31
        BIT STRING (SIZE (1))
    }

U-RNTI-Short ::=
    srnc-Identity
    s-RNTI-2
}

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

```

```

t-314          T-314          DEFAULT s12,
t-315          T-315          DEFAULT s180,
-- n-315 shall be ignored if n-315 in UE-ConnTimersAndConstants-v3a0ext is present, and the
-- value of that element shall be used instead.
n-315          N-315          DEFAULT s1,
t-316          T-316          DEFAULT s30,
t-317          T-317          DEFAULT infinity4
}

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

UE-ConnTimersAndConstants-r5 ::=          SEQUENCE {
-- Optional is used also for parameters for which the default value is the last one read in SIB1
-- t-301 and n-301 should not be used by the UE in this version of the specification
t-301          T-301          DEFAULT ms2000,
n-301          N-301          DEFAULT 2,
t-302          T-302          DEFAULT ms4000,
n-302          N-302          DEFAULT 3,
t-304          T-304          DEFAULT ms2000,
n-304          N-304          DEFAULT 2,
t-305          T-305          DEFAULT m30,
t-307          T-307          DEFAULT s30,
t-308          T-308          DEFAULT ms160,
t-309          T-309          DEFAULT 5,
t-310          T-310          DEFAULT ms160,
n-310          N-310          DEFAULT 4,
t-311          T-311          DEFAULT ms2000,
t-312          T-312          DEFAULT 1,
n-312          N-312-r5          DEFAULT s1,
t-313          T-313          DEFAULT 3,
n-313          N-313          DEFAULT s20,
t-314          T-314          DEFAULT s12,
t-315          T-315          DEFAULT s180,
n-315          N-315-r5          DEFAULT s1,
t-316          T-316          DEFAULT s30,
t-317          T-317          DEFAULT infinity4
}

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

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

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

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

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

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

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

```

```

    ue-RadioAccessCapability-v370ext
  }
UE-RadioAccessCapability-v370ext ::= SEQUENCE {
    ue-RadioAccessCapabBandFDDList
}
UE-RadioAccessCapability-v380ext ::= SEQUENCE {
    ue-PositioningCapabilityExt-v380
}
UE-RadioAccessCapability-v3a0ext ::= SEQUENCE {
    ue-PositioningCapabilityExt-v3a0
}
UE-RadioAccessCapability-v3g0ext ::= SEQUENCE {
    ue-PositioningCapabilityExt-v3g0
}
UE-PositioningCapabilityExt-v380 ::= SEQUENCE {
    rx-tx-TimeDifferenceType2Capable
}
UE-PositioningCapabilityExt-v3a0 ::= SEQUENCE {
    validity-CellPCH-UraPCH
}
UE-PositioningCapabilityExt-v3g0 ::= SEQUENCE {
    sfn-sfnType2Capability
}
UE-RadioAccessCapabBandFDDList ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
    UE-RadioAccessCapabBandFDD
UE-RadioAccessCapabBandFDD ::= SEQUENCE{
    radioFrequencyBandFDD          RadioFrequencyBandFDD,
    fddRF-Capability              SEQUENCE {
        ue-PowerClass              UE-PowerClass-v370,
        txRxFrequencySeparation    TxRxFrequencySeparation
    } OPTIONAL,
    measurementCapability          MeasurementCapability-v370
}
UE-RadioAccessCapability-v4xyext ::= SEQUENCE {
    pdcp-Capability-r4-ext        PDCP-Capability-r4-ext,
    tdd-CapabilityExt            SEQUENCE {
        rf-Capability              RF-Capability-r4-ext,
        physicalChannelCapability-LCR PhysicalChannelCapability-LCR-r4,
        measurementCapability-r4-ext MeasurementCapability-r4-ext
    } OPTIONAL,
    -- IE " AccessStratumReleaseIndicator" is not needed in RRC CONNECTION SETUP COMPLETE
    accessStratumReleaseIndicator AccessStratumReleaseIndicator OPTIONAL
}
UE-RadioAccessCapabilityComp ::= SEQUENCE {
    totalAM-RLCMemoryExceeds10kB BOOLEAN,
    rf-CapabilityComp            RF-CapabilityComp
}
RF-CapabilityComp ::= SEQUENCE {
    fdd                          CHOICE {
        notSupported            NULL,
        supported               RF-CapabBandListFDDComp
    },
    tdd                          CHOICE {
        notSupported            NULL,
        supported               RF-CapabBandListTDDComp
    }
}
RF-CapabBandFDDComp ::= ENUMERATED { notSupported, mhz190,
    mhz174-8-205-2, mhz134-8-245-2 }
RF-CapabBandListFDDComp ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
    -- the first entry corresponds with the first value of IE RadioFrequencyBandFDD,
    -- fdd2100, and so on
    RF-CapabBandFDDComp

```

```

RF-CapabBandListTDDComp ::= SEQUENCE {
    radioFrequencyBandTDDList    RadioFrequencyBandTDDList,
    chipRateCapability            ChipRateCapability
}

UE-RadioAccessCapability-v5xyext ::= SEQUENCE {
    dl-CapabilityWithSimultaneousHS-DSCHConfig DL-CapabilityWithSimultaneousHS-DSCHConfig
    OPTIONAL,
    pdcp-Capability-r5-ext                PDCP-Capability-r5-ext,
    rlc-Capability-r5-ext                  RLC-Capability-r5-ext,
    physicalChannelCapability              PhysicalChannelCapability-hspdsch-r5,
    multiModerAT-Capability-v5xyext        MultiModerAT-Capability-v5xyext
}

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

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

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

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

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

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

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

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

WaitTime ::= INTEGER (0..15)

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

```

```

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

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

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

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

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

DefaultConfigIdentity ::=          INTEGER (0..10)

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

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

DefaultConfigMode ::=              ENUMERATED {
    fdd,
    tdd }

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

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

DL-CounterSynchronisationInfo-r5 ::= SEQUENCE {
    rb-WithPDCP-InfoList           RB-WithPDCP-InfoList    OPTIONAL,
    rb-PDCPContextRelocationList   RB-PDCPContextRelocationList  OPTIONAL
}

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

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

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

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

DL-RFC3095-r4 ::=                  SEQUENCE {
    cid-InclusionInfo               CID-InclusionInfo-r4,
    max-CID                        INTEGER (1..16383)           DEFAULT 15,
    reverseDecompressionDepth       INTEGER (0..65535)           DEFAULT 0
}

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

DL-RLC-StatusInfo ::=              SEQUENCE {
    timerStatusProhibit            TimerStatusProhibit    OPTIONAL,

```

```

-- dummy is not used in this version of the specification, it should not be sent
-- and if received they should be ignored.
dummy                               TimerEPC                               OPTIONAL,
missingPDU-Indicator                 BOOLEAN,
timerStatusPeriodic                 TimerStatusPeriodic                 OPTIONAL
}

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

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

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

ExpectReordering ::=
ENUMERATED {
  reorderingNotExpected,
  reorderingExpected }

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

HeaderCompressionInfo ::=
algorithmSpecificInfo               SEQUENCE {
                                      AlgorithmSpecificInfo
}

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

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

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

LogicalChannelIdentity ::=
INTEGER (1..15)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PredefinedConfigIdentity ::=
    INTEGER (0..15)

PredefinedConfigValueTag ::=
    INTEGER (0..15)

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

PreDefRadioConfiguration ::=
    SEQUENCE {
        -- Radio bearer IEs
        predefinedRB-Configuration     PredefinedRB-Configuration,
        -- Transport channel IEs
    }

```

```

    preDefTransChConfiguration      PreDefTransChConfiguration,
    -- Physical channel IEs
    preDefPhyChConfiguration        PreDefPhyChConfiguration
}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

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

RB-PDCPContextRelocation ::= SEQUENCE {
    rb-Identity RB-Identity,
    dl-RFC3095-Context-Relocation BOOLEAN,
    ul-RFC3095-Context-Relocation BOOLEAN
}

RB-PDCPContextRelocationList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
    RB-PDCPContextRelocation

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

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

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

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

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

```

```

RFC3095-Info-r4 ::=          SEQUENCE {
    rohcProfileList          ROHC-ProfileList-r4,
    ul-RFC3095                UL-RFC3095-r4                OPTIONAL,
    dl-RFC3095                DL-RFC3095-r4                OPTIONAL
}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

```

        tp850, tp900, tp950, tp1000 }

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

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

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

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

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

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

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

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

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

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

```

```

    },
    mac-LogicalChannelPriority          MAC-LogicalChannelPriority
}

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

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

UL-RFC3095-r4 ::= SEQUENCE {
    cid-InclusionInfo                  CID-InclusionInfo-r4,
    max-CID                            INTEGER (1..16383)                DEFAULT 15,
    rohcPacketSizeList                ROHC-PacketSizeList-r4
}

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

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

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

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

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

AddOrReconfMAC-dFlow ::= SEQUENCE {
    mac-hs-AddReconfQueue-List        MAC-hs-AddReconfQueue-List  OPTIONAL,
    mac-hs-DelQueue-List              MAC-hs-DelQueue-List       OPTIONAL
}

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

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

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

```

```

        part1                INTEGER (0..62),
        part2                INTEGER (1..63)                OPTIONAL
    }
}

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

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

CodingRate ::=             ENUMERATED {
    half,
    third }

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

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

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

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

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

CommonTransChTFS-LCR ::=  SEQUENCE {
    tti                    CHOICE {
        tti15              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 ::=
    rlc-Size                SEQUENCE {
        bitMode              CHOICE {
            octetModeType1   BitModeRLC-SizeInfo,
                            OctetModeRLC-SizeInfoType1
        },
        numberOfTbSizeList   SEQUENCE (SIZE (1..maxTF)) OF
        NumberOfTransportBlocks,
        logicalChannelList   LogicalChannelList
    }

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

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

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

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

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

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

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

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

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

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

```

```

}

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

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

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

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

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

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

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

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

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

```

```

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

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
}

HSDSCH-Info ::=
    harqInfo
    mac-hsResetIndicator
    addOrReconfMAC-dFlow
}

HARQ-Info ::=
    numberOfProcesses
    memoryPartitioning
    implicit
    explicit
}

HARQMemorySize ::=
    ENUMERATED {
        hms800, hms1600, hms2400, hms3200, hms4000,
        hms4800, hms5600, hms6400, hms7200, hms8000,
        hms8800, hms9600, hms10400, hms11200, hms12000,
        hms12800, hms13600, hms14400, hms15200, hms16000,
        hms17600, hms19200, hms20800, hms22400, hms24000,
        hms25600, hms27200, hms28800, hms30400, hms32000,
        hms36000, hms40000, hms44000, hms48000, hms52000,
        hms56000, hms60000, hms64000, hms68000, hms72000,
        hms76000, hms80000, hms88000, hms96000, hms104000,
        hms112000, hms120000, hms128000, hms136000, hms144000,
        hms152000, hms160000, hms176000, hms192000, hms208000,
        hms224000, hms240000, hms256000, hms272000, hms288000,
        hms304000 }

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

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

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

```

```

    ul-TFCS                TFCS ,
    tfc-Subset             TFC-Subset
}

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

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

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

MAC-d-FlowIdentityDCHandHSDSCH ::= SEQUENCE {
    dch-transport-ch-id    TransportChannelIdentity,
    hsdSCH-transport-ch-id MAC-d-FlowIdentity
}

MAC-d-FlowIdentity ::= INTEGER (0..7)

MAC-d-PDU-SizeInfo-List ::= SEQUENCE (SIZE(1.. maxMAC-d-PDUsizes)) OF
    MAC-d-PDUsizeInfo

--MAC-d-Pdu sizes need to be defined
MAC-d-PDUsizeInfo ::= SEQUENCE{
    mac-d-PDU-Size          INTEGER (1..5000),
    mac-d-PDU-Index        INTEGER(0..7)
}

MAC-hs-AddReconfQueue-List ::= SEQUENCE (SIZE(1..maxQueueIDs)) OF
    MAC-hs-AddReconfQueue

MAC-hs-AddReconfQueue ::= SEQUENCE {
    mac-hsQueueId          INTEGER(0..7),
    mac-dFlowId            MAC-d-FlowIdentity,
    reorderingReleaseTimer T1-ReleaseTimer,
    mac-hsWindowSize       MAC-hs-WindowSize,
    mac-d-PDU-SizeInfo-List MAC-d-PDU-SizeInfo-List
}

MAC-hs-DelQueue-List ::= SEQUENCE (SIZE(1..maxQueueIDs)) OF
    MAC-hs-DelQueue

MAC-hs-DelQueue ::= SEQUENCE {
    mac-hsQueueId          INTEGER(0..7)
}

MAC-hs-WindowSize ::= ENUMERATED {
    mws4, mws6, mws8, mws12, mws16, mws24, mws32 }

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

MessType ::= ENUMERATED {
    transportFormatCombinationControl }

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

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

OctetModeRLC-SizeInfoType1 ::= CHOICE {
    -- Actual size = (8 * sizeType1) + 16
    sizeType1            INTEGER (0..31),
    sizeType2            SEQUENCE {

```

```

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

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

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

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

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

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

RateMatchingAttribute ::= INTEGER (1..hiRM)

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

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

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

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

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

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

```

```

SplitType ::=
    ENUMERATED {
        hardSplit, logicalSplit }

T1-ReleaseTimer ::=
    ENUMERATED {
        rt10, rt20, rt30, rt40, rt50,
        rt60, rt70, rt80, rt90, rt100,
        rt120, rt140, rt160, rt200, rt300,
        rt400 }

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

TFC-Subset-ID-With3b ::=
    INTEGER (0..7)

TFC-Subset-ID-With5b ::=
    INTEGER (0..31)

TFC-Subset-ID-With10b ::=
    INTEGER (0..1023)

TFC-SubsetList ::=
    modeSpecificInfo
        fdd
        tdd
        tfcs-ID
    },
    tfc-Subset
    SEQUENCE (SIZE (1.. maxTFCsub)) OF SEQUENCE {
        CHOICE {
            NULL,
            SEQUENCE {
                TFCS-Identity
            }
        }
        TFC-Subset
    }

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

TFCI-Field2-Information ::=
    tfci-Range
    explicit-config
    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 {
        TFCS-IdentityPlain
        BOOLEAN
    }

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

TFCS-InfoForDSCH ::=
    ctfc2bit
    ctfc4bit
    ctfc6bit
    ctfc8bit
    ctfc12bit
    ctfc16bit
    ctfc24bit
    CHOICE {
        INTEGER (0..3),
        INTEGER (0..15),
        INTEGER (0..63),
        INTEGER (0..255),
        INTEGER (0..4095),
        INTEGER (0..65535),
        INTEGER (0..16777215)
    }

TFCS-ReconfAdd ::=
    ctfcSize
        ctfc2Bit
        ctfc2
        powerOffsetInformation
    },
    ctfc4Bit
    ctfc4
    SEQUENCE{
        CHOICE{
            SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
                INTEGER (0..3),
                PowerOffsetInformation
            }
            SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
                INTEGER (0..15),
            }
        }
    }

```

```

    powerOffsetInformation      PowerOffsetInformation      OPTIONAL
  },
  ctfc6Bit                      SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    ctfc6                        INTEGER (0..63),
    powerOffsetInformation      PowerOffsetInformation      OPTIONAL
  },
  ctfc8Bit                      SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    ctfc8                        INTEGER (0..255),
    powerOffsetInformation      PowerOffsetInformation      OPTIONAL
  },
  ctfc12Bit                     SEQUENCE (SIZE(1..maxTFC)) OF SEQUENCE {
    ctfc12                       INTEGER (0..4095),
    powerOffsetInformation      PowerOffsetInformation      OPTIONAL
  },
  ctfc16Bit                     SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    ctfc16                       INTEGER(0..65535),
    powerOffsetInformation      PowerOffsetInformation      OPTIONAL
  },
  ctfc24Bit                     SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    ctfc24                       INTEGER(0..16777215),
    powerOffsetInformation      PowerOffsetInformation      OPTIONAL
  }
}

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

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

TimeDurationBeforeRetry ::= INTEGER (1..256)

TM-SignallingInfo ::= SEQUENCE {
  messType MessType,
  tm-SignallingMode CHOICE {
    mode1 NULL,
    mode2 SEQUENCE {
      -- in ul-controlledTrChList, TrCH-Type is always DCH
      ul-controlledTrChList UL-ControlledTrChList
    }
  }
}

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

TransmissionTimeValidity ::= INTEGER (1..256)

TransportChannelIdentity ::= INTEGER (1..32)

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

TransportFormatSet ::= CHOICE {
  dedicatedTransChTFS DedicatedTransChTFS,
  commonTransChTFS CommonTransChTFS
}

TransportFormatSet-LCR ::= CHOICE {
  dedicatedTransChTFS DedicatedTransChTFS,
  commonTransChTFS-LCR CommonTransChTFS-LCR
}

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

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

```

```

UL-CommonTransChInfo ::=          SEQUENCE {
  -- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
  -- CCH Info.
  tfc-Subset          TFC-Subset          OPTIONAL,
  prach-TFCS          TFCS                OPTIONAL,
  modeSpecificInfo    CHOICE {
    fdd                SEQUENCE {
      ul-TFCS
    },
    tdd                SEQUENCE {
      individualUL-CCH-InfoList  IndividualUL-CCH-InfoList  OPTIONAL
    }
  }
}

```

```

UL-CommonTransChInfo-r4 ::=        SEQUENCE {
  -- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
  -- CCH Info.
  tfc-Subset          TFC-Subset          OPTIONAL,
  prach-TFCS          TFCS                OPTIONAL,
  modeSpecificInfo    CHOICE {
    fdd                SEQUENCE {
      ul-TFCS
    },
    tdd                SEQUENCE {
      individualUL-CCH-InfoList  IndividualUL-CCH-InfoList  OPTIONAL
    }
  }
  tfc-SubsetList      TFC-SubsetList      OPTIONAL,
}

```

```

-- In UL-ControlledTrChList, TrCH-Type is always DCH
UL-ControlledTrChList ::=          SEQUENCE (SIZE (1..maxTrCH)) OF
  TransportChannelIdentity

```

```

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

```

```

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

```

```

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

```

```

USCH-TransportChannelsInfo ::=      SEQUENCE (SIZE (1..maxTrCH)) OF
  SEQUENCE {
    usch-TransportChannelIdentity  TransportChannelIdentity,
    usch-TFS                       TransportFormatSet
  }

```

```

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

```

```

ACK-NACK-repetitionFactor ::=      INTEGER(1..4)

```

```

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

```

```

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

```

```

AccessServiceClass-FDD ::=         SEQUENCE {
  availableSignatureStartIndex      INTEGER (0..15),
  availableSignatureEndIndex        INTEGER (0..15),

  assignedSubChannelNumber          BIT STRING {
    b3(0),
    b2(1),
    b1(2),
    b0(3)
  } (SIZE(4))
}

```

```

AccessServiceClass-TDD ::=
  channelisationCodeIndices
  subchannelSize
  size1
  size2
  subchannels
  },
  size4
  subchannels
  },
  size8
  subchannels
}

SEQUENCE {
  BIT STRING {
    chCodeIndex7(0),
    chCodeIndex6(1),
    chCodeIndex5(2),
    chCodeIndex4(3),
    chCodeIndex3(4),
    chCodeIndex2(5),
    chCodeIndex1(6),
    chCodeIndex0(7)
  } (SIZE(8)) OPTIONAL,
  CHOICE {
    NULL,
    SEQUENCE {
      -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'
      subchannels
        ENUMERATED { subch0, subch1 } OPTIONAL
    },
    SEQUENCE {
      BIT STRING {
        subCh3(0),
        subCh2(1),
        subCh1(2),
        subCh0(3)
      } (SIZE(4)) OPTIONAL
    },
    SEQUENCE {
      BIT STRING {
        subCh7(0),
        subCh6(1),
        subCh5(2),
        subCh4(3),
        subCh3(4),
        subCh2(5),
        subCh1(6),
        subCh0(7)
      } (SIZE(8)) OPTIONAL
    }
  }
}

```

```

AccessServiceClass-TDD-LCR-r4 ::=
  availableSYNC-UlCodesIndics
  subchannelSize
  size1
  size2
  subchannels
  },
  size4
  subchannels
  },
  size8
  subchannels
}

SEQUENCE {
  BIT STRING {
    sulCodeIndex7(0),
    sulCodeIndex6(1),
    sulCodeIndex5(2),
    sulCodeIndex4(3),
    sulCodeIndex3(4),
    sulCodeIndex2(5),
    sulCodeIndex1(6),
    sulCodeIndex0(7)
  } (SIZE(8)) OPTIONAL,
  CHOICE {
    NULL,
    SEQUENCE {
      -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'.
      subchannels
        ENUMERATED { subch0, subch1 } OPTIONAL
    },
    SEQUENCE {
      BIT STRING {
        subCh3(0),
        subCh2(1),
        subCh1(2),
        subCh0(3)
      } (SIZE(4)) OPTIONAL
    },
    SEQUENCE {
      BIT STRING {
        subCh7(0),
        subCh6(1),
        subCh5(2),
        subCh4(3),
        subCh3(4),
        subCh2(5),
        subCh1(6),
        subCh0(7)
      } (SIZE(8)) OPTIONAL
    }
  }
}

```

```

}

AICH-Info ::=
    channelisationCode256          SEQUENCE {
        channelisationCode256,
        sttd-Indicator             BOOLEAN,
        aich-TransmissionTiming    AICH-TransmissionTiming
    }

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

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

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

-- Actual value Alpha = IE value * 0.125
Alpha ::=
    INTEGER (0..8)

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

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

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

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

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

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

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

ASCSetting-TDD-LCR-r4 ::=
    SEQUENCE {
        -- TABULAR: accessServiceClass-TDD-LCR is MD in tabular description
        -- Default value is previous ASC
        -- If this is the first ASC, the default value is all available SYNC_UL codes and
        -- all available sub-channels with subchannelSize=size1.
        accessServiceClass-TDD-LCR   AccessServiceClass-TDD-LCR-r4 OPTIONAL
    }

AvailableAP-Signature-VCAMList ::= SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
    AP-Signature-VCAM

AvailableAP-SignatureList ::= SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
    AP-Signature

AvailableAP-SubchannelList ::= SEQUENCE (SIZE (1..maxPCPCH-APsubCh)) OF
    AP-Subchannel

AvailableMinimumSF-ListVCAM ::= SEQUENCE (SIZE (1..maxPCPCH-SF)) OF
    AvailableMinimumSF-VCAM

AvailableMinimumSF-VCAM ::= SEQUENCE {
    minimumSpreadingFactor          MinimumSpreadingFactor,
    nf-Max                          NF-Max,
    maxAvailablePCPCH-Number        MaxAvailablePCPCH-Number,
    availableAP-Signature-VCAMList   AvailableAP-Signature-VCAMList
}

AvailableSignatures ::= BIT STRING {

```

```

signature15(0),
signature14(1),
signature13(2),
signature12(3),
signature11(4),
signature10(5),
signature9(6),
signature8(7),
signature7(8),
signature6(9),
signature5(10),
signature4(11),
signature3(12),
signature2(13),
signature1(14),
signature0(15)
} (SIZE(16))

AvailableSubChannelNumbers ::= BIT STRING {
    subCh11(0),
    subCh10(1),
    subCh9(2),
    subCh8(3),
    subCh7(4),
    subCh6(5),
    subCh5(6),
    subCh4(7),
    subCh3(8),
    subCh2(9),
    subCh1(10),
    subCh0(11)
} (SIZE(12))

BurstType ::= ENUMERATED {
    short1, long2 }

-- Actual value Bler-Target = IE value * 0.05
Bler-Target ::= INTEGER (-63..0)

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

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

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

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

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

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

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

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

CellAndChannelIdentity ::= SEQUENCE {
    burstType          BurstType,
    midambleShift     MidambleShiftLong,
    timeslot          TimeslotNumber,
    cellParametersID  CellParametersID
}

CellParametersID ::= INTEGER (0..127)

Cfntargetsfnframeoffset ::= INTEGER(0..255)

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

```

```

ChannelisationCode256 ::=          INTEGER (0..255)

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

ClosedLoopTimingAdjMode ::=        ENUMERATED {
    slot1, slot2 }

CodeNumberDSCH ::=                INTEGER (0..255)

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

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

CommonTimeslotInfo ::=            SEQUENCE {
    -- TABULAR: secondInterleavingMode is MD, but since it can be encoded in a single
    -- bit it is not defined as OPTIONAL.
    secondInterleavingMode        SecondInterleavingMode,
    tfci-Coding                   TFCI-Coding                      OPTIONAL,
    puncturingLimit               PuncturingLimit,
    repetitionPeriodAndLength     RepetitionPeriodAndLength      OPTIONAL
}

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

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

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

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

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

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

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

CPCH-StatusIndicationMode ::=    ENUMERATED {

```

```

        pa-mode,
        pamsf-mode }

CQI-RepetitionFactor ::=          INTEGER(1..4)

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

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

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

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

DeltaCQI ::=                     INTEGER (0..8)

DeltaNACK ::=                   INTEGER (0..8)

DeltaACK ::=                    INTEGER (0..8)

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

DL-CCTrCh ::=                   SEQUENCE {
    tfcs-ID                      TFCS-IdentityPlain           DEFAULT 1,
    timeInfo                    TimeInfo,
    commonTimeslotInfo          CommonTimeslotInfo           OPTIONAL,
    dl-CCTrCH-TimeslotsCodes    DownlinkTimeslotsCodes     OPTIONAL,
    ul-CCTrChTPCList           UL-CCTrChTPCList             OPTIONAL
}

DL-CCTrCh-r4 ::=               SEQUENCE {
    tfcs-ID                      TFCS-IdentityPlain           DEFAULT 1,
    timeInfo                    TimeInfo,
    commonTimeslotInfo          CommonTimeslotInfo           OPTIONAL,
    tddOption                   CHOICE {
        tdd384                  SEQUENCE {
            dl-CCTrCH-TimeslotsCodes DownlinkTimeslotsCodes OPTIONAL
        },
        tdd128                  SEQUENCE {
            dl-CCTrCH-TimeslotsCodes DownlinkTimeslotsCodes-LCR-r4 OPTIONAL
        }
    },
    ul-CCTrChTPCList           UL-CCTrChTPCList             OPTIONAL
}

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

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

DL-CCTrChListToRemove ::=      SEQUENCE (SIZE (1..maxCCTrCH)) OF
    TFCS-IdentityPlain

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

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

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

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

```

```

        tdd
        defaultDPCH-OffsetValue
    }
}

DL-CommonInformation-r4 ::=
    dl-DPCH-InfoCommon
    modeSpecificInfo
        fdd
            defaultDPCH-OffsetValue
            dpch-CompressedModeInfo
            tx-DiversityMode
            ssdt-Information
        },
        tdd
            tddOption
                tdd384
                tdd128
                tstd-Indicator
            },
        defaultDPCH-OffsetValue
    }
}

DL-CommonInformation-r5 ::=
    dl-DPCH-InfoCommon
    modeSpecificInfo
        fdd
            defaultDPCH-OffsetValue
            dpch-CompressedModeInfo
            tx-DiversityMode
            ssdt-Information
        },
        tdd
            tddOption
                tdd384
                tdd128
                tstd-Indicator
            },
        defaultDPCH-OffsetValue
    }
}

mac-hsResetIndicator
}

DL-CommonInformationPost ::=
    dl-DPCH-InfoCommon
}

DL-CommonInformationPredef ::=
    dl-DPCH-InfoCommon
}

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

DL-DPCH-InfoCommon ::=
    cfnHandling
        maintain
        initialise
        cfntargetsfnsframeoffset
    },
    modeSpecificInfo
        fdd
            dl-DPCH-PowerControlInfo
            powerOffsetPilot-pdpch
            dl-rate-matching-restriction
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot
            positionFixedOrFlexible
            tfci-Existence
        },

```

```

        tdd
        dl-DPCH-PowerControlInfo
    }
}
DL-DPCH-InfoCommon-r4 ::=
    cfnHandling
        maintain
        initialise
        cfntargetsfnframeoffset
    },
    modeSpecificInfo
        fdd
            dl-DPCH-PowerControlInfo
            powerOffsetPilot-pdpdch
            dl-rate-matching-restriction
            spreadingFactorAndPilot
            positionFixedOrFlexible
            tfci-Existence
        },
        tdd
            dl-DPCH-PowerControlInfo
    },
-- The IE mac-d-HFN-initial-value should be absent in the RRCConnectionSetup-r4-IEs or
-- RRCConnectionSetup-r5-IEs or HandoverToUTRANCommand-r4-IEs or HandoverToUTRANCommand-r5-IEs and
-- if the IE is included, the general error handling for conditional IEs applies.
    mac-d-HFN-initial-value
}

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

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

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

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

```

```

    },
    tdd
      dl-CCTrChListToEstablish
      dl-CCTrChListToRemove
    }
  }

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

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

DL-DPCH-InfoPerRL-PostTDD-LCR-r4 ::=
  dl-CCTrCH-TimeslotsCodes
}

DL-DPCH-PowerControlInfo ::=
  modeSpecificInfo
  fdd
    dpc-Mode
  },
  tdd
    tpc-StepSizeTDD
  }
}

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

DL-HSPDSCH-Information ::=
  hs-scch-Info
  measurement-feedback-Info
  modeSpecificInfo
  tdd
    tdd384
      dl-HSPDSCH-TS-Configuration
    },
    tdd128
      HS-PDSCH-Midamble-Configuration-TDD128
  },
  fdd
    NULL
}

DL-HSPDSCH-TS-Configuration ::=
  timeslot
  midambleShiftAndBurstType
}
-- This IE only applies to tdd-384 R-5

DL-InformationPerRL ::=
  modeSpecificInfo
  fdd
    primaryCPICH-Info
    pdsch-SHO-DCH-Info
    pdsch-CodeMapping
  },
  tdd
    PrimaryCCPCH-Info
  },
  dl-DPCH-InfoPerRL
  sccpch-InfoForFACH
}

DL-InformationPerRL-r4 ::=
  modeSpecificInfo
  fdd
    primaryCPICH-Info
    pdsch-SHO-DCH-Info
    pdsch-CodeMapping
  },
  tdd
    PrimaryCCPCH-Info-r4
}

```

```

    },
    dl-DPCH-InfoPerRL
    sccpch-InfoForFACH
    cell-id
}
DL-InformationPerRL-r5 ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            primaryCPICH-Info PrimaryCPICH-Info,
            pdsch-SHO-DCH-Info PDSCH-SHO-DCH-Info,
            pdsch-CodeMapping PDSCH-CodeMapping,
            servingHSDSCH-RL-indicator BOOLEAN
        },
        tdd PrimaryCCPCH-Info-r4
    },
    dl-DPCH-InfoPerRL DL-DPCH-InfoPerRL-r4,
    sccpch-InfoForFACH SCCPCH-InfoForFACH-r4,
    cell-id CellIdentity
}
DL-InformationPerRL-List ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-InformationPerRL
DL-InformationPerRL-List-r4 ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-InformationPerRL-r4
DL-InformationPerRL-List-r5 ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-InformationPerRL-r5
DL-InformationPerRL-ListPostFDD ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-InformationPerRL-PostFDD
DL-InformationPerRL-PostFDD ::= SEQUENCE {
    primaryCPICH-Info PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL DL-DPCH-InfoPerRL-PostFDD
}
DL-InformationPerRL-PostTDD ::= SEQUENCE {
    primaryCCPCH-Info PrimaryCCPCH-InfoPost,
    dl-DPCH-InfoPerRL DL-DPCH-InfoPerRL-PostTDD
}
DL-InformationPerRL-PostTDD-LCR-r4 ::= SEQUENCE {
    primaryCCPCH-Info PrimaryCCPCH-InfoPostTDD-LCR-r4,
    dl-DPCH-InfoPerRL DL-DPCH-InfoPerRL-PostTDD-LCR-r4
}
DL-PDSCH-Information ::= SEQUENCE {
    pdsch-SHO-DCH-Info PDSCH-SHO-DCH-Info,
    pdsch-CodeMapping PDSCH-CodeMapping
}
Dl-rate-matching-restriction ::= SEQUENCE {
    restrictedTrCH-InfoList RestrictedTrCH-InfoList
}
DL-TS-ChannelisationCode ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }
DL-TS-ChannelisationCodesShort ::= SEQUENCE {
    codesRepresentation CHOICE {
        consecutive SEQUENCE {
            firstChannelisationCode DL-TS-ChannelisationCode,
            lastChannelisationCode DL-TS-ChannelisationCode
        },
        bitmap BIT STRING {
            chCode16-SF16(0),
            chCode15-SF16(1),
            chCode14-SF16(2),
            chCode13-SF16(3),
            chCode12-SF16(4),
            chCode11-SF16(5),
            chCode10-SF16(6),
            chCode9-SF16(7),
        }
    }
}

```

```

        chCode8-SF16(8),
        chCode7-SF16(9),
        chCode6-SF16(10),
        chCode5-SF16(11),
        chCode4-SF16(12),
        chCode3-SF16(13),
        chCode2-SF16(14),
        chCode1-SF16(15)
    } (SIZE (16))
}
}

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

DownlinkAdditionalTimeslots-LCR-r4 ::= SEQUENCE {
    parameters CHOICE {
        sameAsLast SEQUENCE {
            timeslotNumber TimeslotNumber-LCR-r4
        },
        newParameters SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo-LCR-r4,
            dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort
        }
    }
}

DownlinkTimeslotsCodes ::= SEQUENCE {
    firstIndividualTimeslotInfo IndividualTimeslotInfo,
    dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort,
    moreTimeslots CHOICE {
        noMore NULL,
        additionalTimeslots CHOICE {
            consecutive INTEGER (1..maxTS-1),
            timeslotList SEQUENCE (SIZE (1..maxTS-1)) OF
                DownlinkAdditionalTimeslots
        }
    }
}

DownlinkTimeslotsCodes-LCR-r4 ::= SEQUENCE {
    firstIndividualTimeslotInfo IndividualTimeslotInfo-LCR-r4,
    dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort,
    moreTimeslots CHOICE {
        noMore NULL,
        additionalTimeslots CHOICE {
            consecutive INTEGER (1..maxTS-LCR-1),
            timeslotList SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                DownlinkAdditionalTimeslots-LCR-r4
        }
    }
}

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

-- Actual value DPCCH-PowerOffset = IE value * 2
DPCCH-PowerOffset ::= INTEGER (-82..-3)

-- Actual value DPCCH-PowerOffset = 2 + (IE value * 4)
DPCCH-PowerOffset2 ::= INTEGER (-28..-13)

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

DPCH-CompressedModeStatusInfo ::= SEQUENCE {

```

```

    tgps-Reconfiguration-CFN          TGPS-Reconfiguration-CFN,
    tgp-SequenceShortList            SEQUENCE (SIZE (1..maxTGPS)) OF
                                     TGP-SequenceShort
}

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

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

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

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

DSCH-TransportChannelsInfo ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    SEQUENCE {
        dsch-transport-channel-identity TransportChannelIdentity,
        dsch-TFS                        TransportFormatSet
    }
}

DurationTimeInfo ::= INTEGER (1..4096)

DynamicPersistenceLevel ::= INTEGER (1..8)

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

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

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

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

Feedback-cycle ::= ENUMERATED {
    fc0, fc2, fc4, fc8, fc10, fc20, fc40, fc80, fc160}

FPACH-Info-r4 ::= SEQUENCE {
    timeslot                       TimeslotNumber-LCR-r4,
    channelisationCode             TDD-FPACH-CCode16-r4,
    midambleShiftAndBurstType     MidambleShiftAndBurstType-LCR-r4,
    wi                             Wi-LCR
}
}

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

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

FrequencyInfoTDD ::= SEQUENCE {
    uarfcn-Nt                     UARFCN
}
}

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

HS-ChannelisationCode-LCR ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,

```

cc16-5, cc16-6, cc16-7, cc16-8,
 cc16-9, cc16-10, cc16-11, cc16-12,
 cc16-13, cc16-14, cc16-15, cc16-16 }

```

HS-PDSCH-Midamble-Configuration-TDD128 ::= SEQUENCE {
  midambleAllocationMode      CHOICE {
    defaultMidamble           NULL,
    commonMidamble           NULL,
    ueSpecificMidamble       INTEGER (1..15)
  },
  midambleConfiguration      INTEGER (1..8)
}

HS-SCCH-Info ::= SEQUENCE {
  modeSpecificInfo           CHOICE {
    fdd                       SEQUENCE {
      hs-SCCHChannelisationCodeInfo SEQUENCE (SIZE (1..maxHSSCCHs)) OF
        HS-SCCH-Codes,
      dl-ScramblingCode        SecondaryScramblingCode OPTIONAL
    },
    tdd                       CHOICE {
      tdd384                  SEQUENCE {
        nack-ack-power-offset   INTEGER (-7..8),
        hs-SICH-PowerControl-Info HS-SICH-Power-Control-Info-TDD384,
        hs-SCCH-SetConfiguration SEQUENCE (SIZE (1..maxHSSCCHs)) OF
          HS-SCCH-TDD384
      },
      tdd128                  SEQUENCE (SIZE (1..maxHSSCCHs)) OF
        HS-SCCH-TDD128
    }
  }
}

HS-SCCH-Codes ::= INTEGER (0..127)

HS-SCCH-TDD128 ::= SEQUENCE (SIZE (1..maxHSSCCHs)) OF
  HS-SCCH-TDD128List

HS-SCCH-TDD128List ::= SEQUENCE {
  timeslotNumber      TimeslotNumber-LCR-r4,
  firstChannelisationCode HS-ChannelisationCode-LCR,
  secondChannelisationCode HS-ChannelisationCode-LCR,
  midambleAllocationMode CHOICE {
    defaultMidamble           NULL,
    commonMidamble           NULL,
    ueSpecificMidamble       INTEGER(1..15)
  },
  -- Actual value midambleConfiguration = IE value * 2
  midambleConfiguration      INTEGER (1..8),
  bler-target                 Bler-Target,
  hs-sich-configuration       HS-SICH-Configuration-TDD128
}

HS-SICH-Configuration-TDD128 ::= SEQUENCE {
  timeslotNumber      TimeslotNumber-LCR-r4,
  channelisationCode HS-ChannelisationCode-LCR,
  midambleAllocationMode CHOICE {
    defaultMidamble           NULL,
    ueSpecificMidamble       SEQUENCE {
      midambleShift          MidambleShiftLong
    }
  },
  -- Actual value midambleConfiguration = IE value * 2
  midambleConfiguration      INTEGER (1..8),
  nack-ack-power-offset       INTEGER (-7..8),
  power-level-HSSICH          INTEGER (-120..-58),
  tpc-step-size               ENUMERATED { s1, s2, s3 , spare1}
}

HS-SCCH-TDD384 ::= SEQUENCE (SIZE (1..maxHSSCCHs)) OF
  HS-SCCH-TDD384List

HS-SCCH-TDD384List ::= SEQUENCE {
  timeslotNumber      TimeslotNumber,
  channelisationCode HS-ChannelisationCode,
  midambleAllocationMode CHOICE {
    defaultMidamble           NULL,
    commonMidamble           NULL
  }
}

```

```

    },
    midambleconfiguration          MidambleConfiguration,
    bler-target                    Bler-Target,
    hs-sich-configuration          HS-SICH-Configuration-TDD384
}

HS-SICH-Configuration-TDD384 ::= SEQUENCE {
    timeslotNumber                TimeslotNumber,
    channelisationCode            HS-ChannelisationCode,
    midambleAllocationMode        CHOICE {
        defaultMidamble           NULL,
        ueSpecificMidamble        SEQUENCE {
            midambleShift         MidambleShiftLong
        }
    },
    midambleconfiguration          MidambleConfiguration
}

HS-SICH-Power-Control-Info-TDD384 ::= SEQUENCE {
    -- Actual value ul-target-SIR = IE value * 0.5
    ul-target-SIR                 INTEGER (-22..40),
    hs-sich-ConstantValue         ConstantValue
}

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

IndividualTimeslotInfo-LCR-r4 ::= SEQUENCE {
    timeslotNumber                TimeslotNumber-LCR-r4,
    tfci-Existence                BOOLEAN,
    midambleShiftAndBurstType      MidambleShiftAndBurstType-LCR-r4,
    modulation                     ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols                 ENUMERATED { zero, one, sixteenOverSF },
    additionalSS-TPC-Symbols        INTEGER(1..15) OPTIONAL
}

IndividualTimeslotInfo-LCR-r4-ext ::= SEQUENCE {
    -- timeslotNumber and tfci-Existence is taken from IndividualTimeslotInfo.
    -- midambleShiftAndBurstType in IndividualTimeslotInfo shall be ignored.
    midambleShiftAndBurstType      MidambleShiftAndBurstType-LCR-r4,
    modulation                     ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols                 ENUMERATED { zero, one, sixteenOverSF }
}

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

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

ITP ::= ENUMERATED {
    mode0, mode1
}

NidentifyAbort ::= INTEGER (1..128)

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

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

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

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

Measurement-Feedback-Info ::= SEQUENCE {
    modeSpecificInfo              CHOICE {
        fdd                       SEQUENCE {
            pohsdsch                Po-hsdsch,
            feedback-cycle           Feedback-cycle,
            cqi-RepetitionFactor      CQI-RepetitionFactor,
            deltaCQI                 DeltaCQI
        },
        tdd                       NULL
    }
}

```

```

    }
}

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

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

MidambleConfigurationBurstType2 ::=          ENUMERATED {ms3, ms6}

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

MidambleShiftAndBurstType-LCR-r4 ::=          SEQUENCE {
    midambleAllocationMode
        CHOICE {
            defaultMidamble
                NULL,
            commonMidamble
                NULL,
            ueSpecificMidamble
                SEQUENCE {
                    midambleShift
                        INTEGER (0..15)
                }
        }
},
-- Actual value midambleConfiguration = IE value * 2
midambleConfiguration
    INTEGER (1..8)
}

MidambleShiftLong ::=          INTEGER (0..15)

MidambleShiftShort ::=          INTEGER (0..5)

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

MultiCodeInfo ::=          INTEGER (1..16)

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

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

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

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

NB01 ::=          INTEGER (0..50)

```

```

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

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

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

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

OpenLoopPowerControl-IPDL-TDD-r4 ::= SEQUENCE {
    ipdl-alpha Alpha,
    maxPowerIncrease MaxPowerIncrease-r4
}

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

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

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

PCPCH-ChannelInfo ::= SEQUENCE {
    pcpch-UL-ScramblingCode INTEGER (0..79),
    pcpch-DL-ChannelisationCode INTEGER (0..511),
    pcpch-DL-ScramblingCode SecondaryScramblingCode OPTIONAL,
    pcp-Length PCP-Length,
    ucsM-Info UCSM-Info OPTIONAL
}

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

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

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

PDSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
    pdsch-AllocationPeriodInfo AllocationPeriodInfo,
    configuration CHOICE {
        old-Configuration SEQUENCE {
            tfcs-ID TFCS-IdentityPlain DEFAULT 1,
            pdsch-Identity PDSCH-Identity
        },
        new-Configuration SEQUENCE {
            pdsch-Info PDSCH-Info-r4,
            pdsch-Identity PDSCH-Identity OPTIONAL,
            pdsch-PowerControlInfo PDSCH-PowerControlInfo OPTIONAL
        }
    }
}

PDSCH-CodeInfo ::= SEQUENCE {
    spreadingFactor SF-PDSCH,

```

```

    codeNumber                CodeNumberDSCH,
    multiCodeInfo             MultiCodeInfo
}

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

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

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

PDSCH-CodeMapping ::=
    dl-ScramblingCode
    signallingMethod
    codeRange
    tfci-Range
    explicit-config
    replace
}

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

PDSCH-Info ::=
    tfcs-ID
    commonTimeslotInfo
    pdsch-TimeslotsCodes
}

PDSCH-Info-r4 ::=
    tfcs-ID
    commonTimeslotInfo
    tddOption
    tdd384
    pdsch-TimeslotsCodes
},
    tdd128
    pdsch-TimeslotsCodes
}

PDSCH-Info-LCR-r4 ::=
    tfcs-ID
    commonTimeslotInfo
    pdsch-TimeslotsCodes
}

PDSCH-PowerControlInfo ::=
    tpc-StepSizeTDD
    ul-CCTrChTPCList
}

PDSCH-SHO-DCH-Info ::=
    dsch-RadioLinkIdentifier
    rl-IdentifierList
}

PDSCH-SysInfo ::=
    pdsch-Identity
    pdsch-Info
    dsch-TFS
    dsch-TFCS
}

PDSCH-SysInfo-HCR-r5 ::=
    pdsch-Identity
    pdsch-Info
    dsch-TransportChannelsInfo
    dsch-TFCS
}

```

```

PDSCH-SysInfo-LCR-r4 ::= SEQUENCE {
    pdsch-Identity          PDSCH-Identity,
    pdsch-Info              PDSCH-Info-LCR-r4,
    dsch-TFS                TransportFormatSet          OPTIONAL,
    dsch-TFCS               TFCS                        OPTIONAL
}

PDSCH-SysInfoList ::= SEQUENCE (SIZE (1..maxPDSCH)) OF
    PDSCH-SysInfo

PDSCH-SysInfoList-HCR-r5 ::= SEQUENCE (SIZE (1..maxPDSCH)) OF PDSCH-SysInfo-HCR-r5

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

PDSCH-SysInfoList-SFN ::= SEQUENCE (SIZE (1..maxPDSCH)) OF
    SEQUENCE {
        pdsch-SysInfo      PDSCH-SysInfo,
        sfm-TimeInfo       SFN-TimeInfo          OPTIONAL
    }

PDSCH-SysInfoList-SFN-HCR-r5 ::= SEQUENCE (SIZE (1..maxPDSCH)) OF
    SEQUENCE {
        pdsch-SysInfo      PDSCH-SysInfo-HCR-r5,
        sfm-TimeInfo       SFN-TimeInfo          OPTIONAL
    }

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

PersistenceScalingFactor ::= ENUMERATED {
    psf0-9, psf0-8, psf0-7, psf0-6,
    psf0-5, psf0-4, psf0-3, psf0-2 }

PersistenceScalingFactorList ::= SEQUENCE (SIZE (1..maxASCpersist)) OF
    PersistenceScalingFactor

PI-CountPerFrame ::= ENUMERATED {
    e18, e36, e72, e144 }

PichChannelisationCodeList-LCR-r4 ::= SEQUENCE (SIZE (1..2)) OF
    DL-TS-ChannelisationCode

PICH-Info ::= CHOICE {
    fdd SEQUENCE {
        channelisationCode256 ChannelisationCode256,
        pi-CountPerFrame      PI-CountPerFrame,
        sttd-Indicator         BOOLEAN
    },
    tdd SEQUENCE {
        channelisationCode      TDD-PICH-CCode          OPTIONAL,
        timeslot                TimeslotNumber          OPTIONAL,
        midambleShiftAndBurstType MidambleShiftAndBurstType,
        repetitionPeriodLengthOffset RepPerLengthOffset-PICH OPTIONAL,
        pagingIndicatorLength    PagingIndicatorLength   DEFAULT pi4,
        n-GAP                    N-GAP                  DEFAULT f4,
        n-PCH                     N-PCH                  DEFAULT 2
    }
}

PICH-Info-LCR-r4 ::= SEQUENCE {
    timeslot                TimeslotNumber-LCR-r4          OPTIONAL,
    pichChannelisationCodeList-LCR-r4 PichChannelisationCodeList-LCR-r4,
    midambleShiftAndBurstType-LCR-r4 MidambleShiftAndBurstType-LCR-r4,
    repetitionPeriodLengthOffset-LCR-r4 RepPerLengthOffset-PICH OPTIONAL,
    pagingIndicatorLength-LCR-r4 PagingIndicatorLength   DEFAULT pi4,
    n-GAP                    N-GAP                  DEFAULT f4,
    n-PCH                     N-PCH                  DEFAULT 2
}

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

PilotBits128 ::= ENUMERATED {
    pb4, pb8 }

```

```

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

    -- Actual value Po-hsdSCH = IE value * 0.5
Po-hsdSCH ::=
    INTEGER (-12..26)

PositionFixedOrFlexible ::=
    ENUMERATED {
        fixed,
        flexible }

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

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

PowerRampStep ::=
    INTEGER (1..8)

PRACH-ChanCodes-LCR-r4 ::=
    SEQUENCE (SIZE (1..4)) OF
        TDD-PRACH-CCode-LCR-r4

PRACH-Definition-LCR-r4 ::=
    SEQUENCE {
        timeslot
            TimeslotNumber-PRACH-LCR-r4,
        prach-ChanCodes-LCR
            PRACH-ChanCodes-LCR-r4,
        midambleShiftAndBurstType-LCR-r4
            MidambleShiftAndBurstType-LCR-r4,
        fpach-Info
            FPACH-Info-r4
    }

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

PRACH-Partitioning ::=
    CHOICE {
        fdd
            SEQUENCE (SIZE (1..maxASC)) OF
                -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-FDD are listed,
                -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
                ASCSetting-FDD,
        tdd
            SEQUENCE (SIZE (1..maxASC)) OF
                -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-TDD are listed,
                -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
                ASCSetting-TDD
    }

PRACH-Partitioning-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxASC)) OF
        -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-TDD-LCR-r4 are listed,
        -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
        ASCSetting-TDD-LCR-r4

PRACH-PowerOffset ::=
    SEQUENCE {
        powerRampStep
            PowerRampStep,
        preambleRetransMax
            PreambleRetransMax
    }

PRACH-RACH-Info ::=
    SEQUENCE {
        modeSpecificInfo
            CHOICE {
                fdd
                    SEQUENCE {
                        availableSignatures
                            AvailableSignatures,
                        availableSF
                            SF-PRACH,
                        preambleScramblingCodeWordNumber
                            PreambleScramblingCodeWordNumber,
                        puncturingLimit
                            PuncturingLimit,
                        availableSubChannelNumbers
                            AvailableSubChannelNumbers
                    },
                tdd
                    SEQUENCE {
                        timeslot
                            TimeslotNumber,
                        channelisationCodeList
                            TDD-PRACH-CCodeList,
                        prach-Midamble
                            PRACH-Midamble
                    }
            }
    }

PRACH-RACH-Info-LCR-r4 ::=
    SEQUENCE {
        sync-UL-Info
            SYNC-UL-Info-r4,
        prach-DefinitionList
            SEQUENCE (SIZE (1..maxPRACH-FPACH)) OF
                PRACH-Definition-LCR-r4
    }

```

```

PRACH-SystemInformation ::= SEQUENCE {
    prach-RACH-Info          PRACH-RACH-Info,
    transportChannelIdentity TransportChannelIdentity,
    rach-TransportFormatSet  TransportFormatSet          OPTIONAL,
    rach-TFCS                TFCS                      OPTIONAL,
    prach-Partitioning       PRACH-Partitioning         OPTIONAL,
    persistenceScalingFactorList PersistenceScalingFactorList OPTIONAL,
    ac-To-ASC-MappingTable   AC-To-ASC-MappingTable   OPTIONAL,
    modeSpecificInfo         CHOICE {
        fdd SEQUENCE {
            primaryCPICH-TX-Power PrimaryCPICH-TX-Power  OPTIONAL,
            constantValue          ConstantValue          OPTIONAL,
            prach-PowerOffset      PRACH-PowerOffset     OPTIONAL,
            rach-TransmissionParameters RACH-TransmissionParameters OPTIONAL,
            aich-Info              AICH-Info                OPTIONAL
        },
        tdd NULL
    }
}

PRACH-SystemInformation-LCR-r4 ::= SEQUENCE {
    prach-RACH-Info-LCR          PRACH-RACH-Info-LCR-r4,
    rach-TransportFormatSet-LCR  TransportFormatSet-LCR          OPTIONAL,
    prach-Partitioning-LCR       PRACH-Partitioning-LCR-r4     OPTIONAL
}

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

PRACH-SystemInformationList-LCR-r4 ::= SEQUENCE (SIZE (1..maxPRACH)) OF
    PRACH-SystemInformation-LCR-r4

PreambleRetransMax ::= INTEGER (1..64)

PreambleScramblingCodeWordNumber ::= INTEGER (0..15)

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

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

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

```

```

    }
    },
    cellParametersID          CellParametersID          OPTIONAL,
    blockSTTD-Indicator       BOOLEAN
  }
}

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

-- For 1.28Mcps TDD, the following IE includes elements for the PCCPCH Info additional to those
-- in PrimaryCCPCH-Info
PrimaryCCPCH-Info-LCR-r4-ext ::= SEQUENCE {
  tstd-Indicator             BOOLEAN
}

PrimaryCCPCH-InfoPost ::= SEQUENCE {
  syncCase                   CHOICE {
    syncCase1                 SEQUENCE {
      timeslot                 TimeslotNumber
    },
    syncCase2                 SEQUENCE {
      timeslotSync2           TimeslotSync2
    }
  },
  cellParametersID          CellParametersID,
  sctd-Indicator            BOOLEAN
}

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

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

PrimaryCPICH-Info ::= SEQUENCE {
  primaryScramblingCode     PrimaryScramblingCode
}

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

PrimaryScramblingCode ::= INTEGER (0..511)

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

PUSCH-CapacityAllocationInfo ::= SEQUENCE {
  pusch-Allocation          CHOICE {
    pusch-AllocationPending NULL,
    pusch-AllocationAssignment SEQUENCE {
      pusch-AllocationPeriodInfo AllocationPeriodInfo,
      pusch-PowerControlInfo UL-TargetSIR OPTIONAL,
      configuration CHOICE {
        old-Configuration SEQUENCE {
          tfcs-ID TFCS-IdentityPlain DEFAULT 1,
          pusch-Identity PUSCH-Identity
        },
        new-Configuration SEQUENCE {
          pusch-Info PUSCH-Info,
          pusch-Identity PUSCH-Identity OPTIONAL
        }
      }
    }
  }
}

PUSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
  pusch-Allocation          CHOICE {
    pusch-AllocationPending NULL,
    pusch-AllocationAssignment SEQUENCE {
      pusch-AllocationPeriodInfo AllocationPeriodInfo,

```

```

pusch-PowerControlInfo
configuration
  old-Configuration
    tfcs-ID
    pusch-Identity
  },
  new-Configuration
    pusch-Info
    pusch-Identity
  }
}
}
}
}

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

PUSCH-Info ::=
SEQUENCE {
  tfcs-ID
  commonTimeslotInfo
  pusch-TimeslotsCodes
}

PUSCH-Info-r4 ::=
SEQUENCE {
  tfcs-ID
  commonTimeslotInfo
  tddOption
  tdd384
  pusch-TimeslotsCodes
  },
  tdd128
  pusch-TimeslotsCodes
}

PUSCH-Info-LCR-r4 ::=
SEQUENCE {
  tfcs-ID
  commonTimeslotInfo
  pusch-TimeslotsCodes
}

PUSCH-PowerControlInfo-r4 ::=
SEQUENCE {
  -- The IE ul-TargetSIR corresponds to PRX-PUSCHdes for 1.28Mcps TDD
  -- Actual value PRX-PUSCHdes = (value of IE "ul-TargetSIR" - 120)
  ul-TargetSIR
  tddOption
  tdd384
  tdd128
  tpc-StepSize
}

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

PUSCH-SysInfo-HCR-r5 ::=
SEQUENCE {
  pusch-Identity
  pusch-Info
  usch-TransportChannelsInfo
  usch-TFCS
}

PUSCH-SysInfo-LCR-r4 ::=
SEQUENCE {
  pusch-Identity
  pusch-Info
  usch-TFS
  usch-TFCS
}

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

```

```

PUSCH-SysInfoList-HCR-r5 ::= SEQUENCE (SIZE (1..maxPUSCH)) OF PUSCH-SysInfo-HCR-r5
PUSCH-SysInfoList-LCR-r4 ::= SEQUENCE (SIZE (1..maxPUSCH)) OF
    PUSCH-SysInfo-LCR-r4
PUSCH-SysInfoList-SFN ::= SEQUENCE (SIZE (1..maxPUSCH)) OF
    SEQUENCE {
        pusch-SysInfo          PUSCH-SysInfo,
        sfn-TimeInfo           SFN-TimeInfo
    } OPTIONAL
PUSCH-SysInfoList-SFN-HCR-r5 ::= SEQUENCE (SIZE (1..maxPUSCH)) OF
    SEQUENCE {
        pusch-SysInfo          PUSCH-SysInfo-HCR-r5,
        sfn-TimeInfo           SFN-TimeInfo
    } OPTIONAL
PUSCH-SysInfoList-SFN-LCR-r4 ::= SEQUENCE (SIZE (1..maxPUSCH)) OF
    SEQUENCE {
        pusch-SysInfo          PUSCH-SysInfo-LCR-r4,
        sfn-TimeInfo           SFN-TimeInfo
    } OPTIONAL
RACH-TransmissionParameters ::= SEQUENCE {
    mmax          INTEGER (1..32),
    nb01Min       NB01,
    nb01Max       NB01
}
ReducedScramblingCodeNumber ::= INTEGER (0..8191)
RepetitionPeriodAndLength ::= CHOICE {
    repetitionPeriod1      NULL,
    -- repetitionPeriod2 could just as well be NULL also.
    repetitionPeriod2      INTEGER (1..1),
    repetitionPeriod4      INTEGER (1..3),
    repetitionPeriod8      INTEGER (1..7),
    repetitionPeriod16     INTEGER (1..15),
    repetitionPeriod32     INTEGER (1..31),
    repetitionPeriod64     INTEGER (1..63)
}
RepetitionPeriodLengthAndOffset ::= CHOICE {
    repetitionPeriod1      NULL,
    repetitionPeriod2      SEQUENCE {
        length             NULL,
        offset             INTEGER (0..1)
    },
    repetitionPeriod4      SEQUENCE {
        length             INTEGER (1..3),
        offset             INTEGER (0..3)
    },
    repetitionPeriod8      SEQUENCE {
        length             INTEGER (1..7),
        offset             INTEGER (0..7)
    },
    repetitionPeriod16     SEQUENCE {
        length             INTEGER (1..15),
        offset             INTEGER (0..15)
    },
    repetitionPeriod32     SEQUENCE {
        length             INTEGER (1..31),
        offset             INTEGER (0..31)
    },
    repetitionPeriod64     SEQUENCE {
        length             INTEGER (1..63),
        offset             INTEGER (0..63)
    }
}
ReplacedPDSCH-CodeInfo ::= SEQUENCE {
    tfci-Field2           MaxTFCI-Field2Value,
    spreadingFactor       SF-PDSCH,
    codeNumber            CodeNumberDSCH,
    multiCodeInfo         MultiCodeInfo
}

```

```

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

RepPerLengthOffset-PICH ::= CHOICE {
    rpp4-2          INTEGER (0..3),
    rpp8-2          INTEGER (0..7),
    rpp8-4          INTEGER (0..7),
    rpp16-2         INTEGER (0..15),
    rpp16-4         INTEGER (0..15),
    rpp32-2         INTEGER (0..31),
    rpp32-4         INTEGER (0..31),
    rpp64-2         INTEGER (0..63),
    rpp64-4         INTEGER (0..63)
}

RestrictedTrCh ::= SEQUENCE {
    dl-restrictedTrCh-Type DL-TrCH-Type,
    restrictedDL-TrCH-Identity TransportChannelIdentity,
    allowedTFIList AllowedTFI-List
}

RestrictedTrCH-InfoList ::= SEQUENCE (SIZE(1..maxTrCH)) OF
                             RestrictedTrCH

RL-AdditionInformation ::= SEQUENCE {
    primaryCPICH-Info PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL DL-DPCH-InfoPerRL,
    tfci-CombiningIndicator BOOLEAN,
    sccpch-InfoForFACH SCCPCH-InfoForFACH OPTIONAL
}

RL-AdditionInformationList ::= SEQUENCE (SIZE (1..maxRL-1)) OF
                                RL-AdditionInformation

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

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

RPP ::= ENUMERATED {
    mode0, mode1 }

S-Field ::= ENUMERATED {
    e1bit, e2bits }

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

SCCPCH-ChannelisationCodeList ::= SEQUENCE (SIZE (1..16)) OF
                                    SCCPCH-ChannelisationCode

SCCPCH-InfoForFACH ::= SEQUENCE {
    secondaryCCPCH-Info SecondaryCCPCH-Info,
    tfcs TFCS,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            fach-PCH-InformationList FACH-PCH-InformationList,
            sib-ReferenceListFACH SIB-ReferenceListFACH
        },
        tdd SEQUENCE {
            fach-PCH-InformationList FACH-PCH-InformationList
        }
    }
}

SCCPCH-InfoForFACH-r4 ::= SEQUENCE {
    secondaryCCPCH-Info-r4 SecondaryCCPCH-Info-r4,
    tfcs TFCS,
    fach-PCH-InformationList FACH-PCH-InformationList,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            sib-ReferenceListFACH SIB-ReferenceListFACH
        },
        tdd NULL
    }
}

```

```

}
}

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

SCCPCH-SystemInformation-LCR-r4-ext ::= SEQUENCE {
    secondaryCCPCH-LCR-Extensions      SecondaryCCPCH-Info-LCR-r4-ext,
    -- pich-Info in the SCCPCH-SystemInformation IE shall be absent,
    -- and instead the following used.
    pich-Info                          PICH-Info-LCR-r4                OPTIONAL
}

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

-- SCCPCH-SystemInformationList-LCR-r4-ext includes elements additional to those in
-- SCCPCH-SystemInformationList for the 1.28Mcps TDD. The order of the IEs
-- indicates which SCCPCH-SystemInformation-LCR-r4-ext IE extends which
-- SCCPCH-SystemInformation IE.
SCCPCH-SystemInformationList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                                SCCPCH-SystemInformation-LCR-r4-ext

ScramblingCodeChange ::=              ENUMERATED {
                                        codeChange, noCodeChange }

ScramblingCodeType ::=                ENUMERATED {
                                        shortSC,
                                        longSC }

SecondaryCCPCH-Info ::=                SEQUENCE {
    modeSpecificInfo                   CHOICE {
        fdd                            SEQUENCE {
            -- dummy1 is not used in this version of the specification and should be ignored.
            dummy1                      PCPICH-UsageForChannelEst,
            -- dummy2 is not used in this version of the specification. It should not
            -- be sent and if received it should be ignored.
            dummy2                      SecondaryCPICH-Info                OPTIONAL,
            secondaryScramblingCode     SecondaryScramblingCode          OPTIONAL,
            sttd-Indicator               BOOLEAN,
            sf-AndCodeNumber             SF256-AndCodeNumber,
            pilotSymbolExistence        BOOLEAN,
            tfci-Existence               BOOLEAN,
            positionFixedOrFlexible     PositionFixedOrFlexible,
            timingOffset                 TimingOffset                    DEFAULT 0
        },
        tdd                             SEQUENCE {
            -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
            commonTimeslotInfo           CommonTimeslotInfoSCCPCH,
            individualTimeslotInfo       IndividualTimeslotInfo,
            channelisationCode           SCCPCH-ChannelisationCodeList
        }
    }
}

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

```

```

        individualTimeslotInfo          IndividualTimeslotInfo-LCR-r4
    },
    channelisationCode                  SCCPCH-ChannelisationCodeList
}
}
}

SecondaryCCPCH-Info-LCR-r4-ext ::= SEQUENCE {
    individualTimeslotLCR-Ext          IndividualTimeslotInfo-LCR-r4-ext
}

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

SecondaryScramblingCode ::= INTEGER (1..15)

SecondInterleavingMode ::= ENUMERATED {
    frameRelated, timeslotRelated }

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

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

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

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

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

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

SpecialBurstScheduling ::= INTEGER (0..7)

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

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

SSDT-CellIdentity ::= ENUMERATED {
    ssdt-id-a, ssdt-id-b, ssdt-id-c,

```

```

                                ssdt-id-d, ssdt-id-e, ssdt-id-f,
                                ssdt-id-g, ssdt-id-h }

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

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

-- SSDT-UL-r4 is used to extend the
-- SSDT-Information IE from Release 4 onwards.
SSDT-UL-r4 ::=              ENUMERATED {
    ul, ul-AndDL }

SynchronisationParameters-r4 ::= SEQUENCE {
    sync-UL-CodesBitmap      BIT STRING {
        code7(0),
        code6(1),
        code5(2),
        code4(3),
        code3(4),
        code2(5),
        code1(6),
        code0(7)
    } (SIZE (8)),
    fpach-Info               FPACH-Info-r4,
    -- Actual value prxUpPCHdes = IE value - 120
    prxUpPCHdes              INTEGER (0..62),
    sync-UL-Procedure        SYNC-UL-Procedure-r4
}
                                                                    OPTIONAL

SYNC-UL-Procedure-r4 ::=    SEQUENCE {
    max-SYNC-UL-Transmissions  ENUMERATED { tr1, tr2, tr4, tr8 },
    powerRampStep             INTEGER (0..3)
}

SYNC-UL-Info-r4 ::=        SEQUENCE {
    sync-UL-Codes-Bitmap      BIT STRING {
        code7(0),
        code6(1),
        code5(2),
        code4(3),
        code3(4),
        code2(5),
        code1(6),
        code0(7)
    } (SIZE (8)),
    -- Actual value prxUpPCHdes = IE value - 120
    prxUpPCHdes              INTEGER (0..62),
    powerRampStep            INTEGER (0..3),
    max-SYNC-UL-Transmissions  ENUMERATED { tr1, tr2, tr4, tr8 } ,
    mmax                     INTEGER(1..32)
}

TDD-FPACH-CCode16-r4 ::=   ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-UL-Interference ::=    INTEGER (-110..-52)

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

TDD-PRACH-CCode8 ::=      ENUMERATED {
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8 }

TDD-PRACH-CCode16 ::=     ENUMERATED {

```

```

cc16-1, cc16-2, cc16-3, cc16-4,
cc16-5, cc16-6, cc16-7, cc16-8,
cc16-9, cc16-10, cc16-11, cc16-12,
cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode-LCR-r4 ::=          ENUMERATED {
                                     cc4-1, cc4-2, cc4-3, cc4-4,
                                     cc8-1, cc8-2, cc8-3, cc8-4,
                                     cc8-5, cc8-6, cc8-7, cc8-8,
                                     cc16-1, cc16-2, cc16-3, cc16-4,
                                     cc16-5, cc16-6, cc16-7, cc16-8,
                                     cc16-9, cc16-10, cc16-11, cc16-12,
                                     cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCodeList ::=            CHOICE {
    sf8                               SEQUENCE (SIZE (1..8)) OF
                                     TDD-PRACH-CCode8,
    -- Channelisation codes cc16-9, cc16-10, cc16-11, cc16-12, cc16-13, cc16-14,
    -- cc16-15 and cc16-16 shall not be used
    sf16                              SEQUENCE (SIZE (1..8)) OF
                                     TDD-PRACH-CCode16
}

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

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

TGCFN ::=                           INTEGER (0..255)

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

TGL ::=                             INTEGER (1..14)

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

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

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

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

TGP-SequenceShort ::=                SEQUENCE {
    tgpsi                               TGPSI,
    tgps-Status                          CHOICE {
        activate                          SEQUENCE {
            tgcfn                          TGCFN
        },
        deactivate                          NULL
    }
}

TGPL ::=                             INTEGER (1..144)

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

TGPS-ConfigurationParams ::=        SEQUENCE {

```

```

    tgmp                TGMP,
    tgprc               TGPRC,
    tgsn                TGSN,
    tgl1                TGL,
    tgl2                TGL,                OPTIONAL,
    tgd                 TGD,
    tgpl1              TGPL,
    tgpl2              TGPL,                OPTIONAL,
    rpp                 RPP,
    itp                 ITP,
    -- TABULAR: Compressed mode method is nested inside UL-DL-Mode
    ul-DL-Mode          UL-DL-Mode,
    dl-FrameType        DL-FrameType,
    deltaSIR1           DeltaSIR,
    deltaSIRAfter1     DeltaSIR,
    deltaSIR2           DeltaSIR,                OPTIONAL,
    deltaSIRAfter2     DeltaSIR,                OPTIONAL,
    nIdentifyAbort      NIdentifyAbort,        OPTIONAL,
    treconfirmAbort     TreconfirmAbort,       OPTIONAL
}

TGPSI ::=              INTEGER (1..maxTGPS)

TGSN ::=              INTEGER (0..14)

TimeInfo ::=          SEQUENCE {
    activationTime      ActivationTime,        OPTIONAL,
    durationTimeInfo    DurationTimeInfo,     OPTIONAL
}

TimeslotList ::=      SEQUENCE (SIZE (1..maxTS)) OF
    TimeslotNumber

TimeslotList-r4 ::=   CHOICE {
    tdd384              SEQUENCE (SIZE (1..maxTS)) OF
        TimeslotNumber,
    tdd128              SEQUENCE (SIZE (1..maxTS-LCR)) OF
        TimeslotNumber-LCR-r4
}

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

TimeslotNumber-LCR-r4 ::=    INTEGER (0..6)

TimeslotNumber-PRACH-LCR-r4 ::=    INTEGER (1..6)

TimeslotSync2 ::=     INTEGER (0..6)

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

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

-- Actual value TPC-StepSizeFDD = IE value + 1
TPC-StepSizeFDD ::=   INTEGER (0..1)

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

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

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

UARFCN ::=           INTEGER (0..16383)

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

UL-CCTrCH ::=        SEQUENCE {
    tfcs-ID              TFCS-IdentityPlain,  DEFAULT 1,

```

```

    ul-TargetSIR                UL-TargetSIR,
    timeInfo                    TimeInfo,
    commonTimeslotInfo          CommonTimeslotInfo
    ul-CCTrCH-TimeslotsCodes    UplinkTimeslotsCodes
}                                OPTIONAL,
                                OPTIONAL

UL-CCTrCH-r4 ::=                SEQUENCE {
    tfcs-ID                    TFCS-IdentityPlain                DEFAULT 1,
    -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
    -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
    ul-TargetSIR                UL-TargetSIR,
    timeInfo                    TimeInfo,
    commonTimeslotInfo          CommonTimeslotInfo                OPTIONAL,
    tddOption                   CHOICE {
        tdd384                  SEQUENCE {
            ul-CCTrCH-TimeslotsCodes    UplinkTimeslotsCodes    OPTIONAL
        },
        tdd128                  SEQUENCE {
            ul-CCTrCH-TimeslotsCodes    UplinkTimeslotsCodes-LCR-r4 OPTIONAL
        }
    }
}

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

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

UL-CCTrCHListToRemove ::=      SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                TFCS-IdentityPlain

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

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

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

UL-ChannelRequirement-r5 ::=   CHOICE {
    ul-DPCH-Info                UL-DPCH-Info-r5,
    cpch-SetInfo                CPCH-SetInfo
}

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

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

UL-ChannelRequirementWithCPCH-SetID-r5 ::= CHOICE {
    ul-DPCH-Info                UL-DPCH-Info-r5,
    cpch-SetInfo                CPCH-SetInfo,
    cpch-SetID                  CPCH-SetID
}

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

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

```

```

}}
UL-DPCH-SlotFormat ::=          ENUMERATED {
                                slf0, slf1, slf2 }
UL-DPCH-Info ::=                SEQUENCE {
    ul-DPCH-PowerControlInfo    UL-DPCH-PowerControlInfo    OPTIONAL,
    modeSpecificInfo            CHOICE {
        fdd                     SEQUENCE {
            scramblingCodeType   ScramblingCodeType,
            scramblingCode       UL-ScramblingCode,
            numberOfDPDCH        NumberOfDPDCH            DEFAULT 1,
            spreadingFactor      SpreadingFactor,
            tfci-Existence       BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits     NumberOfFBI-Bits        OPTIONAL,
            puncturingLimit      PuncturingLimit
        },
        tdd                     SEQUENCE {
            ul-TimingAdvance     UL-TimingAdvanceControl  OPTIONAL,
            ul-CCTrCHList        UL-CCTrCHList            OPTIONAL,
            ul-CCTrCHListToRemove UL-CCTrCHListToRemove  OPTIONAL
        }
    }
}
UL-DPCH-Info-r4 ::=            SEQUENCE {
    ul-DPCH-PowerControlInfo    UL-DPCH-PowerControlInfo-r4  OPTIONAL,
    modeSpecificInfo            CHOICE {
        fdd                     SEQUENCE {
            scramblingCodeType   ScramblingCodeType,
            scramblingCode       UL-ScramblingCode,
            numberOfDPDCH        NumberOfDPDCH            DEFAULT 1,
            spreadingFactor      SpreadingFactor,
            tfci-Existence       BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits     NumberOfFBI-Bits        OPTIONAL,
            puncturingLimit      PuncturingLimit
        },
        tdd                     SEQUENCE {
            ul-TimingAdvance     UL-TimingAdvanceControl-r4  OPTIONAL,
            ul-CCTrCHList        UL-CCTrCHList-r4            OPTIONAL,
            ul-CCTrCHListToRemove UL-CCTrCHListToRemove    OPTIONAL
        }
    }
}
UL-DPCH-Info-r5 ::=            SEQUENCE {
    ul-DPCH-PowerControlInfo    UL-DPCH-PowerControlInfo-r5  OPTIONAL,
    modeSpecificInfo            CHOICE {
        fdd                     SEQUENCE {
            scramblingCodeType   ScramblingCodeType,
            scramblingCode       UL-ScramblingCode,
            numberOfDPDCH        NumberOfDPDCH            DEFAULT 1,
            spreadingFactor      SpreadingFactor,
            tfci-Existence       BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits     NumberOfFBI-Bits        OPTIONAL,
            puncturingLimit      PuncturingLimit
        },
        tdd                     SEQUENCE {
            ul-TimingAdvance     UL-TimingAdvanceControl-r4  OPTIONAL,
            ul-CCTrCHList        UL-CCTrCHList-r4            OPTIONAL,
            ul-CCTrCHListToRemove UL-CCTrCHListToRemove    OPTIONAL
        }
    }
}
UL-DPCH-InfoPostFDD ::=        SEQUENCE {
    ul-DPCH-PowerControlInfo    UL-DPCH-PowerControlInfoPostFDD,
    scramblingCodeType          ScramblingCodeType,
    reducedScramblingCodeNumber ReducedScramblingCodeNumber,
    spreadingFactor              SpreadingFactor
}
UL-DPCH-InfoPostTDD ::=        SEQUENCE {
    ul-DPCH-PowerControlInfo    UL-DPCH-PowerControlInfoPostTDD,

```

```

    ul-TimingAdvance          UL-TimingAdvanceControl          OPTIONAL,
    ul-CCTrCH-TimeslotsCodes  UplinkTimeslotsCodes
  }

UL-DPCH-InfoPostTDD-LCR-r4 ::= SEQUENCE {
    ul-DPCH-PowerControlInfo  UL-DPCH-PowerControlInfoPostTDD-LCR-r4,
    ul-TimingAdvance          UL-TimingAdvanceControl-LCR-r4          OPTIONAL,
    ul-CCTrCH-TimeslotsCodes  UplinkTimeslotsCodes-LCR-r4
}

UL-DPCH-InfoPredef ::= SEQUENCE {
    ul-DPCH-PowerControlInfo  UL-DPCH-PowerControlInfoPredef,
    modeSpecificInfo          CHOICE {
        fdd                    SEQUENCE {
            tfci-Existence     BOOLEAN,
            puncturingLimit    PuncturingLimit
        },
        tdd                    SEQUENCE {
            commonTimeslotInfo CommonTimeslotInfo
        }
    }
}

UL-DPCH-PowerControlInfo ::= CHOICE {
    fdd                    SEQUENCE {
        dpcch-PowerOffset     DPCCH-PowerOffset,
        pc-Preamble           PC-Preamble,
        sRB-delay             SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm PowerControlAlgorithm
    },
    tdd                    SEQUENCE {
        ul-TargetSIR          UL-TargetSIR          OPTIONAL,
        ul-OL-PC-Signalling   CHOICE {
            broadcast-UL-OL-PC-info  NULL,
            individuallySignalled    SEQUENCE {
                individualTS-InterferenceList  IndividualTS-InterferenceList,
                dpch-ConstantValue            ConstantValueTdd,
                primaryCCPCH-TX-Power        PrimaryCCPCH-TX-Power
            }
        }
    }
}

UL-DPCH-PowerControlInfo-r4 ::= CHOICE {
    fdd                    SEQUENCE {
        dpcch-PowerOffset     DPCCH-PowerOffset,
        pc-Preamble           PC-Preamble,
        sRB-delay             SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm PowerControlAlgorithm
    },
    tdd                    SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
        -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
        ul-TargetSIR          UL-TargetSIR          OPTIONAL,
        ul-OL-PC-Signalling   CHOICE {
            broadcast-UL-OL-PC-info  NULL,
            individuallySignalled    SEQUENCE {
                tddOption            CHOICE {
                    tdd384            SEQUENCE {
                        individualTS-InterferenceList  IndividualTS-InterferenceList,
                        dpch-ConstantValue            ConstantValue
                    },
                    tdd128            SEQUENCE {
                        tpc-StepSize    TPC-StepSizeTDD
                    }
                }
            },
            primaryCCPCH-TX-Power    PrimaryCCPCH-TX-Power
        }
    }
}

UL-DPCH-PowerControlInfo-r5 ::= CHOICE {
    fdd                    SEQUENCE {
        dpcch-PowerOffset     DPCCH-PowerOffset,
        pc-Preamble           PC-Preamble,

```

```

-- TABULAR: TPC step size nested inside PowerControlAlgorithm
powerControlAlgorithm      PowerControlAlgorithm,
deltaACK                    DeltaACK      OPTIONAL,
deltaNACK                   DeltaNACK     OPTIONAL,
ack-NACK-repetition-factor  ACK-NACK-repetitionFactor  OPTIONAL
},
tdd                          SEQUENCE {
-- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
-- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
ul-TargetSIR                UL-TargetSIR      OPTIONAL,
ul-OL-PC-Signalling         CHOICE {
  broadcast-UL-OL-PC-info    NULL,
  individuallySignalled      SEQUENCE {
    tddOption                CHOICE {
      tdd384                  SEQUENCE {
        individualTS-InterferenceList  IndividualTS-InterferenceList,
        dpch-ConstantValue            ConstantValue
      },
      tdd128                    SEQUENCE {
        tpc-StepSize            TPC-StepSizeTDD
      }
    }
  },
  primaryCCPCH-TX-Power      PrimaryCCPCH-TX-Power
}
}
}
}

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

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

UL-DPCH-PowerControlInfoPostTDD-LCR-r4 ::= SEQUENCE {
-- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
-- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
ul-TargetSIR              UL-TargetSIR
}

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

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

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

UL-SynchronisationParameters-r4 ::= SEQUENCE {
  stepSize                  INTEGER (1..8),
  frequency                 INTEGER (1..8)
}

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

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

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

```

```

}

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

UL-TimingAdvanceControl-LCR-r4 ::= CHOICE {
    disabled NULL,
    enabled SEQUENCE {
        ul-SynchronisationParameters UL-SynchronisationParameters-r4 OPTIONAL,
        synchronisationParameters SynchronisationParameters-r4 OPTIONAL
    }
}

UL-TS-ChannelisationCode ::= ENUMERATED {
    cc1-1, cc2-1, cc2-2,
    cc4-1, cc4-2, cc4-3, cc4-4,
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8,
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

UL-TS-ChannelisationCodeList ::= SEQUENCE (SIZE (1..2)) OF
    UL-TS-ChannelisationCode

UplinkAdditionalTimeslots ::= SEQUENCE {
    parameters CHOICE {
        sameAsLast SEQUENCE {
            timeslotNumber TimeslotNumber
        },
        newParameters SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo,
            ul-TS-ChannelisationCodeList UL-TS-ChannelisationCodeList
        }
    }
}

UplinkAdditionalTimeslots-LCR-r4 ::= SEQUENCE {
    parameters CHOICE {
        sameAsLast SEQUENCE {
            timeslotNumber TimeslotNumber
        },
        newParameters SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo-LCR-r4,
            ul-TS-ChannelisationCodeList UL-TS-ChannelisationCodeList
        }
    }
}

UplinkTimeslotsCodes ::= SEQUENCE {
    dynamicSFusage BOOLEAN,
    firstIndividualTimeslotInfo IndividualTimeslotInfo,
    ul-TS-ChannelisationCodeList UL-TS-ChannelisationCodeList,
    moreTimeslots CHOICE {
        noMore NULL,
        additionalTimeslots CHOICE {
            consecutive SEQUENCE {
                numAdditionalTimeslots INTEGER (1..maxTS-1)
            },
            timeslotList SEQUENCE (SIZE (1..maxTS-1)) OF
                UplinkAdditionalTimeslots
        }
    }
}

```

```

UplinkTimeslotsCodes-LCR-r4 ::= SEQUENCE {
    dynamicSFusage          BOOLEAN,
    firstIndividualTimeslotInfo IndividualTimeslotInfo-LCR-r4,
    ul-TS-ChannelisationCodeList UL-TS-ChannelisationCodeList,
    moreTimeslots          CHOICE {
        noMore              NULL,
        additionalTimeslots CHOICE {
            consecutive      SEQUENCE {
                numAdditionalTimeslots INTEGER (1..maxTS-LCR-1)
            },
            timeslotList     SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                UplinkAdditionalTimeslots-LCR-r4
        }
    }
}

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

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

AcquisitionSatInfo ::= SEQUENCE {
    satID          SatID,
    -- Actual value dopplerOthOrder = IE value * 2.5
    dopplerOthOrder INTEGER (-2048..2047),
    extraDopplerInfo ExtraDopplerInfo OPTIONAL,
    codePhase        INTEGER (0..1022),
    integerCodePhase INTEGER (0..19),
    gps-BitNumber    INTEGER (0..3),
    codePhaseSearchWindow CodePhaseSearchWindow,
    azimuthAndElevation AzimuthAndElevation OPTIONAL
}

AcquisitionSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF
    AcquisitionSatInfo

AdditionalMeasurementID-List ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasurementIdentity

AlmanacSatInfo ::= SEQUENCE {
    dataID          INTEGER (0..3),
    satID          SatID,
    e              BIT STRING (SIZE (16)),
    t-oa           BIT STRING (SIZE (8)),
    deltaI         BIT STRING (SIZE (16)),
    omegaDot       BIT STRING (SIZE (16)),
    satHealth      BIT STRING (SIZE (8)),
    a-Sqrt         BIT STRING (SIZE (24)),
    omega0         BIT STRING (SIZE (24)),
    m0             BIT STRING (SIZE (24)),
    omega          BIT STRING (SIZE (24)),
    af0           BIT STRING (SIZE (11)),
    af1           BIT STRING (SIZE (11))
}

AlmanacSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF
    AlmanacSatInfo

AverageRLC-BufferPayload ::= ENUMERATED {
    pla0, pla4, pla8, pla16, pla32,
    pla64, pla128, pla256, pla512,
    pla1024, pla2k, pla4k, pla8k, pla16k,
    pla32k, pla64k, pla128k, pla256k,
    pla512k, pla1024k, spare12, spare11,
    spare10, spare9, spare8, spare7, spare6,
    spare5, spare4, spare3, spare2, spare1 }

AzimuthAndElevation ::= SEQUENCE {
    -- Actual value azimuth = IE value * 11.25
    azimuth          INTEGER (0..31),
    -- Actual value elevation = IE value * 11.25
    elevation        INTEGER (0..7)
}

```

```

BadSatList ::=                               SEQUENCE (SIZE (1..maxSat)) OF
                                             INTEGER (0..63)

Frequency-Band ::=                           ENUMERATED {
                                             dcs1800BandUsed, pcs1900BandUsed }

BCCH-ARFCN ::=                               INTEGER (0..1023)

BLER-MeasurementResults ::=                 SEQUENCE {
  transportChannelIdentity                   TransportChannelIdentity,
  dl-TransportChannelBLER                    DL-TransportChannelBLER           OPTIONAL
}

BLER-MeasurementResultsList ::=             SEQUENCE (SIZE (1..maxTrCH)) OF
                                             BLER-MeasurementResults

BLER-TransChIdList ::=                     SEQUENCE (SIZE (1..maxTrCH)) OF
                                             TransportChannelIdentity

BSIC-VerificationRequired ::=               ENUMERATED {
                                             required, notRequired }

BSICReported ::=                            CHOICE {
  -- Value maxCellMeas is not allowed for verifiedBSIC
  verifiedBSIC                               INTEGER (0..maxCellMeas),
  nonVerifiedBSIC                             BCC-ARFCN
}

BurstModeParameters ::=                    SEQUENCE {
  burstStart                                 INTEGER (0..15),
  burstLength                                INTEGER (10..25),
  burstFreq                                  INTEGER (1..16)
}

CellDCH-ReportCriteria ::=                  CHOICE {
  intraFreqReportingCriteria                 IntraFreqReportingCriteria,
  periodicalReportingCriteria                 PeriodicalReportingCriteria
}

CellDCH-ReportCriteria-LCR-r4 ::=           CHOICE {
  intraFreqReportingCriteria                 IntraFreqReportingCriteria-LCR-r4,
  periodicalReportingCriteria                 PeriodicalReportingCriteria
}

-- Actual value CellIndividualOffset = IE value * 0.5
CellIndividualOffset ::=                    INTEGER (-20..20)

CellInfo ::=                                SEQUENCE {
  cellIndividualOffset                       CellIndividualOffset             DEFAULT 0,
  referenceTimeDifferenceToCell               ReferenceTimeDifferenceToCell     OPTIONAL,
  modeSpecificInfo                           CHOICE {
    fdd                                       SEQUENCE {
      primaryCPICH-Info                       PrimaryCPICH-Info               OPTIONAL,
      primaryCPICH-TX-Power                    PrimaryCPICH-TX-Power           OPTIONAL,
      readSFN-Indicator                         BOOLEAN,
      tx-DiversityIndicator                     BOOLEAN
    },
    tdd                                       SEQUENCE {
      primaryCCPCH-Info                       PrimaryCCPCH-Info,
      primaryCCPCH-TX-Power                    PrimaryCCPCH-TX-Power           OPTIONAL,
      timeslotInfoList                          TimeslotInfoList               OPTIONAL,
      readSFN-Indicator                         BOOLEAN
    }
  }
}

CellInfo-r4 ::=                             SEQUENCE {
  cellIndividualOffset                       CellIndividualOffset             DEFAULT 0,
  referenceTimeDifferenceToCell               ReferenceTimeDifferenceToCell     OPTIONAL,
  modeSpecificInfo                           CHOICE {
    fdd                                       SEQUENCE {
      primaryCPICH-Info                       PrimaryCPICH-Info               OPTIONAL,
      primaryCPICH-TX-Power                    PrimaryCPICH-TX-Power           OPTIONAL,
      readSFN-Indicator                         BOOLEAN,
      tx-DiversityIndicator                     BOOLEAN
    },

```

```

    tdd
      primaryCCPCH-Info
      primaryCCPCH-TX-Power
      timeslotInfoList
      readSFN-Indicator
    }
  }
}

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

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

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

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

CellInfoSI-HCS-RSCP ::=
  cellIndividualOffset
  referenceTimeDifferenceToCell
  modeSpecificInfo
  fdd
    primaryCPICH-Info
    primaryCPICH-TX-Power
    readSFN-Indicator

```

SEQUENCE {

PrimaryCCPCH-Info-r4, OPTIONAL,

PrimaryCCPCH-TX-Power OPTIONAL,

TimeslotInfoList-r4 OPTIONAL,

BOOLEAN

SEQUENCE {

CellIndividualOffset DEFAULT 0,

ReferenceTimeDifferenceToCell OPTIONAL,

CHOICE {

SEQUENCE {

PrimaryCPICH-Info OPTIONAL,

PrimaryCPICH-TX-Power OPTIONAL,

BOOLEAN,

BOOLEAN

SEQUENCE {

PrimaryCCPCH-Info, OPTIONAL,

PrimaryCCPCH-TX-Power OPTIONAL,

TimeslotInfoList OPTIONAL,

BOOLEAN

CellSelectReselectInfoSIB-11-12-RSCP OPTIONAL

SEQUENCE {

CellIndividualOffset DEFAULT 0,

ReferenceTimeDifferenceToCell OPTIONAL,

PrimaryCCPCH-Info-LCR-r4,

PrimaryCCPCH-TX-Power OPTIONAL,

TimeslotInfoList-LCR-r4 OPTIONAL,

BOOLEAN,

CellSelectReselectInfoSIB-11-12-RSCP OPTIONAL

SEQUENCE {

CellIndividualOffset DEFAULT 0,

ReferenceTimeDifferenceToCell OPTIONAL,

CHOICE {

SEQUENCE {

PrimaryCPICH-Info OPTIONAL,

PrimaryCPICH-TX-Power OPTIONAL,

BOOLEAN,

BOOLEAN

SEQUENCE {

PrimaryCCPCH-Info, OPTIONAL,

PrimaryCCPCH-TX-Power OPTIONAL,

TimeslotInfoList OPTIONAL,

BOOLEAN

CellSelectReselectInfoSIB-11-12-ECN0 OPTIONAL

SEQUENCE {

CellIndividualOffset DEFAULT 0,

ReferenceTimeDifferenceToCell OPTIONAL,

PrimaryCCPCH-Info-LCR-r4,

PrimaryCCPCH-TX-Power OPTIONAL,

TimeslotInfoList-LCR-r4 OPTIONAL,

BOOLEAN,

CellSelectReselectInfoSIB-11-12-ECN0 OPTIONAL

SEQUENCE {

CellIndividualOffset DEFAULT 0,

ReferenceTimeDifferenceToCell OPTIONAL,

CHOICE {

SEQUENCE {

PrimaryCPICH-Info OPTIONAL,

PrimaryCPICH-TX-Power OPTIONAL,

BOOLEAN,

```

        tx-DiversityIndicator          BOOLEAN
    },
    tdd                                SEQUENCE {
        primaryCCPCH-Info              PrimaryCCPCH-Info,
        primaryCCPCH-TX-Power          PrimaryCCPCH-TX-Power    OPTIONAL,
        timeslotInfoList               TimeslotInfoList       OPTIONAL,
        readSFN-Indicator              BOOLEAN
    }
},
cellSelectionReselectionInfo         CellSelectReselectInfoSIB-11-12-HCS-RSCP  OPTIONAL
}

CellInfoSI-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    cellIndividualOffset               CellIndividualOffset    DEFAULT 0,
    referenceTimeDifferenceToCell       ReferenceTimeDifferenceToCell  OPTIONAL,
    primaryCCPCH-Info                  PrimaryCCPCH-Info-LCR-r4,
    primaryCCPCH-TX-Power              PrimaryCCPCH-TX-Power    OPTIONAL,
    timeslotInfoList                  TimeslotInfoList-LCR-r4  OPTIONAL,
    readSFN-Indicator                 BOOLEAN,
    cellSelectionReselectionInfo       CellSelectReselectInfoSIB-11-12-HCS-RSCP  OPTIONAL
}

CellInfoSI-HCS-ECN0 ::= SEQUENCE {
    cellIndividualOffset               CellIndividualOffset    DEFAULT 0,
    referenceTimeDifferenceToCell       ReferenceTimeDifferenceToCell  OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                             SEQUENCE {
            primaryCPICH-Info            PrimaryCPICH-Info      OPTIONAL,
            primaryCPICH-TX-Power        PrimaryCPICH-TX-Power  OPTIONAL,
            readSFN-Indicator            BOOLEAN,
            tx-DiversityIndicator        BOOLEAN
        },
        tdd                             SEQUENCE {
            primaryCCPCH-Info            PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power        PrimaryCCPCH-TX-Power  OPTIONAL,
            timeslotInfoList             TimeslotInfoList       OPTIONAL,
            readSFN-Indicator            BOOLEAN
        }
    },
    cellSelectionReselectionInfo         CellSelectReselectInfoSIB-11-12-HCS-ECN0  OPTIONAL
}

CellInfoSI-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    cellIndividualOffset               CellIndividualOffset    DEFAULT 0,
    referenceTimeDifferenceToCell       ReferenceTimeDifferenceToCell  OPTIONAL,
    primaryCCPCH-Info                  PrimaryCCPCH-Info-LCR-r4,
    primaryCCPCH-TX-Power              PrimaryCCPCH-TX-Power    OPTIONAL,
    timeslotInfoList                  TimeslotInfoList-LCR-r4  OPTIONAL,
    readSFN-Indicator                 BOOLEAN,
    cellSelectionReselectionInfo       CellSelectReselectInfoSIB-11-12-HCS-ECN0  OPTIONAL
}

CellMeasuredResults ::= SEQUENCE {
    cellIdentity                       CellIdentity            OPTIONAL,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy                               SFN-SFN-ObsTimeDifference  OPTIONAL,
    cellSynchronisationInfo            CellSynchronisationInfo  OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                             SEQUENCE {
            primaryCPICH-Info            PrimaryCPICH-Info,
            cpich-Ec-N0                  CPICH-Ec-N0            OPTIONAL,
            cpich-RSCP                    CPICH-RSCP             OPTIONAL,
            pathloss                       Pathloss                OPTIONAL
        },
        tdd                             SEQUENCE {
            cellParametersID             CellParametersID,
            proposedTGSN                 TGSN                    OPTIONAL,
            primaryCCPCH-RSCP            PrimaryCCPCH-RSCP       OPTIONAL,
            pathloss                       Pathloss                OPTIONAL,
            timeslotISCP-List             TimeslotISCP-List       OPTIONAL
        }
    }
}

CellMeasurementEventResults ::= CHOICE {
    fdd                                SEQUENCE (SIZE (1..maxCellMeas)) OF
        PrimaryCPICH-Info,

```

```

tdd                               SEQUENCE (SIZE (1..maxCellMeas)) OF
}                                 PrimaryCCPCH-Info

CellMeasurementEventResults-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        PrimaryCCPCH-Info-LCR-r4

CellReportingQuantities ::=          SEQUENCE {
-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
dummy                               SFN-SFN-OTD-Type,
cellIdentity-reportingIndicator      BOOLEAN,
cellSynchronisationInfoReportingIndicator  BOOLEAN,
modeSpecificInfo                     CHOICE {
fdd                                   SEQUENCE {
cpich-Ec-N0-reportingIndicator      BOOLEAN,
cpich-RSCP-reportingIndicator       BOOLEAN,
pathloss-reportingIndicator         BOOLEAN
},
tdd                                   SEQUENCE {
timeslotISCP-reportingIndicator     BOOLEAN,
proposedTGSN-ReportingRequired     BOOLEAN,
primaryCCPCH-RSCP-reportingIndicator  BOOLEAN,
pathloss-reportingIndicator         BOOLEAN
}
}
}

CellSelectReselectInfoSIB-11-12 ::= SEQUENCE {
q-Offset1S-N                        Q-OffsetS-N                        DEFAULT 0,
q-Offset2S-N                        Q-OffsetS-N                        OPTIONAL,
maxAllowedUL-TX-Power               MaxAllowedUL-TX-Power             OPTIONAL,
hcs-NeighbouringCellInformation-RSCP HCS-NeighbouringCellInformation-RSCP
OPTIONAL,
modeSpecificInfo                     CHOICE {
fdd                                   SEQUENCE {
q-QualMin                          Q-QualMin                          OPTIONAL,
q-RxlevMin                          Q-RxlevMin                          OPTIONAL
},
tdd                                   SEQUENCE {
q-RxlevMin                          Q-RxlevMin                          OPTIONAL
},
gsm                                   SEQUENCE {
q-RxlevMin                          Q-RxlevMin                          OPTIONAL
}
}
}

CellSelectReselectInfoSIB-11-12-RSCP ::= SEQUENCE {
q-OffsetS-N                          Q-OffsetS-N                        DEFAULT 0,
maxAllowedUL-TX-Power               MaxAllowedUL-TX-Power             OPTIONAL,
modeSpecificInfo                     CHOICE {
fdd                                   SEQUENCE {
q-QualMin                          Q-QualMin                          OPTIONAL,
q-RxlevMin                          Q-RxlevMin                          OPTIONAL
},
tdd                                   SEQUENCE {
q-RxlevMin                          Q-RxlevMin                          OPTIONAL
},
gsm                                   SEQUENCE {
q-RxlevMin                          Q-RxlevMin                          OPTIONAL
}
}
}

CellSelectReselectInfoSIB-11-12-ECNO ::= SEQUENCE {
q-Offset1S-N                        Q-OffsetS-N                        DEFAULT 0,
q-Offset2S-N                        Q-OffsetS-N                        DEFAULT 0,
maxAllowedUL-TX-Power               MaxAllowedUL-TX-Power             OPTIONAL,
modeSpecificInfo                     CHOICE {
fdd                                   SEQUENCE {
q-QualMin                          Q-QualMin                          OPTIONAL,
q-RxlevMin                          Q-RxlevMin                          OPTIONAL
},
tdd                                   SEQUENCE {
q-RxlevMin                          Q-RxlevMin                          OPTIONAL
},
gsm                                   SEQUENCE {

```

```

    }
    }
}

CellSelectReselectInfoSIB-11-12-HCS-RSCP ::= SEQUENCE {
    q-OffsetS-N          Q-OffsetS-N          DEFAULT 0,
    maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
    hcs-NeighbouringCellInformation-RSCP      HCS-NeighbouringCellInformation-RSCP
    OPTIONAL,
    modeSpecificInfo    CHOICE {
        fdd              SEQUENCE {
            q-QualMin    Q-QualMin          OPTIONAL,
            q-RxlevMin   Q-RxlevMin        OPTIONAL
        },
        tdd              SEQUENCE {
            q-RxlevMin   Q-RxlevMin        OPTIONAL
        },
        gsm              SEQUENCE {
            q-RxlevMin   Q-RxlevMin        OPTIONAL
        }
    }
}

CellSelectReselectInfoSIB-11-12-HCS-ECNO ::= SEQUENCE {
    q-Offset1S-N        Q-OffsetS-N          DEFAULT 0,
    q-Offset2S-N        Q-OffsetS-N          DEFAULT 0,
    maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
    hcs-NeighbouringCellInformation-ECNO      HCS-NeighbouringCellInformation-ECNO
    OPTIONAL,
    modeSpecificInfo    CHOICE {
        fdd              SEQUENCE {
            q-QualMin    Q-QualMin          OPTIONAL,
            q-RxlevMin   Q-RxlevMin        OPTIONAL
        },
        tdd              SEQUENCE {
            q-RxlevMin   Q-RxlevMin        OPTIONAL
        },
        gsm              SEQUENCE {
            q-RxlevMin   Q-RxlevMin        OPTIONAL
        }
    }
}

CellSelectReselectInfo-v5xyExt ::= SEQUENCE {
    deltaQrxlevmin      DeltaQrxlevmin      OPTIONAL,
    deltaQhcs           DeltaRSCP           OPTIONAL
}

CellsForInterFreqMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    InterFreqCellID
CellsForInterRATMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    InterRATCellID
CellsForIntraFreqMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    IntraFreqCellID

CellSynchronisationInfo ::= SEQUENCE {
    modeSpecificInfo    CHOICE {
        fdd              SEQUENCE {
            countC-SFN-Frame-difference CountC-SFN-Frame-difference OPTIONAL,
            tm            INTEGER(0..38399)
        },
        tdd              SEQUENCE {
            countC-SFN-Frame-difference CountC-SFN-Frame-difference OPTIONAL
        }
    }
}

CellToReport ::= SEQUENCE {
    bsicReported       BSICReported
}

CellToReportList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellToReport

CodePhaseSearchWindow ::= ENUMERATED {
    w1023, w1, w2, w3, w4, w6, w8,
    w12, w16, w24, w32, w48, w64,
}

```

```

w96, w128, w192 }

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

-- SPARE: CPICH-Ec-No, Max = 49
-- Values above Max are spare
CPICH-Ec-N0 ::= INTEGER (0..63)

-- SPARE: CPICH- RSCP, Max = 91
-- Values above Max are spare
CPICH-RSCP ::= INTEGER (0..127)

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

--Actual value DeltaQrxlevmin = IE value * 2
DeltaQrxlevmin ::= INTEGER (-2..-1)

DeltaRSCP ::= INTEGER (-5..-1)

DeltaRSCPerCell ::= SEQUENCE {
  deltaRSCP          DeltaRSCP  OPTIONAL
}

-- Actual value DeltaRRC = IE value * 0.032
DeltaRRC ::= INTEGER (-7..7)

DGPS-CorrectionSatInfo ::= SEQUENCE {
  satID              SatID,
  iode               IODE,
  udre               UDRE,
  prc                PRC,
  rrc                RRC,
  -- dummy1 and dummy2 are not used in this version of the specification and should be ignored.
  dummy1             DeltaPRC,
  dummy2             DeltaRRC,
  -- dummy3 and dummy4 are not used in this version of the specification. They should not
  -- be sent and if received they should be ignored.
  dummy3             DeltaPRC  OPTIONAL,
  dummy4             DeltaRRC  OPTIONAL
}

DGPS-CorrectionSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF
  DGPS-CorrectionSatInfo

DiffCorrectionStatus ::= ENUMERATED {
  udre-1-0, udre-0-75, udre-0-5, udre-0-3,
  udre-0-2, udre-0-1, noData, invalidData }

DL-TransportChannelBLER ::= INTEGER (0..63)

DopplerUncertainty ::= ENUMERATED {
  hz12-5, hz25, hz50, hz100, hz200,
  spare3, spare2, spare1 }

EllipsoidPoint ::= SEQUENCE {
  latitudeSign      ENUMERATED { north, south },
  latitude          INTEGER (0..8388607),
  longitude         INTEGER (-8388608..8388607)
}

EllipsoidPointAltitude ::= SEQUENCE {
  latitudeSign      ENUMERATED { north, south },
  latitude          INTEGER (0..8388607),
  longitude         INTEGER (-8388608..8388607),
  altitudeDirection ENUMERATED {height, depth},
  altitude          INTEGER (0..32767)
}

EllipsoidPointAltitudeEllipsoide ::= SEQUENCE {
  latitudeSign      ENUMERATED { north, south },
  latitude          INTEGER (0..8388607),

```

```

longitude                INTEGER (-8388608..8388607),
altitudeDirection        ENUMERATED {height, depth},
altitude                 INTEGER (0..32767),
uncertaintySemiMajor     INTEGER (0..127),
uncertaintySemiMinor     INTEGER (0..127),
-- Actual value orientationMajorAxis = IE value * 2
orientationMajorAxis     INTEGER (0..89),
uncertaintyAltitude      INTEGER (0..127),
confidence                INTEGER (0..100)
}

EllipsoidPointUncertCircle ::= SEQUENCE {
latitudeSign             ENUMERATED { north, south },
latitude                 INTEGER (0..8388607),
longitude                INTEGER (-8388608..8388607),
uncertaintyCode          INTEGER (0..127)
}

EllipsoidPointUncertEllipse ::= SEQUENCE {
latitudeSign             ENUMERATED { north, south },
latitude                 INTEGER (0..8388607),
longitude                INTEGER (-8388608..8388607),
uncertaintySemiMajor     INTEGER (0..127),
uncertaintySemiMinor     INTEGER (0..127),
-- Actual value orientationMajorAxis = IE value * 2
orientationMajorAxis     INTEGER (0..89),
confidence                INTEGER (0..100)
}

EnvironmentCharacterisation ::= ENUMERATED {
possibleHeavyMultipathNLOS,
lightMultipathLOS,
notDefined,
spare }

Event1a ::= SEQUENCE {
triggeringCondition      TriggeringCondition2,
reportingRange           ReportingRange,
forbiddenAffectCellList ForbiddenAffectCellList           OPTIONAL,
w                         W,
reportDeactivationThreshold ReportDeactivationThreshold,
reportingAmount          ReportingAmount,
reportingInterval        ReportingInterval
}

Event1a-r4 ::= SEQUENCE {
triggeringCondition      TriggeringCondition2,
reportingRange           ReportingRange,
forbiddenAffectCellList ForbiddenAffectCellList-r4           OPTIONAL,
w                         W,
reportDeactivationThreshold ReportDeactivationThreshold,
reportingAmount          ReportingAmount,
reportingInterval        ReportingInterval
}

Event1a-LCR-r4 ::= SEQUENCE {
triggeringCondition      TriggeringCondition2,
reportingRange           ReportingRange,
forbiddenAffectCellList ForbiddenAffectCellList-LCR-r4           OPTIONAL,
w                         W,
reportDeactivationThreshold ReportDeactivationThreshold,
reportingAmount          ReportingAmount,
reportingInterval        ReportingInterval
}

Event1b ::= SEQUENCE {
triggeringCondition      TriggeringCondition1,
reportingRange           ReportingRange,
forbiddenAffectCellList ForbiddenAffectCellList           OPTIONAL,
w                         W
}

Event1b-r4 ::= SEQUENCE {
triggeringCondition      TriggeringCondition1,
reportingRange           ReportingRange,

```

```

    forbiddenAffectCellList      ForbiddenAffectCellList-r4      OPTIONAL,
    w                             W
}

Event1b-LCR-r4 ::=              SEQUENCE {
    triggeringCondition          TriggeringCondition1,
    reportingRange              ReportingRange,
    forbiddenAffectCellList     ForbiddenAffectCellList-LCR-r4      OPTIONAL,
    w                             W
}

Event1c ::=                     SEQUENCE {
    replacementActivationThreshold ReplacementActivationThreshold,
    reportingAmount             ReportingAmount,
    reportingInterval           ReportingInterval
}

Event1e ::=                     SEQUENCE {
    triggeringCondition          TriggeringCondition2,
    thresholdUsedFrequency      ThresholdUsedFrequency
}

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

Event2a ::=                     SEQUENCE {
    -- dummy is not used in this version of the specification and should be ignored
    dummy                       Threshold,
    usedFreqW                   W,
    hysteresis                  HysteresisInterFreq,
    timeToTrigger               TimeToTrigger,
    reportingCellStatus         ReportingCellStatus      OPTIONAL,
    nonUsedFreqParameterList    NonUsedFreqParameterList      OPTIONAL
}

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

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

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

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

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

Event3a ::=                     SEQUENCE {
    thresholdOwnSystem          Threshold,
}

```

```

w
thresholdOtherSystem
hysteresis
timeToTrigger
reportingCellStatus
}

Event3b ::=
thresholdOtherSystem
hysteresis
timeToTrigger
reportingCellStatus
}

Event3c ::=
thresholdOtherSystem
hysteresis
timeToTrigger
reportingCellStatus
}

Event3d ::=
hysteresis
timeToTrigger
reportingCellStatus
}

EventIDInterFreq ::=
EventIDInterRAT ::=
EventIDIntraFreq ::=

EventResults ::=
intraFreqEventResults
interFreqEventResults
interRATEventResults
trafficVolumeEventResults
qualityEventResults
ue-InternalEventResults
ue-positioning-MeasurementEventResults
spare
}

ExtraDopplerInfo ::=
-- Actual value doppler1stOrder = IE value * 0.023
doppler1stOrder
dopplerUncertainty
}

FACH-MeasurementOccasionInfo ::=
fACH-meas-occasion-coeff
inter-freq-FDD-meas-ind
-- inter-freq-TDD-meas-ind is for 3.84Mcps TDD. For 1.28Mcps TDD, the IE in
-- FACH-MeasurementOccasionInfo-LCR-r4-ext is used.
inter-freq-TDD-meas-ind
inter-RAT-meas-ind
}

FACH-MeasurementOccasionInfo-LCR-r4-ext ::= SEQUENCE {
inter-freq-TDD128-meas-ind
}

FilterCoefficient ::=
}

-- Actual value FineSFN-SFN = IE value * 0.0625
FineSFN-SFN ::=

```

```

ForbiddenAffectCell ::= CHOICE {
    fdd PrimaryCPICH-Info,
    tdd PrimaryCCPCH-Info
}

ForbiddenAffectCell-r4 ::= CHOICE {
    fdd PrimaryCPICH-Info,
    tdd PrimaryCCPCH-Info-r4
}

ForbiddenAffectCell-LCR-r4 ::= SEQUENCE {
    tdd PrimaryCCPCH-Info-LCR-r4
}

ForbiddenAffectCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    ForbiddenAffectCell

ForbiddenAffectCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    ForbiddenAffectCell-r4

ForbiddenAffectCellList-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    ForbiddenAffectCell-LCR-r4

FreqQualityEstimateQuantity-FDD ::= ENUMERATED {
    cpich-Ec-N0,
    cpich-RSCP }

FreqQualityEstimateQuantity-TDD ::= ENUMERATED {
    primaryCCPCH-RSCP }

GPS-MeasurementParam ::= SEQUENCE {
    satelliteID INTEGER (0..63),
    c-N0 INTEGER (0..63),
    doppler INTEGER (-32768..32768),
    wholeGPS-Chips INTEGER (0..1022),
    fractionalGPS-Chips INTEGER (0..1023),
    multipathIndicator MultipathIndicator,
    pseudorangeRMS-Error INTEGER (0..63)
}

GPS-MeasurementParamList ::= SEQUENCE (SIZE (1..maxSat)) OF
    GPS-MeasurementParam

GSM-CarrierRSSI ::= BIT STRING (SIZE (6))

GSM-MeasuredResults ::= SEQUENCE {
    gsm-CarrierRSSI GSM-CarrierRSSI OPTIONAL,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy INTEGER (46..173) OPTIONAL,
    bsicReported BSICReported,
    observedTimeDifferenceToGSM ObservedTimeDifferenceToGSM OPTIONAL
}

GSM-MeasuredResultsList ::= SEQUENCE (SIZE (1..maxReportedGSMCells)) OF
    GSM-MeasuredResults

GPS-TOW-1msec ::= INTEGER (0..604799999)

GPS-TOW-Assist ::= SEQUENCE {
    satID SatID,
    tlm-Message BIT STRING (SIZE (14)),
    tlm-Reserved BIT STRING (SIZE (2)),
    alert BOOLEAN,
    antiSpoof BOOLEAN
}

GPS-TOW-AssistList ::= SEQUENCE (SIZE (1..maxSat)) OF
    GPS-TOW-Assist

HCS-CellReselectInformation-RSCP ::= SEQUENCE {
    -- TABULAR: The default value for penaltyTime is "notUsed"
    -- Temporary offset is nested inside PenaltyTime-RSCP
    penaltyTime PenaltyTime-RSCP
}

```

```

HCS-CellReselectInformation-ECNO ::= SEQUENCE {
  -- TABULAR: The default value for penaltyTime is "notUsed"
  -- Temporary offset is nested inside PenaltyTime-ECNO
  penaltyTime PenaltyTime-ECNO
}

HCS-NeighbouringCellInformation-RSCP ::= SEQUENCE {
  hcs-PRIO HCS-PRIO DEFAULT 0,
  q-HCS Q-HCS DEFAULT 0,
  hcs-CellReselectInformation HCS-CellReselectInformation-RSCP
}

HCS-NeighbouringCellInformation-ECNO ::= SEQUENCE {
  hcs-PRIO HCS-PRIO DEFAULT 0,
  q-HCS Q-HCS DEFAULT 0,
  hcs-CellReselectInformation HCS-CellReselectInformation-ECNO
}

HCS-PRIO ::= INTEGER (0..7)

HCS-ServingCellInformation ::= SEQUENCE {
  hcs-PRIO HCS-PRIO DEFAULT 0,
  q-HCS Q-HCS DEFAULT 0,
  t-CR-Max T-CRMax OPTIONAL
}

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

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

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

InterFreqCell-LCR-r4 ::= SEQUENCE {
  frequencyInfo FrequencyInfo,
  nonFreqRelatedEventResults CellMeasurementEventResults-LCR-r4
}

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

InterFreqCellInfoList ::= SEQUENCE {
  removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
  newInterFreqCellList NewInterFreqCellList OPTIONAL,
  cellsForInterFreqMeasList CellsForInterFreqMeasList OPTIONAL
}

InterFreqCellInfoList-r4 ::= SEQUENCE {
  removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
  newInterFreqCellList NewInterFreqCellList-r4 OPTIONAL,
  cellsForInterFreqMeasList CellsForInterFreqMeasList OPTIONAL
}

InterFreqCellInfoSI-List-RSCP ::= SEQUENCE {
  removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
  newInterFreqCellList NewInterFreqCellSI-List-RSCP OPTIONAL
}

InterFreqCellInfoSI-List-ECNO ::= SEQUENCE {
  removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
  newInterFreqCellList NewInterFreqCellSI-List-ECNO OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP ::= SEQUENCE {
  removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
  newInterFreqCellList NewInterFreqCellSI-List-HCS-RSCP OPTIONAL
}

InterFreqCellInfoSI-List-HCS-ECNO ::= SEQUENCE {
  removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
  newInterFreqCellList NewInterFreqCellSI-List-HCS-ECNO OPTIONAL
}

InterFreqCellInfoSI-List-RSCP-LCR ::= SEQUENCE {
  removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
  newInterFreqCellList NewInterFreqCellSI-List-RSCP-LCR-r4 OPTIONAL
}

```

```

}

InterFreqCellInfoSI-List-ECN0-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-ECN0-LCR-r4 OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 OPTIONAL
}

InterFreqCellInfoSI-List-HCS-ECN0-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-HCS-ECN0-LCR-r4 OPTIONAL
}

InterFreqCellList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqCell

InterFreqCellList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqCell-LCR-r4

InterFreqCellMeasuredResultsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellMeasuredResults

InterFreqEvent ::= CHOICE {
    event2a Event2a,
    event2b Event2b,
    event2c Event2c,
    event2d Event2d,
    event2e Event2e,
    event2f Event2f
}

InterFreqEventList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    InterFreqEvent

--Following IE shall be used regardless of CPICH RSCP(FDD) or Primary CCPCH RSCP(TDD)
--The order of the list corresponds to the order of the cells in Inter-FrequencyMeasuredResultsList
InterFrequencyMeasuredResultsList-v5xyext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    DeltaRSCPPerCell

Inter-FreqEventCriteria-v5xyext ::= SEQUENCE {
    thresholdUsedFrequency-delta DeltaRSCP,
    thresholdNonUsedFrequency-deltaList ThresholdNonUsedFrequency-deltaList OPTIONAL
}

--The order of the list corresponds to the order of the events in Inter-FreqEventList
Inter-FreqEventCriteriaList-v5xyext ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    Inter-FreqEventCriteria-v5xyext

--The order of the list corresponds to the order of relevant events in Intra-FreqEventCriteriaList
--i.e. the first element of the list corresponds to the first occurrence of event 1e, 1f, 1h, 1i,
--the second element of the list corresponds to the second occurrence of event 1e, 1f, 1h, 1i
Intra-FreqEventCriteriaList-v5xyext ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    DeltaRSCP

--Following IE shall be used regardless of CPICH RSCP(FDD) or Primary CCPCH RSCP(TDD)
--The order of the list corresponds to the order of the cells in Intra-FrequencyMeasuredResultsList
IntraFrequencyMeasuredResultsList-v5xyext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    DeltaRSCPPerCell

IntraFreqReportingCriteria-1b-r5ext ::= SEQUENCE {
    periodicReportingInfo-1b PeriodicReportingInfo-1b
}

PeriodicReportingInfo-1b ::= SEQUENCE {
    reportingAmount ReportingAmount,
    reportingInterval ReportingInterval
}

InterFreqEventResults ::= SEQUENCE {
    eventID EventIDInterFreq,
    interFreqCellList InterFreqCellList OPTIONAL
}

InterFreqEventResults-LCR-r4-ext ::= SEQUENCE {
    eventID EventIDInterFreq,

```

```

    interFreqCellList                InterFreqCellList-LCR-r4-ext        OPTIONAL
}

InterFreqMeasQuantity ::=          SEQUENCE {
    reportingCriteria                CHOICE {
        intraFreqReportingCriteria    SEQUENCE {
            intraFreqMeasQuantity      IntraFreqMeasQuantity
        },
        interFreqReportingCriteria     SEQUENCE {
            filterCoefficient           FilterCoefficient           DEFAULT fc0,
            modeSpecificInfo            CHOICE {
                fdd                     SEQUENCE {
                    freqQualityEstimateQuantity-FDD    FreqQualityEstimateQuantity-FDD
                },
                tdd                     SEQUENCE {
                    freqQualityEstimateQuantity-TDD    FreqQualityEstimateQuantity-TDD
                }
            }
        }
    }
}

InterFreqMeasuredResults ::=       SEQUENCE {
    frequencyInfo                    FrequencyInfo                OPTIONAL,
    ultra-CarrierRSSI                UTRA-CarrierRSSI            OPTIONAL,
    interFreqCellMeasuredResultsList  InterFreqCellMeasuredResultsList  OPTIONAL
}

InterFreqMeasuredResultsList ::=   SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqMeasuredResults

InterFreqMeasurementSysInfo-RSCP ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-RSCP    OPTIONAL
}

InterFreqMeasurementSysInfo-ECN0 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-ECN0    OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-HCS-RSCP  OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-ECN0 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-HCS-ECN0  OPTIONAL
}

InterFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-RSCP-LCR  OPTIONAL
}

InterFreqMeasurementSysInfo-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-ECN0-LCR  OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-HCS-RSCP-LCR  OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-HCS-ECN0-LCR  OPTIONAL
}

InterFreqReportCriteria ::=        CHOICE {
    intraFreqReportingCriteria        IntraFreqReportingCriteria,
    interFreqReportingCriteria        InterFreqReportingCriteria,
    periodicalReportingCriteria        PeriodicalWithReportingCellStatus,
    noReporting                        ReportingCellStatusOpt
}

InterFreqReportCriteria-r4 ::=     CHOICE {
    intraFreqReportingCriteria-r4     IntraFreqReportingCriteria-r4,
    interFreqReportingCriteria        InterFreqReportingCriteria,
    periodicalReportingCriteria        PeriodicalWithReportingCellStatus,
    noReporting                        ReportingCellStatusOpt
}

```

```

InterFreqReportingCriteria ::= SEQUENCE {
    interFreqEventList          InterFreqEventList          OPTIONAL
}

InterFreqReportingQuantity ::= SEQUENCE {
    ultra-Carrier-RSSI          BOOLEAN,
    frequencyQualityEstimate    BOOLEAN,
    nonFreqRelatedQuantities    CellReportingQuantities
}

InterFrequencyMeasurement ::= SEQUENCE {
    interFreqCellInfoList       InterFreqCellInfoList,
    interFreqMeasQuantity        InterFreqMeasQuantity          OPTIONAL,
    interFreqReportingQuantity   InterFreqReportingQuantity  OPTIONAL,
    measurementValidity          MeasurementValidity          OPTIONAL,
    interFreqSetUpUpdate         UE-AutonomousUpdateMode    OPTIONAL,
    reportCriteria               InterFreqReportCriteria
}

InterFrequencyMeasurement-r4 ::= SEQUENCE {
    interFreqCellInfoList-r4    InterFreqCellInfoList-r4,
    interFreqMeasQuantity        InterFreqMeasQuantity          OPTIONAL,
    interFreqReportingQuantity   InterFreqReportingQuantity  OPTIONAL,
    measurementValidity          MeasurementValidity          OPTIONAL,
    interFreqSetUpUpdate         UE-AutonomousUpdateMode    OPTIONAL,
    reportCriteria               InterFreqReportCriteria-r4
}

InterRAT-TargetCellDescription ::= SEQUENCE {
    technologySpecificInfo      CHOICE {
        gsm                     SEQUENCE {
            bsic                 BSIC,
            frequency-band       Frequency-Band,
            bcch-ARFCN           BCCH-ARFCN,
            ncMode                NC-Mode          OPTIONAL
        },
        is-2000                  NULL,
        spare2                    NULL,
        spare1                    NULL
    }
}

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

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

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

InterRATCellInfoList-r4 ::= SEQUENCE {
    removedInterRATCellList     RemovedInterRATCellList,
    newInterRATCellList         NewInterRATCellList          OPTIONAL,
    cellsForInterRATMeasList    CellsForInterRATMeasList          OPTIONAL
}

InterRATCellIndividualOffset ::= INTEGER (-50..50)

InterRATEvent ::= CHOICE {
    event3a                      Event3a,
    event3b                      Event3b,
    event3c                      Event3c,
    event3d                      Event3d
}

InterRATEventList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    InterRATEvent

InterRATEventResults ::= SEQUENCE {

```

```

    eventID                               EventIDInterRAT,
    cellToReportList                       CellToReportList
}

InterRATInfo ::=                          ENUMERATED {
                                           gsm }

InterRATMeasQuantity ::=                  SEQUENCE {
    measQuantityUTRAN-QualityEstimate      IntraFreqMeasQuantity          OPTIONAL,
    ratSpecificInfo                         CHOICE {
        gsm                                 SEQUENCE {
            measurementQuantity             MeasurementQuantityGSM,
            filterCoefficient               FilterCoefficient             DEFAULT fc0,
            bsic-VerificationRequired       BSIC-VerificationRequired
        },
        is-2000                             SEQUENCE {
            tadd-EcIo                       INTEGER (0..63),
            tcomp-EcIo                      INTEGER (0..15),
            softSlope                        INTEGER (0..63)                OPTIONAL,
            addIntercept                    INTEGER (0..63)                OPTIONAL
        }
    }
}

InterRATMeasuredResults ::=              CHOICE {
    gsm                                     GSM-MeasuredResultsList,
    spare                                   NULL
}

InterRATMeasuredResultsList ::=          SEQUENCE (SIZE (1..maxOtherRAT-16)) OF
                                           InterRATMeasuredResults

InterRATMeasurement ::=                  SEQUENCE {
    interRATCellInfoList                   InterRATCellInfoList           OPTIONAL,
    interRATMeasQuantity                   InterRATMeasQuantity          OPTIONAL,
    interRATReportingQuantity              InterRATReportingQuantity     OPTIONAL,
    reportCriteria                          InterRATReportCriteria
}

InterRATMeasurement-r4 ::=                SEQUENCE {
    interRATCellInfoList-r4                 InterRATCellInfoList-r4       OPTIONAL,
    interRATMeasQuantity                   InterRATMeasQuantity          OPTIONAL,
    interRATReportingQuantity              InterRATReportingQuantity     OPTIONAL,
    reportCriteria                          InterRATReportCriteria
}

InterRATMeasurementSysInfo ::=           SEQUENCE {
    interRATCellInfoList                   InterRATCellInfoList           OPTIONAL
}

InterRATMeasurementSysInfo-B ::=          SEQUENCE {
    interRATCellInfoList                   InterRATCellInfoList-B       OPTIONAL
}

InterRATReportCriteria ::=                CHOICE {
    interRATReportingCriteria               InterRATReportingCriteria,
    periodicalReportingCriteria             PeriodicalWithReportingCellStatus,
    noReporting                             ReportingCellStatusOpt
}

InterRATReportingCriteria ::=             SEQUENCE {
    interRATEventList                       InterRATEventList             OPTIONAL
}

InterRATReportingQuantity ::=             SEQUENCE {
    utran-EstimatedQuality                  BOOLEAN,
    ratSpecificInfo                         CHOICE {
        gsm                                 SEQUENCE {
            dummy                            BOOLEAN,
            observedTimeDifferenceGSM        BOOLEAN,
            gsm-Carrier-RSSI                BOOLEAN
        }
    }
}

IntraFreqCellID ::=                      INTEGER (0..maxCellMeas-1)

IntraFreqCellInfoList ::=                SEQUENCE {

```

```

    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellList          OPTIONAL,
    cellsForIntraFreqMeasList     CellsForIntraFreqMeasList     OPTIONAL
}

IntraFreqCellInfoList-r4 ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellList-r4      OPTIONAL,
    cellsForIntraFreqMeasList     CellsForIntraFreqMeasList     OPTIONAL
}

IntraFreqCellInfoSI-List-RSCP ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-RSCP
}

IntraFreqCellInfoSI-List-ECNO ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-ECNO
}

IntraFreqCellInfoSI-List-HCS-RSCP ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-HCS-RSCP
}

IntraFreqCellInfoSI-List-HCS-ECNO ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-HCS-ECNO
}

IntraFreqCellInfoSI-List-RSCP-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-RSCP-LCR-r4
}

IntraFreqCellInfoSI-List-ECNO-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-ECNO-LCR-r4
}

IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4
}

IntraFreqCellInfoSI-List-HCS-ECNO-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-HCS-ECNO-LCR-r4
}

IntraFreqEvent ::= CHOICE {
    e1a      Event1a,
    e1b      Event1b,
    e1c      Event1c,
    e1d      NULL,
    e1e      Event1e,
    e1f      Event1f,
    e1g      NULL,
    e1h      ThresholdUsedFrequency,
    e1i      ThresholdUsedFrequency
}

IntraFreqEvent-r4 ::= CHOICE {
    e1a      Event1a-r4,
    e1b      Event1b-r4,
    e1c      Event1c,
    e1d      NULL,
    e1e      Event1e,
    e1f      Event1f,
    e1g      NULL,
    e1h      ThresholdUsedFrequency,
    e1i      ThresholdUsedFrequency
}

IntraFreqEvent-LCR-r4 ::= CHOICE {
    e1a      Event1a-LCR-r4,
    e1b      Event1b-LCR-r4,

```

```

    e1c          Event1c,
    e1d          NULL,
    e1e          Event1e,
    e1f          Event1f,
    e1g          NULL,
    e1h          ThresholdUsedFrequency,
    e1i          ThresholdUsedFrequency
}

IntraFreqEvent-1d-r5ext ::= SEQUENCE {
    triggeringCondition  TriggeringCondition2  OPTIONAL,
    useCIO              BOOLEAN              OPTIONAL
}

IntraFreqEventCriteria ::= SEQUENCE {
    event                IntraFreqEvent,
    hysteresis           Hysteresis,
    timeToTrigger        TimeToTrigger,
    reportingCellStatus ReportingCellStatus  OPTIONAL
}

IntraFreqEventCriteria-r4 ::= SEQUENCE {
    event                IntraFreqEvent-r4,
    hysteresis           Hysteresis,
    timeToTrigger        TimeToTrigger,
    reportingCellStatus ReportingCellStatus  OPTIONAL
}

IntraFreqEventCriteria-LCR-r4 ::= SEQUENCE {
    event                IntraFreqEvent-LCR-r4,
    hysteresis           Hysteresis,
    timeToTrigger        TimeToTrigger,
    reportingCellStatus ReportingCellStatus  OPTIONAL
}

IntraFreqEventCriteriaList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria

IntraFreqEventCriteriaList-r4 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria-r4

IntraFreqEventCriteriaList-LCR-r4 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria-LCR-r4

IntraFreqEventResults ::= SEQUENCE {
    eventID              EventIDIntraFreq,
    cellMeasurementEventResults CellMeasurementEventResults
}

IntraFreqMeasQuantity ::= SEQUENCE {
    filterCoefficient    FilterCoefficient  DEFAULT fc0,
    modeSpecificInfo     CHOICE {
        fdd              SEQUENCE {
            intraFreqMeasQuantity-FDD IntraFreqMeasQuantity-FDD
        },
        tdd              SEQUENCE {
            intraFreqMeasQuantity-TDDList IntraFreqMeasQuantity-TDDList
        }
    }
}

-- If IntraFreqMeasQuantity-FDD is used in InterRATMeasQuantity, then only
-- cpich-Ec-N0 and cpich-RSCP are allowed.
-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
IntraFreqMeasQuantity-FDD ::= ENUMERATED {
    cpich-Ec-N0,
    cpich-RSCP,
    pathloss,
    dummy }

-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
IntraFreqMeasQuantity-TDD ::= ENUMERATED {
    primaryCCPCH-RSCP,
    pathloss,
    timeslotISCP,
    dummy }

```

```

IntraFreqMeasQuantity-TDDList ::= SEQUENCE (SIZE (1..4)) OF
    IntraFreqMeasQuantity-TDD

IntraFreqMeasuredResultsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellMeasuredResults

IntraFreqMeasurementSysInfo-RSCP ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-RSCP  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH         ReportingInfoForCellDCH        OPTIONAL
}

IntraFreqMeasurementSysInfo-ECNO ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-ECNO  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH         ReportingInfoForCellDCH        OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-HCS-RSCP  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH         ReportingInfoForCellDCH        OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-ECNO ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-HCS-ECNO  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH         ReportingInfoForCellDCH        OPTIONAL
}

IntraFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-RSCP-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH         ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-ECNO-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-ECNO-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH         ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH         ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-ECNO-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-HCS-ECNO-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH         ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

```

```

IntraFreqReportCriteria ::= CHOICE {
    intraFreqReportingCriteria
    periodicalReportingCriteria
    noReporting
}

IntraFreqReportCriteria-r4 ::= CHOICE {
    intraFreqReportingCriteria-r4
    periodicalReportingCriteria
    noReporting
}

IntraFreqReportingCriteria ::= SEQUENCE {
    eventCriteriaList
    IntraFreqEventCriteriaList OPTIONAL
}

IntraFreqReportingCriteria-r4 ::= SEQUENCE {
    eventCriteriaList
    IntraFreqEventCriteriaList-r4 OPTIONAL
}

IntraFreqReportingCriteria-LCR-r4 ::= SEQUENCE {
    eventCriteriaList
    IntraFreqEventCriteriaList-LCR-r4 OPTIONAL
}

IntraFreqReportingQuantity ::= SEQUENCE {
    activeSetReportingQuantities
    monitoredSetReportingQuantities
    detectedSetReportingQuantities
    CellReportingQuantities
    CellReportingQuantities
    CellReportingQuantities OPTIONAL
}

IntraFreqReportingQuantityForRACH ::= SEQUENCE {
    sfn-SFN-OTD-Type
    modeSpecificInfo
    fdd
        intraFreqRepQuantityRACH-FDD
        IntraFreqRepQuantityRACH-FDD
    },
    tdd
        intraFreqRepQuantityRACH-TDDList
        IntraFreqRepQuantityRACH-TDDList
    }
}

IntraFreqRepQuantityRACH-FDD ::= ENUMERATED {
    cpich-EcN0, cpich-RSCP,
    pathloss, noReport }

IntraFreqRepQuantityRACH-TDD ::= ENUMERATED {
    timeslotISCP,
    primaryCCPCH-RSCP,
    noReport }

IntraFreqRepQuantityRACH-TDDList ::= SEQUENCE (SIZE (1..2)) OF
    IntraFreqRepQuantityRACH-TDD

IntraFrequencyMeasurement ::= SEQUENCE {
    intraFreqCellInfoList
    intraFreqMeasQuantity
    intraFreqReportingQuantity
    measurementValidity
    reportCriteria
    IntraFreqCellInfoList
    IntraFreqMeasQuantity
    IntraFreqReportingQuantity
    MeasurementValidity
    IntraFreqReportCriteria
    OPTIONAL,
    OPTIONAL,
    OPTIONAL,
    OPTIONAL,
    OPTIONAL
}

IntraFrequencyMeasurement-r4 ::= SEQUENCE {
    intraFreqCellInfoList
    intraFreqMeasQuantity
    intraFreqReportingQuantity
    measurementValidity
    reportCriteria
    IntraFreqCellInfoList-r4
    IntraFreqMeasQuantity
    IntraFreqReportingQuantity
    MeasurementValidity
    IntraFreqReportCriteria-r4
    OPTIONAL,
    OPTIONAL,
    OPTIONAL,
    OPTIONAL,
    OPTIONAL
}

IODE ::= INTEGER (0..255)

IP-Length ::= ENUMERATED {
    ip15, ip110 }

IP-PCCPCH-r4 ::= BOOLEAN

```

```

IP-Spacing ::= ENUMERATED {
    e5, e7, e10, e15, e20,
    e30, e40, e50 }

IP-Spacing-TDD ::= ENUMERATED {
    e30, e40, e50, e70, e100}

IS-2000SpecificMeasInfo ::= ENUMERATED {
    frequency, timeslot, colourcode,
    outputpower, pn-Offset }

MaxNumberOfReportingCellsType1 ::= ENUMERATED {
    e1, e2, e3, e4, e5, e6}

MaxNumberOfReportingCellsType2 ::= ENUMERATED {
    e1, e2, e3, e4, e5, e6, e7, e8, e9, e10, e11, e12}

MaxNumberOfReportingCellsType3 ::= ENUMERATED {
    viactCellsPlus1,
    viactCellsPlus2,
    viactCellsPlus3,
    viactCellsPlus4,
    viactCellsPlus5,
    viactCellsPlus6 }

MaxReportedCellsOnRACH ::= ENUMERATED {
    noReport,
    currentCell,
    currentAnd-1-BestNeighbour,
    currentAnd-2-BestNeighbour,
    currentAnd-3-BestNeighbour,
    currentAnd-4-BestNeighbour,
    currentAnd-5-BestNeighbour,
    currentAnd-6-BestNeighbour }

MeasuredResults ::= CHOICE {
    intraFreqMeasuredResultsList      IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList      InterFreqMeasuredResultsList,
    interRATMeasuredResultsList       InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList  TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults             QualityMeasuredResults,
    ue-InternalMeasuredResults        UE-InternalMeasuredResults,
    ue-positioning-MeasuredResults     UE-Positioning-MeasuredResults,
    spare                              NULL
}

MeasuredResults-v390ext ::= SEQUENCE {
    ue-positioning-MeasuredResults-v390ext  UE-Positioning-MeasuredResults-v390ext
}

MeasuredResults-v5xyext ::= CHOICE {
    intraFrequencyMeasuredResultsList      IntraFrequencyMeasuredResultsList-v5xyext,
    interFrequencyMeasuredResultsList      InterFrequencyMeasuredResultsList-v5xyext
}

MeasuredResults-LCR-r4 ::= CHOICE {
    intraFreqMeasuredResultsList      IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList      InterFreqMeasuredResultsList,
    interRATMeasuredResultsList       InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList  TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults             QualityMeasuredResults,
    ue-InternalMeasuredResults        UE-InternalMeasuredResults-LCR-r4,
    ue-positioning-MeasuredResults     UE-Positioning-MeasuredResults,
    spare                              NULL
}

MeasuredResultsList ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasuredResults

MeasuredResultsList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasuredResults-LCR-r4

MeasuredResultsOnRACH ::= SEQUENCE {
    currentCell          SEQUENCE {
        modeSpecificInfo CHOICE {
            fdd           SEQUENCE {
                measurementQuantity CHOICE {

```

```

        cpich-Ec-N0
        cpich-RSCP
        pathloss
        spare
    }
},
tdd
    timeslotISCP
    primaryCCPCH-RSCP
}
},
monitoredCells
    MonitoredCellRACH-List
    OPTIONAL
}

MeasurementCommand ::=
    CHOICE {
        setup
        modify
            measurementType
        },
        release
        NULL
    }

MeasurementCommand-r4 ::=
    CHOICE {
        setup
        modify
            measurementType
        },
        release
        NULL
    }

MeasurementControlSysInfo ::=
    SEQUENCE {
        use-of-HCS
        hcs-not-used
            cellSelectQualityMeasure
            cpich-RSCP
            intraFreqMeasurementSysInfo
        OPTIONAL,
            interFreqMeasurementSysInfo
        },
        cpich-Ec-N0
        intraFreqMeasurementSysInfo
        OPTIONAL,
            interFreqMeasurementSysInfo
        },
        interRATMeasurementSysInfo
        InterRATMeasurementSysInfo-B
        OPTIONAL
    },
        hcs-used
        cellSelectQualityMeasure
        cpich-RSCP
        intraFreqMeasurementSysInfo
        OPTIONAL,
            interFreqMeasurementSysInfo
        },
        cpich-Ec-N0
        intraFreqMeasurementSysInfo
        OPTIONAL,
            interFreqMeasurementSysInfo
        },
        interRATMeasurementSysInfo
        InterRATMeasurementSysInfo
        OPTIONAL
    },
        trafficVolumeMeasSysInfo
        TrafficVolumeMeasSysInfo
        OPTIONAL,
        -- dummy is not used in this version of specification and it shall be ignored by the UE.
        dummy
        UE-InternalMeasurementSysInfo
        OPTIONAL
    }

MeasurementControlSysInfo-LCR-r4-ext ::=
    SEQUENCE {
        -- CHOICE use-of-HCS shall have the same value as the use-of-HCS
        -- in MeasurementControlSysInfo
        use-of-HCS
        hcs-not-used
            cellSelectQualityMeasure
            cpich-RSCP
            intraFreqMeasurementSysInfo
        OPTIONAL,
            interFreqMeasurementSysInfo
        },
        cpich-Ec-N0
        intraFreqMeasurementSysInfo
        OPTIONAL,
            interFreqMeasurementSysInfo
        },
        interRATMeasurementSysInfo
        InterRATMeasurementSysInfo
        OPTIONAL
    }
}

```

```

    cellSelectQualityMeasure CHOICE {
      cpich-RSCP SEQUENCE {
        intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-RSCP-LCR-r4 OPTIONAL,
        interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-RSCP-LCR-r4 OPTIONAL
      },
      cpich-Ec-N0 SEQUENCE {
        intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-ECN0-LCR-r4 OPTIONAL,
        interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-ECN0-LCR-r4 OPTIONAL
      }
    }
  },
  hcs-used SEQUENCE {
    -- CHOICE cellSelectQualityMeasure shall have the same value as the
    -- cellSelectQualityMeasure in MeasurementControlSysInfo
    cellSelectQualityMeasure CHOICE {
      cpich-RSCP SEQUENCE {
        intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4
OPTIONAL,
        interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 OPTIONAL
      },
      cpich-Ec-N0 SEQUENCE {
        intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-ECN0-LCR-r4
OPTIONAL,
        interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 OPTIONAL
      }
    }
  }
}

MeasurementIdentity ::= INTEGER (1..16)

MeasurementQuantityGSM ::= ENUMERATED {
  gsm-CarrierRSSI,
  dummy }

MeasurementReportingMode ::= SEQUENCE {
  measurementReportTransferMode TransferMode,
  periodicalOrEventTrigger PeriodicalOrEventTrigger
}

MeasurementType ::= CHOICE {
  intraFrequencyMeasurement IntraFrequencyMeasurement,
  interFrequencyMeasurement InterFrequencyMeasurement,
  interRATMeasurement InterRATMeasurement,
  ue-positioning-Measurement UE-Positioning-Measurement,
  trafficVolumeMeasurement TrafficVolumeMeasurement,
  qualityMeasurement QualityMeasurement,
  ue-InternalMeasurement UE-InternalMeasurement
}

MeasurementType-r4 ::= CHOICE {
  intraFrequencyMeasurement IntraFrequencyMeasurement-r4,
  interFrequencyMeasurement InterFrequencyMeasurement-r4,
  interRATMeasurement InterRATMeasurement-r4,
  up-Measurement UE-Positioning-Measurement-r4,
  trafficVolumeMeasurement TrafficVolumeMeasurement,
  qualityMeasurement QualityMeasurement,
  ue-InternalMeasurement UE-InternalMeasurement-r4
}

MeasurementValidity ::= SEQUENCE {
  ue-State ENUMERATED {
    cell-DCH, all-But-Cell-DCH, all-States }
}

MonitoredCellRACH-List ::= SEQUENCE (SIZE (1..8)) OF
  MonitoredCellRACH-Result

MonitoredCellRACH-Result ::= SEQUENCE {
  sfn-SFN-ObsTimeDifference SFN-SFN-ObsTimeDifference OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      primaryCPICH-Info PrimaryCPICH-Info,
      measurementQuantity CHOICE {
        cpich-Ec-N0 CPICH-Ec-N0,
        cpich-RSCP CPICH-RSCP,
        pathloss Pathloss,

```

```

        spare                                NULL                                OPTIONAL
    },
    tdd                                       SEQUENCE {
        cellParametersID                    CellParametersID,
        primaryCCPCH-RSCP                   PrimaryCCPCH-RSCP
    }
}

MultipathIndicator ::=                     ENUMERATED {
    nm,
    low,
    medium,
    high }

N-CR-T-CRMaxHyst ::=                       SEQUENCE {
    n-CR                                    INTEGER (1..16)                DEFAULT 8,
    t-CRMaxHyst                             T-CRMaxHyst
}

NavigationModelSatInfo ::=                 SEQUENCE {
    satID                                    SatID,
    satelliteStatus                          SatelliteStatus,
    ephemerisParameter                       EphemerisParameter            OPTIONAL
}

NavigationModelSatInfoList ::=             SEQUENCE (SIZE (1..maxSat)) OF
    NavigationModelSatInfo

EphemerisParameter ::=                   SEQUENCE {
    codeOnL2                                BIT STRING (SIZE (2)),
    uraIndex                                BIT STRING (SIZE (4)),
    satHealth                               BIT STRING (SIZE (6)),
    iodc                                    BIT STRING (SIZE (10)),
    l2Pflag                                BIT STRING (SIZE (1)),
    sflRevd                                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                                 SEQUENCE {
            neighbourIdentity                PrimaryCPICH-Info                OPTIONAL,
            ue-RX-TX-TimeDifferenceType2Info UE-RX-TX-TimeDifferenceType2Info    OPTIONAL
        },
        tdd                                 SEQUENCE {
            neighbourAndChannelIdentity       CellAndChannelIdentity            OPTIONAL
        }
    },
    neighbourQuality                         NeighbourQuality,
    sfm-SFM-ObsTimeDifference2              SFM-SFM-ObsTimeDifference2
}

Neighbour-v390ext ::=                     SEQUENCE {
    modeSpecificInfo                        CHOICE {

```

```

        fdd                SEQUENCE {
            frequencyInfo    FrequencyInfo
        },
        tdd                NULL
    }
}

NeighbourList ::=          SEQUENCE (SIZE (1..maxCellMeas)) OF
                            Neighbour

-- The order of the cells in IE NeighbourList-v390ext shall be the
-- same as the order in IE NeighbourList
NeighbourList-v390ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                            Neighbour-v390ext

NeighbourQuality ::=      SEQUENCE {
    ue-Positioning-OTDOA-Quality    UE-Positioning-OTDOA-Quality
}

NewInterFreqCell ::=      SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                   FrequencyInfo                   OPTIONAL,
    cellInfo                         CellInfo
}

NewInterFreqCell-r4 ::=   SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                   FrequencyInfo                   OPTIONAL,
    cellInfo                         CellInfo-r4
}

NewInterFreqCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                            NewInterFreqCell

NewInterFreqCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                            NewInterFreqCell-r4

NewInterFreqCellSI-RSCP ::= SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                   FrequencyInfo                   OPTIONAL,
    cellInfo                         CellInfoSI-RSCP
}

NewInterFreqCellSI-ECN0 ::= SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                   FrequencyInfo                   OPTIONAL,
    cellInfo                         CellInfoSI-ECN0
}

NewInterFreqCellSI-HCS-RSCP ::= SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                   FrequencyInfo                   OPTIONAL,
    cellInfo                         CellInfoSI-HCS-RSCP
}

NewInterFreqCellSI-HCS-ECN0 ::= SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                   FrequencyInfo                   OPTIONAL,
    cellInfo                         CellInfoSI-HCS-ECN0
}

NewInterFreqCellSI-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                   FrequencyInfo                   OPTIONAL,
    cellInfo                         CellInfoSI-RSCP-LCR-r4
}

NewInterFreqCellSI-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                   FrequencyInfo                   OPTIONAL,
    cellInfo                         CellInfoSI-ECN0-LCR-r4
}

NewInterFreqCellSI-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                   FrequencyInfo                   OPTIONAL,
    cellInfo                         CellInfoSI-HCS-RSCP-LCR-r4
}

```

```

NewInterFreqCellSI-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellID          InterFreqCellID          OPTIONAL,
    frequencyInfo            FrequencyInfo          OPTIONAL,
    cellInfo                 CellInfoSI-HCS-ECN0-LCR-r4
}

NewInterFreqCellSI-List-ECN0 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-ECN0

NewInterFreqCellSI-List-HCS-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-RSCP

NewInterFreqCellSI-List-HCS-ECN0 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-ECN0

NewInterFreqCellSI-List-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-RSCP

NewInterFreqCellSI-List-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-ECN0-LCR-r4

NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-RSCP-LCR-r4

NewInterFreqCellSI-List-HCS-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-ECN0-LCR-r4

NewInterFreqCellSI-List-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-RSCP-LCR-r4

NewInterRATCell ::= SEQUENCE {
    interRATCellID          InterRATCellID          OPTIONAL,
    technologySpecificInfo CHOICE {
        gsm SEQUENCE {
            cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12 OPTIONAL,
            interRATCellIndividualOffset InterRATCellIndividualOffset,
            bsic BSIC,
            frequency-band Frequency-Band,
            bcch-ARFCN BCCH-ARFCN,
            -- dummy is not used in this version of the specification, it should
            -- not be sent and if received it should be ignored.
            dummy NULL OPTIONAL
        },
        is-2000 SEQUENCE {
            is-2000SpecificMeasInfo IS-2000SpecificMeasInfo
        },
        -- ASN.1 inconsistency: NewInterRATCellList should be optional within
        -- InterRATCellInfoList. The UE shall consider IE NewInterRATCell with
        -- technologySpecificInfo set to "absent" as valid and handle the
        -- message as if the IE NewInterRATCell was absent
        absent NULL,
        spare1 NULL
    }
}

NewInterRATCell-B ::= SEQUENCE {
    interRATCellID          InterRATCellID          OPTIONAL,
    technologySpecificInfo CHOICE {
        gsm SEQUENCE {
            cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12 OPTIONAL,
            interRATCellIndividualOffset InterRATCellIndividualOffset,
            bsic BSIC,
            frequency-band Frequency-Band,
            bcch-ARFCN BCCH-ARFCN,
            -- dummy is not used in this version of the specification, it should
            -- not be sent and if received it should be ignored.
            dummy NULL OPTIONAL
        },
        is-2000 SEQUENCE {
            is-2000SpecificMeasInfo IS-2000SpecificMeasInfo
        },
        -- ASN.1 inconsistency: NewInterRATCellList-B should be optional within
        -- InterRATCellInfoList-B. The UE shall consider IE NewInterRATCell-B with
        -- technologySpecificInfo set to "absent" as valid and handle the
        -- message as if the IE NewInterRATCell-B was absent
        absent NULL,
        spare1 NULL
    }
}

```

```

}
}
NewInterRATCellList ::=          SEQUENCE (SIZE (1..maxCellMeas)) OF
                                  NewInterRATCell

NewInterRATCellList-B ::=        SEQUENCE (SIZE (1..maxCellMeas)) OF
                                  NewInterRATCell-B

NewIntraFreqCell ::=             SEQUENCE {
    intraFreqCellID              IntraFreqCellID          OPTIONAL,
    cellInfo                      CellInfo
}

NewIntraFreqCell-r4 ::=          SEQUENCE {
    intraFreqCellID              IntraFreqCellID          OPTIONAL,
    cellInfo-r4                  CellInfo-r4
}

NewIntraFreqCellList ::=         SEQUENCE (SIZE (1..maxCellMeas)) OF
                                  NewIntraFreqCell

NewIntraFreqCellList-r4 ::=      SEQUENCE (SIZE (1..maxCellMeas)) OF
                                  NewIntraFreqCell-r4

NewIntraFreqCellSI-RSCP ::=      SEQUENCE {
    intraFreqCellID              IntraFreqCellID          OPTIONAL,
    cellInfoSI-RSCP              CellInfoSI-RSCP
}

NewIntraFreqCellSI-ECN0 ::=      SEQUENCE {
    intraFreqCellID              IntraFreqCellID          OPTIONAL,
    cellInfoSI-ECN0              CellInfoSI-ECN0
}

NewIntraFreqCellSI-HCS-RSCP ::=  SEQUENCE {
    intraFreqCellID              IntraFreqCellID          OPTIONAL,
    cellInfoSI-HCS-RSCP          CellInfoSI-HCS-RSCP
}

NewIntraFreqCellSI-HCS-ECN0 ::=  SEQUENCE {
    intraFreqCellID              IntraFreqCellID          OPTIONAL,
    cellInfoSI-HCS-ECN0          CellInfoSI-HCS-ECN0
}

NewIntraFreqCellSI-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqCellID              IntraFreqCellID          OPTIONAL,
    cellInfoSI-RSCP-LCR-r4       CellInfoSI-RSCP-LCR-r4
}

NewIntraFreqCellSI-ECN0-LCR-r4 ::= SEQUENCE {
    intraFreqCellID              IntraFreqCellID          OPTIONAL,
    cellInfoSI-ECN0-LCR-r4       CellInfoSI-ECN0-LCR-r4
}

NewIntraFreqCellSI-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqCellID              IntraFreqCellID          OPTIONAL,
    cellInfoSI-HCS-RSCP-LCR-r4   CellInfoSI-HCS-RSCP-LCR-r4
}

NewIntraFreqCellSI-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    intraFreqCellID              IntraFreqCellID          OPTIONAL,
    cellInfoSI-HCS-ECN0-LCR-r4   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-ECNO-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewIntraFreqCellSI-ECNO-LCR-r4

NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewIntraFreqCellSI-HCS-RSCP-LCR-r4

NewIntraFreqCellSI-List-HCS-ECNO-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewIntraFreqCellSI-HCS-ECNO-LCR-r4

-- IE "nonUsedFreqThreshold" is not needed in case of event 2a
-- In case of event 2a UTRAN should include value 0 within IE "nonUsedFreqThreshold"
-- In case of event 2a, the UE shall be ignore IE "nonUsedFreqThreshold"
-- In later versions of the message including this IE, a special version of
-- IE "NonUsedFreqParameterList" may be defined for event 2a, namely a
-- version not including IE "nonUsedFreqThreshold"
NonUsedFreqParameter ::= SEQUENCE {
nonUsedFreqThreshold Threshold,
nonUsedFreqW W
}

NonUsedFreqParameterList ::= SEQUENCE (SIZE (1..maxFreq)) OF
NonUsedFreqParameter

ObservedTimeDifferenceToGSM ::= INTEGER (0..4095)

OTDOA-SearchWindowSize ::= ENUMERATED {
c20, c40, c80, c160, c320,
c640, c1280, moreThan1280 }

-- SPARE: Pathloss, Max = 158
-- Values above Max are spare
Pathloss ::= INTEGER (46..173)

PenaltyTime-RSCP ::= CHOICE {
notUsed NULL,
pt10 TemporaryOffset1,
pt20 TemporaryOffset1,
pt30 TemporaryOffset1,
pt40 TemporaryOffset1,
pt50 TemporaryOffset1,
pt60 TemporaryOffset1
}

PenaltyTime-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

```

```

    plmn-Identity          SEQUENCE {
    }                      PLMN-Identity          OPTIONAL

PLMNsOfIntraFreqCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    plmn-Identity          SEQUENCE {
    }                      PLMN-Identity          OPTIONAL

PLMNsOfInterRATCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    plmn-Identity          SEQUENCE {
    }                      PLMN-Identity          OPTIONAL

PositionEstimate ::= CHOICE {
    ellipsoidPoint          EllipsoidPoint,
    ellipsoidPointUncertCircle EllipsoidPointUncertCircle,
    ellipsoidPointUncertEllipse EllipsoidPointUncertEllipse,
    ellipsoidPointAltitude EllipsoidPointAltitude,
    ellipsoidPointAltitudeEllipse EllipsoidPointAltitudeEllipsoide
}

PositioningMethod ::= ENUMERATED {
    otdoa,
    gps,
    otdoaOrGPS, cellID }

-- Actual value PRC = IE value * 0.32
PRC ::= INTEGER (-2047..2047)

-- SPARE: PrimaryCCPCH-RSCP, Max = 91
-- Values above Max are spare
PrimaryCCPCH-RSCP ::= INTEGER (0..127)

Q-HCS ::= INTEGER (0..99)

Q-OffsetS-N ::= INTEGER (-50..50)

Q-QualMin ::= INTEGER (-24..0)

-- Actual value Q-RxlevMin = (IE value * 2) + 1
Q-RxlevMin ::= INTEGER (-58..-13)

QualityEventResults ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    TransportChannelIdentity

QualityMeasuredResults ::= SEQUENCE {
    blerMeasurementResultsList BLER-MeasurementResultsList OPTIONAL,
    modeSpecificInfo          CHOICE {
        fdd                    NULL,
        tdd                    SEQUENCE {
            sir-MeasurementResults SIR-MeasurementList OPTIONAL
        }
    }
}

QualityMeasurement ::= SEQUENCE {
    qualityReportingQuantity QualityReportingQuantity OPTIONAL,
    reportCriteria          QualityReportCriteria
}

QualityReportCriteria ::= CHOICE {
    qualityReportingCriteria QualityReportingCriteria,
    periodicalReportingCriteria PeriodicalReportingCriteria,
    noReporting              NULL
}

QualityReportingCriteria ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    QualityReportingCriteriaSingle

QualityReportingCriteriaSingle ::= SEQUENCE {
    transportChannelIdentity TransportChannelIdentity,
    totalCRC                INTEGER (1..512),
    badCRC                  INTEGER (1..512),
    pendingAfterTrigger     INTEGER (1..512)
}

QualityReportingQuantity ::= SEQUENCE {

```

```

dl-TransChBLER                BOOLEAN,
bler-dl-TransChIdList         BLER-TransChIdList           OPTIONAL,
modeSpecificInfo              CHOICE {
    fdd                        NULL,
    tdd                        SEQUENCE {
        sir-TFCS-List         SIR-TFCS-List           OPTIONAL
    }
}
}

RAT-Type ::=                   ENUMERATED {
    gsm, is2000 }

ReferenceCellPosition ::=     CHOICE {
    ellipsoidPoint             EllipsoidPoint,
    ellipsoidPointWithAltitude EllipsoidPointAltitude
}

-- ReferenceLocation, as defined in 23.032
ReferenceLocation ::=         SEQUENCE {
    ellipsoidPointAltitudeEllipsoide EllipsoidPointAltitudeEllipsoide
}

ReferenceTimeDifferenceToCell ::= CHOICE {
    -- Actual value accuracy40 = IE value * 40
    accuracy40                 INTEGER (0..960),
    -- Actual value accuracy256 = IE value * 256
    accuracy256                INTEGER (0..150),
    -- Actual value accuracy2560 = IE value * 2560
    accuracy2560               INTEGER (0..15)
}

RemovedInterFreqCellList ::= CHOICE {
    removeAllInterFreqCells    NULL,
    removeSomeInterFreqCells   SEQUENCE (SIZE (1..maxCellMeas)) OF
        InterFreqCellID,
    removeNoInterFreqCells     NULL
}

RemovedInterRATCellList ::=  CHOICE {
    removeAllInterRATCells     NULL,
    removeSomeInterRATCells    SEQUENCE (SIZE (1..maxCellMeas)) OF
        InterRATCellID,
    removeNoInterRATCells     NULL
}

RemovedIntraFreqCellList ::= CHOICE {
    removeAllIntraFreqCells    NULL,
    removeSomeIntraFreqCells   SEQUENCE (SIZE (1..maxCellMeas)) OF
        IntraFreqCellID,
    removeNoIntraFreqCells     NULL
}

ReplacementActivationThreshold ::= ENUMERATED {
    notApplicable, t1, t2,
    t3, t4, t5, t6, t7 }

ReportDeactivationThreshold ::= ENUMERATED {
    notApplicable, t1, t2,
    t3, t4, t5, t6, t7 }

ReportingAmount ::=          ENUMERATED {
    ra1, ra2, ra4, ra8, ra16, ra32,
    ra64, ra-Infinity }

ReportingCellStatus ::=     CHOICE{
    withinActiveSet             MaxNumberOfReportingCellsType1,
    withinMonitoredSetUsedFreq  MaxNumberOfReportingCellsType1,
    withinActiveAndOrMonitoredUsedFreq MaxNumberOfReportingCellsType1,
    withinDetectedSetUsedFreq  MaxNumberOfReportingCellsType1,
    withinMonitoredAndOrDetectedUsedFreq MaxNumberOfReportingCellsType1,
    allActiveplusMonitoredSet   MaxNumberOfReportingCellsType3,
    allActivePlusDetectedSet    MaxNumberOfReportingCellsType3,
    allActivePlusMonitoredAndOrDetectedSet MaxNumberOfReportingCellsType3,
    withinVirtualActSet         MaxNumberOfReportingCellsType1,
    withinMonitoredSetNonUsedFreq MaxNumberOfReportingCellsType1,
}

```

```

withinMonitoredAndOrVirtualActiveSetNonUsedFreq
    MaxNumberOfReportingCellsType1,
allVirtualActSetplusMonitoredSetNonUsedFreq
    MaxNumberOfReportingCellsType3,
withinActSetOrVirtualActSet-InterRATcells
    MaxNumberOfReportingCellsType2,
withinActSetAndOrMonitoredUsedFreqOrVirtualActSetAndOrMonitoredNonUsedFreq
    MaxNumberOfReportingCellsType2
}

ReportingCellStatusOpt ::=          SEQUENCE {
    reportingCellStatus              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 }
-- When the value "ril0" is used, the UE behaviour is not
-- defined.

-- Actual value ReportingRange = IE value * 0.5
ReportingRange ::=                 INTEGER (0..29)

RL-AdditionInfoList ::=           SEQUENCE (SIZE (1..maxRL)) OF
    PrimaryCPICH-Info

RL-InformationLists ::=           SEQUENCE {
    rl-AdditionInfoList             OPTIONAL,
    rL-RemovalInformationList       OPTIONAL
}

RLC-BuffersPayload ::=            ENUMERATED {
    p10, p14, p18, p116, p132,
    p164, p1128, p1256, p1512, p11024,
    p12k, p14k, p18k, p116k, p132k,
    p164k, p1128k, p1256k, p1512k, p11024k,
    spare12, spare11, spare10, spare9, spare8,
    spare7, spare6, spare5, spare4, spare3,
    spare2, spare1 }

-- Actual value RRC = IE value * 0.032
RRC ::=                            INTEGER (-127..127)

SatData ::=                        SEQUENCE{
    satID                           SatID,
    iode                             IODE
}

SatDataList ::=                   SEQUENCE (SIZE (0..maxSat)) OF
    SatData

SatelliteStatus ::=               ENUMERATED {
    ns-NN-U,
    es-SN,
    es-NN-U,
    rev2,
    rev }

-- Identifies the satellite and is equal to (SV ID No - 1) where SV ID No is defined in [12].

```

```

SatID ::=
    INTEGER (0..63)

SFN-Offset-Validity ::=
    ENUMERATED { false }

SFN-SFN-Drift ::=
    ENUMERATED {
        sfnsfndrift0, sfnsfndrift1, sfnsfndrift2,
        sfnsfndrift3, sfnsfndrift4, sfnsfndrift5,
        sfnsfndrift8, sfnsfndrift10, sfnsfndrift15,
        sfnsfndrift25, sfnsfndrift35, sfnsfndrift50,
        sfnsfndrift65, sfnsfndrift80, sfnsfndrift100,
        sfnsfndrift-1, sfnsfndrift-2, sfnsfndrift-3,
        sfnsfndrift-4, sfnsfndrift-5, sfnsfndrift-8,
        sfnsfndrift-10, sfnsfndrift-15, sfnsfndrift-25,
        sfnsfndrift-35, sfnsfndrift-50, sfnsfndrift-65,
        sfnsfndrift-80, sfnsfndrift-100}

SFN-SFN-ObsTimeDifference ::=
    CHOICE {
        type1
            SFN-SFN-ObsTimeDifference1,
        type2
            SFN-SFN-ObsTimeDifference2
    }

-- SPARE: SFN-SFN-ObsTimeDifference1, Max = 9830399
-- For 1.28Mcps TDD, Max value of SFN-SFN-ObsTimeDifference1 is 3276799.
-- Values above Max are spare
SFN-SFN-ObsTimeDifference1 ::=
    INTEGER (0..16777215)

-- SPARE: SFN-SFN-ObsTimeDifference2, Max = 40961
-- Values above Max are spare
SFN-SFN-ObsTimeDifference2 ::=
    INTEGER (0..65535)

SFN-SFN-OTD-Type ::=
    ENUMERATED {
        noReport,
        type1,
        type2 }

SFN-SFN-RelTimeDifference1 ::=
    SEQUENCE {
        sfn-Offset
            INTEGER (0 .. 4095),
        sfn-sfn-Reltimedifference
            INTEGER (0.. 38399)
    }

SFN-TOW-Uncertainty ::=
    ENUMERATED {
        lessThan10,
        moreThan10 }

SIR ::=
    INTEGER (0..63)

SIR-MeasurementList ::=
    SEQUENCE (SIZE (1..maxCCTrCH)) OF
        SIR-MeasurementResults

SIR-MeasurementResults ::=
    SEQUENCE {
        tfcs-ID
            TFCS-IdentityPlain,
        sir-TimeslotList
            SIR-TimeslotList
    }

SIR-TFCS ::=
    TFCS-IdentityPlain

SIR-TFCS-List ::=
    SEQUENCE (SIZE (1..maxCCTrCH)) OF
        SIR-TFCS

SIR-TimeslotList ::=
    SEQUENCE (SIZE (1..maxTS)) OF
        SIR

-- SubFrame1Reserved, reserved bits in subframe 1 of the GPS navigation message
SubFrame1Reserved ::=
    SEQUENCE {
        reserved1
            BIT STRING (SIZE (23)),
        reserved2
            BIT STRING (SIZE (24)),
        reserved3
            BIT STRING (SIZE (24)),
        reserved4
            BIT STRING (SIZE (16))
    }

T-ADVinfo ::=
    SEQUENCE {
        t-ADV
            INTEGER(0..2047),
        sfn
            INTEGER(0..4095)
    }

```

```

T-CRMax ::=
    notUsed
    t30
    t60
    t120
    t180
    t240
}

T-CRMaxHyst ::=
    CHOICE {
        NULL,
        N-CR-T-CRMaxHyst,
        N-CR-T-CRMaxHyst,
        N-CR-T-CRMaxHyst,
        N-CR-T-CRMaxHyst,
        N-CR-T-CRMaxHyst
    }

TemporaryOffset1 ::=
    ENUMERATED {
        notUsed, t10, t20, t30,
        t40, t50, t60, t70 }

TemporaryOffset2 ::=
    ENUMERATED {
        to2, to3, to4, to6, to8,
        to10, to12, infinite }

TemporaryOffsetList ::=
    SEQUENCE {
        temporaryOffset1
        temporaryOffset2
    }

Threshold ::=
    INTEGER (-115..0)

-- The order of the list corresponds to the order of frequency defined in Inter-FreqEventCriteria
ThresholdNonUsedFrequency-deltaList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    DeltaRSCPPerCell

ThresholdPositionChange ::=
    ENUMERATED {
        pc10, pc20, pc30, pc40, pc50,
        pc100, pc200, pc300, pc500,
        pc1000, pc2000, pc5000, pc10000,
        pc20000, pc50000, pc100000 }

ThresholdSFN-GPS-TOW ::=
    ENUMERATED {
        ms1, ms2, ms3, ms5, ms10,
        ms20, ms50, ms100 }

ThresholdSFN-SFN-Change ::=
    ENUMERATED {
        c0-25, c0-5, c1, c2, c3, c4, c5,
        c10, c20, c50, c100, c200, c500,
        c1000, c2000, c5000 }

ThresholdUsedFrequency ::=
    INTEGER (-115..165)

-- Actual value TimeInterval = IE value * 20.
TimeInterval ::=
    INTEGER (1..13)

TimeslotInfo ::=
    SEQUENCE {
        timeslotNumber
        burstType
    }

TimeslotInfo-LCR-r4 ::=
    SEQUENCE {
        timeslotNumber
    }

TimeslotInfoList ::=
    SEQUENCE (SIZE (1..maxTS)) OF
        TimeslotInfo

TimeslotInfoList-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxTS-LCR)) OF
        TimeslotInfo-LCR-r4

TimeslotInfoList-r4 ::=
    CHOICE {
        tdd384
        SEQUENCE (SIZE (1..maxTS)) OF
            TimeslotInfo,
        tdd128
        SEQUENCE (SIZE (1..maxTS-LCR)) OF
            TimeslotInfo-LCR-r4
    }

-- SPARE: TimeslotISCP, Max = 91

```

```

-- Values above Max are spare
TimeslotISCP ::= INTEGER (0..127)

-- TimeslotISCP-List shall not include more than 6 elements in 1.28Mcps TDD mode.
TimeslotISCP-List ::= SEQUENCE (SIZE (1..maxTS)) OF
    TimeslotISCP

TimeslotListWithISCP ::= SEQUENCE (SIZE (1..maxTS)) OF
    TimeslotWithISCP

TimeslotWithISCP ::= SEQUENCE {
    timeslot TimeslotNumber,
    timeslotISCP TimeslotISCP
}

TimeToTrigger ::= ENUMERATED {
    ttt0, ttt10, ttt20, ttt40, ttt60,
    ttt80, ttt100, ttt120, ttt160,
    ttt200, ttt240, 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,
    -- dummy is not used in this version of specification, it should
    -- not be sent and if received it should be ignored.
    dummy TrafficVolumeReportingCriteria OPTIONAL,
    measurementValidity MeasurementValidity OPTIONAL,
    measurementReportingMode MeasurementReportingMode,
    reportCriteriaSysInf TrafficVolumeReportCriteriaSysInfo
}

TrafficVolumeMeasuredResults ::= SEQUENCE {
    rb-Identity RB-Identity,
    rlc-BuffersPayload RLC-BuffersPayload OPTIONAL,
    averageRLC-BufferPayload AverageRLC-BufferPayload OPTIONAL,
    varianceOfRLC-BufferPayload VarianceOfRLC-BufferPayload OPTIONAL
}

TrafficVolumeMeasuredResultsList ::= SEQUENCE (SIZE (1..maxRB)) OF
    TrafficVolumeMeasuredResults

TrafficVolumeMeasurement ::= SEQUENCE {
    trafficVolumeMeasurementObjectList TrafficVolumeMeasurementObjectList OPTIONAL,
    trafficVolumeMeasQuantity TrafficVolumeMeasQuantity OPTIONAL,
    trafficVolumeReportingQuantity TrafficVolumeReportingQuantity OPTIONAL,
    measurementValidity MeasurementValidity OPTIONAL,
    reportCriteria TrafficVolumeReportCriteria
}

TrafficVolumeMeasurementObjectList ::= SEQUENCE (SIZE (1..maxTrCH)) OF

```

UL-TrCH-Identity

```

TrafficVolumeReportCriteria ::= CHOICE {
    trafficVolumeReportingCriteria    TrafficVolumeReportingCriteria,
    periodicalReportingCriteria      PeriodicalReportingCriteria,
    noReporting                       NULL
}

TrafficVolumeReportCriteriaSysInfo ::= CHOICE {
    trafficVolumeReportingCriteria    TrafficVolumeReportingCriteria,
    periodicalReportingCriteria      PeriodicalReportingCriteria
}

TrafficVolumeReportingCriteria ::= SEQUENCE {
    -- NOTE: transChCriteriaList should be mandatory in later versions of this message
    transChCriteriaList              TransChCriteriaList                OPTIONAL
}

TrafficVolumeReportingQuantity ::= SEQUENCE {
    rlc-RB-BufferPayload             BOOLEAN,
    rlc-RB-BufferPayloadAverage      BOOLEAN,
    rlc-RB-BufferPayloadVariance     BOOLEAN
}

TrafficVolumeThreshold ::= ENUMERATED {
    th8, th16, th32, th64, th128,
    th256, th512, th1024, th2k, th3k,
    th4k, th6k, th8k, th12k, th16k,
    th24k, th32k, th48k, th64k, th96k,
    th128k, th192k, th256k, th384k,
    th512k, th768k }

TransChCriteria ::= SEQUENCE {
    ul-transportChannelID            UL-TrCH-Identity                OPTIONAL,
    eventSpecificParameters          SEQUENCE (SIZE (1..maxMeasParEvent)) OF
                                     TrafficVolumeEventParam            OPTIONAL
}

TransChCriteriaList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    TransChCriteria

TransferMode ::= ENUMERATED {
    acknowledgedModeRLC,
    unacknowledgedModeRLC }

TransmittedPowerThreshold ::= INTEGER (-50..33)

TriggeringCondition1 ::= ENUMERATED {
    activeSetCellsOnly,
    monitoredSetCellsOnly,
    activeSetAndMonitoredSetCells }

TriggeringCondition2 ::= ENUMERATED {
    activeSetCellsOnly,
    monitoredSetCellsOnly,
    activeSetAndMonitoredSetCells,
    detectedSetCellsOnly,
    detectedSetAndMonitoredSetCells }

TX-InterruptionAfterTrigger ::= ENUMERATED {
    txiat0-25, txiat0-5, txiat1,
    txiat2, txiat4, txiat8, txiat16 }

UDRE ::= ENUMERATED {
    lessThan1,
    between1-and-4,
    between4-and-8,
    over8 }

UE-6AB-Event ::= SEQUENCE {
    timeToTrigger                    TimeToTrigger,
    transmittedPowerThreshold        TransmittedPowerThreshold
}

UE-6FG-Event ::= SEQUENCE {
    timeToTrigger                    TimeToTrigger,
    -- in 1.28 Mcps TDD ue-RX-TX-TimeDifferenceThreshold corresponds to TADV Threshold
    ue-RX-TX-TimeDifferenceThreshold UE-RX-TX-TimeDifferenceThreshold
}

```

```

}

UE-AutonomousUpdateMode ::= CHOICE {
    on
    onWithNoReporting
    off
    RL-InformationLists
}

UE-InternalEventParam ::= CHOICE {
    event6a
    event6b
    event6c
    event6d
    event6e
    event6f
    event6g
    UE-6AB-Event
    UE-6AB-Event
    TimeToTrigger
    TimeToTrigger
    TimeToTrigger
    UE-6FG-Event
    UE-6FG-Event
}

UE-InternalEventParamList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    UE-InternalEventParam

UE-InternalEventResults ::= CHOICE {
    event6a
    event6b
    event6c
    event6d
    event6e
    event6f
    event6g
    spare
    PrimaryCPICH-Info
    PrimaryCPICH-Info
    NULL
}

UE-InternalMeasQuantity ::= SEQUENCE {
    measurementQuantity
    filterCoefficient
    UE-MeasurementQuantity
    FilterCoefficient
    DEFAULT fc0
}

UE-InternalMeasuredResults ::= SEQUENCE {
    modeSpecificInfo
    fdd
        ue-TransmittedPowerFDD
        ue-RX-TX-ReportEntryList
    },
    tdd
        ue-TransmittedPowerTDD-List
        appliedTA
    }
}

UE-InternalMeasuredResults-LCR-r4 ::= SEQUENCE {
    ue-TransmittedPowerTDD-List
    t-ADVinfo
    UE-TransmittedPowerTDD-List
    T-ADVinfo
    OPTIONAL,
    OPTIONAL
}

UE-InternalMeasurement ::= SEQUENCE {
    ue-InternalMeasQuantity
    ue-InternalReportingQuantity
    reportCriteria
    UE-InternalMeasQuantity
    UE-InternalReportingQuantity
    UE-InternalReportCriteria
}

UE-InternalMeasurement-r4 ::= SEQUENCE {
    ue-InternalMeasQuantity
    ue-InternalReportingQuantity
    reportCriteria
    UE-InternalMeasQuantity
    UE-InternalReportingQuantity-r4
    UE-InternalReportCriteria
    OPTIONAL,
    OPTIONAL,
}

UE-InternalMeasurementSysInfo ::= SEQUENCE {
    ue-InternalMeasurementID
    ue-InternalMeasQuantity
    MeasurementIdentity
    UE-InternalMeasQuantity
    DEFAULT 5,
}

UE-InternalReportCriteria ::= CHOICE {
    ue-InternalReportingCriteria
    periodicalReportingCriteria
    noReporting
    UE-InternalReportingCriteria,
    PeriodicalReportingCriteria,
    NULL
}

```

```

UE-InternalReportingCriteria ::= SEQUENCE {
  ue-InternalEventParamList      UE-InternalEventParamList      OPTIONAL
}

UE-InternalReportingQuantity ::= SEQUENCE {
  ue-TransmittedPower            BOOLEAN,
  modeSpecificInfo               CHOICE {
    fdd                           SEQUENCE {
      ue-RX-TX-TimeDifference     BOOLEAN
    },
    tdd                           SEQUENCE {
      appliedTA                   BOOLEAN
    }
  }
}

UE-InternalReportingQuantity-r4 ::= SEQUENCE {
  ue-TransmittedPower            BOOLEAN,
  modeSpecificInfo               CHOICE {
    fdd                           SEQUENCE {
      ue-RX-TX-TimeDifference     BOOLEAN
    },
    tdd                           SEQUENCE {
      tddOption                   CHOICE {
        tdd384                     SEQUENCE {
          appliedTA                 BOOLEAN
        },
        tdd128                     SEQUENCE {
          t-ADVinfo                 BOOLEAN
        }
      }
    }
  }
}

-- TABULAR: UE-MeasurementQuantity, for 3.84 Mcps TDD only the first two values
-- ue-TransmittedPower and ultra-Carrier-RSSI are used.
-- For 1.28 Mcps TDD ue-RX-TX-TimeDifference corresponds to T-ADV in the tabular
UE-MeasurementQuantity ::= ENUMERATED {
  ue-TransmittedPower,
  ultra-Carrier-RSSI,
  ue-RX-TX-TimeDifference }

UE-RX-TX-ReportEntry ::= SEQUENCE {
  primaryCPICH-Info              PrimaryCPICH-Info,
  ue-RX-TX-TimeDifferenceType1   UE-RX-TX-TimeDifferenceType1
}

UE-RX-TX-ReportEntryList ::= SEQUENCE (SIZE (1..maxRL)) OF
  UE-RX-TX-ReportEntry

-- SPARE: UE-RX-TX-TimeDifferenceType1, Max = 1280
-- Values above Max are spare
UE-RX-TX-TimeDifferenceType1 ::= INTEGER (768..1791)

UE-RX-TX-TimeDifferenceType2 ::= INTEGER (0..8191)

UE-RX-TX-TimeDifferenceType2Info ::= SEQUENCE {
  ue-RX-TX-TimeDifferenceType2   UE-RX-TX-TimeDifferenceType2,
  neighbourQuality                NeighbourQuality
}

-- In 1.28 Mcps TDD, actual value for
-- T-ADV Threshold = (UE-RX-TX-TimeDifferenceThreshold - 768) * 0.125
UE-RX-TX-TimeDifferenceThreshold ::= INTEGER (768..1280)

UE-TransmittedPower ::= INTEGER (0..104)

UE-TransmittedPowerTDD-List ::= SEQUENCE (SIZE (1..maxTS)) OF
  UE-TransmittedPower

UL-TrCH-Identity ::= CHOICE{
  dch                            TransportChannelIdentity,
  -- Default transport channel in the UL is either RACH or CPCH, but not both.
  rachorcpch                     NULL,
  usch                            TransportChannelIdentity
}

```

```

UE-Positioning-Accuracy ::=                               BIT STRING (SIZE (7))

UE-Positioning-CipherParameters ::=                     SEQUENCE {
  cipheringKeyFlag                                     BIT STRING (SIZE (1)),
  cipheringSerialNumber                               INTEGER (0..65535)
}

UE-Positioning-Error ::=                                SEQUENCE {
  errorReason                                         UE-Positioning-ErrorCause,
  ue-positioning-GPS-additionalAssistanceDataRequest UE-Positioning-GPS-
AdditionalAssistanceDataRequest OPTIONAL
}

UE-Positioning-ErrorCause ::=                          ENUMERATED {
  notEnoughOTDOA-Cells,
  notEnoughGPS-Satellites,
  assistanceDataMissing,
  notAccomplishedGPS-TimingOfCellFrames,
  undefinedError,
  requestDeniedByUser,
  notProcessedAndTimeout,
  referenceCellNotServingCell }

UE-Positioning-EventParam ::=                          SEQUENCE {
  reportingAmount                                     ReportingAmount,
  reportFirstFix                                     BOOLEAN,
  measurementInterval                               UE-Positioning-MeasurementInterval,
  eventSpecificInfo                                  UE-Positioning-EventSpecificInfo
}

UE-Positioning-EventParamList ::=                      SEQUENCE (SIZE (1..maxMeasEvent)) OF
UE-Positioning-EventParam

UE-Positioning-EventSpecificInfo ::=                   CHOICE {
  e7a                                                  ThresholdPositionChange,
  e7b                                                  ThresholdSFN-SFN-Change,
  e7c                                                  ThresholdSFN-GPS-TOW
}

UE-Positioning-GPS-AcquisitionAssistance ::=          SEQUENCE {
  gps-ReferenceTime                                  INTEGER (0..604799999),
  utran-GPSReferenceTime                             UTRAN-GPSReferenceTime          OPTIONAL,
  satelliteInformationList                           AcquisitionSatInfoList
}

UE-Positioning-GPS-AdditionalAssistanceDataRequest ::= SEQUENCE {
  almanacRequest                                     BOOLEAN,
  utcModelRequest                                   BOOLEAN,
  ionosphericModelRequest                           BOOLEAN,
  navigationModelRequest                            BOOLEAN,
  dgpsCorrectionsRequest                            BOOLEAN,
  referenceLocationRequest                           BOOLEAN,
  referenceTimeRequest                               BOOLEAN,
  aquisitionAssistanceRequest                       BOOLEAN,
  realTimeIntegrityRequest                           BOOLEAN,
  navModelAddDataRequest                             UE-Positioning-GPS-NavModelAddDataReq  OPTIONAL
}

UE-Positioning-GPS-Almanac ::=                        SEQUENCE {
  wn-a                                               BIT STRING (SIZE (8)),
  almanacSatInfoList                                AlmanacSatInfoList,
  sv-GlobalHealth                                   BIT STRING (SIZE (364))          OPTIONAL
}

UE-Positioning-GPS-AssistanceData ::=                 SEQUENCE {
  ue-positioning-GPS-ReferenceTime                   UE-Positioning-GPS-ReferenceTime
OPTIONAL,
  ue-positioning-GPS-ReferenceLocation                ReferenceLocation                OPTIONAL,
  ue-positioning-GPS-DGPS-Corrections                UE-Positioning-GPS-DGPS-Corrections
OPTIONAL,
  ue-positioning-GPS-NavigationModel                  UE-Positioning-GPS-NavigationModel
OPTIONAL,
  ue-positioning-GPS-IonosphericModel                 UE-Positioning-GPS-IonosphericModel
OPTIONAL,
  ue-positioning-GPS-UTC-Model                       UE-Positioning-GPS-UTC-Model
OPTIONAL,

```

```

ue-positioning-GPS-Almanac                UE-Positioning-GPS-Almanac
OPTIONAL,
ue-positioning-GPS-AcquisitionAssistance  UE-Positioning-GPS-AcquisitionAssistance
OPTIONAL,
ue-positioning-GPS-Real-timeIntegrity      BadSatList                                OPTIONAL,
-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
dummy          UE-Positioning-GPS-ReferenceCellInfo      OPTIONAL
}

UE-Positioning-GPS-DGPS-Corrections ::=      SEQUENCE {
  gps-TOW                INTEGER (0..604799),
  statusHealth           DiffCorrectionStatus,
  dgps-CorrectionSatInfoList  DGPS-CorrectionSatInfoList
}

UE-Positioning-GPS-IonosphericModel ::=      SEQUENCE {
  alfa0                  BIT STRING (SIZE (8)),
  alfa1                  BIT STRING (SIZE (8)),
  alfa2                  BIT STRING (SIZE (8)),
  alfa3                  BIT STRING (SIZE (8)),
  beta0                  BIT STRING (SIZE (8)),
  beta1                  BIT STRING (SIZE (8)),
  beta2                  BIT STRING (SIZE (8)),
  beta3                  BIT STRING (SIZE (8))
}

UE-Positioning-GPS-MeasurementResults ::=      SEQUENCE {
  referenceTime          CHOICE {
    utran-GPSReferenceTimeResult  UTRAN-GPSReferenceTimeResult,
    gps-ReferenceTimeOnly         INTEGER (0..604799999)
  },
  gps-MeasurementParamList  GPS-MeasurementParamList
}

UE-Positioning-GPS-NavigationModel ::=      SEQUENCE {
  navigationModelSatInfoList  NavigationModelSatInfoList
}

UE-Positioning-GPS-NavModelAddDataReq ::=      SEQUENCE {
  gps-Week              INTEGER (0..1023),
  -- SPARE: gps-Toe, Max = 167
  -- Values above Max are spare
  gps-Toe              INTEGER (0..255),
  -- SPARE: tToeLimit, Max = 10
  -- Values above Max are spare
  tToeLimit            INTEGER (0..15),
  satDataList          SatDataList
}

UE-Positioning-GPS-ReferenceCellInfo ::=      SEQUENCE{
  modeSpecificInfo      CHOICE {
    fdd                  SEQUENCE {
      referenceIdentity  PrimaryCPICH-Info
    },
    tdd                  SEQUENCE {
      referenceIdentity  CellParametersID
    }
  }
}

UE-Positioning-GPS-ReferenceTime ::=      SEQUENCE {
  gps-Week              INTEGER (0..1023),
  gps-tow-lmsec         GPS-TOW-lmsec,  utran-GPSReferenceTime  UTRAN-
GPSReferenceTime      OPTIONAL,
  sfn-tow-Uncertainty  SFN-TOW-Uncertainty  OPTIONAL,
  utran-GPS-DriftRate  UTRAN-GPS-DriftRate  OPTIONAL,
  gps-TOW-AssistList   GPS-TOW-AssistList  OPTIONAL
}

UE-Positioning-GPS-UTC-Model ::=      SEQUENCE {
  a1                    BIT STRING (SIZE (24)),
  a0                    BIT STRING (SIZE (32)),
  t-ot                  BIT STRING (SIZE (8)),
  wn-t                  BIT STRING (SIZE (8)),
  delta-t-LS           BIT STRING (SIZE (8)),
  wn-lsf                BIT STRING (SIZE (8)),
  dn                    BIT STRING (SIZE (8)),

```

```

    delta-t-LSF                                BIT STRING (SIZE (8))
}

UE-Positioning-IPDL-Parameters ::=            SEQUENCE {
    ip-Spacing                                IP-Spacing,
    ip-Length                                 IP-Length,
    ip-Offset                                 INTEGER (0..9),
    seed                                       INTEGER (0..63),
    burstModeParameters                       BurstModeParameters OPTIONAL
}

UE-Positioning-IPDL-Parameters-r4 ::=         SEQUENCE {
    modeSpecificInfo                          CHOICE {
        fdd                                    SEQUENCE {
            ip-Spacing                        IP-Spacing,
            ip-Length                         IP-Length,
            ip-Offset                         INTEGER (0..9),
            seed                              INTEGER (0..63)
        },
        tdd                                    SEQUENCE {
            ip-Spacing-TDD                    IP-Spacing-TDD,
            ip-slot                           INTEGER (0..14),
            ip-Start                           INTEGER (0..4095),
            ip-PCCPCH                          IP-PCCPCH-r4 OPTIONAL
        }
    },
    burstModeParameters                       BurstModeParameters OPTIONAL
}

UE-Positioning-IPDL-Parameters-TDD-r4-ext ::= SEQUENCE {
    ip-Spacing-TDD                            IP-Spacing-TDD,
    ip-slot                                    INTEGER (0..14),
    ip-Start                                    INTEGER (0..4095),
    ip-PCCPCH-r4                              IP-PCCPCH-r4 OPTIONAL,
    burstModeParameters                       BurstModeParameters
}

UE-Positioning-MeasuredResults ::=            SEQUENCE {
    ue-positioning-OTDOA-Measurement          UE-Positioning-OTDOA-Measurement
    OPTIONAL,
    ue-positioning-PositionEstimateInfo      UE-Positioning-PositionEstimateInfo
    OPTIONAL,
    ue-positioning-GPS-Measurement           UE-Positioning-GPS-MeasurementResults
    OPTIONAL,
    ue-positioning-Error                     UE-Positioning-Error
    OPTIONAL
}

UE-Positioning-MeasuredResults-v390ext ::=    SEQUENCE {
    ue-Positioning-OTDOA-Measurement-v390ext UE-Positioning-OTDOA-Measurement-v390ext
}

UE-Positioning-Measurement ::=                SEQUENCE {
    ue-positioning-ReportingQuantity          UE-Positioning-ReportingQuantity,
    reportCriteria                           UE-Positioning-ReportCriteria,
    ue-positioning-OTDOA-AssistanceData      UE-Positioning-OTDOA-AssistanceData
    OPTIONAL,
    ue-positioning-GPS-AssistanceData        UE-Positioning-GPS-AssistanceData
    OPTIONAL
}

UE-Positioning-Measurement-v390ext ::=        SEQUENCE {
    ue-positioning-ReportingQuantity-v390ext UE-Positioning-ReportingQuantity-v390ext
    OPTIONAL,
    measurementValidity                      MeasurementValidity OPTIONAL,
    ue-positioning-OTDOA-AssistanceData-UEB UE-Positioning-OTDOA-AssistanceData-UEB
    OPTIONAL
}

UE-Positioning-Measurement-r4 ::=             SEQUENCE {
    ue-positioning-ReportingQuantity-r4      UE-Positioning-ReportingQuantity-r4,
    measurementValidity                      MeasurementValidity
    OPTIONAL,
    reportCriteria                           UE-Positioning-ReportCriteria,
    ue-positioning-OTDOA-AssistanceData-r4   UE-Positioning-OTDOA-AssistanceData-r4
    OPTIONAL,
    ue-positioning-GPS-AssistanceData        UE-Positioning-GPS-AssistanceData
    OPTIONAL
}

```

```

}

UE-Positioning-MeasurementEventResults ::= CHOICE {
    event7a      UE-Positioning-PositionEstimateInfo,
    event7b      UE-Positioning-OTDOA-Measurement,
    event7c      UE-Positioning-GPS-MeasurementResults,
    spare        NULL
}

UE-Positioning-MeasurementInterval ::= ENUMERATED {
    e5, e15, e60, e300,
    e900, e1800, e3600, e7200 }

UE-Positioning-MethodType ::= ENUMERATED {
    ue-Assisted,
    ue-Based,
    ue-BasedPreferred,
    ue-AssistedPreferred }

UE-Positioning-OTDOA-AssistanceData ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo  UE-Positioning-OTDOA-ReferenceCellInfo
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList  UE-Positioning-OTDOA-NeighbourCellList
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-r4 ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo  UE-Positioning-OTDOA-ReferenceCellInfo-r4
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList  UE-Positioning-OTDOA-NeighbourCellList-r4
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-r4ext ::= SEQUENCE {
    -- In case of TDD these IPDL parameters shall be used for the reference cell instead of
    -- IPDL Parameters in IE UE-Positioning-OTDOA-ReferenceCellInfo
    ue-Positioning-IPDL-Parameters-TDD-r4-ext  UE-Positioning-IPDL-Parameters-TDD-r4-ext
    OPTIONAL,
    -- These IPDL parameters shall be used for the neighbour cells in case of TDD instead of
    -- IPDL Parameters in IE UE-Positioning-OTDOA-NeighbourCellInfoList. The cells shall be
    -- listed in the same order as in IE UE-Positioning-OTDOA-NeighbourCellInfoList
    ue-Positioning-IPDL-Parameters-TDDList-r4-ext  UE-Positioning-IPDL-Parameters-TDDList-r4-ext
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-UEB ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo-UEB  UE-Positioning-OTDOA-ReferenceCellInfo-UEB
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList-UEB  UE-Positioning-OTDOA-NeighbourCellList-
    UEB
    OPTIONAL
}

UE-Positioning-IPDL-Parameters-TDDList-r4-ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    UE-Positioning-IPDL-Parameters-TDD-r4-ext

UE-Positioning-OTDOA-Measurement ::= SEQUENCE {
    sfn          INTEGER (0..4095),
    modeSpecificInfo CHOICE {
        fdd      SEQUENCE {
            referenceCellIdentity  PrimaryCPICH-Info,
            ue-RX-TX-TimeDifferenceType2Info  UE-RX-TX-TimeDifferenceType2Info
        },
        tdd      SEQUENCE {
            referenceCellIdentity  CellParametersID
        }
    },
    neighbourList  NeighbourList OPTIONAL
}

UE-Positioning-OTDOA-Measurement-v390ext ::= SEQUENCE {
    neighbourList-v390ext  NeighbourList-v390ext
}

UE-Positioning-OTDOA-NeighbourCellInfo ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd      SEQUENCE {
            primaryCPICH-Info  PrimaryCPICH-Info
        },

```

```

    tdd
      cellAndChannelIdentity
    },
  },
  frequencyInfo
  ue-positioning-IPDL-Parameters
  OPTIONAL,
  sfn-SFN-RelTimeDifference
  sfn-SFN-Drift
  searchWindowSize
  positioningMode CHOICE {
    ueBased
    ueAssisted
  }
}

UE-Positioning-OTDOA-NeighbourCellInfo-r4 ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd
      primaryCPICH-Info
    },
    tdd
      cellAndChannelIdentity
  },
  frequencyInfo
  ue-positioning-IPDL-Parameters
  sfn-SFN-RelTimeDifference
  sfn-Offset-Validity
  sfn-SFN-Drift
  searchWindowSize
  positioningMode CHOICE {
    ueBased
      relativeNorth
      relativeEast
      relativeAltitude
      fineSFN-SFN
      -- actual value roundTripTime = (IE value * 0.0625) + 876
      roundTripTime
    },
    ueAssisted
  }
}

UE-Positioning-OTDOA-NeighbourCellInfo-UEB ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd
      primaryCPICH-Info
    },
    tdd
      cellAndChannelIdentity
  },
  frequencyInfo
  ue-positioning-IPDL-Parameters
  sfn-SFN-RelTimeDifference
  sfn-SFN-Drift
  searchWindowSize
  relativeNorth
  relativeEast
  relativeAltitude
  fineSFN-SFN
  -- actual value roundTripTime = (IE value * 0.0625) + 876
  roundTripTime
}

UE-Positioning-OTDOA-NeighbourCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  UE-Positioning-OTDOA-NeighbourCellInfo

UE-Positioning-OTDOA-NeighbourCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  UE-Positioning-OTDOA-NeighbourCellInfo-r4

UE-Positioning-OTDOA-NeighbourCellList-UEB ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  UE-Positioning-OTDOA-NeighbourCellInfo-UEB

UE-Positioning-OTDOA-Quality ::=
  stdResolution
  numberOfOTDOA-Measurements

```

```

    stdOfOTDOA-Measurements          BIT STRING (SIZE (5))
}

UE-Positioning-OTDOA-ReferenceCellInfo ::= SEQUENCE {
    sfn                               INTEGER (0..4095)
    OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                           SEQUENCE {
            primaryCPICH-Info          PrimaryCPICH-Info
        },
        tdd                            SEQUENCE {
            cellAndChannelIdentity     CellAndChannelIdentity
        }
    },
    frequencyInfo                     FrequencyInfo                               OPTIONAL,
    positioningMode CHOICE {
        ueBased                        SEQUENCE {},
        ueAssisted                     SEQUENCE {}
    },
    ue-positioning-IPDL-Paremters     UE-Positioning-IPDL-Parameters OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-r4 ::= SEQUENCE {
    sfn                               INTEGER (0..4095)
    OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                           SEQUENCE {
            primaryCPICH-Info          PrimaryCPICH-Info
        },
        tdd                            SEQUENCE {
            cellAndChannelIdentity     CellAndChannelIdentity
        }
    },
    frequencyInfo                     FrequencyInfo                               OPTIONAL,
    positioningMode CHOICE {
        ueBased                        SEQUENCE {
            cellPosition               ReferenceCellPosition OPTIONAL,
            -- actual value roundTripTime = (IE value * 0.0625) + 876
            roundTripTime              INTEGER (0..32766)          OPTIONAL
        },
        ueAssisted                     SEQUENCE {}
    },
    ue-positioning-IPDL-Paremters     UE-Positioning-IPDL-Parameters-r4 OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-UEB ::= SEQUENCE {
    sfn                               INTEGER (0..4095)                               OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                           SEQUENCE {
            primaryCPICH-Info          PrimaryCPICH-Info
        },
        tdd                            SEQUENCE {
            cellAndChannelIdentity     CellAndChannelIdentity
        }
    },
    frequencyInfo                     FrequencyInfo                               OPTIONAL,
    cellPosition                       ReferenceCellPosition                     OPTIONAL,
    -- actual value roundTripTime = (IE value * 0.0625) + 876
    roundTripTime                      INTEGER (0..32766)                          OPTIONAL,
    ue-positioning-IPDL-Paremters     UE-Positioning-IPDL-Parameters          OPTIONAL
}

UE-Positioning-PositionEstimateInfo ::= SEQUENCE {
    referenceTime                      CHOICE {
        utran-GPSReferenceTimeResult  UTRAN-GPSReferenceTimeResult,
        gps-ReferenceTimeOnly         INTEGER (0..604799999),
        cell-Timing                   SEQUENCE {
            sfn                        INTEGER (0..4095),
            modeSpecificInfo          CHOICE {
                fdd                    SEQUENCE {
                    primaryCPICH-Info  PrimaryCPICH-Info
                },
                tdd                    SEQUENCE {
                    cellAndChannelIdentity CellAndChannelIdentity
                }
            }
        }
    }
}

```

```

    positionEstimate                PositionEstimate
}

UE-Positioning-ReportCriteria ::=
    ue-positioning-ReportingCriteria
    periodicalReportingCriteria
    noReporting
                                CHOICE {
                                    UE-Positioning-EventParamList,
                                    PeriodicalReportingCriteria,
                                    NULL
                                }
}

UE-Positioning-ReportingQuantity ::=
    methodType                    UE-Positioning-MethodType,
    positioningMethod              PositioningMethod,
    -- dummy1 is not used in this version of specification and it should
    -- be ignored.
    dummy1                        UE-Positioning-ResponseTime,
    accuracy                      UE-Positioning-Accuracy                OPTIONAL,
    gps-TimingOfCellWanted        BOOLEAN,
    -- dummy2 is not used in this version of specification and it should
    -- be ignored.
    dummy2                        BOOLEAN,
    additionalAssistanceDataReq    BOOLEAN,
    environmentCharacterisation    EnvironmentCharacterisation        OPTIONAL
}

UE-Positioning-ReportingQuantity-v390ext ::=
    vertical-Accuracy              UE-Positioning-Accuracy
}

UE-Positioning-ReportingQuantity-r4 ::=
    methodType                    UE-Positioning-MethodType,
    positioningMethod              PositioningMethod,
    horizontalAccuracy             UE-Positioning-Accuracy                OPTIONAL,
    verticalAccuracy               UE-Positioning-Accuracy                OPTIONAL,
    gps-TimingOfCellWanted        BOOLEAN,
    additionalAssistanceDataReq    BOOLEAN,
    environmentCharacterisation    EnvironmentCharacterisation        OPTIONAL
}

UE-Positioning-ResponseTime ::=
                                ENUMERATED {
                                    s1, s2, s4, s8, s16,
                                    s32, s64, s128 }

-- SPARE: UTRA-CarrierRSSI, Max = 76
-- Values above Max are spare
UTRA-CarrierRSSI ::=
                                INTEGER (0..127)

UTRAN-GPS-DriftRate ::=
                                ENUMERATED {
                                    utran-GPSDrift0, utran-GPSDrift1, utran-GPSDrift2,
                                    utran-GPSDrift5, utran-GPSDrift10, utran-GPSDrift15,
                                    utran-GPSDrift25, utran-GPSDrift50, utran-GPSDrift-1,
                                    utran-GPSDrift-2, utran-GPSDrift-5, utran-GPSDrift-10,
                                    utran-GPSDrift-15, utran-GPSDrift-25, utran-GPSDrift-50}

UTRAN-GPSReferenceTime ::=
    -- For utran-GPSTimingOfCell values above 2322431999999 are not
    -- used in this version of the specification
    -- Actual value utran-GPSTimingOfCell = (ms-part * 4294967296) + ls-part
    utran-GPSTimingOfCell          SEQUENCE {
        ms-part                    INTEGER (0..1023),
        ls-part                    INTEGER (0..4294967295)
    },
    modeSpecificInfo              CHOICE {
        fdd                        SEQUENCE {
            referenceIdentity      PrimaryCPICH-Info
        },
        tdd                        SEQUENCE {
            referenceIdentity      CellParametersID
        }
    }
    sfm                            OPTIONAL,
    sfm                            INTEGER (0..4095)
}

UTRAN-GPSReferenceTimeResult ::=
    -- For ue-GPSTimingOfCell values above 371589119999999 are not
    -- used in this version of the specification
    -- Actual value ue-GPSTimingOfCell = (ms-part * 4294967296) + ls-part
    ue-GPSTimingOfCell            SEQUENCE {
        ms-part                    INTEGER (0.. 16383),

```

```

    ls-part                INTEGER (0..4294967295)
  },
  modeSpecificInfo        CHOICE {
    fdd                    SEQUENCE {
      referenceIdentity
    },
    tdd                    SEQUENCE {
      referenceIdentity
    }
  },
  sfn                     INTEGER (0..4095)
}

VarianceOfRLC-BufferPayload ::= ENUMERATED {
  plv0, plv4, plv8, plv16, plv32, plv64,
  plv128, plv256, plv512, plv1024,
  plv2k, plv4k, plv8k, plv16k, spare2, spare1 }

-- Actual value W = IE value * 0.1
W ::= INTEGER (0..20)

-- *****
--
--   OTHER INFORMATION ELEMENTS (10.3.8)
--
-- *****

BCC ::= INTEGER (0..7)

BCCH-ModificationInfo ::= SEQUENCE {
  mib-ValueTag           MIB-ValueTag,
  bcch-ModificationTime BCCH-ModificationTime OPTIONAL
}

-- Actual value BCCH-ModificationTime = IE value * 8
BCCH-ModificationTime ::= INTEGER (0..511)

BSIC ::= SEQUENCE {
  ncc                    NCC,
  bcc                    BCC
}

CBS-DRX-Level1Information ::= SEQUENCE {
  ctch-AllocationPeriod INTEGER (1..256),
  cbs-FrameOffset       INTEGER (0..255)
}

CDMA2000-Message ::= SEQUENCE {
  msg-Type              BIT STRING (SIZE (8)),
  payload               BIT STRING (SIZE (1..512))
}

CDMA2000-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
  CDMA2000-Message

CDMA2000-UMTS-Frequency-List ::= SEQUENCE (SIZE (1..maxNumCDMA2000Freqs)) OF
  FrequencyInfoCDMA2000

CellValueTag ::= INTEGER (1..4)

--Actual value = 2^(IE value)
ExpirationTimeFactor ::= INTEGER (1..8)

FDD-UMTS-Frequency-List ::= SEQUENCE (SIZE (1..maxNumFDDFreqs)) OF
  FrequencyInfoFDD

FrequencyInfoCDMA2000 ::= SEQUENCE {
  band-Class            BIT STRING (SIZE (5)),
  cdma-Freq             BIT STRING (SIZE(11))
}

GERAN-SystemInfoBlock ::= OCTET STRING (SIZE (1..23))

GERAN-SystemInformation ::= SEQUENCE (SIZE (1..maxGERAN-SI)) OF GERAN-SystemInfoBlock

GSM-BA-Range ::= SEQUENCE {
  gsmLowRangeUARFCN    UARFCN,
  gsmUpRangeUARFCN     UARFCN
}

```

```

}

GSM-BA-Range-List ::= SEQUENCE (SIZE (1..maxNumGSMFreqRanges)) OF
                        GSM-BA-Range

-- This IE is formatted as 'TLV' and is coded in the same way as the Mobile Station Classmark 2
-- information element in [5]. The first octet is the Mobile station classmark 2 IEI and its value
-- shall be set to 33H. The second octet is the Length of mobile station classmark 2 and its value
-- shall be set to 3. The octet 3 contains the first octet of the value part of the Mobile Station
-- Classmark 2 information element, the octet 4 contains the second octet of the value part of the
-- Mobile Station Classmark 2 information element and so on. For each of these octets, the first/
-- leftmost/ most significant bit of the octet contains b8 of the corresponding octet of the Mobile
-- Station Classmark 2.
GSM-Classmark2 ::= OCTET STRING (SIZE (5))

-- This IE is formatted as 'V' and is coded in the same way as the value part in the Mobile station
-- classmark 3 information element in [5]
-- The value part is specified by means of CSN.1, which encoding results in a bit string, to which
-- final padding may be appended upto the next octet boundary [5]. The first/ leftmost bit of the
-- CSN.1 bit string is placed in the first/ leftmost/ most significant bit of the first
-- octet. This continues until the last bit of the CSN.1 bit string, which is placed in the last/
-- rightmost/ least significant bit of the last octet.
GSM-Classmark3 ::= OCTET STRING (SIZE (1..32))

GSM-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                    BIT STRING (SIZE (1..512))

GsmSecurityCapability ::= BIT STRING {
                            -- For each bit value "0" means false/ not supported
                            a5-7(0),
                            a5-6(1),
                            a5-5(2),
                            a5-4(3),
                            a5-3(4),
                            a5-2(5),
                            a5-1(6)
                            } (SIZE (7))

IdentificationOfReceivedMessage ::= SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    receivedMessageType       ReceivedMessageType
}

InterRAT-ChangeFailureCause ::= CHOICE {
    configurationUnacceptable NULL,
    physicalChannelFailure   NULL,
    protocolError             ProtocolErrorInformation,
    unspecified               NULL,
    spare4                     NULL,
    spare3                     NULL,
    spare2                     NULL,
    spare1                     NULL
}

GERANIu-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                        BIT STRING (SIZE (1..32768))

GERANIu-RadioAccessCapability ::= BIT STRING (SIZE (1..170))

InterRAT-UE-RadioAccessCapability ::= CHOICE {
    gsm SEQUENCE {
        gsm-Classmark2 GSM-Classmark2,
        gsm-Classmark3 GSM-Classmark3
    },
    cdma2000 SEQUENCE {
        cdma2000-MessageList CDMA2000-MessageList
    }
}

InterRAT-UE-RadioAccessCapability-r5 ::= CHOICE {
    gsm SEQUENCE {
        gsm-Classmark2 GSM-Classmark2,
        gsm-Classmark3 GSM-Classmark3
    },
    geranIu SEQUENCE {
        geranIu-RadioAccessCapability GERANIu-RadioAccessCapability
    },
}

```

```

    cdma2000
      cdma2000-MessageList
    }
}

InterRAT-UE-RadioAccessCapabilityList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
InterRAT-UE-RadioAccessCapability

InterRAT-UE-RadioAccessCapabilityList-r5 ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
InterRAT-UE-RadioAccessCapability-r5

InterRAT-UE-SecurityCapability ::= CHOICE {
  gsm
    gsmSecurityCapability
  }
}

InterRAT-UE-SecurityCapList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
InterRAT-UE-SecurityCapability

InterRAT-HO-FailureCause ::= CHOICE {
  configurationUnacceptable
  physicalChannelFailure
  protocolError
  interRAT-ProtocolError
  unspecified
  spare11
  spare10
  spare9
  spare8
  spare7
  spare6
  spare5
  spare4
  spare3
  spare2
  spare1
}

MasterInformationBlock ::= SEQUENCE {
  mib-ValueTag
  -- TABULAR: The PLMN identity and ANSI-41 core network information
  -- are included in PLMN-Type.
  plmn-Type
  sibSb-ReferenceList
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions
}

MIB-ValueTag ::= INTEGER (1..8)

NCC ::= INTEGER (0..7)

PLMN-ValueTag ::= INTEGER (1..256)

PredefinedConfigIdentityAndValueTag ::= SEQUENCE {
  predefinedConfigIdentity
  predefinedConfigValueTag
}

ProtocolErrorInformation ::= SEQUENCE {
  diagnosticsType
  type1
  protocolErrorCause
  },
  spare
}

ReceivedMessageType ::= ENUMERATED {
  activeSetUpdate,
  cellChangeOrderFromUTRAN,
  cellUpdateConfirm,
  counterCheck,
  downlinkDirectTransfer,
  interRATHandoverCommand,
  measurementControl,
}

```

```

        pagingType2,
        physicalChannelReconfiguration,
        physicalSharedChannelAllocation,
        radioBearerReconfiguration,
        radioBearerRelease,
        radioBearerSetup,
        rrcConnectionRelease,
        rrcConnectionReject,
        rrcConnectionSetup,
        securityModeCommand,
        signallingConnectionRelease,
        transportChannelReconfiguration,
        transportFormatCombinationControl,
        ueCapabilityEnquiry,
        ueCapabilityInformationConfirm,
        uplinkPhysicalChannelControl,
        uraUpdateConfirm,
        utranMobilityInformation,
        assistanceDataDelivery,
        spare5, spare4, spare3, spare2,
        spare1
    }
}

Rplmn-Information ::= SEQUENCE {
    gsm-BA-Range-List      GSM-BA-Range-List      OPTIONAL,
    fdd-UMTS-Frequency-List FDD-UMTS-Frequency-List
    OPTIONAL,
    tdd-UMTS-Frequency-List TDD-UMTS-Frequency-List
    OPTIONAL,
    cdma2000-UMTS-Frequency-List CDMA2000-UMTS-Frequency-List
    OPTIONAL
}

Rplmn-Information-r4 ::= SEQUENCE {
    gsm-BA-Range-List      GSM-BA-Range-List      OPTIONAL,
    fdd-UMTS-Frequency-List FDD-UMTS-Frequency-List OPTIONAL,
    tdd384-UMTS-Frequency-List TDD-UMTS-Frequency-List OPTIONAL,
    tdd128-UMTS-Frequency-List TDD-UMTS-Frequency-List OPTIONAL,
    cdma2000-UMTS-Frequency-List CDMA2000-UMTS-Frequency-List OPTIONAL
}

SchedulingInformation ::= SEQUENCE {
    scheduling SEQUENCE {
        segCount SegCount DEFAULT 1,
        sib-Pos CHOICE {
            -- The element name indicates the repetition period and the value
            -- (multiplied by two) indicates the position of the first segment.
            rep4 INTEGER (0..1),
            rep8 INTEGER (0..3),
            rep16 INTEGER (0..7),
            rep32 INTEGER (0..15),
            rep64 INTEGER (0..31),
            rep128 INTEGER (0..63),
            rep256 INTEGER (0..127),
            rep512 INTEGER (0..255),
            rep1024 INTEGER (0..511),
            rep2048 INTEGER (0..1023),
            rep4096 INTEGER (0..2047)
        },
        sib-PosOffsetInfo SibOFF-List OPTIONAL
    }
}

SchedulingInformationSIB ::= SEQUENCE {
    sib-Type SIB-TypeAndTag,
    scheduling SchedulingInformation
}

SchedulingInformationSIBSb ::= SEQUENCE {
    sibSb-Type SIBSb-TypeAndTag,
    scheduling SchedulingInformation
}

SegCount ::= INTEGER (1..16)

SegmentIndex ::= INTEGER (1..15)

-- Actual value SFN-Prime = 2 * IE value

```

```

SFN-Prime ::=                               INTEGER (0..2047)

SIB-Data-fixed ::=                          BIT STRING (SIZE (222))

SIB-Data-variable ::=                       BIT STRING (SIZE (1..214))

SIBOccurIdentity ::=                        INTEGER (0..15)

SIBOccurrenceIdentityAndValueTag ::=       SEQUENCE {
    sibOccurIdentity                        SIBOccurIdentity,
    sibOccurValueTag                       SIBOccurValueTag
}

SIBOccurValueTag ::=                       INTEGER (0..15)

SIB-ReferenceList ::=                      SEQUENCE (SIZE (1..maxSIB)) OF
    SchedulingInformationSIB

SIBSb-ReferenceList ::=                   SEQUENCE (SIZE (1..maxSIB)) OF
    SchedulingInformationSIBSb

SIB-ReferenceListFACH ::=                 SEQUENCE (SIZE (1..maxSIB-FACH)) OF
    SchedulingInformationSIB

SIB-Type ::=                               ENUMERATED {
    masterInformationBlock,
    systemInformationBlockType1,
    systemInformationBlockType2,
    systemInformationBlockType3,
    systemInformationBlockType4,
    systemInformationBlockType5,
    systemInformationBlockType6,
    systemInformationBlockType7,
    systemInformationBlockType8,
    systemInformationBlockType9,
    systemInformationBlockType10,
    systemInformationBlockType11,
    systemInformationBlockType12,
    systemInformationBlockType13,
    systemInformationBlockType13-1,
    systemInformationBlockType13-2,
    systemInformationBlockType13-3,
    systemInformationBlockType13-4,
    systemInformationBlockType14,
    systemInformationBlockType15,
    systemInformationBlockType15-1,
    systemInformationBlockType15-2,
    systemInformationBlockType15-3,
    systemInformationBlockType16,
    systemInformationBlockType17,
    systemInformationBlockType15-4,
    systemInformationBlockType18,
    schedulingBlock1,
    schedulingBlock2,
    systemInformationBlockType15-5,
    spare1, spare2 }

SIB-TypeAndTag ::=                        CHOICE {
    sysInfoType1                            PLMN-ValueTag,
    sysInfoType2                            CellValueTag,
    sysInfoType3                            CellValueTag,
    sysInfoType4                            CellValueTag,
    sysInfoType5                            CellValueTag,
    sysInfoType6                            CellValueTag,
    sysInfoType7                            NULL,
    sysInfoType8                            CellValueTag,
    sysInfoType9                            NULL,
    sysInfoType10                           NULL,
    sysInfoType11                           CellValueTag,
    sysInfoType12                           CellValueTag,
    sysInfoType13                           CellValueTag,
    sysInfoType13-1                         CellValueTag,
    sysInfoType13-2                         CellValueTag,
    sysInfoType13-3                         CellValueTag,
    sysInfoType13-4                         CellValueTag,
    sysInfoType14                           NULL,

```

```

sysInfoType15      CellValueTag,
sysInfoType16      PredefinedConfigIdentityAndValueTag,
sysInfoType17      NULL,
sysInfoType15-1    CellValueTag,
sysInfoType15-2    SIBOccurrenceIdentityAndValueTag,
sysInfoType15-3    SIBOccurrenceIdentityAndValueTag,
sysInfoType15-4    CellValueTag,
sysInfoType18      CellValueTag,
sysInfoType15-5    CellValueTag,
spare5             NULL,
spare4             NULL,
spare3             NULL,
spare2             NULL,
spare1             NULL
}

SIBSb-TypeAndTag ::=
  sysInfoType1      PLMN-ValueTag,
  sysInfoType2      CellValueTag,
  sysInfoType3      CellValueTag,
  sysInfoType4      CellValueTag,
  sysInfoType5      CellValueTag,
  sysInfoType6      CellValueTag,
  sysInfoType7      NULL,
  sysInfoType8      CellValueTag,
  sysInfoType9      NULL,
  sysInfoType10     NULL,
  sysInfoType11     CellValueTag,
  sysInfoType12     CellValueTag,
  sysInfoType13     CellValueTag,
  sysInfoType13-1   CellValueTag,
  sysInfoType13-2   CellValueTag,
  sysInfoType13-3   CellValueTag,
  sysInfoType13-4   CellValueTag,
  sysInfoType14     NULL,
  sysInfoType15     CellValueTag,
  sysInfoType16     PredefinedConfigIdentityAndValueTag,
  sysInfoType17     NULL,
  sysInfoTypeSB1    CellValueTag,
  sysInfoTypeSB2    CellValueTag,
  sysInfoType15-1   CellValueTag,
  sysInfoType15-2   SIBOccurrenceIdentityAndValueTag,
  sysInfoType15-3   SIBOccurrenceIdentityAndValueTag,
  sysInfoType15-4   CellValueTag,
  sysInfoType18     CellValueTag,
  sysInfoType15-5   CellValueTag,
  spare3            NULL,
  spare2            NULL,
  spare1            NULL
}

SibOFF ::=
  ENUMERATED {
    so2, so4, so6, so8, so10,
    so12, so14, so16, so18,
    so20, so22, so24, so26,
    so28, so30, so32 }

SibOFF-List ::=
  SEQUENCE (SIZE (1..15)) OF
  SibOFF

SysInfoType1 ::=
  SEQUENCE {
    -- Core network IEs
    cn-CommonGSM-MAP-NAS-SysInfo  NAS-SystemInformationGSM-MAP,
    cn-DomainSysInfoList          CN-DomainSysInfoList,
    -- User equipment IEs
    ue-ConnTimersAndConstants      UE-ConnTimersAndConstants      OPTIONAL,
    ue-IdleTimersAndConstants      UE-IdleTimersAndConstants      OPTIONAL,
    -- Extension mechanism for non- release99 information
    v3a0NonCriticalExtensions      SEQUENCE {
      sysInfoType1-v3a0ext         SysInfoType1-v3a0ext-IEs,
      nonCriticalExtensions         SEQUENCE {} OPTIONAL
    }
  }
  OPTIONAL

SysInfoType1-v3a0ext-IEs ::= SEQUENCE {
  ue-ConnTimersAndConstants-v3a0ext  UE-ConnTimersAndConstants-v3a0ext,
  ue-IdleTimersAndConstants-v3a0ext  UE-IdleTimersAndConstants-v3a0ext
}

```

```

SysInfoType2 ::=
    -- UTRAN mobility IEs
    ura-IdentityList          URA-IdentityList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions     SEQUENCE {}
    OPTIONAL
}

SysInfoType3 ::=
    sib4indicator            BOOLEAN,
    -- UTRAN mobility IEs
    cellIdentity              CellIdentity,
    cellSelectReselectInfo    CellSelectReselectInfoSIB-3-4,
    cellAccessRestriction     CellAccessRestriction,
    -- Extension mechanism for non- release99 information
    v4xyNonCriticalExtensions SEQUENCE {
        sysInfoType3-v4xyext  SysInfoType3-v4xyext-IEs,
        v5xyNonCriticalExtension SEQUENCE {
            sysInfoType3-v5xyext  SysInfoType3-v5xyext,
            nonCriticalExtensions SEQUENCE {}
        }
    }
    OPTIONAL
}

SysInfoType3-v4xyext-IEs ::= SEQUENCE {
    mapping-LCR          Mapping-LCR-r4
}
OPTIONAL

SysInfoType3-v5xyext ::= SEQUENCE {
    cellSelectReselectInfo-v5xyext  CellSelectReselectInfo-v5xyExt
}
OPTIONAL

SysInfoType4 ::=
    -- UTRAN mobility IEs
    cellIdentity              CellIdentity,
    cellSelectReselectInfo    CellSelectReselectInfoSIB-3-4,
    cellAccessRestriction     CellAccessRestriction,
    -- Extension mechanism for non- release99 information
    v4xyNonCriticalExtensions SEQUENCE {
        sysInfoType4-v4xyext  SysInfoType4-v4xyext-IEs,
        v5xyNonCriticalExtension SEQUENCE {
            sysInfoType4-v5xyext  SysInfoType4-v5xyext,
            nonCriticalExtensions SEQUENCE {}
        }
    }
    OPTIONAL
}

SysInfoType4-v4xyext-IEs ::= SEQUENCE {
    mapping-LCR          Mapping-LCR-r4
}
OPTIONAL

SysInfoType4-v5xyext ::= SEQUENCE {
    cellSelectReselectInfo-v5xyext  CellSelectReselectInfo-v5xyExt
}
OPTIONAL

SysInfoType5 ::=
    sib6indicator            BOOLEAN,
    -- Physical channel IEs
    pich-PowerOffset         PICH-PowerOffset,
    modeSpecificInfo         CHOICE {
        fdd                   SEQUENCE {
            aich-PowerOffset  AICH-PowerOffset
        },
        tdd                   SEQUENCE {
            -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, the following IEs should be absent
            -- and the info included in the tdd128SpecificInfo instead.
            -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
            -- included.
            pusch-SysInfoList-SFN  PUSCH-SysInfoList-SFN    OPTIONAL,
            pdsch-SysInfoList-SFN  PDSCH-SysInfoList-SFN    OPTIONAL,
            openLoopPowerControl-TDD OpenLoopPowerControl-TDD
        }
    },
    primaryCCPCH-Info         PrimaryCCPCH-Info    OPTIONAL,
    prach-SystemInformationList PRACH-SystemInformationList,
    sccpch-SystemInformationList SCCPCH-SystemInformationList,
    -- cbs-DRX-Level1Information is conditional on any of the CTCH indicator IEs in
    -- sccpch-SystemInformationList

```

```

    cbs-DRX-Level1Information      CBS-DRX-Level1Information      OPTIONAL,
-- Extension mechanism for non- release99 information
v4xyNonCriticalExtensions        SEQUENCE {
    sysInfoType5-v4xyext          SysInfoType5-v4xyext-IEs      OPTIONAL,
-- Extension mechanism for non- rel-4 information
v5xyNonCriticalExtensions        SEQUENCE {
    sysInfoType5-v5xyext          SysInfoType5-v5xyext-IEs      OPTIONAL,
    nonCriticalExtensions         SEQUENCE {}                      OPTIONAL
    }
    }
    OPTIONAL
}

SysInfoType5-v4xyext-IEs ::= SEQUENCE {
--The following IE PNBSCH-Allocation-r4 shall be used for 3.84Mcps TDD only.
pNBSCH-Allocation-r4             PNBSCH-Allocation-r4         OPTIONAL,
-- In case of TDD, the following IE is included instead of the
-- IE up-IPDL-Parameter in up-OTDOA-AssistanceData.
openLoopPowerControl-IPDL-TDD    OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL,
-- If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included in
-- PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
-- IE rach-TransportFormatSet shall be absent and the corresponding IE in the following
-- PRACH-SystemInformationList-LCR-r4 shall be used
prach-SystemInformationList-LCR-r4 PRACH-SystemInformationList-LCR-r4  OPTIONAL,
tdd128SpecificInfo              SEQUENCE {
    pusch-SysInfoList-SFN        PUSCH-SysInfoList-SFN-LCR-r4  OPTIONAL,
    pdsch-SysInfoList-SFN        PDSCH-SysInfoList-SFN-LCR-r4  OPTIONAL,
    pCCPCH-LCR-ExtensionsList    PrimaryCCPCH-Info-LCR-r4-ext  OPTIONAL,
    sCCPCH-LCR-ExtensionsList    SCCPCH-SystemInformationList-LCR-r4-ext  OPTIONAL
    }
}

SysInfoType5-v5xyext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo          SEQUENCE {
        pusch-SysInfoList-SFN    PUSCH-SysInfoList-SFN-HCR-r5  OPTIONAL,
        pdsch-SysInfoList-SFN    PDSCH-SysInfoList-SFN-HCR-r5  OPTIONAL
    }
}

SysInfoType6 ::= SEQUENCE {
-- Physical channel IEs
    pich-PowerOffset            PICH-PowerOffset,
    modeSpecificInfo            CHOICE {
        fdd                      SEQUENCE {
            aich-PowerOffset      AICH-PowerOffset,
            -- dummy is not used in this version of specification, it should
            -- not be sent and if received it should be ignored.
            dummy                 CSICH-PowerOffset      OPTIONAL
        },
        tdd                      SEQUENCE {
            -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList-SFN,
            -- pdsch-SysInfoList-SFN and openLoopPowerControl-TDD should be absent
            -- and the info included in the tdd128SpecificInfo instead.
            -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should
            -- also be included.
            pusch-SysInfoList-SFN PUSCH-SysInfoList-SFN      OPTIONAL,
            pdsch-SysInfoList-SFN PDSCH-SysInfoList-SFN      OPTIONAL,
            openLoopPowerControl-TDD OpenLoopPowerControl-TDD
        }
    },
    primaryCCPCH-Info            PrimaryCCPCH-Info      OPTIONAL,
    prach-SystemInformationList  PRACH-SystemInformationList  OPTIONAL,
    sCCPCH-SystemInformationList SCCPCH-SystemInformationList  OPTIONAL,
    cbs-DRX-Level1Information    CBS-DRX-Level1Information  OPTIONAL,
-- Conditional on any of the CTCH indicator IEs in
-- sCCPCH-SystemInformationList
-- Extension mechanism for non- release99 information
v4xyNonCriticalExtensions        SEQUENCE {
    sysInfoType6-v4xyext          SysInfoType6-v4xyext-IEs      OPTIONAL,
-- Extension mechanism for non- rel-4 information
v5xyNonCriticalExtensions        SEQUENCE {
    sysInfoType6-v5xyext          SysInfoType6-v5xyext-IEs      OPTIONAL,
    nonCriticalExtensions         SEQUENCE {}                      OPTIONAL
    }
    }
    OPTIONAL
}

SysInfoType6-v4xyext-IEs ::= SEQUENCE {
-- openLoopPowerControl-IPDL-TDD is present only if IPDLs are applied for TDD

```

```

openLoopPowerControl-IPDL-TDD    OpenLoopPowerControl-IPDL-TDD-r4    OPTIONAL,
-- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included
-- in PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
-- IE rach-TransportFormatSet shall be absent and the corresponding IEs in the following
-- PRACH-SystemInformationList-LCR-r4 shall be used
prach-SystemInformationList-LCR-r4  PRACH-SystemInformationList-LCR-r4  OPTIONAL,
tdd128SpecificInfo                SEQUENCE {
    pusch-SysInfoList-SFN          PUSCH-SysInfoList-SFN-LCR-r4    OPTIONAL,
    pdsch-SysInfoList-SFN          PDSCH-SysInfoList-SFN-LCR-r4    OPTIONAL,
    pCCPCH-LCR-Extensions          PrimaryCCPCH-Info-LCR-r4-ext    OPTIONAL,
    sCCPCH-LCR-ExtensionsList      SCCPCH-SystemInformationList-LCR-r4-ext  OPTIONAL
}
}

SysInfoType6-v5xyext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo            SEQUENCE {
        pusch-SysInfoList-SFN      PUSCH-SysInfoList-SFN-HCR-r5    OPTIONAL,
        pdsch-SysInfoList-SFN      PDSCH-SysInfoList-SFN-HCR-r5    OPTIONAL
    }
}

SysInfoType7 ::= SEQUENCE {
    -- Physical channel IEs
    modeSpecificInfo              CHOICE {
        fdd                        SEQUENCE {
            ul-Interference        UL-Interference
        },
        tdd                        NULL
    },
    prach-Information-SIB5-List    DynamicPersistenceLevelList,
    prach-Information-SIB6-List    DynamicPersistenceLevelList    OPTIONAL,
    expirationTimeFactor          ExpirationTimeFactor            OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}

SysInfoType8 ::= SEQUENCE {
    -- User equipment IEs
    cpch-Parameters                CPCH-Parameters,
    -- Physical channel IEs
    cpch-SetInfoList              CPCH-SetInfoList,
    csich-PowerOffset             CSICH-PowerOffset,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}

SysInfoType9 ::= SEQUENCE {
    -- Physical channel IEs
    cpch-PersistenceLevelsList    CPCH-PersistenceLevelsList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}

SysInfoType10 ::= SEQUENCE {
    -- User equipment IEs
    drac-SysInfoList              DRAC-SysInfoList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}

SysInfoType11 ::= SEQUENCE {
    sib12indicator                BOOLEAN,
    -- Measurement IEs
    fach-MeasurementOccasionInfo    FACH-MeasurementOccasionInfo    OPTIONAL,
    measurementControlSysInfo      MeasurementControlSysInfo,
    -- Extension mechanism for non- release99 information
    v4xyNonCriticalExtensions      SEQUENCE {
        sysInfoType11-v4xyext      SysInfoType11-v4xyext-IEs        OPTIONAL,
        v5xyNonCriticalExtension    SEQUENCE {
            sysInfoType11-v5xyext  SysInfoType11-v5xyext-IEs,
            nonCriticalExtensions  SEQUENCE {}                                OPTIONAL
        }
    }
}

SysInfoType11-v4xyext-IEs ::= SEQUENCE {
    fach-MeasurementOccasionInfo-LCR-Ext  FACH-MeasurementOccasionInfo-LCR-r4-ext  OPTIONAL,
    measurementControlSysInfo-LCR         MeasurementControlSysInfo-LCR-r4-ext
}

```

```

}

SysInfoType11-v5xyext-IEs ::= SEQUENCE {
  --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
  newIntraFrequencyCellInfoList-v5xyext SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellSelectReselectInfo-v5xyExt OPTIONAL,
  --The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
  newInterFrequencyCellInfoList-v5xyext SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellSelectReselectInfo-v5xyExt OPTIONAL,
  --The order of the list corresponds to the order of cell in newInterRATCellInfoList
  newInterRATCellInfoList-v5xyext SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellSelectReselectInfo-v5xyExt OPTIONAL,
  intraFreqEventCriteriaList-v5xyext Intra-FreqEventCriteriaList-v5xyext OPTIONAL,
  intraFreqReportingCriteria-lb-r5ext IntraFreqReportingCriteria-lb-r5ext OPTIONAL,
  intraFreqEvent-ld-r5ext IntraFreqEvent-ld-r5ext OPTIONAL
}

SysInfoType12 ::= SEQUENCE {
  -- Measurement IEs
  fach-MeasurementOccasionInfo FACH-MeasurementOccasionInfo OPTIONAL,
  measurementControlSysInfo MeasurementControlSysInfo,
  -- Extension mechanism for non- release99 information
  v4xyNonCriticalExtensions SEQUENCE {
    sysInfoType12-v4xyext SysInfoType12-v4xyext-IEs OPTIONAL,
    v5xyNonCriticalExtension SEQUENCE {
      sysInfoType12-v5xyext SysInfoType12-v5xyext-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
  } OPTIONAL
}

SysInfoType12-v4xyext-IEs ::= SEQUENCE {
  fach-MeasurementOccasionInfo-LCR-Ext FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
  measurementControlSysInfo-LCR MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType12-v5xyext-IEs ::= SEQUENCE {
  --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
  newIntraFrequencyCellInfoList-v5xyext SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellSelectReselectInfo-v5xyExt OPTIONAL,
  --The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
  newInterFrequencyCellInfoList-v5xyext SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellSelectReselectInfo-v5xyExt OPTIONAL,
  --The order of the list corresponds to the order of cell in newInterRATCellInfoList
  newInterRATCellInfoList-v5xyext SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellSelectReselectInfo-v5xyExt OPTIONAL,
  intraFreqEventCriteriaList-v5xyext Intra-FreqEventCriteriaList-v5xyext OPTIONAL,
  intraFreqReportingCriteria-lb-r5ext IntraFreqReportingCriteria-lb-r5ext OPTIONAL,
  intraFreqEvent-ld-r5ext IntraFreqEvent-ld-r5ext OPTIONAL
}

SysInfoType13 ::= SEQUENCE {
  -- Core network IEs
  cn-DomainSysInfoList CN-DomainSysInfoList,
  -- User equipment IEs
  ue-IdleTimersAndConstants UE-IdleTimersAndConstants OPTIONAL,
  capabilityUpdateRequirement CapabilityUpdateRequirement OPTIONAL,
  -- Extension mechanism for non- release99 information
  v3a0NonCriticalExtensions SEQUENCE {
    sysInfoType13-v3a0ext SysInfoType13-v3a0ext-IEs,
    v4xyNonCriticalExtensions SEQUENCE {
      sysInfoType13-v4xyext SysInfoType13-v4xyext-IEs,
      -- Extension mechanism for non- release99 information
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
  } OPTIONAL
}

SysInfoType13-v3a0ext-IEs ::= SEQUENCE {
  ue-IdleTimersAndConstants-v3a0ext UE-IdleTimersAndConstants-v3a0ext
}

SysInfoType13-v4xyext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4Ext CapabilityUpdateRequirement-r4-ext OPTIONAL
}

SysInfoType13-1 ::= SEQUENCE {
  -- ANSI-41 IEs

```

```

    ansi-41-RAND-Information      ANSI-41-RAND-Information,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType13-2 ::=              SEQUENCE {
-- ANSI-41 IEs
    ansi-41-UserZoneID-Information ANSI-41-UserZoneID-Information,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType13-3 ::=              SEQUENCE {
-- ANSI-41 IEs
    ansi-41-PrivateNeighbourListInfo ANSI-41-PrivateNeighbourListInfo,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType13-4 ::=              SEQUENCE {
-- ANSI-41 IEs
    ansi-41-GlobalServiceRedirectInfo
                                ANSI-41-GlobalServiceRedirectInfo,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType14 ::=                SEQUENCE {
-- Physical channel IEs
    individualTS-InterferenceList IndividualTS-InterferenceList,
    expirationTimeFactor          ExpirationTimeFactor                    OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType15 ::=                SEQUENCE {
-- Measurement IEs

    ue-positioning-GPS-CipherParameters UE-Positioning-CipherParameters  OPTIONAL,
    ue-positioning-GPS-ReferenceLocation ReferenceLocation,
    ue-positioning-GPS-ReferenceTime   UE-Positioning-GPS-ReferenceTime,

    ue-positioning-GPS-Real-timeIntegrity BadSatList                      OPTIONAL,
-- Extension mechanism for non- release99 information
    v4xyNonCriticalExtensions        SEQUENCE {
        sysInfoType15-v4xyext        SysInfoType15-v4xyext-IEs,
-- Extension mechanism for non- release4 information
        nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
    } OPTIONAL
}

SysInfoType15-v4xyext-IEs ::= SEQUENCE {
    up-IPDL-Parameters-TDD           UE-Positioning-IPDL-Parameters-TDD-r4-ext  OPTIONAL
}

SysInfoType15-1 ::=              SEQUENCE {
-- DGPS corrections
    ue-positioning-GPS-DGPS-Corrections UE-Positioning-GPS-DGPS-Corrections,

-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType15-2 ::=              SEQUENCE {
-- Ephemeris and clock corrections
    transmissionTOW                INTEGER (0..604799),
    satID                           SatID,
    ephemerisParameter              EphemerisParameter,

-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType15-3 ::=              SEQUENCE {
-- Almanac and other data
    transmissionTOW                INTEGER (0.. 604799),
    ue-positioning-GPS-Almanac      UE-Positioning-GPS-Almanac
OPTIONAL,

```

```

        ue-positioning-GPS-IonosphericModel          UE-Positioning-GPS-IonosphericModel
OPTIONAL,
        ue-positioning-GPS-UTC-Model                UE-Positioning-GPS-UTC-Model
OPTIONAL,
        satMask                                     BIT STRING (SIZE (1..32))  OPTIONAL,
        lsbTOW                                       BIT STRING (SIZE (8))    OPTIONAL,
-- Extension mechanism for non- release99 information
        nonCriticalExtensions                       SEQUENCE {}              OPTIONAL
}

SysInfoType15-4 ::=                               SEQUENCE {
-- Measurement IEs
        ue-positioning-OTDOA-CipherParameters      UE-Positioning-CipherParameters      OPTIONAL,
        ue-positioning-OTDOA-AssistanceData        UE-Positioning-OTDOA-AssistanceData,
        v3a0NonCriticalExtensions                 SEQUENCE {
                sysInfoType15-4-v3a0ext           SysInfoType15-4-v3a0ext,
-- Extension mechanism for non- release99 information
                v4xyNonCriticalExtensions         SEQUENCE {
                        sysInfoType15-4-v4xyext   SysInfoType15-4-v4xyext,
                        nonCriticalExtensions     SEQUENCE {}          OPTIONAL
                } OPTIONAL
        } OPTIONAL
}

SysInfoType15-4-v3a0ext ::= SEQUENCE {
        sfn-Offset-Validity                       SFN-Offset-Validity          OPTIONAL
}

SysInfoType15-4-v4xyext ::= SEQUENCE {
        ue-Positioning-OTDOA-AssistanceData-r4ext UE-Positioning-OTDOA-AssistanceData-r4ext  OPTIONAL
}

SysInfoType15-5 ::=                               SEQUENCE {
-- Measurement IEs
        ue-positioning-OTDOA-AssistanceData-UEB    UE-Positioning-OTDOA-AssistanceData-UEB,
        v3a0NonCriticalExtensions                 SEQUENCE {
                sysInfoType15-5-v3a0ext           SysInfoType15-5-v3a0ext,
-- Extension mechanism for non- release99 information
                nonCriticalExtensions             SEQUENCE {}          OPTIONAL
        } OPTIONAL
}

SysInfoType15-5-v3a0ext ::= SEQUENCE {
        sfn-Offset-Validity                       SFN-Offset-Validity          OPTIONAL
}

SysInfoType16 ::=                               SEQUENCE {
-- Radio bearer IEs
        preDefinedRadioConfiguration             PreDefRadioConfiguration,
-- Extension mechanism for non- release99 information
        nonCriticalExtensions                     SEQUENCE {}                  OPTIONAL
}

SysInfoType17 ::=                               SEQUENCE {
-- Physical channel IEs
-- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList and
-- pdsch-SysInfoList should be absent and the info included in the
-- tddl28SpecificInfo instead.
-- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
-- included.
        pusch-SysInfoList                         PUSCH-SysInfoList           OPTIONAL,
        pdsch-SysInfoList                         PDSCH-SysInfoList           OPTIONAL,
-- Extension mechanism for non- release99 information
        v4xyNonCriticalExtensions                 SEQUENCE {
                sysInfoType17-v4xyext           SysInfoType17-v4xyext-IEs,
                v5xyNonCriticalExtensions       SEQUENCE {
                        sysInfoType17-v5xyext   SysInfoType17-v5xyext-IEs  OPTIONAL,
                        nonCriticalExtensions     SEQUENCE {}          OPTIONAL
                } OPTIONAL
        } OPTIONAL
}

SysInfoType17-v4xyext-IEs ::= SEQUENCE {
        tddl28SpecificInfo                       SEQUENCE {
                pusch-SysInfoList               PUSCH-SysInfoList-LCR-r4   OPTIONAL,
                pdsch-SysInfoList               PDSCH-SysInfoList-LCR-r4   OPTIONAL
        } OPTIONAL
}

```

```

SysInfoType17-v5xyext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo          SEQUENCE {
        pusch-SysInfoList      PUSCH-SysInfoList-HCR-r5    OPTIONAL,
        pdsch-SysInfoList      PDSCH-SysInfoList-HCR-r5    OPTIONAL
    }
}

SysInfoType18 ::=
    SEQUENCE {
        idleModePLMNIdentities    PLMNIdentitiesOfNeighbourCells    OPTIONAL,
        connectedModePLMNIdentities PLMNIdentitiesOfNeighbourCells    OPTIONAL,
        -- Extension mechanism for non-release99 information
        nonCriticalExtensions      SEQUENCE {}    OPTIONAL
    }

SysInfoTypeSB1 ::=
    SEQUENCE {
        -- Other IEs
        sib-ReferenceList          SIB-ReferenceList,
        -- Extension mechanism for non-release99 information
        nonCriticalExtensions      SEQUENCE {}    OPTIONAL
    }

SysInfoTypeSB2 ::=
    SEQUENCE {
        -- Other IEs
        sib-ReferenceList          SIB-ReferenceList,
        -- Extension mechanism for non-release99 information
        nonCriticalExtensions      SEQUENCE {}    OPTIONAL
    }

TDD-UMTS-Frequency-List ::=
    SEQUENCE (SIZE (1..maxNumTDDFreqs)) OF
        FrequencyInfoTDD

-- *****
--
--     ANSI-41 INFORMATION ELEMENTS (10.3.9)
--
-- *****

ANSI-41-GlobalServiceRedirectInfo ::= ANSI-41-NAS-Parameter
ANSI-41-PrivateNeighbourListInfo ::= ANSI-41-NAS-Parameter
ANSI-41-RAND-Information ::= ANSI-41-NAS-Parameter
ANSI-41-UserZoneID-Information ::= ANSI-41-NAS-Parameter
ANSI-41-NAS-Parameter ::= BIT STRING (SIZE (1..2048))

Min-P-REV ::= BIT STRING (SIZE (8))

NAS-SystemInformationANSI-41 ::= ANSI-41-NAS-Parameter
NID ::= BIT STRING (SIZE (16))

P-REV ::= BIT STRING (SIZE (8))

SID ::= BIT STRING (SIZE (15))

END

```

11.4 Constant definitions

Constant-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

```

hiPDSCHidentities    INTEGER ::= 64
hiPUSCHidentities    INTEGER ::= 64
hiRM                  INTEGER ::= 256
maxAC                 INTEGER ::= 16
maxAdditionalMeas     INTEGER ::= 4
maxASC                INTEGER ::= 8
maxASCmap             INTEGER ::= 7
maxASCpersist        INTEGER ::= 6
maxCCTrCH             INTEGER ::= 8
maxCellMeas          INTEGER ::= 32
maxCellMeas-1        INTEGER ::= 31
maxCNdomains          INTEGER ::= 4
maxCPCHsets           INTEGER ::= 16
maxDPCH-DLchan        INTEGER ::= 8
maxDPDCH-UL           INTEGER ::= 6
maxDRACclasses        INTEGER ::= 8

```

```

maxFACHPCH                INTEGER ::= 8
maxFreq                   INTEGER ::= 8
maxFreqBandsFDD           INTEGER ::= 8
maxFreqBandsTDD           INTEGER ::= 4
maxFreqBandsGSM           INTEGER ::= 16
maxGERAN-SI               INTEGER ::= 8
maxHProcesses             INTEGER ::= 8
maxHSDSCHTBIndex         INTEGER ::= 64
maxHSDSCHTBIndex-tdd384  INTEGER ::= 512
maxHSSCCHs                INTEGER ::= 4
maxInterSysMessages      INTEGER ::= 4
maxLoCHperRLC             INTEGER ::= 2
maxMAC-d-PDUsizes        INTEGER ::= 8
maxMeasEvent              INTEGER ::= 8
maxMeasIntervals          INTEGER ::= 3
maxMeasParEvent           INTEGER ::= 2
maxNumCDMA2000Freqs       INTEGER ::= 8
maxNumGSMFreqRanges      INTEGER ::= 32
maxNumFDDFreqs           INTEGER ::= 8
maxNumTDDFreqs           INTEGER ::= 8
maxNoOfMeas              INTEGER ::= 16
maxOtherRAT               INTEGER ::= 15
maxOtherRAT-16           INTEGER ::= 16
maxPage1                  INTEGER ::= 8
maxPCPCH-APsig           INTEGER ::= 16
maxPCPCH-APsubCh         INTEGER ::= 12
maxPCPCH-CDsig           INTEGER ::= 16
maxPCPCH-CDsubCh         INTEGER ::= 12
maxPCPCH-SF               INTEGER ::= 7
maxPCPCHs                INTEGER ::= 64
maxPDCPAlgoType          INTEGER ::= 8
maxPDSCH                  INTEGER ::= 8
maxPDSCH-TFCigroups      INTEGER ::= 256
maxPRACH                  INTEGER ::= 16
maxPRACH-FPACH           INTEGER ::= 8
maxPredefConfig           INTEGER ::= 16
maxPUSCH                  INTEGER ::= 8
maxQueueIDs              INTEGER ::= 8
maxRABsetup               INTEGER ::= 16
maxRAT                    INTEGER ::= 16
maxRB                     INTEGER ::= 32
maxRBallRABs             INTEGER ::= 27
maxRBMuxOptions           INTEGER ::= 8
maxRBperRAB               INTEGER ::= 8
maxReportedGSMCells       INTEGER ::= 6
maxRL                      INTEGER ::= 8
maxRL-1                   INTEGER ::= 7
maxRFC3095-CID           INTEGER ::= 16384
maxROHC-PacketSizes-r4   INTEGER ::= 16
maxROHC-Profile-r4       INTEGER ::= 8
maxSat                    INTEGER ::= 16
maxSCCPCH                 INTEGER ::= 16
maxSIB                    INTEGER ::= 32
maxSIB-FACH               INTEGER ::= 8
maxSIBperMsg              INTEGER ::= 16
maxSRBsetup               INTEGER ::= 8
maxSystemCapability       INTEGER ::= 16
maxTF                      INTEGER ::= 32
maxTF-CPCH                INTEGER ::= 16
maxTFC                    INTEGER ::= 1024
maxTFCsub                 INTEGER ::= 1024
maxTFCI-2-Combs          INTEGER ::= 512
maxTGPS                   INTEGER ::= 6
maxTrCH                   INTEGER ::= 32
-- maxTrCHpreconf should be 16 but has been set to 32 for compatibility
maxTrCHpreconf            INTEGER ::= 32
maxTS                      INTEGER ::= 14
maxTS-1                   INTEGER ::= 13
maxTS-LCR                 INTEGER ::= 6
maxTS-LCR-1               INTEGER ::= 5
maxURA                    INTEGER ::= 8
maxURNTI-Group            INTEGER ::= 8

```

END

11.5 RRC information between network nodes

```
Internode-definitions DEFINITIONS AUTOMATIC TAGS ::=
```

```
BEGIN
```

```
IMPORTS
```

```
    HandoverToUTRANCommand,
    MeasurementReport,
    PhysicalChannelReconfiguration,
    RadioBearerReconfiguration,
    RadioBearerRelease,
    RadioBearerSetup,
    RRC-FailureInfo-r3-IEs,
    TransportChannelReconfiguration
```

```
FROM PDU-definitions
```

```
-- Core Network IEs :
    CN-DomainIdentity,
    CN-DomainInformationList,
    CN-DomainInformationListFull,
    CN-DRX-CycleLengthCoefficient,
    NAS-SystemInformationGSM-MAP,
-- UTRAN Mobility IEs :
    CellIdentity,
    URA-Identity,
-- User Equipment IEs :
    AccessStratumReleaseIndicator,
    C-RNTI,
    ChipRateCapability,
    DL-PhysChCapabilityFDD-v380ext,
    DL-PhysChCapabilityTDD,
    DL-PhysChCapabilityTDD-LCR-r4,
    GSM-Measurements,
    FailureCauseWithProtErr,
    MaxHcContextSpace,
    MaxNoPhysChBitsReceived,
    MaxROHC-ContextSessions-r4,
    NetworkAssistedGPS-Supported,
    RadioFrequencyBandTDDList,
    RLC-Capability,
    RRC-MessageSequenceNumber,
    SecurityCapability,
    SimultaneousSCCPCH-DPCH-Reception,
    STARTList,
    STARTSingle,
    START-Value,
    SupportOfDedicatedPilotsForChEstimation,
    TransportChannelCapability,
    TxRxFrequencySeparation,
    U-RNTI,
    UE-MultiModeRAT-Capability,
    UE-PowerClass-v370,
    UE-RadioAccessCapabBandFDDList,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-v370ext,
    UE-RadioAccessCapability-v380ext,
    UE-RadioAccessCapability-v3a0ext,
    UE-RadioAccessCapability-v3g0ext,
    UE-RadioAccessCapability-v4xyext,
    UE-RadioAccessCapability-v5xyext,
    UL-PhysChCapabilityFDD,
    UL-PhysChCapabilityTDD,
    UL-PhysChCapabilityTDD-LCR-r4,
-- Radio Bearer IEs :
    PredefinedConfigStatusList,
    PredefinedConfigValueTag,
    RAB-InformationSetupList,
    RAB-InformationSetupList-r4,
    RAB-Identity,
    RB-Identity,
    RB-Identity,
    SRB-InformationSetupList,
-- Transport Channel IEs :
    CPCH-SetID,
    DL-CommonTransChInfo,
```

```

DL-CommonTransChInfo-r4,
DL-AddReconfTransChInfoList,
DL-AddReconfTransChInfoList-r4,
DRAC-StaticInformationList,
UL-CommonTransChInfo,
UL-CommonTransChInfo-r4,
UL-AddReconfTransChInfoList,
-- Measurement IEs :
MeasurementIdentity,
MeasurementReportingMode,
MeasurementType,
MeasurementType-r4,
AdditionalMeasurementID-List,
PositionEstimate,
-- Other IEs :
InterRAT-UE-RadioAccessCapabilityList,
InterRAT-UE-RadioAccessCapabilityList-r5,
UESpecificBehaviourInformationIdle,
UESpecificBehaviourInformationInterRAT

FROM InformationElements

maxCNdomains,
maxNoOfMeas,

maxRB,
maxRBallRABs,
maxRFC3095-CID,
maxSRBsetup
FROM Constant-definitions
;

-- Part 1: Class definitions similar to what has been defined in 11.1 for RRC messages
-- Information that is transferred in the same direction and across the same path is grouped

-- *****
--
-- RRC information, to target RNC
--
-- *****
-- RRC Information to target RNC sent either from source RNC or from another RAT

ToTargetRNC-Container ::= CHOICE {
    interRATHandoverInfo          InterRATHandoverInfoWithInterRATCapabilities-r3,
    srncRelocation                SRNC-RelocationInfo-r3,
    rfc3095-ContextInfo           RFC3095-ContextInfo-r5,
    extension                      NULL
}

-- *****
--
-- RRC information, target RNC to source RNC
--
-- *****

Target-RNC-ToSourceRNC-Container ::= CHOICE {
    radioBearerSetup              RadioBearerSetup,
    radioBearerReconfiguration    RadioBearerReconfiguration,
    radioBearerRelease            RadioBearerRelease,
    transportChannelReconfiguration TransportChannelReconfiguration,
    physicalChannelReconfiguration PhysicalChannelReconfiguration,
    rrc-FailureInfo              RRC-FailureInfo-r3-IEs,
    dL-DCCHmessage               OCTET STRING,
    extension                      NULL
}

-- Part 2: Container definitions, similar to the PDU definitions in 11.2 for RRC messages
-- In alphabetical order

-- *****
--
-- Handover to UTRAN information
--
-- *****

InterRATHandoverInfoWithInterRATCapabilities-r3 ::= CHOICE {

```

```

r3
    SEQUENCE {
    -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also
    -- includes non critical extensions
    interRATHandoverInfo-r3      InterRATHandoverInfoWithInterRATCapabilities-r3-IEs,
    v390NonCriticalExtensions    SEQUENCE {
        interRATHandoverInfoWithInterRATCapabilities-v390ext
    InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs,
        -- Reserved for future non critical extension
        nonCriticalExtensions    SEQUENCE {} OPTIONAL
    }
    },
criticalExtensions              SEQUENCE {}
}

InterRATHandoverInfoWithInterRATCapabilities-r3-IEs ::= SEQUENCE {
    -- The order of the IEs may not reflect the tabular format
    -- but has been chosen to simplify the handling of the information in the BSC
    -- Other IEs
    ue-RATSpecificCapability      InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
    -- interRATHandoverInfo, Octet string is used to obtain 8 bit length field prior to
    -- actual information. This makes it possible for BSS to transparently handle information
    -- received via GSM air interface even when it includes non critical extensions.
    -- The octet string shall include the InterRATHandoverInfo information
    -- The BSS can re-use the 04.18 length field received from the MS
    interRATHandoverInfo          OCTET STRING (SIZE (0..255))
}

InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    failureCauseWithProtErr      FailureCauseWithProtErr              OPTIONAL
}

-- *****
--
-- RFC3095 context, source RNC to target RNC
--
-- *****

RFC3095-ContextInfo-r5 ::= CHOICE {
    r5
        SEQUENCE {
        rFC3095-ContextInfoList-r5    RFC3095-ContextInfoList-r5,
        -- Reserved for future non critical extension
        nonCriticalExtensions        SEQUENCE {} OPTIONAL
        },
criticalExtensions                SEQUENCE {}
}

RFC3095-ContextInfoList-r5 ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
    RFC3095-ContextInfo

-- *****
--
-- SRNC Relocation information
--
-- *****

SRNC-RelocationInfo-r3 ::= CHOICE {
    r3
        SEQUENCE {
        sRNC-RelocationInfo-r3      SRNC-RelocationInfo-r3-IEs,
        v380NonCriticalExtensions    SEQUENCE {
            sRNC-RelocationInfo-v380ext SRNC-RelocationInfo-v380ext-IEs,
            -- Reserved for future non critical extension
            v390NonCriticalExtensions    SEQUENCE {
                sRNC-RelocationInfo-v390ext SRNC-RelocationInfo-v390ext-IEs,
                v3a0NonCriticalExtensions    SEQUENCE {
                    sRNC-RelocationInfo-v3a0ext SRNC-RelocationInfo-v3a0ext-IEs,
                    v3b0NonCriticalExtensions    SEQUENCE {
                        sRNC-RelocationInfo-v3b0ext SRNC-RelocationInfo-v3b0ext-IEs,
                        v3c0NonCriticalExtensions    SEQUENCE {
                            sRNC-RelocationInfo-v3c0ext SRNC-RelocationInfo-v3c0ext-IEs,
                            laterNonCriticalExtensions    SEQUENCE {
                                sRNC-RelocationInfo-v3d0ext SRNC-RelocationInfo-v3d0ext-
IEs,
                                -- Container for additional R99 extensions
                                sRNC-RelocationInfo-r3-add-ext BIT STRING OPTIONAL,
                                v3g0NonCriticalExtensions    SEQUENCE {
                                    sRNC-RelocationInfo-v3g0ext SRNC-RelocationInfo-v3g0ext-IEs,

```

```

v4xyNonCriticalExtensions SEQUENCE {
  sRNC-RelocationInfo-v4xyext SRNC-RelocationInfo-v4xyext-IE
  v5xyNonCriticalExtensions SEQUENCE {
    sRNC-RelocationInfo-v5xyext SRNC-
    -- Reserved for future non critical extension
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  } OPTIONAL
} OPTIONAL
} OPTIONAL
} OPTIONAL
} OPTIONAL
} OPTIONAL
},
later-than-r3 CHOICE {
  r4 SEQUENCE {
    sRNC-RelocationInfo-r4 SRNC-RelocationInfo-r4-IEs,
    v5xyNonCriticalExtensions SEQUENCE {
      sRNC-RelocationInfo-v5xyext SRNC-RelocationInfo-v5xyext-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  criticalExtensions SEQUENCE {}
}
}

SRNC-RelocationInfo-r3-IEs ::= SEQUENCE {
  -- Non-RRC IEs
  stateOfRRC StateOfRRC,
  stateOfRRC-Procedure StateOfRRC-Procedure,
  -- Ciphering related information IEs
  -- If the extension v380 is included use the extension for the ciphering status per CN domain
  cipheringStatus CipheringStatus,
  calculationTimeForCiphering CalculationTimeForCiphering OPTIONAL,
  -- The order of occurrence in the IE cipheringInfoPerRB-List is the
  -- same as the RBs in SRB-InformationSetupList in RAB-InformationSetupList.
  -- The signalling RBs are supposed to be listed
  -- first. Only UM and AM RBs that are ciphered are listed here
  cipheringInfoPerRB-List CipheringInfoPerRB-List OPTIONAL,
  count-C-List COUNT-C-List OPTIONAL,
  integrityProtectionStatus IntegrityProtectionStatus,
  -- In the IE srb-SpecificIntegrityProtInfo, the first information listed corresponds to
  -- signalling radio bearer RB0 and after the order of occurrence is the same as the SRBs in
  -- SRB-InformationSetupList
  srb-SpecificIntegrityProtInfo SRB-SpecificIntegrityProtInfoList,
  implementationSpecificParams ImplementationSpecificParams OPTIONAL,
  -- User equipment IEs
  u-RNTI U-RNTI,
  c-RNTI C-RNTI OPTIONAL,
  ue-RadioAccessCapability UE-RadioAccessCapability,
  ue-Positioning-LastKnownPos UE-Positioning-LastKnownPos OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity URA-Identity OPTIONAL,
  -- Core network IEs
  cn-CommonGSM-MAP-NAS-SysInfo NAS-SystemInformationGSM-MAP,
  cn-DomainInformationList CN-DomainInformationList OPTIONAL,
  -- Measurement IEs
  ongoingMeasRepList OngoingMeasRepList OPTIONAL,
  -- Radio bearer IEs
  predefinedConfigStatusList PredefinedConfigStatusList,
  srb-InformationList SRB-InformationSetupList,
  rab-InformationList RAB-InformationSetupList OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
  ul-TransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      cpch-SetID CPCH-SetID OPTIONAL,
      transChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd NULL
  },
  dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,

```

```

    dl-TransChInfoList          DL-AddReconfTransChInfoList          OPTIONAL,
  -- Measurement report
    measurementReport          MeasurementReport                    OPTIONAL
}

SRNC-RelocationInfo-v380ext-IEs ::= SEQUENCE {
  -- Ciphering related information IEs
    cn-DomainIdentity          CN-DomainIdentity,
    cipheringStatusList        CipheringStatusList
}

SRNC-RelocationInfo-v390ext-IEs ::= SEQUENCE {
    cn-DomainInformationList-v390ext  CN-DomainInformationList-v390ext          OPTIONAL,
    ue-RadioAccessCapability-v370ext  UE-RadioAccessCapability-v370ext          OPTIONAL,
    ue-RadioAccessCapability-v380ext  UE-RadioAccessCapability-v380ext          OPTIONAL,
    dl-PhysChCapabilityFDD-v380ext    DL-PhysChCapabilityFDD-v380ext,
    failureCauseWithProtErr          FailureCauseWithProtErr                    OPTIONAL
}

SRNC-RelocationInfo-v3a0ext-IEs ::= SEQUENCE {
  -- cn-domain identity for IE startValueForCiphering-v3a0ext is specified
  -- in subsequent extension (SRNC-RelocationInfo-v3b0ext-IEs)
    startValueForCIphering-v3a0ext    START-Value,
    cipheringInfoForSRB1-v3a0ext      CipheringInfoForSRB1-v3a0ext,
    ue-RadioAccessCapability-v3a0ext  UE-RadioAccessCapability-v3a0ext          OPTIONAL
}

SRNC-RelocationInfo-v3b0ext-IEs ::= SEQUENCE {
  -- cn-domain identity for IE startValueForCiphering-v3a0ext included in previous extension
    cn-DomainIdentity                CN-DomainIdentity,
  -- the IE startValueForCiphering-v3b0ext contains the start values for each CN Domain. The
  -- value of start indicated by the IE startValueForCiphering-v3a0ext should be set to the
  -- same value as the start-Value for the corresponding cn-DomainIdentity in the IE
  -- startValueForCiphering-v3b0ext
    startValueForCiphering-v3b0ext    STARTList2                    OPTIONAL
}

SRNC-RelocationInfo-v3c0ext-IEs ::= SEQUENCE {
  -- IE rb-identityForHOMessage includes the identity of the RB used by the source SRNC
  -- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
  -- Only included if type is "UE involved"
    rb-IdentityForHOMessage          RB-Identity                    OPTIONAL
}

SRNC-RelocationInfo-v3d0ext-IEs ::= SEQUENCE {
  -- User equipment IEs
    ueSpecificBehaviourInformationIdle  UESpecificBehaviourInformationIdle          OPTIONAL,
    ueSpecificBehaviourInformationInterRAT  UESpecificBehaviourInformationInterRAT
  OPTIONAL
}

SRNC-RelocationInfo-v3g0ext-IEs ::= SEQUENCE {
    ue-RadioAccessCapability-v3g0ext    UE-RadioAccessCapability-v3g0ext          OPTIONAL
}

STARTList2 ::=
    SEQUENCE (SIZE (2..maxCNdomains)) OF
    STARTSingle

SRNC-RelocationInfo-v4xyext-IEs ::= SEQUENCE {
    ue-RadioAccessCapability-v4xyext    UE-RadioAccessCapability-v4xyext
}

SRNC-RelocationInfo-v5xyext-IEs ::= SEQUENCE {
    ue-RadioAccessCapability-v5xyext    UE-RadioAccessCapability-v5xyext,
    ue-RATSpecificCapability-r5         InterRAT-UE-RadioAccessCapabilityList-r5  OPTIONAL
}

CipheringInfoForSRB1-v3a0ext ::= SEQUENCE {
    dl-UM-SN                            BIT STRING (SIZE (7))
}

CipheringStatusList ::=
    SEQUENCE (SIZE (1..maxCNdomains)) OF
    CipheringStatusCNdomain

CipheringStatusCNdomain ::=
    SEQUENCE {
        cn-DomainIdentity                CN-DomainIdentity,
        cipheringStatus                  CipheringStatus
    }

```

```

SRNC-RelocationInfo-r4-IEs ::=          SEQUENCE {
-- Non-RRC IEs
-- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
-- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
-- Only included if type is "UE involved"
rb-IdentityForHOMessage          RB-Identity          OPTIONAL,
stateOfRRC                      StateOfRRC,
stateOfRRC-Procedure            StateOfRRC-Procedure,
-- Ciphering related information IEs
cipheringStatusList             CipheringStatusList-r4,
latestConfiguredCN-Domain       CN-DomainIdentity,
calculationTimeForCiphering     CalculationTimeForCiphering          OPTIONAL,
count-C-List                    COUNT-C-List                          OPTIONAL,
cipheringInfoPerRB-List         CipheringInfoPerRB-List-r4          OPTIONAL,
-- Integrity protection related information IEs
integrityProtectionStatus       IntegrityProtectionStatus,
srb-SpecificIntegrityProtInfo   SRB-SpecificIntegrityProtInfoList,
implementationSpecificParams    ImplementationSpecificParams      OPTIONAL,
-- User equipment IEs
u-RNTI                          U-RNTI,
c-RNTI                          C-RNTI                              OPTIONAL,
ue-RadioAccessCapability        UE-RadioAccessCapability-r4,
ue-RadioAccessCapability-ext    UE-RadioAccessCapabBandFDDList    OPTIONAL,
ue-Positioning-LastKnownPos    UE-Positioning-LastKnownPos      OPTIONAL,
uESpecificBehaviourInformationIdle UESpecificBehaviourInformationIdle OPTIONAL,
uESpecificBehaviourInformationInterRAT UESpecificBehaviourInformationInterRAT OPTIONAL,
-- Other IEs
ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
-- UTRAN mobility IEs
ura-Identity                    URA-Identity                        OPTIONAL,
-- Core network IEs
cn-CommonGSM-MAP-NAS-SysInfo   NAS-SystemInformationGSM-MAP,
cn-DomainInformationList       CN-DomainInformationListFull      OPTIONAL,
-- Measurement IEs
ongoingMeasRepList             OngoingMeasRepList-r4            OPTIONAL,
-- Radio bearer IEs
predefinedConfigStatusList     PredefinedConfigStatusList,
srb-InformationList            SRB-InformationSetupList,
rab-InformationList            RAB-InformationSetupList-r4      OPTIONAL,
-- Transport channel IEs
ul-CommonTransChInfo          UL-CommonTransChInfo-r4          OPTIONAL,
ul-TransChInfoList            UL-AddReconfTransChInfoList      OPTIONAL,
modeSpecificInfo               CHOICE {
    fdd                          SEQUENCE {
        cpch-SetID              CPCH-SetID                      OPTIONAL,
        transChDRAC-Info        DRAC-StaticInformationList    OPTIONAL
    },
    tdd                          NULL
}
dl-CommonTransChInfo          DL-CommonTransChInfo-r4          OPTIONAL,
dl-TransChInfoList            DL-AddReconfTransChInfoList-r4    OPTIONAL,
-- Measurement report
measurementReport              MeasurementReport                  OPTIONAL,
failureCause                   FailureCauseWithProtErr           OPTIONAL
}

-- IE definitions
CalculationTimeForCiphering ::=          SEQUENCE {
    cell-Id                      CellIdentity,
    sfn                          INTEGER (0..4095)
}

CipheringInfoPerRB ::=                  SEQUENCE {
    dl-HFN                        BIT STRING (SIZE (20..25)),
    ul-HFN                        BIT STRING (SIZE (20..25))
}

CipheringInfoPerRB-r4 ::=              SEQUENCE {
    rb-Identity                  RB-Identity,
    dl-HFN                        BIT STRING (SIZE (20..25)),
    dl-UM-SN                      BIT STRING (SIZE (7))          OPTIONAL,
    ul-HFN                        BIT STRING (SIZE (20..25))
}

-- TABULAR: CipheringInfoPerRB-List, multiplicity value numberOfRadioBearers

```

```

-- has been replaced with maxRB.
CipheringInfoPerRB-List ::= SEQUENCE (SIZE (1..maxRB)) OF
    CipheringInfoPerRB

CipheringInfoPerRB-List-r4 ::= SEQUENCE (SIZE (1..maxRB)) OF
    CipheringInfoPerRB-r4

CipheringStatus ::= ENUMERATED {
    started, notStarted }

CipheringStatusList-r4 ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CipheringStatusCNdomain-r4

CipheringStatusCNdomain-r4 ::= SEQUENCE {
    cn-DomainIdentity CN-DomainIdentity,
    cipheringStatus CipheringStatus,
    start-Value START-Value
}

CN-DomainInformation-v390ext ::= SEQUENCE {
    cn-DRX-CycleLengthCoeff CN-DRX-CycleLengthCoefficient
}

CN-DomainInformationList-v390ext ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CN-DomainInformation-v390ext

CompressedModeMeasCapability-r4 ::= SEQUENCE {
    fdd-Measurements BOOLEAN,
    -- TABULAR: The IEs tdd-Measurements, gsm-Measurements and multiCarrierMeasurements
    -- are made optional since they are conditional based on another information element.
    -- Their absence corresponds to the case where the condition is not true.
    tdd384-Measurements BOOLEAN OPTIONAL,
    tdd128-Measurements BOOLEAN OPTIONAL,
    gsm-Measurements GSM-Measurements OPTIONAL,
    multiCarrierMeasurements BOOLEAN OPTIONAL
}

COUNT-C-List ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    COUNT-CSingle

COUNT-CSingle ::= SEQUENCE {
    cn-DomainIdentity CN-DomainIdentity,
    count-C BIT STRING (SIZE (32))
}

DL-PhysChCapabilityFDD-r4 ::= SEQUENCE {
    maxNoDPCH-PDSCH-Codes INTEGER (1..8),
    maxNoPhysChBitsReceived MaxNoPhysChBitsReceived,
    supportForSF-512 BOOLEAN,
    supportOfPDSCH BOOLEAN,
    simultaneousSCCPCH-DPCH-Reception SimultaneousSCCPCH-DPCH-Reception,
    supportOfDedicatedPilotsForChEstimation SupportOfDedicatedPilotsForChEstimation OPTIONAL
}

DL-RFC3095-Context ::= SEQUENCE {
    rfc3095-Context-Identity INTEGER (0..16383),
    dl-mode ENUMERATED {u, o, r},
    dl-ref-ir OCTET STRING (SIZE (1..3000)),
    dl-ref-time INTEGER (0..4294967295) OPTIONAL,
    dl-curr-time INTEGER (0..4294967295) OPTIONAL,
    dl-syn-offset-id INTEGER (0..65535) OPTIONAL,
    dl-syn-slope-ts INTEGER (0..4294967295) OPTIONAL,
    dl-dyn-changed BOOLEAN
}

ImplementationSpecificParams ::= BIT STRING (SIZE (1..512))

IntegrityProtectionStatus ::= ENUMERATED {
    started, notStarted }

MeasurementCapability-r4 ::= SEQUENCE {
    downlinkCompressedMode CompressedModeMeasCapability-r4,
    uplinkCompressedMode CompressedModeMeasCapability-r4
}

MeasurementCommandWithType ::= CHOICE {

```

```

    setup           MeasurementType,
    modify          NULL,
    release         NULL,
}

MeasurementCommandWithType-r4 ::= CHOICE {
    setup           MeasurementType-r4,
    modify          NULL,
    release         NULL,
}

OngoingMeasRep ::= SEQUENCE {
    measurementIdentity MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType
    measurementCommandWithType MeasurementCommandWithType,
    measurementReportingMode MeasurementReportingMode OPTIONAL,
    additionalMeasurementID-List AdditionalMeasurementID-List OPTIONAL
}

OngoingMeasRep-r4 ::= SEQUENCE {
    measurementIdentity MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType-r4.
    measurementCommandWithType MeasurementCommandWithType-r4,
    measurementReportingMode MeasurementReportingMode OPTIONAL,
    additionalMeasurementID-List AdditionalMeasurementID-List OPTIONAL
}

OngoingMeasRepList ::= SEQUENCE (SIZE (1..maxNoOfMeas)) OF
    OngoingMeasRep

OngoingMeasRepList-r4 ::= SEQUENCE (SIZE (1..maxNoOfMeas)) OF
    OngoingMeasRep-r4

PDCP-Capability-r4 ::= SEQUENCE {
    losslessSRNS-RelocationSupport BOOLEAN,
    supportForRfc2507 CHOICE {
        notSupported NULL,
        supported MaxHcContextSpace
    },
    supportForRfc3095 CHOICE {
        notSupported NULL,
        supported SEQUENCE {
            maxROHC-ContextSessions MaxROHC-ContextSessions-r4 DEFAULT s16,
            reverseCompressionDepth INTEGER (0..65535) DEFAULT 0
        }
    }
}

PhysicalChannelCapability-r4 ::= SEQUENCE {
    fddPhysChCapability SEQUENCE {
        downlinkPhysChCapability DL-PhysChCapabilityFDD-r4,
        uplinkPhysChCapability UL-PhysChCapabilityFDD
    } OPTIONAL,
    tdd384-PhysChCapability SEQUENCE {
        downlinkPhysChCapability DL-PhysChCapabilityTDD,
        uplinkPhysChCapability UL-PhysChCapabilityTDD
    } OPTIONAL,
    tdd128-PhysChCapability SEQUENCE {
        downlinkPhysChCapability DL-PhysChCapabilityTDD-LCR-r4,
        uplinkPhysChCapability UL-PhysChCapabilityTDD-LCR-r4
    } OPTIONAL
}

RF-Capability-r4 ::= SEQUENCE {
    fddRF-Capability SEQUENCE {
        ue-PowerClass UE-PowerClass-v370,
        txRxFrequencySeparation TxRxFrequencySeparation
    } OPTIONAL,
    tdd384-RF-Capability SEQUENCE {
        ue-PowerClass UE-PowerClass-v370,
        radioFrequencyBandTDDList RadioFrequencyBandTDDList,
        chipRateCapability ChipRateCapability
    } OPTIONAL,
    tdd128-RF-Capability SEQUENCE {
        ue-PowerClass UE-PowerClass-v370,
        radioFrequencyBandTDDList RadioFrequencyBandTDDList,

```

```

        chipRateCapability          ChipRateCapability          OPTIONAL
    }
}

RFC3095-ContextInfo ::=          SEQUENCE {
    rb-Identity                    RB-Identity,
    rfc3095-Context-List          RFC3095-Context-List
}

RFC3095-Context-List ::=        SEQUENCE (SIZE (1..maxRFC3095-CID)) OF SEQUENCE {
    dl-RFC3095-Context            DL-RFC3095-Context    OPTIONAL,
    ul-RFC3095-Context            UL-RFC3095-Context    OPTIONAL
}

SRB-SpecificIntegrityProtInfo ::= SEQUENCE {
    ul-RRC-HFN                    BIT STRING (SIZE (28)),
    dl-RRC-HFN                    BIT STRING (SIZE (28)),
    ul-RRC-SequenceNumber        RRC-MessageSequenceNumber,
    dl-RRC-SequenceNumber        RRC-MessageSequenceNumber
}

SRB-SpecificIntegrityProtInfoList ::= SEQUENCE (SIZE (4..maxSRBsetup)) OF
SRB-SpecificIntegrityProtInfo

StateOfRRC ::=                  ENUMERATED {
    cell-DCH, cell-FACH,
    cell-PCH, ura-PCH }

StateOfRRC-Procedure ::=        ENUMERATED {
    awaitNoRRC-Message,
    awaitRB-ReleaseComplete,
    awaitRB-SetupComplete,
    awaitRB-ReconfigurationComplete,
    awaitTransportCH-ReconfigurationComplete,
    awaitPhysicalCH-ReconfigurationComplete,
    awaitActiveSetUpdateComplete,
    awaitHandoverComplete,
    sendCellUpdateConfirm,
    sendUraUpdateConfirm,
    -- dummy is not used in this version of specification
    -- It should not be sent
    dummy,
    otherStates
}

UE-Positioning-Capability-r4 ::= SEQUENCE {
    standaloneLocMethodsSupported    BOOLEAN,
    ue-BasedOTDOA-Supported          BOOLEAN,
    networkAssistedGPS-Supported     NetworkAssistedGPS-Supported,
    supportForUE-GPS-TimingOfCellFrames    BOOLEAN,
    supportForIPDL                   BOOLEAN,
    rx-tx-TimeDifferenceType2Capable    BOOLEAN,
    validity-CellPCH-UraPCH           ENUMERATED { true (0) }    OPTIONAL
}

UE-Positioning-LastKnownPos ::= SEQUENCE {
    sfn                              INTEGER (0..4095),
    cell-id                          CellIdentity,
    positionEstimate                  PositionEstimate
}

UE-RadioAccessCapability-r4 ::= SEQUENCE {
    accessStratumReleaseIndicator     AccessStratumReleaseIndicator,
    pdcp-Capability                   PDCP-Capability-r4,
    rlc-Capability                     RLC-Capability,
    transportChannelCapability        TransportChannelCapability,
    rf-Capability                      RF-Capability-r4,
    physicalChannelCapability          PhysicalChannelCapability-r4,
    ue-MultiModeRAT-Capability        UE-MultiModeRAT-Capability,
    securityCapability                SecurityCapability,
    ue-positioning-Capability-r4      UE-Positioning-Capability-r4,
    measurementCapability              MeasurementCapability-r4    OPTIONAL
}

UL-RFC3095-Context ::=          SEQUENCE {
    rfc3095-Context-Identity          INTEGER (0..16383),
    ul-mode                            ENUMERATED {u, o, r},
    ul-ref-ir                          OCTET STRING ( SIZE (1..3000)),

```

Error! No text of specified style in document.

Error! No text of specified style in document.

ul-ref-time	INTEGER (0..4294967295)	OPTIONAL,
ul-curr-time	INTEGER (0..4294967295)	OPTIONAL,
ul-syn-offset-id	INTEGER (0..65535)	OPTIONAL,
ul-syn-slope-ts	INTEGER (0..4294967295)	OPTIONAL,
ul-ref-sn-1	INTEGER (0..65535)	OPTIONAL

}

END

CHANGE REQUEST

25.331 CR 2265 # rev 2 # Current version: 6.0.1

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	# Signalling of MAC-hs Reset		
Source:	# RAN WG2		
Work item code:	# HSDPA-L23	Date:	# 01/03/2004
Category:	# A	Release:	# Rel-6
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change: # The MAC-hs reset indication is currently signalled with Added or Reconfigured MAC-d flow and H-ARQ information within the Transport Information Elements sections of RRC procedures. In general these procedures are intended for service establishment or reconfiguration.

A primary consideration for MAC-hs reset is the case of HS-PDSCH serving cell change or hard handover. In these cases the UE MAC-hs reset provides reset of H-ARQ processes and the reordering queues that would not be known in the target cell Node-B, and for a more efficiently recovery of Node-B buffered data lost as a result of the cell change. The reset is mainly concerned with the Inter Node-B case, and depending on Node-B design may also be necessary for the Intra Node-B case.

When signalling a HS-DSCH cell change, identified in DL info for Each RL (10.3.6.27), in addition to new H-RNTI it is likely that a new HS-PDSCH info (10.3.6.23a) is required. These IE's are provided in the Physical Channel Reconfiguration procedure. Unfortunately when MAC-hs reset is needed it is currently not possible to use this procedure.

To signal MAC-hs reset in the case of serving HS-PDSCH cell change or hard handover it is necessary to initiate either the Transport Channel Reconfiguration or Radio Bearer Reconfiguration procedures just to include the single bit MAC-hs reset indication.

To avoid unnecessary signalling overhead it is proposed to move the MAC-hs Reset Indicator so that it is signalled with the Serving HS-PDSCH Radio Link Indicator (FDD) and P-CCPCH Info (TDD).

Summary of change:	⌘ The MAC-hs reset indicator is moved from Added or Reconfigured TrCH Info (10.3.5.1) to DL Information Common for all Radio Links (10.3.6.24).
Consequences if not approved:	⌘ Unnecessary signalling overhead is introduced for HSDPA serving HS-DSCH cell changes.

Clauses affected:	⌘ 8.6.5.6, 8.6.6.27, 10.3.5.1, 10.3.6.24, & 11.									
Other specs affected:	⌘ <table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table> Other core specifications	Y	N		X		X		X	⌘
	Y	N								
		X								
	X									
	X									
	Test specifications									
	O&M Specifications									
Other comments:	⌘									

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.5.6 Added or Reconfigured DL TrCH information

If the IE "Added or Reconfigured DL TrCH information" is included then for the transport channel identified by the IE "DL Transport Channel Identity" the UE shall:

- 1> if the choice "DL parameters" is set to 'explicit':
 - 2> perform the actions for the IE "Transport Format Set" as specified in subclause 8.6.5.1.
- 1> if the choice "DL parameters" is set to 'same as uplink':
 - 2> if the IE "UL Transport Channel Identity" indicates an existing or a new UL Transport Channel:
 - 3> store as transport format for this transport channel the transport format associated with the transport channel identified by the IE "UL Transport Channel Identity".
 - 2> else:
 - 3> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the choice "DL parameters" is set to 'HSDSCH':
 - 2> if the IE "HARQ Info" is included:
 - 3> perform the actions specified in subclause 8.6.5.6b.

~~2> if the value of the IE "MAC-hs reset indicator" is TRUE:~~

~~3> reset the MAC-hs entity[15].~~

- 1> if the IE "DCH quality target" is included:
 - 2> perform the actions specified in subclause 8.6.5.4.

NOTE: The UE stores the DL transport channel configuration until it is explicitly deleted by a message containing the IE "Deleted DL TrCH information" or the UE leaves RRC connected mode.

8.6.6.27 Downlink information common for all radio links

If the IE "Downlink information common for all radio links" is included the UE shall:

- 1> if the IE "Downlink DPCH info common for all RL" is included:
 - 2> perform actions as specified in subclause 8.6.6.28.
- 1> if the IE choice "mode" is set to 'FDD':
 - 2> perform actions for the IE "DPCH compressed mode info" as specified in subclause 8.6.6.15;
 - 2> perform actions for the IE "Tx Diversity mode" as specified in subclause 8.6.6.24;
 - 2> if the IE "SSDT information" is included:
 - 3> perform actions as specified in subclause 8.6.6.25.
- 1> if the IE "Default DPCH Offset value" is included:
 - 2> perform actions as specified in the subclause 8.6.6.21.

1> if the IE "MAC-hs reset indicator" is included:

2> reset the MAC-hs entity[15].

10.3.5.1 Added or Reconfigured DL TrCH information

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Downlink transport channel type	MP		Enumerated(DCH,DSCH,HS-DSCH)		REL-5
DL Transport channel identity	MP		Transport channel identity 10.3.5.18		REL-5
	<i>CV-not HS-DSCH</i>				REL-5
<i>CHOICE DL parameters</i>					
<i>>Explicit</i>					
>>TFS	MP		Transport Format Set 10.3.5.23		
<i>>SameAsUL</i>					
>>Uplink transport channel type	MP		Enumerated(DCH,USCH)	USCH is TDD only	
>>UL TrCH identity	MP		Transport channel identity 10.3.5.18	Same TFS applies as specified for indicated UL TrCH	
<i>>HS-DSCH</i>					
>>HARQ Info	OP		HARQ info 10.3.5.7a		REL-5
>>MAC-hs-reset-indicator	MP		Boolean	TRUE Indicates the MAC-hs entity needs to be reset.	REL-5
>>Added or reconfigured MAC-d flow	OP		Added or reconfigured MAC-d flow 10.3.5.1a		REL-5
DCH quality target	OP		Quality target 10.3.5.10		
Transparent mode signalling info	CV-MessageType		Transparent mode signalling info 10.3.5.17	This IE is not used in RB RELEASE message nor RB RECONFIGURATION message	

Condition	Explanation
<i>MessageType</i>	This IE is not needed in Radio Bearer Release message and Radio Bearer Reconfiguration message. Otherwise it is optional.
<i>NotHS-DSCH</i>	If the downlink transport channel type is DCH or DSCH then this IE is mandatory otherwise it is not needed.

10.3.6.24 Downlink information common for all radio links

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Downlink DPCH info common for all RL	OP		Downlink DPCH info common for all RL 10.3.6.18		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE <i>mode</i>	MP				
>FDD					
>>DPCH compressed mode info	OP		DPCH compressed mode info 10.3.6.33		
>>TX Diversity Mode	MD		TX Diversity Mode 10.3.6.86	Default value is the existing value of TX Diversity mode	
>>>SSDT information	OP		SSDT information 10.3.6.77		
>TDD				(no data)	
>>CHOICE <i>TDD option</i>	MP				REL-4
>>>3.84 Mcps TDD				(no data)	REL-4
>>>1.28 Mcps TDD					REL-4
>>>>TSTD indicator	MP		TSTD indicator 10.3.6.85a		REL-4
Default DPCH Offset Value	OP		Default DPCH Offset Value, 10.3.6.16		
MAC-hs reset indicator	OPCV-messageType		Enumerated (true)	TRUE Indicates the MAC-hs entity needs to be reset.	REL-5

Condition	Explanation
MessageType	The IE is not needed in the HANDOVER TO UTRAN COMMAND and the RRC CONNECTION SETUP messages. Otherwise, it is optional.

11 Message and Information element abstract syntax (with ASN.1)

This clause contains definitions for RRC PDUs and IEs using a subset of ASN.1 as specified in [14]. PDU and IE definitions are grouped into separate ASN.1 modules.

11.0 General

Some messages and/or IEs may include one or more IEs with name "dummy" that are included only in the ASN.1. The UE should avoid sending information elements that are named "dummy" to UTRAN. Likewise, UTRAN should avoid sending IEs with name "dummy" to the UE. If the UE anyhow receives an information element named "dummy", it shall ignore the IE and process the rest of the message as if the IE was not included.

NOTE: An IE with name "dummy" concerns an information element that was (erroneously) included in a previous version of the specification and has been removed by replacing it with a dummy with same type.

The UE shall only include the "variable length extension container" when it sends a non critical extension that according to this specification shall be transferred within this container.

If the abstract syntax of an IE is defined using the ASN.1 type "BIT STRING", and this IE corresponds to a functional IE definition in tabular format, in which the significance of bits is semantically defined, the following general rule shall be applied:

The bits in the ASN.1 bit string shall represent the semantics of the functional IE definition in decreasing order of bit significance;

- with the first (or leftmost) bit in the bit string representing the most significant bit; and
- with the last (or rightmost) bit in the bit string representing the least significant bit.

11.1 General message structure

```
Class-definitions DEFINITIONS AUTOMATIC TAGS ::=
```

```
BEGIN
```

```
IMPORTS
```

```

ActiveSetUpdate,
ActiveSetUpdateComplete,
ActiveSetUpdateFailure,
AssistanceDataDelivery,
CellChangeOrderFromUTRAN,
CellChangeOrderFromUTRANFailure,
CellUpdate,
CellUpdateConfirm-CCCH,
CellUpdateConfirm,
CounterCheck,
CounterCheckResponse,
DownlinkDirectTransfer,
HandoverToUTRANComplete,
InitialDirectTransfer,
HandoverFromUTRANCommand-GERANIu,
HandoverFromUTRANCommand-GSM,
HandoverFromUTRANCommand-CDMA2000,
HandoverFromUTRANFailure,
MeasurementControl,
MeasurementControlFailure,
MeasurementReport,
PagingType1,
PagingType2,
PhysicalChannelReconfiguration,
PhysicalChannelReconfigurationComplete,
PhysicalChannelReconfigurationFailure,
PhysicalSharedChannelAllocation,
PUSCHCapacityRequest,
RadioBearerReconfiguration,
RadioBearerReconfigurationComplete,
RadioBearerReconfigurationFailure,
RadioBearerRelease,
RadioBearerReleaseComplete,
RadioBearerReleaseFailure,
RadioBearerSetup,
RadioBearerSetupComplete,
RadioBearerSetupFailure,
RRCConnectionReject,
RRCConnectionRelease,
RRCConnectionRelease-CCCH,
RRCConnectionReleaseComplete,
RRCConnectionRequest,
RRCConnectionSetup,
RRCConnectionSetupComplete,
RRCStatus,
SecurityModeCommand,
SecurityModeComplete,
SecurityModeFailure,
SignallingConnectionRelease,
SignallingConnectionReleaseIndication,
SystemInformation-BCH,
SystemInformation-FACH,
SystemInformationChangeIndication,
TransportChannelReconfiguration,
TransportChannelReconfigurationComplete,

```

```

TransportChannelReconfigurationFailure,
TransportFormatCombinationControl,
TransportFormatCombinationControlFailure,
UECapabilityEnquiry,
UECapabilityInformation,
UECapabilityInformationConfirm,
UplinkDirectTransfer,
UplinkPhysicalChannelControl,
URAUUpdate,
URAUUpdateConfirm,
URAUUpdateConfirm-CCCH,
UTRANMobilityInformation,
UTRANMobilityInformationConfirm,
UTRANMobilityInformationFailure
FROM PDU-definitions

-- User Equipment IEs :
  IntegrityCheckInfo
FROM InformationElements;

--*****
--
-- Downlink DCCH messages
--
--*****

DL-DCCH-Message ::= SEQUENCE {
  integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
  message                 DL-DCCH-MessageType
}

DL-DCCH-MessageType ::= CHOICE {
  activeSetUpdate                ActiveSetUpdate,
  assistanceDataDelivery         AssistanceDataDelivery,
  cellChangeOrderFromUTRAN      CellChangeOrderFromUTRAN,
  cellUpdateConfirm              CellUpdateConfirm,
  counterCheck                   CounterCheck,
  downlinkDirectTransfer        DownlinkDirectTransfer,
  handoverFromUTRANCommand-GSM   HandoverFromUTRANCommand-GSM,
  handoverFromUTRANCommand-CDMA2000 HandoverFromUTRANCommand-CDMA2000,
  measurementControl            MeasurementControl,
  pagingType2                   PagingType2,
  physicalChannelReconfiguration PhysicalChannelReconfiguration,
  physicalSharedChannelAllocation PhysicalSharedChannelAllocation,
  radioBearerReconfiguration     RadioBearerReconfiguration,
  radioBearerRelease            RadioBearerRelease,
  radioBearerSetup              RadioBearerSetup,
  rrcConnectionRelease          RRCConnectionRelease,
  securityModeCommand           SecurityModeCommand,
  signallingConnectionRelease    SignallingConnectionRelease,
  transportChannelReconfiguration TransportChannelReconfiguration,
  transportFormatCombinationControl TransportFormatCombinationControl,
  ueCapabilityEnquiry           UECapabilityEnquiry,
  ueCapabilityInformationConfirm  UECapabilityInformationConfirm,
  uplinkPhysicalChannelControl   UplinkPhysicalChannelControl,
  uraUpdateConfirm              URAUpdateConfirm,
  utranMobilityInformation       UTRANMobilityInformation,
  handoverFromUTRANCommand-GERANIu HandoverFromUTRANCommand-GERANIu,
  spare6                         NULL,
  spare5                         NULL,
  spare4                         NULL,
  spare3                         NULL,
  spare2                         NULL,
  spare1                         NULL
}

--*****
--
-- Uplink DCCH messages
--
--*****

UL-DCCH-Message ::= SEQUENCE {
  integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
  message                 UL-DCCH-MessageType
}

UL-DCCH-MessageType ::= CHOICE {

```

```

activeSetUpdateComplete      ActiveSetUpdateComplete,
activeSetUpdateFailure       ActiveSetUpdateFailure,
cellChangeOrderFromUTRANFailure CellChangeOrderFromUTRANFailure,
counterCheckResponse         CounterCheckResponse,
handoverToUTRANComplete     HandoverToUTRANComplete,
initialDirectTransfer        InitialDirectTransfer,
handoverFromUTRANFailure     HandoverFromUTRANFailure,
measurementControlFailure    MeasurementControlFailure,
measurementReport            MeasurementReport,
physicalChannelReconfigurationComplete PhysicalChannelReconfigurationComplete,
physicalChannelReconfigurationFailure PhysicalChannelReconfigurationFailure,
radioBearerReconfigurationComplete RadioBearerReconfigurationComplete,
radioBearerReconfigurationFailure RadioBearerReconfigurationFailure,
radioBearerReleaseComplete   RadioBearerReleaseComplete,
radioBearerReleaseFailure    RadioBearerReleaseFailure,
radioBearerSetupComplete     RadioBearerSetupComplete,
radioBearerSetupFailure      RadioBearerSetupFailure,
rrcConnectionReleaseComplete RRCConnectionReleaseComplete,
rrcConnectionSetupComplete   RRCConnectionSetupComplete,
rrcStatus                     RRCStatus,
securityModeComplete         SecurityModeComplete,
securityModeFailure          SecurityModeFailure,
signallingConnectionReleaseIndication SignallingConnectionReleaseIndication,
transportChannelReconfigurationComplete TransportChannelReconfigurationComplete,
transportChannelReconfigurationFailure TransportChannelReconfigurationFailure,
transportFormatCombinationControlFailure TransportFormatCombinationControlFailure,
ueCapabilityInformation       UECapabilityInformation,
uplinkDirectTransfer          UplinkDirectTransfer,
utranMobilityInformationConfirm UTRANMobilityInformationConfirm,
utranMobilityInformationFailure UTRANMobilityInformationFailure,
spare2                        NULL,
spare1                        NULL
}

```

```

--*****
--
-- Downlink CCCH messages
--
--*****

```

```

DL-CCCH-Message ::= SEQUENCE {
  integrityCheckInfo IntegrityCheckInfo OPTIONAL,
  message DL-CCCH-MessageType
}

```

```

DL-CCCH-MessageType ::= CHOICE {
  cellUpdateConfirm CellUpdateConfirm-CCCH,
  rrcConnectionReject RRCConnectionReject,
  rrcConnectionRelease RRCConnectionRelease-CCCH,
  rrcConnectionSetup RRCConnectionSetup,
  uraUpdateConfirm URAUpdateConfirm-CCCH,
  spare3 NULL,
  spare2 NULL,
  spare1 NULL
}

```

```

--*****
--
-- Uplink CCCH messages
--
--*****

```

```

UL-CCCH-Message ::= SEQUENCE {
  integrityCheckInfo IntegrityCheckInfo OPTIONAL,
  message UL-CCCH-MessageType
}

```

```

UL-CCCH-MessageType ::= CHOICE {
  cellUpdate CellUpdate,
  rrcConnectionRequest RRCConnectionRequest,
  uraUpdate URAUpdate,
  spare1 NULL
}

```

```

}

--*****
--
-- PCCH messages
--
--*****

PCCH-Message ::= SEQUENCE {
    message          PCCH-MessageType
}

PCCH-MessageType ::= CHOICE {
    pagingType1          PagingType1,
    spare                NULL
}

--*****
--
-- Downlink SHCCH messages
--
--*****

DL-SHCCH-Message ::= SEQUENCE {
    message          DL-SHCCH-MessageType
}

DL-SHCCH-MessageType ::= CHOICE {
    physicalSharedChannelAllocation PhysicalSharedChannelAllocation,
    extension                NULL
}

--*****
--
-- Uplink SHCCH messages
--
--*****

UL-SHCCH-Message ::= SEQUENCE {
    message          UL-SHCCH-MessageType
}

UL-SHCCH-MessageType ::= CHOICE {
    puschCapacityRequest PUSCHCapacityRequest,
    spare                NULL
}

--*****
--
-- BCCH messages sent on FACH
--
--*****

BCCH-FACH-Message ::= SEQUENCE {
    message          BCCH-FACH-MessageType
}

BCCH-FACH-MessageType ::= CHOICE {
    systemInformation          SystemInformation-FACH,
    systemInformationChangeIndication SystemInformationChangeIndication,
    spare2                    NULL,
    spare1                    NULL
}

--*****
--
-- BCCH messages sent on BCH
--
--*****

BCCH-BCH-Message ::= SEQUENCE {
    message          SystemInformation-BCH
}

END

```

11.2 PDU definitions

```

--*****
--
-- TABULAR: The message type and integrity check info are not
-- visible in this module as they are defined in the class module.
-- Also, all FDD/TDD specific choices have the FDD option first
-- and TDD second, just for consistency.
--
--*****

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

--*****
--
-- IE parameter types from other modules
--
--*****

IMPORTS

-- Core Network IEs :
  CN-DomainIdentity,
  CN-InformationInfo,
  CN-InformationInfoFull,
  NAS-Message,
  PagingRecordTypeID,
-- UTRAN Mobility IEs :
  CellIdentity,
  CellIdentity-PerRL-List,
  URA-Identity,
-- User Equipment IEs :
  AccessStratumReleaseIndicator,
  ActivationTime,
  C-RNTI,
  CapabilityUpdateRequirement,
  CapabilityUpdateRequirement-r4,
  CapabilityUpdateRequirement-r4-ext,
  CellUpdateCause,
  CipheringAlgorithm,
  CipheringModeInfo,
  DSCH-RNTI,
  EstablishmentCause,
  FailureCauseWithProtErr,
  FailureCauseWithProtErrTrId,
  GroupReleaseInformation,
  H-RNTI,
  UESpecificBehaviourInformationIdle,
  UESpecificBehaviourInformationInterRAT,
  InitialUE-Identity,
  IntegrityProtActivationInfo,
  IntegrityProtectionModeInfo,
  N-308,
  PagingCause,
  PagingRecordList,
  PagingRecordList-r5,
  ProtocolErrorIndicator,
  ProtocolErrorIndicatorWithMoreInfo,
  Rb-timer-indicator,
  RedirectionInfo,
  RejectionCause,
  ReleaseCause,
  RF-CapabilityComp,
  RRC-StateIndicator,
  RRC-TransactionIdentifier,
  SecurityCapability,
  START-Value,
  STARTList,
  U-RNTI,
  U-RNTI-Short,
  UE-RadioAccessCapability,
  UE-RadioAccessCapability-v370ext,
  UE-RadioAccessCapability-v380ext,
  UE-RadioAccessCapability-v3a0ext,
  UE-RadioAccessCapability-v3g0ext,

```

```

UE-RadioAccessCapability-v4xyext,
UE-RadioAccessCapability-v5xyext,
UE-RadioAccessCapabilityComp,
DL-PhysChCapabilityFDD-v380ext,
UE-ConnTimersAndConstants,
UE-ConnTimersAndConstants-v3a0ext,
UE-ConnTimersAndConstants-r5,
UE-SecurityInformation,
URA-UpdateCause,
UTRAN-DRX-CycleLengthCoefficient,
WaitTime,
-- Radio Bearer IEs :
  DefaultConfigIdentity,
  DefaultConfigIdentity-r4,
  DefaultConfigIdentity-r5,
  DefaultConfigMode,
  DL-CounterSynchronisationInfo,
  DL-CounterSynchronisationInfo-r5,
  PredefinedConfigIdentity,
  PredefinedConfigStatusList,
  PredefinedConfigStatusListComp,
  PredefinedConfigSetWithDifferentValueTag,
  RAB-Info,
  RAB-Info-Post,
  RAB-InformationList,
  RAB-InformationReconfigList,
  RAB-InformationSetupList,
  RAB-InformationSetupList-r4,
  RB-ActivationTimeInfoList,
  RB-COUNT-C-InformationList,
  RB-COUNT-C-MSB-InformationList,
  RB-IdentityList,
  RB-InformationAffectedList,
  RB-InformationAffectedList-r5,
  RB-InformationReconfigList,
  RB-InformationReconfigList-r4,
  RB-InformationReconfigList-r5,
  RB-InformationReleaseList,
  RB-PDCPContextRelocationList,
  SRB-InformationSetupList,
  SRB-InformationSetupList2,
  UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
  CPCH-SetID,
  DL-AddReconfTransChInfo2List,
  DL-AddReconfTransChInfoList,
  DL-AddReconfTransChInfoList-r4,
  DL-AddReconfTransChInfoList-r5,
  DL-CommonTransChInfo,
  DL-CommonTransChInfo-r4,
  DL-DeletedTransChInfoList,
  DL-DeletedTransChInfoList-r5,
  DRAC-StaticInformationList,
  TFC-Subset,
  TFCS-Identity,
  UL-AddReconfTransChInfoList,
  UL-CommonTransChInfo,
  UL-CommonTransChInfo-r4,
  UL-DeletedTransChInfoList,
-- Physical Channel IEs :
  Alpha,
  CCTrCH-PowerControlInfo,
  CCTrCH-PowerControlInfo-r4,
  ConstantValue,
  ConstantValueTdd,
  CPCH-SetInfo,
  DL-CommonInformation,
  DL-CommonInformation-r4,
  DL-CommonInformation-r5,
  DL-CommonInformationPost,
  DL-HSPDSCH-Information,
  DL-InformationPerRL,
  DL-InformationPerRL-List,
  DL-InformationPerRL-List-r4,
  DL-InformationPerRL-List-r5,
  DL-InformationPerRL-ListPostFDD,
  DL-InformationPerRL-PostTDD,
  DL-InformationPerRL-PostTDD-LCR-r4,

```

```

DL-PDSCH-Information,
DPC-Mode,
DPCH-CompressedModeStatusInfo,
FrequencyInfo,
FrequencyInfoFDD,
FrequencyInfoTDD,
HS-SICH-Power-Control-Info-TDD384,
MaxAllowedUL-TX-Power,
OpenLoopPowerControl-IPDL-TDD-r4,
PDSCH-CapacityAllocationInfo,
PDSCH-CapacityAllocationInfo-r4,
PDSCH-Identity,
PrimaryCPICH-Info,
PrimaryCCPCH-TX-Power,
PUSCH-CapacityAllocationInfo,
PUSCH-CapacityAllocationInfo-r4,
PUSCH-Identity,
PUSCH-SysInfoList-HCR-r5,
PDSCH-SysInfoList-HCR-r5,
RL-AdditionInformationList,
RL-RemovalInformationList,
SpecialBurstScheduling,
SSDT-Information,
TFC-ControlDuration,
SSDT-UL-r4,
TimeslotList,
TimeslotList-r4,
TX-DiversityMode,
UL-ChannelRequirement,
UL-ChannelRequirement-r4,
UL-ChannelRequirement-r5,
UL-ChannelRequirementWithCPCH-SetID,
UL-ChannelRequirementWithCPCH-SetID-r4,
UL-ChannelRequirementWithCPCH-SetID-r5,
UL-DPCH-Info,
UL-DPCH-Info-r4,
UL-DPCH-InfoPostFDD,
UL-DPCH-InfoPostTDD,
UL-DPCH-InfoPostTDD-LCR-r4,
UL-SynchronisationParameters-r4,
UL-TimingAdvance,
UL-TimingAdvanceControl,
UL-TimingAdvanceControl-r4,
-- Measurement IEs :
AdditionalMeasurementID-List,
DeltaRSCP,
Frequency-Band,
EventResults,
Inter-FreqEventCriteriaList-v5xyext,
Intra-FreqEventCriteriaList-v5xyext,
IntraFreqReportingCriteria-lb-r5ext,
IntraFreqEvent-ld-r5ext,
InterFreqEventResults-LCR-r4-ext,
InterRAT-TargetCellDescription,
MeasuredResults,
MeasuredResults-v390ext,
MeasuredResults-v5xyext,
MeasuredResultsList,
MeasuredResultsList-LCR-r4-ext,
MeasuredResultsOnRACH,
MeasurementCommand,
MeasurementCommand-r4,
MeasurementIdentity,
MeasurementReportingMode,
PrimaryCCPCH-RSCP,
SFN-Offset-Validity,
TimeslotListWithISCP,
TrafficVolumeMeasuredResultsList,
UE-Positioning-GPS-AssistanceData,
UE-Positioning-Measurement-v390ext,
UE-Positioning-OTDOA-AssistanceData,
UE-Positioning-OTDOA-AssistanceData-r4ext,
UE-Positioning-OTDOA-AssistanceData-UEB,
UE-Positioning-IPDL-Parameters-TDD-r4-ext,
-- Other IEs :
BCCH-ModificationInfo,
CDMA2000-MessageList,
GERANIu-MessageList,
GERAN-SystemInformation,

```

```

GSM-MessageList,
InterRAT-ChangeFailureCause,
InterRAT-HO-FailureCause,
InterRAT-UE-RadioAccessCapabilityList,
InterRAT-UE-RadioAccessCapabilityList-r5,
InterRAT-UE-SecurityCapList,
IntraDomainNasNodeSelector,
ProtocolErrorMoreInformation,
Rplmn-Information,
Rplmn-Information-r4,
SegCount,
SegmentIndex,
SFN-Prime,
SIB-Data-fixed,
SIB-Data-variable,
SIB-Type
FROM InformationElements

maxSIBperMsg,
maxURNTI-Group
FROM Constant-definitions;

-- *****
--
-- ACTIVE SET UPDATE (FDD only)
--
-- *****

ActiveSetUpdate ::= CHOICE {
    r3
        SEQUENCE {
            activeSetUpdate-r3
                ActiveSetUpdate-r3-IEs,
            laterNonCriticalExtensions
                SEQUENCE {
                    -- Container for additional R99 extensions
                    activeSetUpdate-r3-add-ext
                        BIT STRING OPTIONAL,
                    v4xyNonCriticalExtensions
                        SEQUENCE {
                            activeSetUpdate-v4xyext
                                ActiveSetUpdate-v4xyext-IEs,
                            v5xynonCriticalExtensions
                                SEQUENCE {
                                    activeSetUpdate-v5xyext
                                        ActiveSetUpdate-v5xyext-IEs,
                                    nonCriticalExtensions
                                        SEQUENCE {} OPTIONAL
                                } OPTIONAL
                            } OPTIONAL
                } OPTIONAL
        },
    later-than-r3
        SEQUENCE {
            rrc-TransactionIdentifier
                RRC-TransactionIdentifier,
            criticalExtensions
                SEQUENCE {}
        }
}

ActiveSetUpdate-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier
        RRC-TransactionIdentifier,
    -- dummy and dummy2 are not used in this version of the specification, they should
    -- not be sent and if received they should be ignored.
    dummy
        IntegrityProtectionModeInfo
        OPTIONAL,
    dummy2
        CipheringModeInfo
        OPTIONAL,
    activationTime
        ActivationTime
        OPTIONAL,
    newU-RNTI
        U-RNTI
        OPTIONAL,
    -- Core network IEs
    cn-InformationInfo
        CN-InformationInfo
        OPTIONAL,
    -- Radio bearer IEs
    -- dummy3 is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy3
        DL-CounterSynchronisationInfo
        OPTIONAL,
    -- Physical channel IEs
    maxAllowedUL-TX-Power
        MaxAllowedUL-TX-Power
        OPTIONAL,
    rl-AdditionInformationList
        RL-AdditionInformationList
        OPTIONAL,
    rl-RemovalInformationList
        RL-RemovalInformationList
        OPTIONAL,
    tx-DiversityMode
        TX-DiversityMode
        OPTIONAL,
    ssdt-Information
        SSDT-Information
        OPTIONAL
}

ActiveSetUpdate-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- ssdt-UL extends SSDT-Information. FDD only.
    ssdt-UL
        SSDT-UL-r4
        OPTIONAL,
    -- The order of the RLs in IE cell-id-PerRL-List is the same as
    -- in IE RL-AdditionInformationList included in this message
    cell-id-PerRL-List
        CellIdentity-PerRL-List
        OPTIONAL
}

```

```

}

ActiveSetUpdate-v5xyext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  dpc-Mode                               DPC-Mode
}

-- *****
--
-- ACTIVE SET UPDATE COMPLETE (FDD only)
--
-- *****

ActiveSetUpdateComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier              RRC-TransactionIdentifier,
  -- dummy is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored.
  dummy                                  IntegrityProtActivationInfo          OPTIONAL,
  -- Radio bearer IEs
  -- dummy2 and dummy3 are not used in this version of the specification, they should
  -- not be sent and if received they should be ignored.
  dummy2                                 RB-ActivationTimeInfoList          OPTIONAL,
  dummy3                                 UL-CounterSynchronisationInfo      OPTIONAL,
  laterNonCriticalExtensions             SEQUENCE {
    -- Container for additional R99 extensions
    activeSetUpdateComplete-r3-add-ext   BIT STRING                    OPTIONAL,
    nonCriticalExtensions                 SEQUENCE {} OPTIONAL
  } OPTIONAL
}

-- *****
--
-- ACTIVE SET UPDATE FAILURE (FDD only)
--
-- *****

ActiveSetUpdateFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier              RRC-TransactionIdentifier,
  failureCause                           FailureCauseWithProtErr,
  laterNonCriticalExtensions             SEQUENCE {
    -- Container for additional R99 extensions
    activeSetUpdateFailure-r3-add-ext    BIT STRING                    OPTIONAL,
    nonCriticalExtensions                 SEQUENCE {} OPTIONAL
  } OPTIONAL
}

-- *****
--
-- Assistance Data Delivery
--
-- *****

AssistanceDataDelivery ::= CHOICE {
  r3                                       SEQUENCE {
    assistanceDataDelivery-r3            AssistanceDataDelivery-r3-IEs,
    v3aoNonCriticalExtensions            SEQUENCE {
      assistanceDataDelivery-v3a0ext     AssistanceDataDelivery-v3a0ext,
      laterNonCriticalExtensions         SEQUENCE {
        -- Container for additional R99 extensions
        assistanceDataDelivery-r3-add-ext BIT STRING                    OPTIONAL,
        v4xyNonCriticalExtensions        SEQUENCE {
          assistanceDataDelivery-v4xyext
        }
      }
      AssistanceDataDelivery-v4xyext-IEs,
    } SEQUENCE {} OPTIONAL
  } OPTIONAL
},
  later-than-r3                             SEQUENCE {
    rrc-TransactionIdentifier            RRC-TransactionIdentifier,
    criticalExtensions                   SEQUENCE {}
  }
}

AssistanceDataDelivery-r3-IEs ::= SEQUENCE {

```

```

-- User equipment IEs
rrc-TransactionIdentifier      RRC-TransactionIdentifier,
-- Measurement Information Elements
ue-positioning-GPS-AssistanceData      UE-Positioning-GPS-AssistanceData
OPTIONAL,
ue-positioning-OTDOA-AssistanceData-UEB      UE-Positioning-OTDOA-AssistanceData-UEB
OPTIONAL
}

AssistanceDataDelivery-v3a0ext ::= SEQUENCE {
  sfn-Offset-Validity          SFN-Offset-Validity      OPTIONAL
}

AssistanceDataDelivery-v4xyext-IEs ::= SEQUENCE {
  ue-Positioning-OTDOA-AssistanceData-r4ext      UE-Positioning-OTDOA-AssistanceData-r4ext      OPTIONAL
}

-- *****
--
-- CELL CHANGE ORDER FROM UTRAN
--
-- *****

CellChangeOrderFromUTRAN ::= CHOICE {
  r3          SEQUENCE {
    cellChangeOrderFromUTRAN-IEs      CellChangeOrderFromUTRAN-r3-IEs,
    laterNonCriticalExtensions      SEQUENCE {
      -- Container for additional R99 extensions
      cellChangeOrderFromUTRAN-r3-add-ext      BIT STRING      OPTIONAL,
      v5xyNonCriticalExtensions      SEQUENCE {
        cellChangeOrderFromUTRAN-v5xyext      CellChangeOrderFromUTRAN-v5xyext-IEs,
        nonCriticalExtensions      SEQUENCE {} OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  later-than-r3          SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions      SEQUENCE {}
  }
}

CellChangeOrderFromUTRAN-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- dummy is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored.
  dummy          IntegrityProtectionModeInfo      OPTIONAL,
  activationTime      ActivationTime      OPTIONAL,
  -- the IE rab-InformationList is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored. The IE may be used in a later
  -- version of the protocol and hence it is not changed into a dummy
  rab-InformationList      RAB-InformationList      OPTIONAL,
  interRAT-TargetCellDescription      InterRAT-TargetCellDescription
}

CellChangeOrderFromUTRAN-v5xyext-IEs ::= SEQUENCE {
  geran-SystemInfoType      CHOICE {
    sI          GERAN-SystemInformation,
    pSI          GERAN-SystemInformation
  } OPTIONAL
}

-- *****
--
-- CELL CHANGE ORDER FROM UTRAN FAILURE
--
-- *****

CellChangeOrderFromUTRANFailure ::= CHOICE {
  r3          SEQUENCE {
    cellChangeOrderFromUTRANFailure-r3
    laterNonCriticalExtensions      SEQUENCE {
      -- Container for additional R99 extensions
      cellChangeOrderFromUTRANFailure-r3-add-ext      BIT STRING      OPTIONAL,
      nonCriticalExtensions      SEQUENCE {} OPTIONAL
    } OPTIONAL
  },

```

```

-- dummy is not used in this version of the specification and it
-- should be ignored.
dummy          SEQUENCE {
  rrc-TransactionIdentifier  RRC-TransactionIdentifier,
  criticalExtensions         SEQUENCE {}
}
}

CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
  -- User equipment IES
  rrc-TransactionIdentifier  RRC-TransactionIdentifier,
  -- dummy is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored.
  dummy                    IntegrityProtectionModeInfo          OPTIONAL,
  interRAT-ChangeFailureCause  InterRAT-ChangeFailureCause
}

-- *****
--
-- CELL UPDATE
--
-- *****

CellUpdate ::= SEQUENCE {
  -- User equipment IES
  u-RNTI                U-RNTI,
  startList             STARTList,
  am-RLC-ErrorIndicationRb2-3or4  BOOLEAN,
  am-RLC-ErrorIndicationRb5orAbove  BOOLEAN,
  cellUpdateCause      CellUpdateCause,
  -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
  failureCause         FailureCauseWithProtErrTrId          OPTIONAL,
  rb-timer-indicator   Rb-timer-indicator,
  -- Measurement IES
  measuredResultsOnRACH  MeasuredResultsOnRACH              OPTIONAL,
  laterNonCriticalExtensions  SEQUENCE {
    -- Container for additional R99 extensions
    cellUpdate-r3-add-ext      BIT STRING  OPTIONAL,
    v5xyNonCriticalExtensions SEQUENCE {
      cellUpdate-v5xyext  CellUpdate-v5xyext,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
  } OPTIONAL
}

CellUpdate-v5xyext ::= SEQUENCE {
  establishmentCause      EstablishmentCause  OPTIONAL
}

-- *****
--
-- CELL UPDATE CONFIRM
--
-- *****

CellUpdateConfirm ::= CHOICE {
  r3          SEQUENCE {
    cellUpdateConfirm-r3      CellUpdateConfirm-r3-IEs,
    v3a0NonCriticalExtensions SEQUENCE {
      cellUpdateConfirm-v3a0ext  CellUpdateConfirm-v3a0ext,
      laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions
        cellUpdateConfirm-r3-add-ext      BIT STRING  OPTIONAL,
        v4xyNonCriticalExtensions SEQUENCE {
          cellUpdateConfirm-v4xyext  CellUpdateConfirm-v4xyext-IEs,
          nonCriticalExtensions SEQUENCE {} OPTIONAL
        }
      } OPTIONAL
    }
  } OPTIONAL
},
  later-than-r3  SEQUENCE {
    rrc-TransactionIdentifier  RRC-TransactionIdentifier,
    criticalExtensions         CHOICE {
      r4          SEQUENCE {
        cellUpdateConfirm-r4      CellUpdateConfirm-r4-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
      },
      r5          SEQUENCE {

```

```

        cellUpdateConfirm-r5
        nonCriticalExtensions
    },
    criticalExtensions
}
}
}

CellUpdateConfirm-r3-IEs ::= SEQUENCE {
-- User equipment IES
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    integrityProtectionModeInfo    IntegrityProtectionModeInfo      OPTIONAL,
    cipheringModeInfo              CipheringModeInfo                  OPTIONAL,
    activationTime                  ActivationTime                      OPTIONAL,
    new-U-RNTI                     U-RNTI                            OPTIONAL,
    new-C-RNTI                     C-RNTI                            OPTIONAL,
    rrc-StateIndicator              RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
    rlc-Re-establishIndicatorRb2-3or4  BOOLEAN,
    rlc-Re-establishIndicatorRb5orAbove  BOOLEAN,
-- CN information elements
    cn-InformationInfo              CN-InformationInfo                  OPTIONAL,
-- UTRAN mobility IES
    ura-Identity                    URA-Identity                        OPTIONAL,
-- Radio bearer IES
    rb-InformationReleaseList        RB-InformationReleaseList          OPTIONAL,
    rb-InformationReconfigList       RB-InformationReconfigList         OPTIONAL,
    rb-InformationAffectedList       RB-InformationAffectedList         OPTIONAL,
    dl-CounterSynchronisationInfo    DL-CounterSynchronisationInfo     OPTIONAL,
-- Transport channel IES
    ul-CommonTransChInfo            UL-CommonTransChInfo              OPTIONAL,
    ul-deletedTransChInfoList        UL-DeletedTransChInfoList         OPTIONAL,
    ul-AddReconfTransChInfoList      UL-AddReconfTransChInfoList       OPTIONAL,
    modeSpecificTransChInfo          CHOICE {
        fdd                          SEQUENCE {
            cpch-SetID                CPCH-SetID                        OPTIONAL,
            addReconfTransChDRAC-Info  DRAC-StaticInformationList        OPTIONAL
        },
        tdd                            NULL
    },
    dl-CommonTransChInfo            DL-CommonTransChInfo              OPTIONAL,
    dl-DeletedTransChInfoList        DL-DeletedTransChInfoList         OPTIONAL,
    dl-AddReconfTransChInfoList      DL-AddReconfTransChInfoList       OPTIONAL,
-- Physical channel IES
    frequencyInfo                   FrequencyInfo                       OPTIONAL,
    maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power              OPTIONAL,
    ul-ChannelRequirement            UL-ChannelRequirement              OPTIONAL,
    modeSpecificPhysChInfo           CHOICE {
        fdd                          SEQUENCE {
            dl-PDSCH-Information        DL-PDSCH-Information              OPTIONAL
        },
        tdd                            NULL
    },
    dl-CommonInformation            DL-CommonInformation              OPTIONAL,
    dl-InformationPerRL-List         DL-InformationPerRL-List          OPTIONAL
}

CellUpdateConfirm-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI                    DSCH-RNTI                          OPTIONAL
}

CellUpdateConfirm-v4xyext-IEs ::= SEQUENCE {
-- Physical channel IES
-- ssdt-UL extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
    ssdt-UL                          SSdT-UL-r4                          OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List                CellIdentity-PerRL-List              OPTIONAL
}

CellUpdateConfirm-r4-IEs ::= SEQUENCE {
-- User equipment IES
    integrityProtectionModeInfo      IntegrityProtectionModeInfo          OPTIONAL,
    cipheringModeInfo                 CipheringModeInfo                    OPTIONAL,
    activationTime                     ActivationTime                        OPTIONAL,
    new-U-RNTI                         U-RNTI                              OPTIONAL,

```

```

    new-C-RNTI                C-RNTI                OPTIONAL,
    new-DSCH-RNTI            DSCH-RNTI                OPTIONAL,
    rrc-StateIndicator        RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
    rlc-ResetIndicatorC-Plane  BOOLEAN,
    rlc-ResetIndicatorU-Plane  BOOLEAN,
-- CN information elements
    cn-InformationInfo        CN-InformationInfo        OPTIONAL,
-- UTRAN mobility IES
    ura-Identity              URA-Identity              OPTIONAL,
-- Radio bearer IES
    rb-InformationReleaseList  RB-InformationReleaseList  OPTIONAL,
    rb-InformationReconfigList RB-InformationReconfigList-r4  OPTIONAL,
    rb-InformationAffectedList RB-InformationAffectedList  OPTIONAL,
    dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo  OPTIONAL,
-- Transport channel IES
    ul-CommonTransChInfo      UL-CommonTransChInfo-r4    OPTIONAL,
    ul-deletedTransChInfoList  UL-DeletedTransChInfoList  OPTIONAL,
    ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList  OPTIONAL,
    modeSpecificTransChInfo    CHOICE {
        fdd                    SEQUENCE {
            cpch-SetID          CPCH-SetID                OPTIONAL,
            addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
        },
        tdd                    NULL
    },
    dl-CommonTransChInfo      DL-CommonTransChInfo-r4    OPTIONAL,
    dl-DeletedTransChInfoList  DL-DeletedTransChInfoList  OPTIONAL,
    dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r4  OPTIONAL,
-- Physical channel IES
    frequencyInfo             FrequencyInfo              OPTIONAL,
    maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power      OPTIONAL,
    ul-ChannelRequirement      UL-ChannelRequirement-r4    OPTIONAL,
    modeSpecificPhysChInfo     CHOICE {
        fdd                    SEQUENCE {
            dl-PDSCH-Information  DL-PDSCH-Information      OPTIONAL
        },
        tdd                    NULL
    },
    dl-CommonInformation      DL-CommonInformation-r4    OPTIONAL,
    dl-InformationPerRL-List   DL-InformationPerRL-List-r4  OPTIONAL
}

CellUpdateConfirm-r5-IEs ::= SEQUENCE {
-- User equipment IES
    integrityProtectionModeInfo IntegrityProtectionModeInfo  OPTIONAL,
    cipheringModeInfo          CipheringModeInfo            OPTIONAL,
    activationTime              ActivationTime                OPTIONAL,
    new-U-RNTI                  U-RNTI                      OPTIONAL,
    new-C-RNTI                  C-RNTI                      OPTIONAL,
    new-DSCH-RNTI              DSCH-RNTI                  OPTIONAL,
    new-H-RNTI                  H-RNTI                      OPTIONAL,
    rrc-StateIndicator          RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
    rlc-ResetIndicatorC-Plane  BOOLEAN,
    rlc-ResetIndicatorU-Plane  BOOLEAN,
-- CN information elements
    cn-InformationInfo        CN-InformationInfo        OPTIONAL,
-- UTRAN mobility IES
    ura-Identity              URA-Identity              OPTIONAL,
-- Radio bearer IES
    rb-InformationReleaseList  RB-InformationReleaseList  OPTIONAL,
    rb-InformationReconfigList RB-InformationReconfigList-r5  OPTIONAL,
    rb-InformationAffectedList RB-InformationAffectedList-r5  OPTIONAL,
    dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5  OPTIONAL,
-- Transport channel IES
    ul-CommonTransChInfo      UL-CommonTransChInfo-r4    OPTIONAL,
    ul-deletedTransChInfoList  UL-DeletedTransChInfoList  OPTIONAL,
    ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList  OPTIONAL,
    modeSpecificTransChInfo    CHOICE {
        fdd                    SEQUENCE {
            cpch-SetID          CPCH-SetID                OPTIONAL,
            addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
        },
        tdd                    NULL
    },
    dl-CommonTransChInfo      DL-CommonTransChInfo-r4    OPTIONAL,
    dl-DeletedTransChInfoList  DL-DeletedTransChInfoList-r5  OPTIONAL,

```

```

    dl-AddReconfTransChInfoList      DL-AddReconfTransChInfoList-r5      OPTIONAL,
-- Physical channel IEs
    frequencyInfo                    FrequencyInfo                    OPTIONAL,
    maxAllowedUL-TX-Power             MaxAllowedUL-TX-Power             OPTIONAL,
    ul-ChannelRequirement             UL-ChannelRequirement-r5         OPTIONAL,
    modeSpecificPhysChInfo           CHOICE {
        fdd                          SEQUENCE {
            dl-PDSCH-Information      DL-PDSCH-Information            OPTIONAL,
        },
        tdd                          NULL
    },
    dl-HSPDSCH-Information            DL-HSPDSCH-Information            OPTIONAL,
    dl-CommonInformation              DL-CommonInformation-r54         OPTIONAL,
    dl-InformationPerRL-List          DL-InformationPerRL-List-r5      OPTIONAL
}

-- *****
--
-- CELL UPDATE CONFIRM for CCCH
--
-- *****

CellUpdateConfirm-CCCH ::= CHOICE {
    r3                               SEQUENCE {
        -- User equipment IEs
        u-RNTI                       U-RNTI,
        -- The rest of the message is identical to the one sent on DCCH.
        cellUpdateConfirm-r3         CellUpdateConfirm-r3-IEs,
        laterNonCriticalExtensions   SEQUENCE {
            -- Container for additional R99 extensions
            cellUpdateConfirm-CCCH-r3-add-ext BIT STRING OPTIONAL,
            v4xyNonCriticalExtensions SEQUENCE {
                cellUpdateConfirm-v4xyext CellUpdateConfirm-v4xyext-IEs,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        u-RNTI                       U-RNTI,
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions            CHOICE {
            r4                       SEQUENCE {
                -- The rest of the message is identical to the one sent on DCCH.
                cellUpdateConfirm-r4 CellUpdateConfirm-r4-IEs,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            },
            criticalExtensions        SEQUENCE {}
        }
    }
}

-- *****
--
-- COUNTER CHECK
--
-- *****

CounterCheck ::= CHOICE {
    r3                               SEQUENCE {
        counterCheck-r3              CounterCheck-r3-IEs,
        laterNonCriticalExtensions   SEQUENCE {
            -- Container for additional R99 extensions
            counterCheck-r3-add-ext   BIT STRING OPTIONAL,
            nonCriticalExtensions     SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions            SEQUENCE {}
    }
}

CounterCheck-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    -- Radio bearer IEs
    rb-COUNT-C-MSB-InformationList   RB-COUNT-C-MSB-InformationList
}

```

```

-- *****
--
-- COUNTER CHECK RESPONSE
--
-- *****

CounterCheckResponse ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- Radio bearer IEs
  rb-COUNT-C-InformationList     RB-COUNT-C-InformationList      OPTIONAL,
  laterNonCriticalExtensions     SEQUENCE {
    -- Container for additional R99 extensions
    counterCheckResponse-r3-add-ext  BIT STRING OPTIONAL,
    nonCriticalExtensions            SEQUENCE {} OPTIONAL
  } OPTIONAL
}

-- *****
--
-- DOWNLINK DIRECT TRANSFER
--
-- *****

DownlinkDirectTransfer ::= CHOICE {
  r3
    SEQUENCE {
      downlinkDirectTransfer-r3      DownlinkDirectTransfer-r3-IEs,
      laterNonCriticalExtensions     SEQUENCE {
        -- Container for additional R99 extensions
        downlinkDirectTransfer-r3-add-ext  BIT STRING OPTIONAL,
        nonCriticalExtensions            SEQUENCE {} OPTIONAL
      } OPTIONAL
    },
  later-than-r3
    SEQUENCE {
      rrc-TransactionIdentifier      RRC-TransactionIdentifier,
      criticalExtensions            SEQUENCE {}
    }
}

DownlinkDirectTransfer-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- Core network IEs
  cn-DomainIdentity             CN-DomainIdentity,
  nas-Message                    NAS-Message
}

-- *****
--
-- HANDOVER TO UTRAN COMMAND
--
-- *****

HandoverToUTRANCommand ::= CHOICE {
  r3
    SEQUENCE {
      handoverToUTRANCommand-r3      HandoverToUTRANCommand-r3-IEs,
      v4xyNonCriticalExtensions       SEQUENCE {
        handoverToUTRANCommand-v4xyext  HandoverToUTRANCommand-v4xyext-IEs,
        nonCriticalExtensions           SEQUENCE {} OPTIONAL
      } OPTIONAL
    },
  criticalExtensions
    CHOICE {
      r4
        SEQUENCE {
          handoverToUTRANCommand-r4      HandoverToUTRANCommand-r4-IEs,
          nonCriticalExtensions           SEQUENCE {} OPTIONAL
        },
      criticalExtensions
        CHOICE {
          r5
            SEQUENCE {
              handoverToUTRANCommand-r5      HandoverToUTRANCommand-r5-IEs,
              nonCriticalExtensions           SEQUENCE {} OPTIONAL
            },
          criticalExtensions
            SEQUENCE {}
        }
    }
}

```

```

HandoverToUTRANCommand-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  new-U-RNTI                U-RNTI-Short,
  -- dummy is not used in this version of specification, it should
  -- not be sent and if received it should be ignored.
  dummy                    ActivationTime                OPTIONAL,
  cipheringAlgorithm        CipheringAlgorithm           OPTIONAL,
  -- Radio bearer IEs
  -- Specification mode information
  specificationMode         CHOICE {
    complete                SEQUENCE {
      srb-InformationSetupList  SRB-InformationSetupList,
      rab-InformationSetupList  RAB-InformationSetupList        OPTIONAL,
      ul-CommonTransChInfo     UL-CommonTransChInfo,
      ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList,
      dl-CommonTransChInfo     DL-CommonTransChInfo,
      dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList,
      ul-DPCH-Info             UL-DPCH-Info,
      modeSpecificInfo         CHOICE {
        fdd                    SEQUENCE {
          dl-PDSCH-Information  DL-PDSCH-Information  OPTIONAL,
          cpch-SetInfo         CPCH-SetInfo        OPTIONAL
        },
        tdd                    NULL
      },
      dl-CommonInformation     DL-CommonInformation,
      dl-InformationPerRL-List  DL-InformationPerRL-List,
      frequencyInfo            FrequencyInfo
    },
    preconfiguration         SEQUENCE {
      predefinedConfigIdentity  PredefinedConfigIdentity,
      defaultConfig             SEQUENCE {
        defaultConfigMode      DefaultConfigMode,
        defaultConfigIdentity   DefaultConfigIdentity
      }
    },
    rab-Info                  RAB-Info-Post        OPTIONAL,
    modeSpecificInfo          CHOICE {
      fdd                      SEQUENCE {
        ul-DPCH-Info           UL-DPCH-InfoPostFDD,
        dl-CommonInformationPost  DL-CommonInformationPost,
        dl-InformationPerRL-List  DL-InformationPerRL-ListPostFDD,
        frequencyInfo           FrequencyInfoFDD
      },
      tdd                      SEQUENCE {
        ul-DPCH-Info           UL-DPCH-InfoPostTDD,
        dl-CommonInformationPost  DL-CommonInformationPost,
        dl-InformationPerRL-List  DL-InformationPerRL-ListPostTDD,
        frequencyInfo           FrequencyInfoTDD,
        primaryCCPCH-TX-Power    PrimaryCCPCH-TX-Power
      }
    }
  },
  -- Physical channel IEs
  maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power
}

HandoverToUTRANCommand-v4xyext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- ssdt-UL extends SSdT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL                    SSdT-UL-r4                OPTIONAL,
  cell-id                    CellIdentity                OPTIONAL
}

HandoverToUTRANCommand-r4-IEs ::= SEQUENCE {
  -- User equipment IEs
  new-U-RNTI                U-RNTI-Short,
  cipheringAlgorithm        CipheringAlgorithm           OPTIONAL,
  -- Radio bearer IEs
  -- Specification mode information

```



```

    nas-Message                NAS-Message,
-- Measurement IEs
    measuredResultsOnRACH      MeasuredResultsOnRACH                OPTIONAL,
    v3a0NonCriticalExtensions  SEQUENCE {
    initialDirectTransfer-v3a0ext InitialDirectTransfer-v3a0ext,
    laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions
        initialDirectTransfer-r3-add-ext BIT STRING OPTIONAL,
        v5xyNonCriticalExtensions SEQUENCE {
            initialDirectTransfer-v5xyext InitialDirectTransfer-v5xyext,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        }
    } OPTIONAL
} OPTIONAL
}

InitialDirectTransfer-v3a0ext ::= SEQUENCE {
    -- start-value shall always be included in this version of the protocol
    start-Value                START-Value                OPTIONAL
}

InitialDirectTransfer-v5xyext ::= SEQUENCE {
    establishmentCause         EstablishmentCause OPTIONAL
}

-- *****
--
-- HANDOVER FROM UTRAN COMMAND
--
-- *****

HandoverFromUTRANCommand-GSM ::= CHOICE {
    r3                          SEQUENCE {
        handoverFromUTRANCommand-GSM-r3
        HandoverFromUTRANCommand-GSM-r3-IEs,
        laterNonCriticalExtensions SEQUENCE {
            -- Container for additional R99 extensions
            handoverFromUTRANCommand-GSM-r3-add-ext BIT STRING OPTIONAL,
            -- UTRAN should not include the IE nonCriticalExtensions when it sets
            -- the IE gsm-message included in handoverFromUTRANCommand-GSM-r3 to single-GSM-Message
            -- The UE behaviour upon receiving a message including this combination of IE values is
            -- not specified
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        }
    },
    later-than-r3              SEQUENCE {
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
        criticalExtensions SEQUENCE {}
    }
}

HandoverFromUTRANCommand-GSM-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    activationTime ActivationTime OPTIONAL,
    -- Radio bearer IEs
    toHandover-Info RAB-Info OPTIONAL,
    -- Measurement IEs
    frequency-band Frequency-Band,
    -- Other IEs
    gsm-message CHOICE {
        -- In the single-GSM-Message case the following rules apply:
        -- 1> the GSM message directly follows the basic production; the final padding that
        -- results when PER encoding the abstract syntax value is removed prior to appending
        -- the GSM message.
        -- 2> the RRC message excluding the GSM part, does not contain a length determinant;
        -- there is no explicit parameter indicating the size of the included GSM message.
        -- 3> depending on need, final padding (all "0"s) is added to ensure the final result
        -- comprises a full number of octets
        single-GSM-Message SEQUENCE {},
        gsm-MessageList SEQUENCE {
            gsm-Messages GSM-MessageList
        }
    }
}

HandoverFromUTRANCommand-GERANIu ::= CHOICE {
    r5                          SEQUENCE {

```

```

handoverFromUTRANCommand-GERANIu-r5
    HandoverFromUTRANCommand-GERANIu-r5-IEs,
-- UTRAN should not include the IE nonCriticalExtensions when it sets
-- the IE geranIu-message included in handoverFromUTRANCommand-GERANIu-r5 to
-- single-GERANIu-Message
-- The UE behaviour upon receiving a message including this combination of IE values is
-- not specified
    nonCriticalExtensions          SEQUENCE {} OPTIONAL
},
later-than-r5                      SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions             SEQUENCE {}
}
}

HandoverFromUTRANCommand-GERANIu-r5-IEs ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    activationTime                 ActivationTime                      OPTIONAL,
-- Measurement IEs
    frequency-Band                Frequency-Band,
-- Other IEs
    geranIu-Message               CHOICE {
-- In the single-GERANIu-Message case the following rules apply:
-- 1> the GERAN Iu message directly follows the basic production; the final padding that
-- results when PER encoding the abstract syntax value is removed prior to appending
-- the GERAN Iu message.
-- 2> the RRC message excluding the GERAN Iu part does not contain a length determinant;
-- there is no explicit parameter indicating the size of the included GERAN Iu
-- message.
-- 3> depending on need, final padding (all "0"s) is added to ensure the final result
-- comprises a full number of octets.
    single-GERANIu-Message        SEQUENCE {},
    geranIu-MessageList          SEQUENCE {
        geranIu-MessageList      GERANIu-MessageList
    }
}
}

HandoverFromUTRANCommand-CDMA2000 ::= CHOICE {
    r3                             SEQUENCE {
        handoverFromUTRANCommand-CDMA2000-r3
        nonCriticalExtensions      HandoverFromUTRANCommand-CDMA2000-r3-IEs,
        SEQUENCE {} OPTIONAL
    },
    later-than-r3                  SEQUENCE {
        rrc-TransactionIdentifier  RRC-TransactionIdentifier,
        criticalExtensions         SEQUENCE {}
    }
}

HandoverFromUTRANCommand-CDMA2000-r3-IEs ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    activationTime                 ActivationTime                      OPTIONAL,
-- Radio bearer IEs
    toHandover-Info               RAB-Info                          OPTIONAL,
-- Other IEs
    cdma2000-MessageList          CDMA2000-MessageList
}

-- *****
--
-- HANDOVER FROM UTRAN FAILURE
--
-- *****

HandoverFromUTRANFailure ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
-- Other IEs
    interRAT-HO-FailureCause      InterRAT-HO-FailureCause          OPTIONAL,
-- In case the interRATMessage to be transferred is for GERAN Iu mode, the
-- message should be placed in the HandoverFromUtranFailure-v5xyext-IEs
-- non-critical extension container.
    interRATMessage               CHOICE {
        gsm                       SEQUENCE {
            gsm-MessageList        GSM-MessageList
        }
    }
}

```

```

    },
    cdma2000
        cdma2000-MessageList
    }
} OPTIONAL,
laterNonCriticalExtensions SEQUENCE {
-- Container for additional R99 extensions
handoverFromUTRANFailure-r3-add-ext BIT STRING OPTIONAL,
v560NonCriticalExtensions SEQUENCE {
    handoverFromUTRANFailure-v5xyext HandoverFromUtranFailure-v560ext-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
} OPTIONAL
} OPTIONAL
}

HandoverFromUtranFailure-v560ext-IEs ::= SEQUENCE {
    geranIu-MessageList GERANIu-MessageList
}

-- *****
--
-- INTER RAT HANDOVER INFO
--
-- *****

InterRATHandoverInfo ::= SEQUENCE {
-- This structure is defined for historical reasons, backward compatibility with 04.18
predefinedConfigStatusList CHOICE {
    absent NULL,
    present PredefinedConfigStatusList
},
uE-SecurityInformation CHOICE {
    absent NULL,
    present UE-SecurityInformation
},
ue-CapabilityContainer CHOICE {
    absent NULL,
    -- present is an octet aligned string containing IE UE-RadioAccessCapabilityInfo
    present OCTET STRING (SIZE (0..63))
},
-- Non critical extensions
v390NonCriticalExtensions CHOICE {
    absent NULL,
    present SEQUENCE {
        interRATHandoverInfo-v390ext InterRATHandoverInfo-v390ext-IEs,
        v3a0NonCriticalExtensions SEQUENCE {
            interRATHandoverInfo-v3a0ext InterRATHandoverInfo-v3a0ext,
            laterNonCriticalExtensions SEQUENCE {
                interRATHandoverInfo-v3d0ext InterRATHandoverInfo-v3d0ext-IEs,
                -- Container for additional R99 extensions
                interRATHandoverInfo-r3-add-ext BIT STRING OPTIONAL,
                v3g0NonCriticalExtensions SEQUENCE {
                    interRATHandoverInfo-v3g0ext InterRATHandoverInfo-v3g0ext-IEs,
                    v4xyNonCriticalExtensions SEQUENCE {
                        interRATHandoverInfo-v4xyext InterRATHandoverInfo-v4xyext-IEs,
                        -- Reserved for future non critical extension
                        v5xyNonCriticalExtensions SEQUENCE {
                            interRATHandoverInfo-v5xyext InterRATHandoverInfo-v5xyext-IEs,
                            nonCriticalExtensions SEQUENCE {} OPTIONAL
                        } OPTIONAL
                    } OPTIONAL
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    } OPTIONAL
} OPTIONAL
}

InterRATHandoverInfo-v390ext-IEs ::= SEQUENCE {
-- User equipment IEs
    ue-RadioAccessCapability-v380ext UE-RadioAccessCapability-v380ext OPTIONAL,
    dl-PhysChCapabilityFDD-v380ext DL-PhysChCapabilityFDD-v380ext
}

InterRATHandoverInfo-v3a0ext ::= SEQUENCE {
-- User equipment IEs
    ue-RadioAccessCapability-v3a0ext UE-RadioAccessCapability-v3a0ext OPTIONAL
}

```

```

InterRATHandoverInfo-v3d0ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ueSpecificBehaviourInformationInterRAT    UESpecificBehaviourInformationInterRAT
  OPTIONAL
}

InterRATHandoverInfo-v3g0ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v3g0ext    UE-RadioAccessCapability-v3g0ext    OPTIONAL
}
InterRATHandoverInfo-v4xyext-IEs ::= SEQUENCE {
  -- User equipment IEs
  accessStratumReleaseIndicator    AccessStratumReleaseIndicator
}

InterRATHandoverInfo-v5xyext-IEs ::= SEQUENCE {
  -- User equipment IEs

  predefinedConfigStatusListComp    PredefinedConfigStatusListComp    OPTIONAL,
  ue-RadioAccessCapabilityComp    UE-RadioAccessCapabilityComp    OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability-r5    InterRAT-UE-RadioAccessCapabilityList-r5    OPTIONAL
}

-- *****
--
-- MEASUREMENT CONTROL
--
-- *****

MeasurementControl ::= CHOICE {
  r3
    SEQUENCE {
      measurementControl-r3    MeasurementControl-r3-IEs,
      v390nonCriticalExtensions    SEQUENCE {
        measurementControl-v390ext    MeasurementControl-v390ext,
        v3a0NonCriticalExtensions    SEQUENCE {
          measurementControl-v3a0ext    MeasurementControl-v3a0ext,
          laterNonCriticalExtensions    SEQUENCE {
            -- Container for additional R99 extensions
            measurementControl-r3-add-ext    BIT STRING OPTIONAL,
            v4xyNonCriticalExtensions    SEQUENCE {
              measurementControl-v4xyext    MeasurementControl-v4xyext-IEs,
              v5xyNonCriticalExtensions    SEQUENCE {
                measurementControl-v5xyext    MeasurementControl-v5xyext-IEs,
                nonCriticalExtensions    SEQUENCE {}
              }
            }
          }
        }
      }
    }
  OPTIONAL
},
  later-than-r3
    SEQUENCE {
      rrc-TransactionIdentifier    RRC-TransactionIdentifier,
      criticalExtensions    CHOICE {
        r4
          SEQUENCE {
            measurementControl-r4    MeasurementControl-r4-IEs,
            v5xyNonCriticalExtensions    SEQUENCE {
              measurementControl-v5xyext    MeasurementControl-v5xyext-IEs,
              nonCriticalExtensions    SEQUENCE {}
            }
          }
        OPTIONAL
      },
      criticalExtensions    SEQUENCE {}
    }
}

MeasurementControl-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier    RRC-TransactionIdentifier,
  -- Measurement IEs
  measurementIdentity    MeasurementIdentity,
  -- TABULAR: The measurement type is included in MeasurementCommand.
  measurementCommand    MeasurementCommand,
  measurementReportingMode    MeasurementReportingMode    OPTIONAL,
  additionalMeasurementList    AdditionalMeasurementID-List    OPTIONAL,
}

```

```

-- Physical channel IEs
  dpch-CompressedModeStatusInfo    DPCH-CompressedModeStatusInfo    OPTIONAL
}

MeasurementControl-v4xyext-IEs ::= SEQUENCE {
  ue-Positioning-OTDOA-AssistanceData-r4ext    UE-Positioning-OTDOA-AssistanceData-r4ext    OPTIONAL
}

MeasurementControl-v390ext ::= SEQUENCE {
  ue-Positioning-Measurement-v390ext    UE-Positioning-Measurement-v390ext    OPTIONAL
}

MeasurementControl-v3a0ext ::= SEQUENCE {
  sfn-Offset-Validity                SFN-Offset-Validity                OPTIONAL
}

MeasurementControl-r4-IEs ::= SEQUENCE {
  -- Measurement IEs
  measurementIdentity                MeasurementIdentity,
  -- TABULAR: The measurement type is included in measurementCommand.
  measurementCommand                  MeasurementCommand-r4,
  measurementReportingMode            MeasurementReportingMode            OPTIONAL,
  additionalMeasurementList           AdditionalMeasurementID-List         OPTIONAL,
  -- Physical channel IEs
  dpch-CompressedModeStatusInfo    DPCH-CompressedModeStatusInfo    OPTIONAL
}

MeasurementControl-v5xyext-IEs ::= SEQUENCE {
  measurementCommand-v5xyext          CHOICE {
    -- the choice "intra-frequency" shall be used for the case of intra-frequency measurement,
    -- as well as when intra-frequency events are configured for inter-frequency measurement
    intra-frequency                    Intra-FreqEventCriteriaList-v5xyext,
    inter-frequency                    Inter-FreqEventCriteriaList-v5xyext
  }
  OPTIONAL,
  intraFreqReportingCriteria-lb-r5ext  IntraFreqReportingCriteria-lb-r5ext  OPTIONAL,
  intraFreqEvent-lb-r5ext              IntraFreqEvent-lb-r5ext              OPTIONAL,
  -- most significant part of "RRC transaction identifier" (MSP),
  -- "RRC transaction identifier" = rrc-TransactionIdentifier-MSP-v5xyext * 4 +
  -- rrc-TransactionIdentifier
  rrc-TransactionIdentifier-MSP-v5xyext RRC-TransactionIdentifier
}

-- *****
--
-- MEASUREMENT CONTROL FAILURE
--
-- *****

MeasurementControlFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier            RRC-TransactionIdentifier,
  failureCause                        FailureCauseWithProtErr,
  laterNonCriticalExtensions           SEQUENCE {
    -- Container for additional R99 extensions
    measurementControlFailure-r3-add-ext    BIT STRING    OPTIONAL,
    v5xyNonCriticalExtensions              SEQUENCE {
      measurementControlFailure-v5xyext    MeasurementControlFailure-v5xyext-IEs,
      nonCriticalExtensions                SEQUENCE {}    OPTIONAL
    }
  }
  OPTIONAL
}

MeasurementControlFailure-v5xyext-IEs ::= SEQUENCE {
  -- most significant part of "RRC transaction identifier" (MSP),
  -- "RRC transaction identifier" = rrc-TransactionIdentifier-MSP-v5xyext * 4 +
  -- rrc-TransactionIdentifier
  -- If the rrc-TransactionIdentifier-MSP-v5xyext was not received in the MEASUREMENT CONTROL
  -- message, then the rrc-TransactionIdentifier-MSP-v5xyext shall be set to zero
  rrc-TransactionIdentifier-MSP-v5xyext  RRC-TransactionIdentifier
}

-- *****
--
-- MEASUREMENT REPORT
--
-- *****

MeasurementReport ::= SEQUENCE {
  -- Measurement IEs

```

```

    measurementIdentity      MeasurementIdentity,
    measuredResults          MeasuredResults          OPTIONAL,
    measuredResultsOnRACH    MeasuredResultsOnRACH    OPTIONAL,
    additionalMeasuredResults MeasuredResultsList     OPTIONAL,
    eventResults             EventResults             OPTIONAL,
-- Non-critical extensions
    v390nonCriticalExtensions SEQUENCE {
        measurementReport-v390ext MeasurementReport-v390ext,
        laterNonCriticalExtensions SEQUENCE {
            -- Container for additional R99 extensions
            measurementReport-r3-add-ext BIT STRING OPTIONAL,
            v4xyNonCriticalExtensions SEQUENCE {
                measurementReport-v4xyext MeasurementReport-v4xyext-IEs,
                -- Extension mechanism for non-Rel4 information
                v5xyNonCriticalExtensions SEQUENCE {
                    measurementReport-v5xyext MeasurementReport-v5xyext-IEs,
                    nonCriticalExtensions SEQUENCE {} OPTIONAL
                }
            } OPTIONAL
        } OPTIONAL
    } OPTIONAL
}

MeasurementReport-v390ext ::= SEQUENCE {
    measuredResults-v390ext MeasuredResults-v390ext OPTIONAL
}

MeasurementReport-v4xyext-IEs ::= SEQUENCE {
    interFreqEventResults-LCR InterFreqEventResults-LCR-r4-ext OPTIONAL,
    additionalMeasuredResults-LCR MeasuredResultsList-LCR-r4-ext OPTIONAL,
    gsmOTDreferenceCell PrimaryCPICH-Info OPTIONAL
}

MeasurementReport-v5xyext-IEs ::= SEQUENCE {
    measuredResults-v5xyext MeasuredResults-v5xyext OPTIONAL
}

-- *****
--
-- PAGING TYPE 1
--
-- *****

PagingType1 ::= SEQUENCE {
    -- User equipment IEs
    pagingRecordList PagingRecordList OPTIONAL,
    -- Other IEs
    bcch-ModificationInfo BCCH-ModificationInfo OPTIONAL,
    laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions
        pagingType1-r3-add-ext BIT STRING OPTIONAL,
        v4xyNonCriticalExtensions SEQUENCE {
            pagingType1-v5xyext PagingType1-v5xyext-IEs,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
    } OPTIONAL
}

PagingType1-v5xyext-IEs ::= SEQUENCE {
    -- User equipment IEs
    pagingRecordList PagingRecordList-r5 OPTIONAL
}

-- *****
--
-- PAGING TYPE 2
--
-- *****

PagingType2 ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    pagingCause PagingCause,
    -- Core network IEs
    cn-DomainIdentity CN-DomainIdentity,
    pagingRecordTypeID PagingRecordTypeID,
    laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions

```

```

        pagingType2-r3-add-ext          BIT STRING          OPTIONAL,
        nonCriticalExtensions            SEQUENCE {}         OPTIONAL
    }
}

-- *****
--
-- PHYSICAL CHANNEL RECONFIGURATION
--
-- *****

PhysicalChannelReconfiguration ::= CHOICE {
    r3                                SEQUENCE {
        physicalChannelReconfiguration-r3
        v3a0NonCriticalExtensions      SEQUENCE {
            physicalChannelReconfiguration-v3a0ext    PhysicalChannelReconfiguration-v3a0ext,
            laterNonCriticalExtensions SEQUENCE {
                -- Container for additional R99 extensions
                pagingType2-r3-add-ext          BIT STRING          OPTIONAL,
                v4xyNonCriticalExtensions      SEQUENCE {
                    physicalChannelReconfiguration-v4xyext
                    nonCriticalExtensions      SEQUENCE {} OPTIONAL
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3                      SEQUENCE {
        rrc-TransactionIdentifier        RRC-TransactionIdentifier,
        criticalExtensions                CHOICE {
            r4                            SEQUENCE {
                physicalChannelReconfiguration-r4
                nonCriticalExtensions      SEQUENCE {} OPTIONAL
            },
            criticalExtensions            CHOICE {
                r5                        SEQUENCE {
                    physicalChannelReconfiguration-r5
                    nonCriticalExtensions  SEQUENCE {} OPTIONAL
                },
                criticalExtensions        SEQUENCE {}
            }
        }
    }
}

PhysicalChannelReconfiguration-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    integrityProtectionModeInfo      IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo                CipheringModeInfo                OPTIONAL,
    activationTime                    ActivationTime                    OPTIONAL,
    new-U-RNTI                        U-RNTI                        OPTIONAL,
    new-C-RNTI                        C-RNTI                        OPTIONAL,
    rrc-StateIndicator                RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff        UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- Core network IEs
    cn-InformationInfo                CN-InformationInfo                OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                      URA-Identity                      OPTIONAL,
    -- Radio bearer IEs
    dl-CounterSynchronisationInfo     DL-CounterSynchronisationInfo  OPTIONAL,
    -- Physical channel IEs
    frequencyInfo                     FrequencyInfo                     OPTIONAL,
    maxAllowedUL-TX-Power              MaxAllowedUL-TX-Power          OPTIONAL,
    -- TABULAR: UL-ChannelRequirementWithCPCH-SetID contains the choice
    -- between UL DPCH info, CPCH SET info and CPCH set ID.
    ul-ChannelRequirement              UL-ChannelRequirementWithCPCH-SetID OPTIONAL,
    modeSpecificInfo                  CHOICE {
        fdd                             SEQUENCE {
            dl-PDSCH-Information         DL-PDSCH-Information         OPTIONAL
        },
        tdd                             NULL
    },
    dl-CommonInformation               DL-CommonInformation           OPTIONAL,
    dl-InformationPerRL-List           DL-InformationPerRL-List       OPTIONAL
}

```

```

}

PhysicalChannelReconfiguration-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI          DSCH-RNTI          OPTIONAL
}

PhysicalChannelReconfiguration-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- ssdt-UL extends SSdT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                SSdT-UL-r4        OPTIONAL,
    -- The order of the RLs in IE cell-id-PerRL-List is the same as
    -- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List     CellIdentity-PerRL-List  OPTIONAL
}

PhysicalChannelReconfiguration-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo              CipheringModeInfo              OPTIONAL,
    activationTime                  ActivationTime                  OPTIONAL,
    new-U-RNTI                      U-RNTI                      OPTIONAL,
    new-C-RNTI                      C-RNTI                      OPTIONAL,
    new-DSCH-RNTI                  DSCH-RNTI                  OPTIONAL,
    rrc-StateIndicator              RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
    -- Core network IEs
    cn-InformationInfo              CN-InformationInfo              OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                    URA-Identity                    OPTIONAL,
    -- Radio bearer IEs
    dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo   OPTIONAL,
    -- Physical channel IEs
    frequencyInfo                   FrequencyInfo                   OPTIONAL,
    maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power          OPTIONAL,
    -- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r4 contains the choice
    -- between UL DPCH info, CPCH SET info and CPCH set ID.
    ul-ChannelRequirement            UL-ChannelRequirementWithCPCH-SetID-r4  OPTIONAL,
    modeSpecificInfo                CHOICE {
        fdd                          SEQUENCE {
            dl-PDSCH-Information      DL-PDSCH-Information      OPTIONAL
        },
        tdd                          NULL
    },
    dl-CommonInformation             DL-CommonInformation-r4        OPTIONAL,
    dl-InformationPerRL-List         DL-InformationPerRL-List-r4    OPTIONAL
}

PhysicalChannelReconfiguration-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo              CipheringModeInfo              OPTIONAL,
    activationTime                  ActivationTime                  OPTIONAL,
    new-U-RNTI                      U-RNTI                      OPTIONAL,
    new-C-RNTI                      C-RNTI                      OPTIONAL,
    new-DSCH-RNTI                  DSCH-RNTI                  OPTIONAL,
    new-H-RNTI                      H-RNTI                      OPTIONAL,
    rrc-StateIndicator              RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
    -- Core network IEs
    cn-InformationInfo              CN-InformationInfo              OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                    URA-Identity                    OPTIONAL,
    -- Radio bearer IEs
    dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo-r5  OPTIONAL,
    -- Physical channel IEs
    frequencyInfo                   FrequencyInfo                   OPTIONAL,
    maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power          OPTIONAL,
    -- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r4 contains the choice
    -- between UL DPCH info, CPCH SET info and CPCH set ID.
    ul-ChannelRequirement            UL-ChannelRequirementWithCPCH-SetID-r5  OPTIONAL,
    modeSpecificInfo                CHOICE {
        fdd                          SEQUENCE {
            dl-PDSCH-Information      DL-PDSCH-Information      OPTIONAL
        },
        tdd                          NULL
    },
    dl-HSPDSCH-Information           DL-HSPDSCH-Information         OPTIONAL,
}

```

```

    dl-CommonInformation          DL-CommonInformation-r54          OPTIONAL,
    dl-InformationPerRL-List      DL-InformationPerRL-List-r5      OPTIONAL
  }
-- *****
--
-- PHYSICAL CHANNEL RECONFIGURATION COMPLETE
--
-- *****

PhysicalChannelReconfigurationComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo     IntegrityProtActivationInfo          OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance              UL-TimingAdvance          OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime        ActivationTime          OPTIONAL,
  rb-UL-ClphActivationTimeInfo   RB-ActivationTimeInfoList        OPTIONAL,
  ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo    OPTIONAL,
  laterNonCriticalExtensions     SEQUENCE {
    -- Container for additional R99 extensions
    physicalChannelReconfigurationComplete-r3-add-ext  BIT STRING          OPTIONAL,
    nonCriticalExtensions          SEQUENCE {}          OPTIONAL
  }
  OPTIONAL
}

-- *****
--
-- PHYSICAL CHANNEL RECONFIGURATION FAILURE
--
-- *****

PhysicalChannelReconfigurationFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier          OPTIONAL,
  failureCause                  FailureCauseWithProtErr,
  laterNonCriticalExtensions     SEQUENCE {
    -- Container for additional R99 extensions
    physicalChannelReconfigurationFailure-r3-add-ext  BIT STRING          OPTIONAL,
    nonCriticalExtensions          SEQUENCE {}          OPTIONAL
  }
  OPTIONAL
}

-- *****
--
-- PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)
--
-- *****

PhysicalSharedChannelAllocation ::= CHOICE {
  r3                             SEQUENCE {
    physicalSharedChannelAllocation-r3
    PhysicalSharedChannelAllocation-r3-IEs,
    laterNonCriticalExtensions    SEQUENCE {
      -- Container for additional R99 extensions
      physicalSharedChannelAllocation-r3-add-ext  BIT STRING          OPTIONAL,
      nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    }
    OPTIONAL
  },
  later-than-r3                  SEQUENCE {
    dsch-RNTI                    DSCH-RNTI          OPTIONAL,
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions             CHOICE {
      r4                           SEQUENCE {
        physicalSharedChannelAllocation-r4
        PhysicalSharedChannelAllocation-r4-IEs,
        nonCriticalExtensions        SEQUENCE {}          OPTIONAL
      },
      criticalExtensions            SEQUENCE {}
    }
  }
}

PhysicalSharedChannelAllocation-r3-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  dsch-RNTI                      DSCH-RNTI          OPTIONAL,

```

```

    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
-- Physical channel IEs
    ul-TimingAdvance              UL-TimingAdvanceControl          OPTIONAL,
    pusch-CapacityAllocationInfo   PUSCH-CapacityAllocationInfo  OPTIONAL,
    pdsch-CapacityAllocationInfo   PDSCH-CapacityAllocationInfo  OPTIONAL,
-- TABULAR: If the above value is not present, the default value "No Confirm"
-- shall be used as specified in 10.2.25.
    confirmRequest                 ENUMERATED {
                                     confirmPDSCH, confirmPUSCH }  OPTIONAL,
    trafficVolumeReportRequest     INTEGER (0..255)              OPTIONAL,
    iscpTimeslotList               TimeslotList                  OPTIONAL,
    requestPCCPCHRSCP              BOOLEAN
}

PhysicalSharedChannelAllocation-r4-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall not be performed on this message.
-- Physical channel IEs
    ul-TimingAdvance              UL-TimingAdvanceControl-r4    OPTIONAL,
    pusch-CapacityAllocationInfo   PUSCH-CapacityAllocationInfo-r4  OPTIONAL,
    pdsch-CapacityAllocationInfo   PDSCH-CapacityAllocationInfo-r4  OPTIONAL,
-- TABULAR: If confirmRequest is not present, the default value "No Confirm"
-- shall be used as specified in 10.2.25.
    confirmRequest                 ENUMERATED {
                                     confirmPDSCH, confirmPUSCH }  OPTIONAL,
    iscpTimeslotList               TimeslotList-r4                OPTIONAL,
    requestPCCPCHRSCP              BOOLEAN
}

-- *****
--
-- PUSCH CAPACITY REQUEST (TDD only)
--
-- *****

PUSCHCapacityRequest ::= SEQUENCE {
-- User equipment IEs
    dsch-RNTI                     DSCH-RNTI                       OPTIONAL,
-- Measurement IEs
    trafficVolume                  TrafficVolumeMeasuredResultsList,
    timeslotListWithISCP           TimeslotListWithISCP             OPTIONAL,
    primaryCCPCH-RSCP              PrimaryCCPCH-RSCP                 OPTIONAL,
    allocationConfirmation         CHOICE {
        pdschConfirmation          PDSCH-Identity,
        puschConfirmation          PUSCH-Identity
    }                               OPTIONAL,
    protocolErrorIndicator         ProtocolErrorIndicatorWithMoreInfo,
    laterNonCriticalExtensions     SEQUENCE {
        -- Container for additional R99 extensions
        puschCapacityRequest-r3-add-ext  BIT STRING          OPTIONAL,
        v5xyNonCriticalExtensions     SEQUENCE {
            puschCapacityRequest-v5xyext  PUSCHCapacityRequest-v5xyext,
            nonCriticalExtensions        SEQUENCE {} OPTIONAL
        }
    }                               OPTIONAL
}

PUSCHCapacityRequest-v5xyext ::= SEQUENCE {
    primaryCCPCH-RSCP-delta        DeltaRSCP                        OPTIONAL
}

-- *****
--
-- RADIO BEARER RECONFIGURATION
--
-- *****

RadioBearerReconfiguration ::= CHOICE {
    r3                             SEQUENCE {
        radioBearerReconfiguration-r3  RadioBearerReconfiguration-r3-IEs,
        v3a0NonCriticalExtensions     SEQUENCE {
            radioBearerReconfiguration-v3a0ext  RadioBearerReconfiguration-v3a0ext,
            laterNonCriticalExtensions     SEQUENCE {
                -- Container for additional R99 extensions
                radioBearerReconfiguration-r3-add-ext  BIT STRING          OPTIONAL,
                v4xyNonCriticalExtensions     SEQUENCE {
                    radioBearerReconfiguration-v4xyext
                }
            }
            nonCriticalExtensions        SEQUENCE {} OPTIONAL
        }
    }                               OPTIONAL
}

```



```

-- DL-CommonInformation. FDD only.
ssdt-UL                               SSdT-UL-r4                               OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
cell-id-PerRL-List                     CellIdentity-PerRL-List                     OPTIONAL
}

RadioBearerReconfiguration-r4-IEs ::= SEQUENCE {
-- User equipment IEs
  integrityProtectionModeInfo          IntegrityProtectionModeInfo                OPTIONAL,
  cipheringModeInfo                    CipheringModeInfo                          OPTIONAL,
  activationTime                        ActivationTime                              OPTIONAL,
  new-U-RNTI                            U-RNTI                                    OPTIONAL,
  new-C-RNTI                            C-RNTI                                    OPTIONAL,
  new-DSCH-RNTI                         DSCH-RNTI                                 OPTIONAL,
  rrc-StateIndicator                   RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff           UTRAN-DRX-CycleLengthCoefficient          OPTIONAL,
-- Core network IEs
  cn-InformationInfo                    CN-InformationInfo                         OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                          URA-Identity                              OPTIONAL,
-- Radio bearer IEs
  rab-InformationReconfigList           RAB-InformationReconfigList               OPTIONAL,
  rb-InformationReconfigList            RB-InformationReconfigList-r4              OPTIONAL,
  rb-InformationAffectedList            RB-InformationAffectedList                 OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo                 UL-CommonTransChInfo-r4                  OPTIONAL,
  ul-deletedTransChInfoList             UL-DeletedTransChInfoList                 OPTIONAL,
  ul-AddReconfTransChInfoList           UL-AddReconfTransChInfoList               OPTIONAL,
  modeSpecificTransChInfo               CHOICE {
    fdd                                  SEQUENCE {
      cpch-SetID                         CPCH-SetID                               OPTIONAL,
      addReconfTransChDRAC-Info           DRAC-StaticInformationList               OPTIONAL
    },
    tdd                                  NULL
  }
  dl-CommonTransChInfo                 DL-CommonTransChInfo-r4                  OPTIONAL,
  dl-DeletedTransChInfoList             DL-DeletedTransChInfoList                 OPTIONAL,
  dl-AddReconfTransChInfoList           DL-AddReconfTransChInfo2List              OPTIONAL,
-- Physical channel IEs
  frequencyInfo                         FrequencyInfo                              OPTIONAL,
  maxAllowedUL-TX-Power                 MaxAllowedUL-TX-Power                     OPTIONAL,
  ul-ChannelRequirement                 UL-ChannelRequirement-r4                  OPTIONAL,
  modeSpecificPhysChInfo                CHOICE {
    fdd                                  SEQUENCE {
      dl-PDSCH-Information                DL-PDSCH-Information                     OPTIONAL
    },
    tdd                                  NULL
  },
  dl-CommonInformation                  DL-CommonInformation-r4                    OPTIONAL,
  dl-InformationPerRL-List               DL-InformationPerRL-List-r4                OPTIONAL
}

RadioBearerReconfiguration-r5-IEs ::= SEQUENCE {
-- User equipment IEs
  integrityProtectionModeInfo          IntegrityProtectionModeInfo                OPTIONAL,
  cipheringModeInfo                    CipheringModeInfo                          OPTIONAL,
  activationTime                        ActivationTime                              OPTIONAL,
  new-U-RNTI                            U-RNTI                                    OPTIONAL,
  new-C-RNTI                            C-RNTI                                    OPTIONAL,
  new-DSCH-RNTI                         DSCH-RNTI                                 OPTIONAL,
  new-H-RNTI                            H-RNTI                                    OPTIONAL,
  rrc-StateIndicator                   RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff           UTRAN-DRX-CycleLengthCoefficient          OPTIONAL,
-- Core network IEs
  cn-InformationInfo                    CN-InformationInfo                         OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                          URA-Identity                              OPTIONAL,
-- Specification mode information
  specificationMode                     CHOICE {
    complete                             SEQUENCE {
      -- Radio bearer IEs
      rab-InformationReconfigList         RAB-InformationReconfigList               OPTIONAL,
      rb-InformationReconfigList          RB-InformationReconfigList-r5              OPTIONAL,
      rb-InformationAffectedList          RB-InformationAffectedList-r5              OPTIONAL,
      rb-PDCPCContextRelocationList      RB-PDCPCContextRelocationList             OPTIONAL,
      -- Transport channel IEs
      ul-CommonTransChInfo                UL-CommonTransChInfo-r4                  OPTIONAL,

```

```

        ul-deletedTransChInfoList      UL-DeletedTransChInfoList      OPTIONAL,
        ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList    OPTIONAL,
        modeSpecificTransChInfo        CHOICE {
            fdd                          SEQUENCE {
                cpch-SetID                CPCH-SetID                OPTIONAL,
                addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
            },
            tdd                          NULL
        }
        dl-CommonTransChInfo            DL-CommonTransChInfo-r4        OPTIONAL,
        dl-DeletedTransChInfoList       DL-DeletedTransChInfoList-r5   OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r5 OPTIONAL
    },
    preconfiguration                    SEQUENCE {
        -- All IEs that include an FDD/TDD choice are split in two IEs for this message,
        -- one for the FDD only elements and one for the TDD only elements, so that one
        -- FDD/TDD choice in this level is sufficient.
        preConfigMode                   CHOICE {
            predefinedConfigIdentity      PredefinedConfigIdentity,
            defaultConfig                 SEQUENCE {
                defaultConfigMode        DefaultConfigMode,
                defaultConfigIdentity    DefaultConfigIdentity-r5
            }
        }
    }
},
-- Physical channel IEs
frequencyInfo                          FrequencyInfo                      OPTIONAL,
maxAllowedUL-TX-Power                  MaxAllowedUL-TX-Power             OPTIONAL,
ul-ChannelRequirement                  UL-ChannelRequirement-r5         OPTIONAL,
modeSpecificPhysChInfo                 CHOICE {
    fdd                                  SEQUENCE {
        dl-PDSCH-Information            DL-PDSCH-Information             OPTIONAL
    },
    tdd                                  NULL
},
dl-HSPDSCH-Information                 DL-HSPDSCH-Information           OPTIONAL,
dl-CommonInformation                   DL-CommonInformation-r54         OPTIONAL,
dl-InformationPerRL-List                DL-InformationPerRL-List-r5     OPTIONAL
}

-- *****
--
-- RADIO BEARER RECONFIGURATION COMPLETE
--
-- *****

RadioBearerReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier            RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo           IntegrityProtActivationInfo       OPTIONAL,
    -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance                     UL-TimingAdvance                 OPTIONAL,
    -- Radio bearer IEs
    count-C-ActivationTime               ActivationTime                     OPTIONAL,
    rb-UL-CiphActivationTimeInfo         RB-ActivationTimeInfoList        OPTIONAL,
    ul-CounterSynchronisationInfo        UL-CounterSynchronisationInfo    OPTIONAL,
    laterNonCriticalExtensions            SEQUENCE {
        -- Container for additional R99 extensions
        radioBearerReconfigurationComplete-r3-add-ext  BIT STRING  OPTIONAL,
        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,
    laterNonCriticalExtensions           SEQUENCE {
        -- Container for additional R99 extensions

```

```

        radioBearerReconfigurationFailure-r3-add-ext          BIT STRING          OPTIONAL,
        nonCriticalExtensions                               SEQUENCE {} OPTIONAL
    }
}

-- *****
--
-- RADIO BEARER RELEASE
--
-- *****

RadioBearerRelease ::= CHOICE {
    r3                               SEQUENCE {
        radioBearerRelease-r3        RadioBearerRelease-r3-IEs,
        v3a0NonCriticalExtensions    SEQUENCE {
            radioBearerRelease-v3a0ext RadioBearerRelease-v3a0ext,
            laterNonCriticalExtensions SEQUENCE {
                -- Container for additional R99 extensions
                radioBearerRelease-r3-add-ext BIT STRING          OPTIONAL,
                v4xyNonCriticalExtensions    SEQUENCE {
                    radioBearerRelease-v4xyext RadioBearerRelease-v4xyext-IEs,
                    nonCriticalExtensions    SEQUENCE {} OPTIONAL
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3                    SEQUENCE {
        rrc-TransactionIdentifier     RRC-TransactionIdentifier,
        criticalExtensions             CHOICE {
            r4                         SEQUENCE {
                radioBearerRelease-r4   RadioBearerRelease-r4-IEs,
                nonCriticalExtensions    SEQUENCE {}          OPTIONAL
            },
            criticalExtensions         CHOICE {
                r5                     SEQUENCE {
                    radioBearerRelease-r5   RadioBearerRelease-r5-IEs,
                    nonCriticalExtensions    SEQUENCE {}          OPTIONAL
                }
            },
            criticalExtensions         SEQUENCE {}
        }
    }
}

RadioBearerRelease-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier     RRC-TransactionIdentifier,
    integrityProtectionModeInfo   IntegrityProtectionModeInfo   OPTIONAL,
    cipheringModeInfo             CipheringModeInfo                 OPTIONAL,
    activationTime                 ActivationTime                     OPTIONAL,
    new-U-RNTI                     U-RNTI                             OPTIONAL,
    new-C-RNTI                     C-RNTI                             OPTIONAL,
    rrc-StateIndicator             RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- Core network IEs
    cn-InformationInfo             CN-InformationInfo                 OPTIONAL,
    signallingConnectionRelIndication CN-DomainIdentity             OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                   URA-Identity                       OPTIONAL,
    -- Radio bearer IEs
    rab-InformationReconfigList     RAB-InformationReconfigList     OPTIONAL,
    rb-InformationReleaseList       RB-InformationReleaseList,
    rb-InformationAffectedList      RB-InformationAffectedList     OPTIONAL,
    dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo   OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo           UL-CommonTransChInfo           OPTIONAL,
    ul-deletedTransChInfoList       UL-DeletedTransChInfoList       OPTIONAL,
    ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList     OPTIONAL,
    modeSpecificTransChInfo         CHOICE {
        fdd                           SEQUENCE {
            cpch-SetID                 CPCH-SetID                     OPTIONAL,
            addReconfTransChDRAC-Info   DRAC-StaticInformationList     OPTIONAL
        },
        tdd                             NULL
    }
    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
        dl-PDSCH-Information  DL-PDSCH-Information  OPTIONAL
    },
    tdd
        NULL
},
dl-CommonInformation  DL-CommonInformation  OPTIONAL,
dl-InformationPerRL-List  DL-InformationPerRL-List  OPTIONAL
}

RadioBearerRelease-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI          DSCH-RNTI          OPTIONAL
}

RadioBearerRelease-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- IE ssdt-UL extends SSDT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                SSDT-UL-r4                OPTIONAL,
    -- The order of the RLs in IE cell-id-PerRL-List is the same as
    -- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List     CellIdentity-PerRL-List     OPTIONAL
}

RadioBearerRelease-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo  IntegrityProtectionModeInfo  OPTIONAL,
    cipheringModeInfo            CipheringModeInfo            OPTIONAL,
    activationTime                ActivationTime                OPTIONAL,
    new-U-RNTI                    U-RNTI                    OPTIONAL,
    new-C-RNTI                    C-RNTI                    OPTIONAL,
    new-DSCH-RNTI                DSCH-RNTI                OPTIONAL,
    rrc-StateIndicator            RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
    -- Core network IEs
    cn-InformationInfo            CN-InformationInfo            OPTIONAL,
    signallingConnectionRelIndication  CN-DomainIdentity            OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                  URA-Identity                  OPTIONAL,
    -- Radio bearer IEs
    rab-InformationReconfigList    RAB-InformationReconfigList    OPTIONAL,
    rb-InformationReleaseList      RB-InformationReleaseList,
    rb-InformationAffectedList     RB-InformationAffectedList     OPTIONAL,
    dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo  OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo          UL-CommonTransChInfo-r4        OPTIONAL,
    ul-deletedTransChInfoList     UL-DeletedTransChInfoList     OPTIONAL,
    ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList   OPTIONAL,
    modeSpecificTransChInfo       CHOICE {
        fdd
            cpch-SetID            CPCH-SetID            OPTIONAL,
            addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
        },
        tdd
            NULL
    }
    dl-CommonTransChInfo          DL-CommonTransChInfo-r4        OPTIONAL,
    dl-DeletedTransChInfoList     DL-DeletedTransChInfoList     OPTIONAL,
    dl-AddReconfTransChInfoList   DL-AddReconfTransChInfo2List  OPTIONAL,
    -- Physical channel IEs
    frequencyInfo                FrequencyInfo                OPTIONAL,
    maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power         OPTIONAL,
    ul-ChannelRequirement         UL-ChannelRequirement-r4      OPTIONAL,
    modeSpecificPhysChInfo       CHOICE {
        fdd
            dl-PDSCH-Information  DL-PDSCH-Information  OPTIONAL
        },
        tdd
            NULL
    },
    dl-CommonInformation          DL-CommonInformation-r4      OPTIONAL,
    dl-InformationPerRL-List      DL-InformationPerRL-List-r4  OPTIONAL
}

RadioBearerRelease-r5-IEs ::= SEQUENCE {
    -- User equipment IEs

```

```

integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
cipheringModeInfo CipheringModeInfo OPTIONAL,
activationTime ActivationTime OPTIONAL,
new-U-RNTI U-RNTI OPTIONAL,
new-C-RNTI C-RNTI OPTIONAL,
new-DSCH-RNTI DSCH-RNTI OPTIONAL,
new-H-RNTI H-RNTI OPTIONAL,
rrc-StateIndicator RRC-StateIndicator,
utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- Core network IES
cn-InformationInfo CN-InformationInfo OPTIONAL,
signallingConnectionRelIndication CN-DomainIdentity OPTIONAL,
-- UTRAN mobility IES
ura-Identity URA-Identity OPTIONAL,
-- Radio bearer IES
rab-InformationReconfigList RAB-InformationReconfigList OPTIONAL,
rb-InformationReleaseList RB-InformationReleaseList,
rb-InformationAffectedList RB-InformationAffectedList-r5 OPTIONAL,
dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5 OPTIONAL,
-- Transport channel IES
ul-CommonTransChInfo UL-CommonTransChInfo-r4 OPTIONAL,
ul-deletedTransChInfoList UL-DeletedTransChInfoList OPTIONAL,
ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
modeSpecificTransChInfo CHOICE {
    fdd SEQUENCE {
        cpch-SetID CPCH-SetID OPTIONAL,
        addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd NULL
}
dl-CommonTransChInfo DL-CommonTransChInfo-r4 OPTIONAL,
dl-DeletedTransChInfoList DL-DeletedTransChInfoList-r5 OPTIONAL,
dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r5 OPTIONAL,
-- Physical channel IES
frequencyInfo FrequencyInfo OPTIONAL,
maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
ul-ChannelRequirement UL-ChannelRequirement-r5 OPTIONAL,
modeSpecificPhysChInfo CHOICE {
    fdd SEQUENCE {
        dl-PDSCH-Information DL-PDSCH-Information OPTIONAL
    },
    tdd NULL
},
dl-HSPDSCH-Information DL-HSPDSCH-Information OPTIONAL,
dl-CommonInformation DL-CommonInformation-r54 OPTIONAL,
dl-InformationPerRL-List DL-InformationPerRL-List-r5 OPTIONAL
}

-- *****
--
-- RADIO BEARER RELEASE COMPLETE
--
-- *****

RadioBearerReleaseComplete ::= SEQUENCE {
-- User equipment IES
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo IntegrityProtActivationInfo OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance UL-TimingAdvance OPTIONAL,
-- Radio bearer IES
    count-C-ActivationTime ActivationTime OPTIONAL,
    rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfoList OPTIONAL,
    ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo OPTIONAL,
    laterNonCriticalExtensions SEQUENCE {
-- Container for additional R99 extensions
        radioBearerReleaseComplete-r3-add-ext BIT STRING OPTIONAL,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
}

-- *****
--
-- RADIO BEARER RELEASE FAILURE
--
-- *****

```

```

RadioBearerReleaseFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
  -- Radio bearer IEs
  potentiallySuccessfulBearerList RB-IdentityList                OPTIONAL,
  laterNonCriticalExtensions      SEQUENCE {
    -- Container for additional R99 extensions
    radioBearerReleaseFailure-r3-add-ext BIT STRING            OPTIONAL,
    nonCriticalExtensions           SEQUENCE {}                  OPTIONAL
  }
}

-- *****
--
-- RADIO BEARER SETUP
--
-- *****

RadioBearerSetup ::= CHOICE {
  r3
    SEQUENCE {
      radioBearerSetup-r3          RadioBearerSetup-r3-IEs,
      v3a0NonCriticalExtensions    SEQUENCE {
        radioBearerSetup-v3a0ext   RadioBearerSetup-v3a0ext,
        laterNonCriticalExtensions SEQUENCE {
          -- Container for additional R99 extensions
          radioBearerSetup-r3-add-ext BIT STRING            OPTIONAL,
          v4xyNonCriticalExtensions SEQUENCE {
            radioBearerSetup-v4xyext RadioBearerSetup-v4xyext-IEs,
            nonCriticalExtensions    SEQUENCE {}            OPTIONAL
          }
        } OPTIONAL
      } OPTIONAL
    },
  later-than-r3
    SEQUENCE {
      rrc-TransactionIdentifier      RRC-TransactionIdentifier,
      criticalExtensions             CHOICE {
        r4
          SEQUENCE {
            radioBearerSetup-r4      RadioBearerSetup-r4-IEs,
            nonCriticalExtensions    SEQUENCE {}                OPTIONAL
          },
        r5
          CHOICE {
            radioBearerSetup-r5      RadioBearerSetup-r5-IEs,
            nonCriticalExtensions    SEQUENCE {}                OPTIONAL
          },
        criticalExtensions          SEQUENCE {}
      }
    }
}

RadioBearerSetup-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo              CipheringModeInfo                OPTIONAL,
  activationTime                  ActivationTime                    OPTIONAL,
  new-U-RNTI                      U-RNTI                          OPTIONAL,
  new-C-RNTI                      C-RNTI                          OPTIONAL,
  rrc-StateIndicator              RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                    URA-Identity                    OPTIONAL,
  -- Core network IEs
  cn-InformationInfo              CN-InformationInfo            OPTIONAL,
  -- Radio bearer IEs
  srb-InformationSetupList        SRB-InformationSetupList        OPTIONAL,
  rab-InformationSetupList        RAB-InformationSetupList        OPTIONAL,
  rb-InformationAffectedList      RB-InformationAffectedList      OPTIONAL,
  dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo  OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo            UL-CommonTransChInfo            OPTIONAL,
  ul-deletedTransChInfoList       UL-DeletedTransChInfoList       OPTIONAL,
  ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList     OPTIONAL,
  modeSpecificTransChInfo         CHOICE {
    fdd
      SEQUENCE {
        cpch-SetID                  CPCH-SetID                    OPTIONAL,

```

```

        addReconfTransChDRAC-Info          DRAC-StaticInformationList  OPTIONAL
    },
    tdd                                     NULL
}
dl-CommonTransChInfo                     DL-CommonTransChInfo          OPTIONAL,
dl-DeletedTransChInfoList                 DL-DeletedTransChInfoList     OPTIONAL,
dl-AddReconfTransChInfoList               DL-AddReconfTransChInfoList   OPTIONAL,
-- Physical channel IEs
frequencyInfo                             FrequencyInfo                  OPTIONAL,
maxAllowedUL-TX-Power                     MaxAllowedUL-TX-Power         OPTIONAL,
ul-ChannelRequirement                     UL-ChannelRequirement         OPTIONAL,
modeSpecificPhysChInfo                    CHOICE {
    fdd                                     SEQUENCE {
        dl-PDSCH-Information               DL-PDSCH-Information         OPTIONAL
    },
    tdd                                     NULL
},
dl-CommonInformation                       DL-CommonInformation          OPTIONAL,
dl-InformationPerRL-List                   DL-InformationPerRL-List      OPTIONAL
}

RadioBearerSetup-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI                           DSCH-RNTI                     OPTIONAL
}

RadioBearerSetup-v4xyext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- ssdt-UL extends SSdT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL                                 SSdT-UL-r4                     OPTIONAL,
    -- The order of the RLs in IE cell-id-PerRL-List is the same as
    -- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List                       CellIdentity-PerRL-List        OPTIONAL
}

RadioBearerSetup-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo             IntegrityProtectionModeInfo     OPTIONAL,
    cipheringModeInfo                       CipheringModeInfo               OPTIONAL,
    activationTime                           ActivationTime                   OPTIONAL,
    new-U-RNTI                               U-RNTI                         OPTIONAL,
    new-C-RNTI                               C-RNTI                         OPTIONAL,
    new-DSCH-RNTI                           DSCH-RNTI                      OPTIONAL,
    rrc-StateIndicator                       RRC-StateIndicator             OPTIONAL,
    utran-DRX-CycleLengthCoeff              UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                             URA-Identity                   OPTIONAL,
    -- Core network IEs
    cn-InformationInfo                       CN-InformationInfo             OPTIONAL,
    -- Radio bearer IEs
    srb-InformationSetupList                 SRB-InformationSetupList       OPTIONAL,
    rab-InformationSetupList                 RAB-InformationSetupList-r4     OPTIONAL,
    rb-InformationAffectedList               RB-InformationAffectedList      OPTIONAL,
    dl-CounterSynchronisationInfo           DL-CounterSynchronisationInfo   OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo-r4                 UL-CommonTransChInfo-r4        OPTIONAL,
    ul-deletedTransChInfoList               UL-DeletedTransChInfoList       OPTIONAL,
    ul-AddReconfTransChInfoList             UL-AddReconfTransChInfoList     OPTIONAL,
    modeSpecificTransChInfo                  CHOICE {
        fdd                                 SEQUENCE {
            cpch-SetID                       CPCH-SetID                     OPTIONAL,
            addReconfTransChDRAC-Info        DRAC-StaticInformationList     OPTIONAL
        },
        tdd                                 NULL
    }
},
dl-CommonTransChInfo-r4                   DL-CommonTransChInfo-r4        OPTIONAL,
dl-DeletedTransChInfoList-r4               DL-DeletedTransChInfoList-r4    OPTIONAL,
dl-AddReconfTransChInfoList-r4            DL-AddReconfTransChInfoList-r4  OPTIONAL,
-- Physical channel IEs
frequencyInfo                             FrequencyInfo                    OPTIONAL,
maxAllowedUL-TX-Power                     MaxAllowedUL-TX-Power           OPTIONAL,
ul-ChannelRequirement-r4                   UL-ChannelRequirement-r4        OPTIONAL,
modeSpecificPhysChInfo                     CHOICE {
    fdd                                     SEQUENCE {
        dl-PDSCH-Information               DL-PDSCH-Information         OPTIONAL
    },
    tdd                                     NULL
},
},

```

```

    dl-CommonInformation          DL-CommonInformation-r4          OPTIONAL,
    dl-InformationPerRL-List      DL-InformationPerRL-List-r4      OPTIONAL
}

RadioBearerSetup-r5-IEs ::= SEQUENCE {
-- User equipment IEs
    integrityProtectionModeInfo  IntegrityProtectionModeInfo      OPTIONAL,
    cipheringModeInfo            CipheringModeInfo                 OPTIONAL,
    activationTime                ActivationTime                     OPTIONAL,
    new-U-RNTI                    U-RNTI                           OPTIONAL,
    new-C-RNTI                    C-RNTI                           OPTIONAL,
    new-DSCH-RNTI                 DSCH-RNTI                        OPTIONAL,
    new-H-RNTI                    H-RNTI                           OPTIONAL,
    rrc-StateIndicator            RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                  URA-Identity                     OPTIONAL,
-- Core network IEs
    cn-InformationInfo            CN-InformationInfo               OPTIONAL,
-- Radio bearer IEs
    srb-InformationSetupList      SRB-InformationSetupList         OPTIONAL,
    rab-InformationSetupList      RAB-InformationSetupList-r4      OPTIONAL,
    rb-InformationAffectedList    RB-InformationAffectedList-r5    OPTIONAL,
    dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5 OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo         UL-CommonTransChInfo-r4         OPTIONAL,
    ul-deletedTransChInfoList    UL-DeletedTransChInfoList       OPTIONAL,
    ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList     OPTIONAL,
    modeSpecificTransChInfo      CHOICE {
        fdd                      SEQUENCE {
            cpch-SetID            CPCH-SetID                      OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList     OPTIONAL
        },
        tdd                      NULL
    }
    dl-CommonTransChInfo         DL-CommonTransChInfo-r4         OPTIONAL,
    dl-DeletedTransChInfoList    DL-DeletedTransChInfoList-r5    OPTIONAL,
    dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList-r5  OPTIONAL,
-- Physical channel IEs
    frequencyInfo                FrequencyInfo                     OPTIONAL,
    maxAllowedUL-TX-Power        MaxAllowedUL-TX-Power           OPTIONAL,
    ul-ChannelRequirement        UL-ChannelRequirement-r5        OPTIONAL,
    modeSpecificPhysChInfo      CHOICE {
        fdd                      SEQUENCE {
            dl-PDSCH-Information  DL-PDSCH-Information           OPTIONAL
        },
        tdd                      NULL
    },
    dl-HSPDSCH-Information       DL-HSPDSCH-Information          OPTIONAL,
    dl-CommonInformation         DL-CommonInformation-r54        OPTIONAL,
    dl-InformationPerRL-List     DL-InformationPerRL-List-r5    OPTIONAL
}

-- *****
--
-- RADIO BEARER SETUP COMPLETE
--
-- *****

RadioBearerSetupComplete ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier     RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo    IntegrityProtActivationInfo      OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance             UL-TimingAdvance                OPTIONAL,
    start-Value                  START-Value                     OPTIONAL,
-- Radio bearer IEs
    count-C-ActivationTime       ActivationTime                   OPTIONAL,
    rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList       OPTIONAL,
    ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo   OPTIONAL,
    laterNonCriticalExtensions    SEQUENCE {
        -- Container for additional R99 extensions
        radioBearerSetupComplete-r3-add-ext BIT STRING OPTIONAL,
        nonCriticalExtensions      SEQUENCE {} OPTIONAL
    }
    } OPTIONAL
}

-- *****

```

```

--
-- RADIO BEARER SETUP FAILURE
--
-- *****

RadioBearerSetupFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
  -- Radio bearer IEs
  potentiallySuccessfulBearerList RB-IdentityList          OPTIONAL,
  laterNonCriticalExtensions     SEQUENCE {
    -- Container for additional R99 extensions
    radioBearerSetupFailure-r3-add-ext BIT STRING          OPTIONAL,
    nonCriticalExtensions           SEQUENCE {}              OPTIONAL
  } OPTIONAL
}

-- *****
--
-- RRC CONNECTION REJECT
--
-- *****

RRCConnectionReject ::= CHOICE {
  r3 SEQUENCE {
    rrcConnectionReject-r3      RRCConnectionReject-r3-IEs,
    laterNonCriticalExtensions  SEQUENCE {
      -- Container for additional R99 extensions
      rrcConnectionReject-r3-add-ext BIT STRING          OPTIONAL,
      nonCriticalExtensions      SEQUENCE {}              OPTIONAL
    } OPTIONAL
  },
  later-than-r3 SEQUENCE {
    initialUE-Identity          InitialUE-Identity,
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    criticalExtensions          SEQUENCE {}
  }
}

RRCConnectionReject-r3-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  initialUE-Identity          InitialUE-Identity,
  rrc-TransactionIdentifier    RRC-TransactionIdentifier,
  rejectionCause              RejectionCause,
  waitTime                    WaitTime,
  redirectionInfo              RedirectionInfo          OPTIONAL
}

-- *****
--
-- RRC CONNECTION RELEASE
--
-- *****

RRCConnectionRelease ::= CHOICE {
  r3 SEQUENCE {
    rrcConnectionRelease-r3      RRCConnectionRelease-r3-IEs,
    laterNonCriticalExtensions  SEQUENCE {
      -- Container for additional R99 extensions
      rrcConnectionRelease-r3-add-ext BIT STRING          OPTIONAL,
      nonCriticalExtensions      SEQUENCE {}              OPTIONAL
    } OPTIONAL
  },
  later-than-r3 SEQUENCE {
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    criticalExtensions          CHOICE {
      r4 SEQUENCE {
        rrcConnectionRelease-r4      RRCConnectionRelease-r4-IEs,
        nonCriticalExtensions        SEQUENCE {}              OPTIONAL
      },
      criticalExtensions          SEQUENCE {}
    }
  }
}

RRCConnectionRelease-r3-IEs ::= SEQUENCE {

```

```

-- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- n-308 is conditional on the UE state
  n-308                          N-308                                OPTIONAL,
  releaseCause                   ReleaseCause,
  rplmn-information              Rplmn-Information                OPTIONAL
}

RRCCConnectionRelease-r4-IEs ::= SEQUENCE {
  -- User equipment IEs
  -- n-308 is conditional on the UE state.
  n-308                          N-308                                OPTIONAL,
  releaseCause                   ReleaseCause,
  rplmn-information              Rplmn-Information-r4            OPTIONAL
}

RRCCConnectionRelease-r5-IEs ::= SEQUENCE {
  -- User equipment IEs
  -- n-308 is conditional on the UE state.
  n-308                          N-308                                OPTIONAL,
  releaseCause                   ReleaseCause,
  rplmn-information              Rplmn-Information-r4            OPTIONAL
}

-- *****
--
-- RRC CONNECTION RELEASE for CCCH
--
-- *****

RRCCConnectionRelease-CCCH ::= CHOICE {
  r3                               SEQUENCE {
    rrcConnectionRelease-CCCH-r3  RRCCConnectionRelease-CCCH-r3-IEs,
    laterNonCriticalExtensions     SEQUENCE {
      -- Container for additional R99 extensions
      rrcConnectionRelease-CCCH-r3-add-ext  BIT STRING      OPTIONAL,
      nonCriticalExtensions              SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  later-than-r3                    SEQUENCE {
    u-RNTI                          U-RNTI,
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    criticalExtensions              CHOICE {
      r4                               SEQUENCE {
        rrcConnectionRelease-CCCH-r4  RRCCConnectionRelease-CCCH-r4-IEs,
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
      },
      later-than-r4                  CHOICE {
        r5                               SEQUENCE {
          rrcConnectionRelease-CCCH-r5  RRCCConnectionRelease-CCCH-r5-IEs,
          nonCriticalExtensions          SEQUENCE {} OPTIONAL
        },
        criticalExtensions              SEQUENCE {}
      }
    }
  }
}

RRCCConnectionRelease-CCCH-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  u-RNTI                          U-RNTI,
  -- The rest of the message is identical to the one sent on DCCH.
  rrcConnectionRelease            RRCCConnectionRelease-r3-IEs
}

RRCCConnectionRelease-CCCH-r4-IEs ::= SEQUENCE {
  -- The rest of the message is identical to the one sent on DCCH.
  rrcConnectionRelease            RRCCConnectionRelease-r4-IEs
}

RRCCConnectionRelease-CCCH-r5-IEs ::= SEQUENCE {
  --
  -- TABULAR:
  -- CHOICE IdentityType (U-RNTI, GroupIdentity) is replaced with
  -- an optional IE GroupIdentity, since the U-RNTI is mandatory in ASN.1.
  -- In case CHOICE IdentityType is equal to GroupIdentity
  -- the value of the U-RNTI shall be ignored by a UE
  -- complying with this version of the message.

```

```

--
-- User equipment IEs
  groupIdentity                SEQUENCE ( SIZE (1 .. maxURNTI-Group) ) OF
                                GroupReleaseInformation OPTIONAL,
-- The rest of the message is identical to the one sent on DCCH.
  rrcConnectionRelease        RRCCConnectionRelease-r5-IEs
}

-- *****
--
-- RRC CONNECTION RELEASE COMPLETE
--
-- *****

RRCCConnectionReleaseComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier    RRC-TransactionIdentifier,
  errorIndication              FailureCauseWithProtErr          OPTIONAL,
  laterNonCriticalExtensions   SEQUENCE {
    -- Container for additional R99 extensions
    rrcConnectionReleaseComplete-r3-add-ext  BIT STRING      OPTIONAL,
    nonCriticalExtensions                   SEQUENCE {}        OPTIONAL
  }
}

-- *****
--
-- RRC CONNECTION REQUEST
--
-- *****

RRCCConnectionRequest ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  initialUE-Identity           InitialUE-Identity,
  establishmentCause           EstablishmentCause,
  -- protocolErrorIndictator is MD, but for compactness reasons no default value
  -- has been assigned to it.
  protocolErrorIndicator       ProtocolErrorIndicator,
  -- Measurement IEs
  measuredResultsOnRACH        MeasuredResultsOnRACH          OPTIONAL,
  -- Non critical Extensions
  v3d0NonCriticalExtensions    SEQUENCE {
    rrcConnectionRequest-v3d0ext  RRCCConnectionRequest-v3d0ext-IEs,
    -- Reserved for future non critical extension
    v4xyNonCriticalExtensions     SEQUENCE {
      rrcConnectionRequest-v4xyext  RRCCConnectionRequest-v4xyext-IEs,
      v5xyNonCriticalExtensions     SEQUENCE {
        rrcConnectionRequest-v5xyext  RRCCConnectionRequest-v5xyext-IEs,
        -- Reserved for future non critical extension
        nonCriticalExtensions         SEQUENCE {}        OPTIONAL
      }
    }
  }
}

RRCCConnectionRequest-v3d0ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ueSpecificBehaviourInformationIdle  UESpecificBehaviourInformationIdle  OPTIONAL
}

RRCCConnectionRequest-v4xyext-IEs ::= SEQUENCE {
  -- User equipment IEs
  accessStratumReleaseIndicator       AccessStratumReleaseIndicator
}

RRCCConnectionRequest-v5xyext-IEs ::= SEQUENCE {
  -- User equipment IEs
  predefinedConfigStatusInfo          BOOLEAN
}

-- *****
--
-- RRC CONNECTION SETUP
--
-- *****

RRCCConnectionSetup ::= CHOICE {

```

```

r3          SEQUENCE {
  rrcConnectionSetup-r3          RRCConnectionSetup-r3-IEs,
  laterNonCriticalExtensions      SEQUENCE {
    -- Container for additional R99 extensions
    rrcConnectionSetup-r3-add-ext  BIT STRING          OPTIONAL,
    v4xyNonCriticalExtensions      SEQUENCE {
      rrcConnectionSetup-v4xyext  RRCConnectionSetup-v4xyext-IEs,
      nonCriticalExtensions        SEQUENCE {}          OPTIONAL
    } OPTIONAL
  } OPTIONAL
},
later-than-r3          SEQUENCE {
  initialUE-Identity             InitialUE-Identity,
  rrc-TransactionIdentifier       RRC-TransactionIdentifier,
  criticalExtensions              CHOICE {
    r4          SEQUENCE {
      rrcConnectionSetup-r4          RRCConnectionSetup-r4-IEs,
      nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    },
    later-than-r4          CHOICE {
      r5          SEQUENCE {
        rrcConnectionSetup-r5          RRCConnectionSetup-r5-IEs,
        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
      },
      criticalExtensions              SEQUENCE {}
    }
  }
}
}
}

```

```

RRCConnectionSetup-r3-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  initialUE-Identity             InitialUE-Identity,
  rrc-TransactionIdentifier       RRC-TransactionIdentifier,
  activationTime                  ActivationTime          OPTIONAL,
  new-U-RNTI                     U-RNTI,
  new-c-RNTI                     C-RNTI                OPTIONAL,
  rrc-StateIndicator             RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient,
  -- TABULAR: If capacityUpdateRequest is not present, the default value
  -- defined in 10.3.3.2 shall be used.
  capabilityUpdateRequirement     CapabilityUpdateRequirement  OPTIONAL,
  -- Radio bearer IEs
  srb-InformationSetupList        SRB-InformationSetupList2,
  -- Transport channel IEs
  ul-CommonTransChInfo           UL-CommonTransChInfo      OPTIONAL,
  -- NOTE: ul-AddReconfTransChInfoList should be optional in later versions of
  -- this message
  ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList,
  dl-CommonTransChInfo           DL-CommonTransChInfo      OPTIONAL,
  -- NOTE: dl-AddReconfTransChInfoList should be optional in later versions
  -- of this message
  dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList,
  -- Physical channel IEs
  frequencyInfo                  FrequencyInfo          OPTIONAL,
  maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power  OPTIONAL,
  ul-ChannelRequirement           UL-ChannelRequirement  OPTIONAL,
  dl-CommonInformation            DL-CommonInformation   OPTIONAL,
  dl-InformationPerRL-List        DL-InformationPerRL-List  OPTIONAL
}

```

```

RRCConnectionSetup-v4xyext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4-ext  CapabilityUpdateRequirement-r4-ext  OPTIONAL,
  -- Physical channel IEs
  -- ssdt-UL extends SSDT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL                          SSDT-UL-r4          OPTIONAL,
  -- The order of the RLs in IE cell-id-PerRL-List is the same as
  -- in IE DL-InformationPerRL-List included in this message
  cell-id-PerRL-List                CellIdentity-PerRL-List  OPTIONAL
}

```

```

RRCConnectionSetup-r4-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  activationTime                  ActivationTime          OPTIONAL,
  new-U-RNTI                     U-RNTI,
  new-c-RNTI                     C-RNTI                OPTIONAL,

```

```

rrc-StateIndicator          RRC-StateIndicator,
utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient,
-- TABULAR: If capabilityUpdateRequirements is not present, the default value
-- defined in 10.3.3.2 shall be used.
capabilityUpdateRequirement  CapabilityUpdateRequirement-r4      OPTIONAL,
-- Radio bearer IEs
  srb-InformationSetupList    SRB-InformationSetupList2,
-- Transport channel IEs
  ul-CommonTransChInfo       UL-CommonTransChInfo          OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList      OPTIONAL,
  dl-CommonTransChInfo       DL-CommonTransChInfo-r4        OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList      OPTIONAL,
-- Physical channel IEs
  frequencyInfo              FrequencyInfo                OPTIONAL,
  maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power          OPTIONAL,
  ul-ChannelRequirement      UL-ChannelRequirement-r4      OPTIONAL,
  dl-CommonInformation       DL-CommonInformation-r4        OPTIONAL,
  dl-InformationPerRL-List    DL-InformationPerRL-List-r4    OPTIONAL
}

RRCConnectionSetup-r5-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall not be performed on this message.
  activationTime              ActivationTime                OPTIONAL,
  new-U-RNTI                  U-RNTI,
  new-c-RNTI                  C-RNTI                    OPTIONAL,
  rrc-StateIndicator          RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient,
-- TABULAR: If capabilityUpdateRequirements is not present, the default value
-- defined in 10.3.3.2 shall be used.
  capabilityUpdateRequirement  CapabilityUpdateRequirement-r4      OPTIONAL,
-- Specification mode information
  specificationMode           CHOICE {
    complete                   SEQUENCE {
-- Radio bearer IEs
      srb-InformationSetupList  SRB-InformationSetupList2,
-- Transport channel IEs
      ul-CommonTransChInfo     UL-CommonTransChInfo          OPTIONAL,
      ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList      OPTIONAL,
      dl-CommonTransChInfo     DL-CommonTransChInfo-r4        OPTIONAL,
      dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList      OPTIONAL
    },
    preconfiguration           SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
      preConfigMode            CHOICE {
        predefinedConfigIdentity  PredefinedConfigIdentity,
        defaultConfig            SEQUENCE {
          defaultConfigMode      DefaultConfigMode,
          defaultConfigIdentity  DefaultConfigIdentity-r5
        }
      }
    }
  },
-- Physical channel IEs
  frequencyInfo              FrequencyInfo                OPTIONAL,
  maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power          OPTIONAL,
  ul-ChannelRequirement      UL-ChannelRequirement-r4      OPTIONAL,
  dl-CommonInformation       DL-CommonInformation-r4        OPTIONAL,
  dl-InformationPerRL-List    DL-InformationPerRL-List-r4    OPTIONAL
}

-- *****
--
-- RRC CONNECTION SETUP COMPLETE
--
-- *****

RRCConnectionSetupComplete ::= SEQUENCE {
-- TABULAR: Integrity protection shall not be performed on this message.
-- User equipment IEs
  rrc-TransactionIdentifier    RRC-TransactionIdentifier,
  startList                    STARTList,
  ue-RadioAccessCapability     UE-RadioAccessCapability      OPTIONAL,
-- Other IEs
  ue-RATSpecificCapability     InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
-- Non critical extensions
  v370NonCriticalExtensions    SEQUENCE {

```



```

-- Non-RRC IEs
  failureCauseWithProtErr          FailureCauseWithProtErr
}
-- *****
--
-- RRC STATUS
-- *****

RRCStatus ::= SEQUENCE {
  -- Other IEs
  -- TABULAR: Identification of received message is nested in
  -- ProtocolErrorMoreInformation
  protocolErrorInformation          ProtocolErrorMoreInformation,
  laterNonCriticalExtensions        SEQUENCE {
    -- Container for additional R99 extensions
    rrcStatus-r3-add-ext            BIT STRING          OPTIONAL,
    nonCriticalExtensions           SEQUENCE {}          OPTIONAL
  } OPTIONAL
}

-- *****
--
-- SECURITY MODE COMMAND
-- *****

SecurityModeCommand ::= CHOICE {
  r3                                 SEQUENCE {
    securityModeCommand-r3          SecurityModeCommand-r3-IEs,
    laterNonCriticalExtensions       SEQUENCE {
      -- Container for additional R99 extensions
      securityModeCommand-r3-add-ext BIT STRING          OPTIONAL,
      nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    } OPTIONAL
  },
  later-than-r3                      SEQUENCE {
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    criticalExtensions               SEQUENCE {}
  }
}

SecurityModeCommand-r3-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.
  -- User equipment IEs
  rrc-TransactionIdentifier          RRC-TransactionIdentifier,
  securityCapability                  SecurityCapability,
  cipheringModeInfo                  CipheringModeInfo          OPTIONAL,
  integrityProtectionModeInfo        IntegrityProtectionModeInfo  OPTIONAL,
  -- Core network IEs
  cn-DomainIdentity                  CN-DomainIdentity,
  -- Other IEs
  ue-SystemSpecificSecurityCap       InterRAT-UE-SecurityCapList  OPTIONAL
}

-- *****
--
-- SECURITY MODE COMPLETE
-- *****

SecurityModeComplete ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.
  -- User equipment IEs
  rrc-TransactionIdentifier          RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo         IntegrityProtActivationInfo  OPTIONAL,
  -- Radio bearer IEs
  rb-UL-CiphActivationTimeInfo       RB-ActivationTimeInfoList  OPTIONAL,
  laterNonCriticalExtensions         SEQUENCE {
    -- Container for additional R99 extensions
    securityModeComplete-r3-add-ext  BIT STRING          OPTIONAL,
    nonCriticalExtensions             SEQUENCE {}          OPTIONAL
  } OPTIONAL
}

-- *****

```

```

--
-- SECURITY MODE FAILURE
--
-- *****

SecurityModeFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
  laterNonCriticalExtensions     SEQUENCE {
    -- Container for additional R99 extensions
    securityModeFailure-r3-add-ext  BIT STRING      OPTIONAL,
    nonCriticalExtensions           SEQUENCE {}      OPTIONAL
  } OPTIONAL
}

-- *****
--
-- SIGNALLING CONNECTION RELEASE
--
-- *****

SignallingConnectionRelease ::= CHOICE {
  r3                             SEQUENCE {
    signallingConnectionRelease-r3  SignallingConnectionRelease-r3-IEs,
    laterNonCriticalExtensions     SEQUENCE {
      -- Container for additional R99 extensions
      signallingConnectionRelease-r3-add-ext  BIT STRING      OPTIONAL,
      nonCriticalExtensions           SEQUENCE {}      OPTIONAL
    } OPTIONAL
  },
  later-than-r3                  SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions            SEQUENCE {}
  }
}

SignallingConnectionRelease-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- Core network IEs
  cn-DomainIdentity             CN-DomainIdentity
}

-- *****
--
-- SIGNALLING CONNECTION RELEASE INDICATION
--
-- *****

SignallingConnectionReleaseIndication ::= SEQUENCE {
  -- Core network IEs
  cn-DomainIdentity             CN-DomainIdentity,
  laterNonCriticalExtensions     SEQUENCE {
    -- Container for additional R99 extensions
    signallingConnectionReleaseIndication-r3-add-ext  BIT STRING      OPTIONAL,
    nonCriticalExtensions           SEQUENCE {}      OPTIONAL
  } OPTIONAL
}

-- *****
--
-- SYSTEM INFORMATION for BCH
--
-- *****

SystemInformation-BCH ::= SEQUENCE {
  -- Other information elements
  sfn-Prime                     SFN-Prime,
  payload                       CHOICE {
    noSegment                    NULL,
    firstSegment                 FirstSegment,
    subsequentSegment            SubsequentSegment,
    lastSegmentShort             LastSegmentShort,
    lastAndFirst                 SEQUENCE {
      lastSegmentShort           LastSegmentShort,
      firstSegment               FirstSegmentShort
    }
  },
}

```

```

        lastAndComplete          SEQUENCE {
            lastSegmentShort      LastSegmentShort,
            completeSIB-List      CompleteSIB-List
        },
        lastAndCompleteAndFirst  SEQUENCE {
            lastSegmentShort      LastSegmentShort,
            completeSIB-List      CompleteSIB-List,
            firstSegment          FirstSegmentShort
        },
        completeSIB-List         CompleteSIB-List,
        completeAndFirst         SEQUENCE {
            completeSIB-List      CompleteSIB-List,
            firstSegment          FirstSegmentShort
        },
        completeSIB              CompleteSIB,
        lastSegment              LastSegment,
        spare5                   NULL,
        spare4                   NULL,
        spare3                   NULL,
        spare2                   NULL,
        spare1                   NULL
    }
}

```

```

-- *****
--
-- SYSTEM INFORMATION for FACH
--
-- *****

```

```

SystemInformation-FACH ::= SEQUENCE {
    -- Other information elements
    payload CHOICE {
        noSegment          NULL,
        firstSegment       FirstSegment,
        subsequentSegment  SubsequentSegment,
        lastSegmentShort   LastSegmentShort,
        lastAndFirst       SEQUENCE {
            lastSegmentShort LastSegmentShort,
            firstSegment     FirstSegmentShort
        },
        lastAndComplete    SEQUENCE {
            lastSegmentShort LastSegmentShort,
            completeSIB-List CompleteSIB-List
        },
        lastAndCompleteAndFirst SEQUENCE {
            lastSegmentShort LastSegmentShort,
            completeSIB-List CompleteSIB-List,
            firstSegment     FirstSegmentShort
        },
        completeSIB-List   CompleteSIB-List,
        completeAndFirst   SEQUENCE {
            completeSIB-List CompleteSIB-List,
            firstSegment     FirstSegmentShort
        },
        completeSIB        CompleteSIB,
        lastSegment        LastSegment,
        spare5             NULL,
        spare4             NULL,
        spare3             NULL,
        spare2             NULL,
        spare1             NULL
    }
}

```

```

-- *****
--
-- First segment
--
-- *****

```

```

FirstSegment ::= SEQUENCE {
    -- Other information elements
    sib-Type          SIB-Type,
    seg-Count         SegCount,
    sib-Data-fixed    SIB-Data-fixed
}

```

```

-- *****
--
-- First segment (short)
--
-- *****

FirstSegmentShort ::=                SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    seg-Count                SegCount,
    sib-Data-variable        SIB-Data-variable
}

-- *****
--
-- Subsequent segment
--
-- *****

SubsequentSegment ::=                SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    segmentIndex            SegmentIndex,
    sib-Data-fixed          SIB-Data-fixed
}

-- *****
--
-- Last segment
--
-- *****

LastSegment ::=                    SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    segmentIndex            SegmentIndex,
    -- For sib-Data-fixed, in case the SIB data is less than 222 bits, padding
    -- shall be used. The same padding bits shall be used as defined in clause 12.1
    sib-Data-fixed          SIB-Data-fixed
}

LastSegmentShort ::=                SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    segmentIndex            SegmentIndex,
    sib-Data-variable        SIB-Data-variable
}

-- *****
--
-- Complete SIB
--
-- *****

CompleteSIB-List ::=                SEQUENCE (SIZE (1..maxSIBperMsg)) OF
    CompleteSIBshort

CompleteSIB ::=                    SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    -- For sib-Data-fixed, in case the SIB data is less than 226 bits, padding
    -- shall be used. The same padding bits shall be used as defined in clause 12.1
    sib-Data-fixed          BIT STRING (SIZE (226))
}

CompleteSIBshort ::=                SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    sib-Data-variable        SIB-Data-variable
}

-- *****
--
-- SYSTEM INFORMATION CHANGE INDICATION
--
-- *****

SystemInformationChangeIndication ::= SEQUENCE {

```

```

-- Other IEs
  bcch-ModificationInfo          BCCH-ModificationInfo,
  laterNonCriticalExtensions      SEQUENCE {
    -- Container for additional R99 extensions
    systemInformationChangeIndication-r3-add-ext  BIT STRING  OPTIONAL,
    nonCriticalExtensions          SEQUENCE {}  OPTIONAL
  }
}

-- *****
--
-- TRANSPORT CHANNEL RECONFIGURATION
--
-- *****

TransportChannelReconfiguration ::= CHOICE {
  r3          SEQUENCE {
    transportChannelReconfiguration-r3
    v3a0NonCriticalExtensions          SEQUENCE {
      transportChannelReconfiguration-v3a0ext
      laterNonCriticalExtensions      SEQUENCE {
        -- Container for additional R99 extensions
        transportChannelReconfiguration-r3-add-ext  BIT STRING  OPTIONAL,
        v4xyNonCriticalExtensions      SEQUENCE {
          transportChannelReconfiguration-v4xyext
          nonCriticalExtensions        SEQUENCE {}  OPTIONAL
        }
      }
    }
  } OPTIONAL
},
  later-than-r3          SEQUENCE {
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    criticalExtensions              CHOICE {
      r4          SEQUENCE {
        transportChannelReconfiguration-r4
        nonCriticalExtensions          SEQUENCE {}  OPTIONAL
      },
      criticalExtensions              CHOICE {
        r5          SEQUENCE {
          transportChannelReconfiguration-r5
          nonCriticalExtensions        SEQUENCE {}  OPTIONAL
        },
        criticalExtensions              SEQUENCE {}
      }
    }
  }
}

TransportChannelReconfiguration-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier          RRC-TransactionIdentifier,
  integrityProtectionModeInfo        IntegrityProtectionModeInfo  OPTIONAL,
  cipheringModeInfo                  CipheringModeInfo  OPTIONAL,
  activationTime                      ActivationTime  OPTIONAL,
  new-U-RNTI                          U-RNTI  OPTIONAL,
  new-C-RNTI                          C-RNTI  OPTIONAL,
  rrc-StateIndicator                  RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff          UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- Core network IEs
  cn-InformationInfo                  CN-InformationInfo  OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                        URA-Identity  OPTIONAL,
  -- Radio bearer IEs
  dl-CounterSynchronisationInfo        DL-CounterSynchronisationInfo  OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo                UL-CommonTransChInfo  OPTIONAL,
  ul-AddReconfTransChInfoList          UL-AddReconfTransChInfoList  OPTIONAL,
  modeSpecificTransChInfo              CHOICE {
    fdd          SEQUENCE {
      cpch-SetID          CPCH-SetID  OPTIONAL,
      addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
    },
    tdd          NULL
  }
}

```

```

    }
    dl-CommonTransChInfo          DL-CommonTransChInfo          OPTIONAL,
    dl-AddReconfTransChInfoList   DL-AddReconfTransChInfoList  OPTIONAL,
-- Physical channel IEs
  frequencyInfo                  FrequencyInfo              OPTIONAL,
  maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power      OPTIONAL,
  ul-ChannelRequirement          UL-ChannelRequirement     OPTIONAL,
  modeSpecificPhysChInfo        CHOICE {
    fdd                           SEQUENCE {
      dl-PDSCH-Information        DL-PDSCH-Information     OPTIONAL
    },
    tdd                           NULL
  },
  dl-CommonInformation           DL-CommonInformation      OPTIONAL,
  dl-InformationPerRL-List       DL-InformationPerRL-List  OPTIONAL
}

TransportChannelReconfiguration-v3a0ext ::= SEQUENCE {
  new-DSCH-RNTI                  DSCH-RNTI                  OPTIONAL
}

TransportChannelReconfiguration-v4xyext-IEs ::= SEQUENCE {
-- Physical channel IEs
  -- ssdt-UL extends SSdT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL                        SSdT-UL-r4                      OPTIONAL,
  -- The order of the RLs in IE cell-id-PerRL-List is the same as
  -- in IE DL-InformationPerRL-List included in this message
  cell-id-PerRL-List             CellIdentity-PerRL-List    OPTIONAL
}

TransportChannelReconfiguration-r4-IEs ::= SEQUENCE {
-- User equipment IEs
  integrityProtectionModeInfo    IntegrityProtectionModeInfo  OPTIONAL,
  cipheringModeInfo              CipheringModeInfo             OPTIONAL,
  activationTime                  ActivationTime                  OPTIONAL,
  new-U-RNTI                      U-RNTI                       OPTIONAL,
  new-C-RNTI                      C-RNTI                       OPTIONAL,
  new-DSCH-RNTI                   DSCH-RNTI                    OPTIONAL,
  rrc-StateIndicator              RRC-StateIndicator           OPTIONAL,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
  cn-InformationInfo              CN-InformationInfo           OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                    URA-Identity                  OPTIONAL,
-- Radio bearer IEs
  dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo  OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo           UL-CommonTransChInfo-r4      OPTIONAL,
  ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList  OPTIONAL,
  modeSpecificTransChInfo        CHOICE {
    fdd                           SEQUENCE {
      cpch-SetID                  CPCH-SetID                  OPTIONAL,
      addReconfTransChDRAC-Info   DRAC-StaticInformationList  OPTIONAL
    },
    tdd                           NULL
  }
  dl-CommonTransChInfo           DL-CommonTransChInfo-r4      OPTIONAL,
  dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r4  OPTIONAL,
-- Physical channel IEs
  frequencyInfo                  FrequencyInfo                  OPTIONAL,
  maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power        OPTIONAL,
  ul-ChannelRequirement-r4       UL-ChannelRequirement-r4     OPTIONAL,
  modeSpecificPhysChInfo        CHOICE {
    fdd                           SEQUENCE {
      dl-PDSCH-Information        DL-PDSCH-Information     OPTIONAL
    },
    tdd                           NULL
  },
  dl-CommonInformation-r4        DL-CommonInformation-r4      OPTIONAL,
  dl-InformationPerRL-List-r4     DL-InformationPerRL-List-r4  OPTIONAL
}

TransportChannelReconfiguration-r5-IEs ::= SEQUENCE {
-- User equipment IEs
  integrityProtectionModeInfo    IntegrityProtectionModeInfo  OPTIONAL,
  cipheringModeInfo              CipheringModeInfo             OPTIONAL,
  activationTime                  ActivationTime                  OPTIONAL,

```

```

    new-U-RNTI                U-RNTI                OPTIONAL,
    new-C-RNTI                C-RNTI                OPTIONAL,
    new-DSCH-RNTI            DSCH-RNTI            OPTIONAL,
    new-H-RNTI                H-RNTI                OPTIONAL,
    rrc-StateIndicator        RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
  cn-InformationInfo          CN-InformationInfo          OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                URA-Identity                OPTIONAL,
-- Radio bearer IEs
  dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo-r5  OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo        UL-CommonTransChInfo-r4          OPTIONAL,
  ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList      OPTIONAL,
  modeSpecificTransChInfo      CHOICE {
    fdd                        SEQUENCE {
      cpch-SetID              CPCH-SetID              OPTIONAL,
      addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
    },
    tdd                        NULL
  }
  dl-CommonTransChInfo        DL-CommonTransChInfo-r4          OPTIONAL,
  dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList-r5   OPTIONAL,
-- Physical channel IEs
  frequencyInfo              FrequencyInfo              OPTIONAL,
  maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power      OPTIONAL,
  ul-ChannelRequirement      UL-ChannelRequirement-r5     OPTIONAL,
  modeSpecificPhysChInfo      CHOICE {
    fdd                        SEQUENCE {
      dl-PDSCH-Information    DL-PDSCH-Information    OPTIONAL
    },
    tdd                        NULL
  },
  dl-HSPDSCH-Information      DL-HSPDSCH-Information        OPTIONAL,
  dl-CommonInformation        DL-CommonInformation-r54       OPTIONAL,
  dl-InformationPerRL-List    DL-InformationPerRL-List-r5   OPTIONAL
}

-- *****
--
-- TRANSPORT CHANNEL RECONFIGURATION COMPLETE
--
-- *****

TransportChannelReconfigurationComplete ::= SEQUENCE {
-- User equipment IEs
  rrc-TransactionIdentifier    RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo    IntegrityProtActivationInfo    OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance            UL-TimingAdvance            OPTIONAL,
-- Radio bearer IEs
  count-C-ActivationTime        ActivationTime            OPTIONAL,
  rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList    OPTIONAL,
  ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo  OPTIONAL,
  laterNonCriticalExtensions    SEQUENCE {
    -- Container for additional R99 extensions
    transportChannelReconfigurationComplete-r3-add-ext  BIT STRING    OPTIONAL,
    nonCriticalExtensions    SEQUENCE {}    OPTIONAL
  }
}

-- *****
--
-- TRANSPORT CHANNEL RECONFIGURATION FAILURE
--
-- *****

TransportChannelReconfigurationFailure ::= SEQUENCE {
-- User equipment IEs
  rrc-TransactionIdentifier    RRC-TransactionIdentifier,
  failureCause                FailureCauseWithProtErr,
  laterNonCriticalExtensions    SEQUENCE {
    -- Container for additional R99 extensions
    transportChannelReconfigurationFailure-r3-add-ext  BIT STRING    OPTIONAL,
    nonCriticalExtensions    SEQUENCE {}    OPTIONAL
  }
}

```

```

-- *****
--
-- TRANSPORT FORMAT COMBINATION CONTROL in AM or UM RLC mode
--
-- *****

TransportFormatCombinationControl ::= SEQUENCE {
    -- rrc-TransactionIdentifier is always included in this message
    rrc-TransactionIdentifier      RRC-TransactionIdentifier      OPTIONAL,
    modeSpecificInfo              CHOICE {
        fdd                       NULL,
        tdd                       SEQUENCE {
            tfcs-ID                TFCS-Identity      OPTIONAL
        }
    },
    dpch-TFCS-InUplink            TFC-Subset,
    activationTimeForTFCSsubset   ActivationTime              OPTIONAL,
    tfc-ControlDuration           TFC-ControlDuration          OPTIONAL,
    laterNonCriticalExtensions    SEQUENCE {
        -- Container for additional R99 extensions
        transportFormatCombinationControl-r3-add-ext  BIT STRING      OPTIONAL,
        nonCriticalExtensions    SEQUENCE {}          OPTIONAL
    }
}

-- *****
--
-- TRANSPORT FORMAT COMBINATION CONTROL FAILURE
--
-- *****

TransportFormatCombinationControlFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    failureCause                  FailureCauseWithProtErr,
    laterNonCriticalExtensions    SEQUENCE {
        -- Container for additional R99 extensions
        transportFormatCombinationControlFailure-r3-add-ext  BIT STRING      OPTIONAL,
        nonCriticalExtensions    SEQUENCE {}          OPTIONAL
    }
}

-- *****
--
-- UE CAPABILITY ENQUIRY
--
-- *****

UECapabilityEnquiry ::= CHOICE {
    r3                             SEQUENCE {
        ueCapabilityEnquiry-r3      UECapabilityEnquiry-r3-IEs,
        laterNonCriticalExtensions  SEQUENCE {
            -- Container for additional R99 extensions
            ueCapabilityEnquiry-r3-add-ext  BIT STRING      OPTIONAL,
            v4xyNonCriticalExtensions    SEQUENCE {
                ueCapabilityEnquiry-v4xyext  UECapabilityEnquiry-v4xyext-IEs,
                nonCriticalExtensions    SEQUENCE {}          OPTIONAL
            }
        }
    }
},
    later-than-r3                  SEQUENCE {
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions             SEQUENCE {}
    }
}

UECapabilityEnquiry-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    capabilityUpdateRequirement    CapabilityUpdateRequirement
}

UECapabilityEnquiry-v4xyext-IEs ::= SEQUENCE {
    capabilityUpdateRequirement-r4-ext  CapabilityUpdateRequirement-r4-ext
}

-- *****

```

```

--
-- UE CAPABILITY INFORMATION
--
-- *****

UECapabilityInformation ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier      OPTIONAL,
  ue-RadioAccessCapability      UE-RadioAccessCapability      OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability      InterRAT-UE-RadioAccessCapabilityList
OPTIONAL,
  v370NonCriticalExtensions      SEQUENCE {
    ueCapabilityInformation-v370ext UECapabilityInformation-v370ext,
    v380NonCriticalExtensions      SEQUENCE {
      ueCapabilityInformation-v380ext UECapabilityInformation-v380ext-IEs,
      v3a0NonCriticalExtensions      SEQUENCE {
        ueCapabilityInformation-v3a0ext UECapabilityInformation-v3a0ext,
        laterNonCriticalExtensions      SEQUENCE {
          -- Container for additional R99 extensions
          ueCapabilityInformation-r3-add-ext BIT STRING OPTIONAL,
          -- Reserved for future non critical extension
          v4xyNonCriticalExtensions      SEQUENCE {
            ueCapabilityInformation-v4xyext UECapabilityInformation-v4xyext,
            v5xyNonCriticalExtensions      SEQUENCE {
              ueCapabilityInformation-v5xyext UECapabilityInformation-v5xyext,
              nonCriticalExtensions      SEQUENCE {} OPTIONAL
            } OPTIONAL
          } OPTIONAL
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  } OPTIONAL
}

UECapabilityInformation-v370ext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v370ext UE-RadioAccessCapability-v370ext OPTIONAL
}

UECapabilityInformation-v380ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v380ext UE-RadioAccessCapability-v380ext
OPTIONAL,
  dl-PhysChCapabilityFDD-v380ext DL-PhysChCapabilityFDD-v380ext
}

UECapabilityInformation-v3a0ext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v3a0ext UE-RadioAccessCapability-v3a0ext OPTIONAL
}

UECapabilityInformation-v4xyext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v4xyext UE-RadioAccessCapability-v4xyext
}

UECapabilityInformation-v5xyext ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v5xyext UE-RadioAccessCapability-v5xyext OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability-r5 InterRAT-UE-RadioAccessCapabilityList-r5 OPTIONAL
}

-- *****
--
-- UE CAPABILITY INFORMATION CONFIRM
--
-- *****

UECapabilityInformationConfirm ::= CHOICE {
  r3 SEQUENCE {
    ueCapabilityInformationConfirm-r3
      UECapabilityInformationConfirm-r3-IEs,
    laterNonCriticalExtensions SEQUENCE {
      -- Container for additional R99 extensions
      ueCapabilityInformationConfirm-r3-add-ext BIT STRING OPTIONAL,

```

```

        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    } OPTIONAL
},
later-than-r3                          SEQUENCE {
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    criticalExtensions                 SEQUENCE {}
}
}

UECapabilityInformationConfirm-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier
}

-- *****
--
-- UPLINK DIRECT TRANSFER
--
-- *****

UplinkDirectTransfer ::= SEQUENCE {
    -- Core network IEs
    cn-DomainIdentity                 CN-DomainIdentity,
    nas-Message                        NAS-Message,
    -- Measurement IEs
    measuredResultsOnRACH              MeasuredResultsOnRACH          OPTIONAL,
    laterNonCriticalExtensions         SEQUENCE {
        -- Container for additional R99 extensions
        uplinkDirectTransfer-r3-add-ext BIT STRING          OPTIONAL,
        nonCriticalExtensions         SEQUENCE {}          OPTIONAL
    } OPTIONAL
}

-- *****
--
-- UPLINK PHYSICAL CHANNEL CONTROL
--
-- *****

UplinkPhysicalChannelControl ::= CHOICE {
    r3                                  SEQUENCE {
        uplinkPhysicalChannelControl-r3 UplinkPhysicalChannelControl-r3-IEs,
        laterNonCriticalExtensions     SEQUENCE {
            -- Container for additional R99 extensions
            uplinkPhysicalChannelControl-r3-add-ext BIT STRING          OPTIONAL,
            v4xyNonCriticalExtensions SEQUENCE {
                uplinkPhysicalChannelControl-v4xyext UplinkPhysicalChannelControl-v4xyext-IEs,
                -- Extension mechanism for non- release4 information
                noncriticalExtensions SEQUENCE {}          OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3                      SEQUENCE {
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions             CHOICE {
            r4                          SEQUENCE {
                uplinkPhysicalChannelControl-r4 UplinkPhysicalChannelControl-r4-IEs,
                nonCriticalExtensions     SEQUENCE {}          OPTIONAL
            },
            later-than-r4              CHOICE {
                r5                      SEQUENCE {
                    uplinkPhysicalChannelControl-r5 UplinkPhysicalChannelControl-r5-IEs,
                    nonCriticalExtensions SEQUENCE {}          OPTIONAL
                },
                criticalExtensions     SEQUENCE {}
            }
        }
    }
}

UplinkPhysicalChannelControl-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    -- Physical channel IEs
    ccTrCH-PowerControlInfo           CCTrCH-PowerControlInfo          OPTIONAL,
    timingAdvance                     UL-TimingAdvanceControl          OPTIONAL,
    alpha                              Alpha                            OPTIONAL,
    specialBurstScheduling              SpecialBurstScheduling            OPTIONAL,

```

```

    prach-ConstantValue          ConstantValueTdd          OPTIONAL,
    pusch-ConstantValue          ConstantValueTdd          OPTIONAL
}

UplinkPhysicalChannelControl-v4xyext-IEs ::= SEQUENCE {
-- In case of TDD, openLoopPowerControl-IPDL-TDD is included instead of IE
-- up-IPDL-Parameters in up-OTDOA-AssistanceData
openLoopPowerControl-IPDL-TDD  OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL
}

UplinkPhysicalChannelControl-r4-IEs ::= SEQUENCE {
-- Physical channel IEs
ccTrCH-PowerControlInfo        CcTrCH-PowerControlInfo-r4        OPTIONAL,
specialBurstScheduling         SpecialBurstScheduling              OPTIONAL,
tddOption                       CHOICE {
    tdd384                       SEQUENCE {
        timingAdvance            UL-TimingAdvanceControl-r4        OPTIONAL,
        alpha                    Alpha                                OPTIONAL,
        prach-ConstantValue      ConstantValueTdd                  OPTIONAL,
        pusch-ConstantValue      ConstantValueTdd                  OPTIONAL,
        openLoopPowerControl-IPDL-TDD  OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL
    },
    tdd128                       SEQUENCE {
        ul-SynchronisationParameters  UL-SynchronisationParameters-r4  OPTIONAL
    }
}
}

UplinkPhysicalChannelControl-r5-IEs ::= SEQUENCE {
-- Physical channel IEs
ccTrCH-PowerControlInfo        CcTrCH-PowerControlInfo-r4        OPTIONAL,
specialBurstScheduling         SpecialBurstScheduling              OPTIONAL,
tddOption                       CHOICE {
    tdd384                       SEQUENCE {
        timingAdvance            UL-TimingAdvanceControl-r4        OPTIONAL,
        alpha                    Alpha                                OPTIONAL,
        prach-ConstantValue      ConstantValueTdd                  OPTIONAL,
        pusch-ConstantValue      ConstantValueTdd                  OPTIONAL,
        openLoopPowerControl-IPDL-TDD  OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL,
        hs-SICH-PowerControl      HS-SICH-Power-Control-Info-TDD384  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,
laterNonCriticalExtensions      SEQUENCE {
-- Container for additional R99 extensions
uraUpdate-r3-add-ext           BIT STRING          OPTIONAL,
nonCriticalExtensions          SEQUENCE {}          OPTIONAL
}
}

-- *****
--
-- URA UPDATE CONFIRM
--
-- *****

URAUUpdateConfirm ::= CHOICE {
    r3                           SEQUENCE {
        uraUpdateConfirm-r3      URAUpdateConfirm-r3-IEs,
        laterNonCriticalExtensions  SEQUENCE {
-- Container for additional R99 extensions
uraUpdateConfirm-r3-add-ext     BIT STRING          OPTIONAL,
nonCriticalExtensions           SEQUENCE {}          OPTIONAL
        }
    }
}

```

```

    } OPTIONAL
  },
  later-than-r3 SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions CHOICE {
      r5 SEQUENCE {
        uraUpdateConfirm-r5 URAUpdateConfirm-r5-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
      },
      criticalExtensions SEQUENCE {}
    }
  }
}

URAUpdateConfirm-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
  cipheringModeInfo CipheringModeInfo OPTIONAL,
  new-U-RNTI U-RNTI OPTIONAL,
  new-C-RNTI C-RNTI OPTIONAL,
  rrc-StateIndicator RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  -- CN information elements
  cn-InformationInfo CN-InformationInfo OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity URA-Identity OPTIONAL,
  -- Radio bearer IEs
  dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo OPTIONAL
}

URAUpdateConfirm-r5-IEs ::= SEQUENCE {
  -- User equipment IEs
  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-r5 OPTIONAL
}

-- *****
--
-- URA UPDATE CONFIRM for CCCH
--
-- *****

URAUpdateConfirm-CCCH ::= CHOICE {
  r3 SEQUENCE {
    uraUpdateConfirm-CCCH-r3 URAUpdateConfirm-CCCH-r3-IEs,
    laterNonCriticalExtensions SEQUENCE {
      -- Container for additional R99 extensions
      uraUpdateConfirm-CCCH-r3-add-ext BIT STRING OPTIONAL,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  later-than-r3 SEQUENCE {
    u-RNTI U-RNTI,
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions SEQUENCE {}
  }
}

URAUpdateConfirm-CCCH-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  u-RNTI U-RNTI,
  -- The rest of the message is identical to the one sent on DCCH.
  uraUpdateConfirm URAUpdateConfirm-r3-IEs
}

-- *****

```

```

--
-- UTRAN MOBILITY INFORMATION
--
-- *****

UTRANMobilityInformation ::= CHOICE {
  r3          SEQUENCE {
    utranMobilityInformation-r3          UTRANMobilityInformation-r3-IEs,
    v3a0NonCriticalExtensions            SEQUENCE {
      utranMobilityInformation-v3a0ext    UTRANMobilityInformation-v3a0ext-IEs,
      laterNonCriticalExtensions          SEQUENCE {
        -- Container for additional R99 extensions
        utranMobilityInformation-r3-add-ext  BIT STRING      OPTIONAL,
        nonCriticalExtensions                SEQUENCE {}      OPTIONAL
      }
    }
  },
  later-than-r3          SEQUENCE {
    rrc-TransactionIdentifier            RRC-TransactionIdentifier,
    criticalExtensions              CHOICE {
      r5          SEQUENCE {
        utranMobilityInformation-r5          UTRANMobilityInformation-r5-IEs,
        nonCriticalExtensions                SEQUENCE {}      OPTIONAL
      },
      criticalExtensions              SEQUENCE {}
    }
  }
}

UTRANMobilityInformation-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier            RRC-TransactionIdentifier,
  integrityProtectionModeInfo          IntegrityProtectionModeInfo      OPTIONAL,
  cipheringModeInfo                    CipheringModeInfo                OPTIONAL,
  new-U-RNTI                            U-RNTI                            OPTIONAL,
  new-C-RNTI                            C-RNTI                            OPTIONAL,
  ue-ConnTimersAndConstants              UE-ConnTimersAndConstants          OPTIONAL,
  -- CN information elements
  cn-InformationInfo                    CN-InformationInfoFull              OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                          URA-Identity                        OPTIONAL,
  -- Radio bearer IEs
  dl-CounterSynchronisationInfo          DL-CounterSynchronisationInfo      OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions                  SEQUENCE {}                        OPTIONAL
}

UTRANMobilityInformation-v3a0ext-IEs ::= SEQUENCE {
  ue-ConnTimersAndConstants-v3a0ext      UE-ConnTimersAndConstants-v3a0ext
}

UTRANMobilityInformation-r5-IEs ::= SEQUENCE {
  -- User equipment IEs
  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-r5      OPTIONAL,
  -- CN information elements
  cn-InformationInfo                    CN-InformationInfoFull              OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                          URA-Identity                        OPTIONAL,
  -- Radio bearer IEs
  dl-CounterSynchronisationInfo          DL-CounterSynchronisationInfo-r5  OPTIONAL
}

-- *****
--
-- UTRAN MOBILITY INFORMATION CONFIRM
--
-- *****

UTRANMobilityInformationConfirm ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier            RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo            IntegrityProtActivationInfo        OPTIONAL,
  -- Radio bearer IEs

```

```

count-C-ActivationTime      ActivationTime      OPTIONAL,
rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList  OPTIONAL,
ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo  OPTIONAL,
laterNonCriticalExtensions      SEQUENCE {
  -- Container for additional R99 extensions
  utranNMobilityInformationConfirm-r3-add-ext  BIT STRING  OPTIONAL,
  nonCriticalExtensions      SEQUENCE {}  OPTIONAL
}
}

-- *****
--
-- UTRAN MOBILITY INFORMATION FAILURE
--
-- *****

UTRANMobilityInformationFailure ::= SEQUENCE {
  -- UE information elements
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause      FailureCauseWithProtErr,
  laterNonCriticalExtensions      SEQUENCE {
    -- Container for additional R99 extensions
    utranNMobilityInformationFailure-r3-add-ext  BIT STRING  OPTIONAL,
    nonCriticalExtensions      SEQUENCE {}  OPTIONAL
  }  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,
maxDPCH-UL,
maxDRACclasses,
maxFACHPCH,
maxFreq,
maxFreqBandsFDD,
maxFreqBandsTDD,
maxFreqBandsGSM,
maxGERAN-SI,
maxHProcesses,
maxHSDSCHTBIndex,
maxHSDSCHTBIndex-tdd384,
maxHSSCCHs,
maxInterSysMessages,
maxLoCHperRLC,
maxMAC-d-PDU sizes,
maxMeasEvent,
maxMeasIntervals,
maxMeasParEvent,
maxNumCDMA2000Freqs,
maxNumFDDFreqs,
maxNumGSMFreqRanges,

```

```

maxNumTDDFreqs,
maxOtherRAT,
maxOtherRAT-16,
maxPage1,
maxPCPCH-APsig,
maxPCPCH-APsubCh,
maxPCPCH-CDSig,
maxPCPCH-CDsubCh,
maxPCPCH-SF,
maxPCPCHs,
maxPDCPAlgoType,
maxPDSCH,
maxPDSCH-TFCIgroups,
maxPRACH,
maxPRACH-FPACH,
maxPredefConfig,
maxPUSCH,
maxQueueIDs,
maxRABsetup,
maxRAT,
maxRB,
maxRBallRABs,
maxRBMuxOptions,
maxRBperRAB,
maxReportedGSMCells,
maxSRBsetup,
maxRL,
maxRL-1,
maxROHC-PacketSizes-r4,
maxROHC-Profile-r4,
maxSCCPCH,
maxSat,
maxSIB,
maxSIB-FACH,
maxSystemCapability,
maxTF,
maxTF-CPCH,
maxTFC,
maxTFCsub,
maxTFCI-2-Combs,
maxTGPS,
maxTrCH,
maxTrCHpreconf,
maxTS,
maxTS-1,
maxTS-LCR,
maxTS-LCR-1,
maxURA,
maxURNTI-Group
FROM Constant-definitions;

```

```

Ansi-41-IDNNS ::= BIT STRING (SIZE (14))

CN-DomainIdentity ::= ENUMERATED {
    cs-domain,
    ps-domain }

CN-DomainInformation ::= SEQUENCE {
    cn-DomainIdentity
    cn-DomainSpecificNAS-Info
}

CN-DomainInformationFull ::= SEQUENCE {
    cn-DomainIdentity
    cn-DomainSpecificNAS-Info
    cn-DRX-CycleLengthCoeff
}

CN-DomainInformationList ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CN-DomainInformation

CN-DomainInformationListFull ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CN-DomainInformationFull

CN-DomainSysInfo ::= SEQUENCE {
    cn-DomainIdentity
    cn-Type
    gsm-MAP
    ansi-41
    CHOICE {
        NAS-SystemInformationGSM-MAP,
        NAS-SystemInformationANSI-41
    }
}

```

```

    },
    cn-DRX-CycleLengthCoeff          CN-DRX-CycleLengthCoefficient
}

CN-DomainSysInfoList ::=
SEQUENCE (SIZE (1..maxCNdomains)) OF
    CN-DomainSysInfo

CN-InformationInfo ::=
SEQUENCE {
    plmn-Identity                    PLMN-Identity                    OPTIONAL,
    cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP    OPTIONAL,
    cn-DomainInformationList         CN-DomainInformationList        OPTIONAL
}

CN-InformationInfoFull ::=
SEQUENCE {
    plmn-Identity                    PLMN-Identity                    OPTIONAL,
    cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP    OPTIONAL,
    cn-DomainInformationListFull     CN-DomainInformationListFull    OPTIONAL
}

Digit ::=
INTEGER (0..9)

Gsm-map-IDNNS ::=
SEQUENCE {
    routingbasis                     CHOICE {
        localPTMSI                   SEQUENCE {
            routingparameter          RoutingParameter
        },
        tMSIofsamePLMN                SEQUENCE {
            routingparameter          RoutingParameter
        },
        tMSIofdifferentPLMN           SEQUENCE {
            routingparameter          RoutingParameter
        },
        iMSIresponsetopaging           SEQUENCE {
            routingparameter          RoutingParameter
        },
        iMSIUEinitiatedEvent           SEQUENCE {
            routingparameter          RoutingParameter
        },
        iMEI                           SEQUENCE {
            routingparameter          RoutingParameter
        },
        spare1                          SEQUENCE {
            routingparameter          RoutingParameter
        },
        spare2                          SEQUENCE {
            routingparameter          RoutingParameter
        }
    },
    enteredparameter                  BOOLEAN
}

IMEI ::=
SEQUENCE (SIZE (15)) OF
    IMEI-Digit

IMEI-Digit ::=
INTEGER (0..15)

IMSI-GSM-MAP ::=
SEQUENCE (SIZE (6..15)) OF
    Digit

IntraDomainNasNodeSelector ::=
SEQUENCE {
    version                           CHOICE {
        release99                     SEQUENCE {
            cn-Type                     CHOICE {
                gsm-Map-IDNNS          Gsm-map-IDNNS,
                ansi-41-IDNNS          Ansi-41-IDNNS
            }
        },
        later                           SEQUENCE {
            futurecoding                BIT STRING (SIZE (15))
        }
    }
}

LAI ::=
SEQUENCE {
    plmn-Identity                    PLMN-Identity,
    lac                              BIT STRING (SIZE (16))
}

```

```

MCC ::=                               SEQUENCE (SIZE (3)) OF
                                       Digit

MNC ::=                               SEQUENCE (SIZE (2..3)) OF
                                       Digit

NAS-Message ::=                       OCTET STRING (SIZE (1..4095))

NAS-Synchronisation-Indicator ::=     BIT STRING(SIZE(4))

NAS-SystemInformationGSM-MAP ::=     OCTET STRING (SIZE (1..8))

P-TMSI-GSM-MAP ::=                   BIT STRING (SIZE (32))

PagingRecordTypeID ::=               ENUMERATED {
                                       imsi-GSM-MAP,
                                       tmsi-GSM-MAP-P-TMSI,
                                       imsi-DS-41,
                                       tmsi-DS-41 }

PLMN-Identity ::=                   SEQUENCE {
   mcc                               MCC,
   mnc                               MNC
}

PLMN-Type ::=                       CHOICE {
   gsm-MAP                           SEQUENCE {
     plmn-Identity
   },
   ansi-41                            SEQUENCE {
     p-REV                            P-REV,
     min-P-REV                        Min-P-REV,
     sid                              SID,
     nid                              NID
   },
   gsm-MAP-and-ANSI-41                SEQUENCE {
     plmn-Identity
     p-REV                            P-REV,
     min-P-REV                        Min-P-REV,
     sid                              SID,
     nid                              NID
   },
   spare                              NULL
}

RAB-Identity ::=                   CHOICE {
   gsm-MAP-RAB-Identity                BIT STRING (SIZE (8)),
   ansi-41-RAB-Identity                BIT STRING (SIZE (8))
}

RAI ::=                             SEQUENCE {
   lai                               LAI,
   rac                               RoutingAreaCode
}

RoutingAreaCode ::=                 BIT STRING (SIZE (8))

RoutingParameter ::=                 BIT STRING (SIZE (10))

TMSI-GSM-MAP ::=                     BIT STRING (SIZE (32))

-- *****
--
--   UTRAN MOBILITY INFORMATION ELEMENTS (10.3.2)
--
-- *****

AccessClassBarred ::=               ENUMERATED {
                                       barred, notBarred }

AccessClassBarredList ::=           SEQUENCE (SIZE (maxAC)) OF
                                       AccessClassBarred

AllowedIndicator ::=                 ENUMERATED {
                                       allowed, notAllowed }

CellAccessRestriction ::=           SEQUENCE {
   cellBarred

```

```

cellReservedForOperatorUse      ReservedIndicator,
cellReservationExtension         ReservedIndicator,
-- NOTE: IE accessClassBarredList should not be included if the IE CellAccessRestriction
-- is included in the IE SysInfoType4
accessClassBarredList          AccessClassBarredList          OPTIONAL
}

CellBarred ::=
    barred                       CHOICE {
        barred                   SEQUENCE {
            intraFreqCellReselectionInd  AllowedIndicator,
            t-Barred                 T-Barred
        },
        notBarred                NULL
    }

CellIdentity ::=                BIT STRING (SIZE (28))

CellIdentity-PerRL-List ::=    SEQUENCE (SIZE (1..maxRL)) OF CellIdentity

CellSelectReselectInfoSIB-3-4 ::= SEQUENCE {
    mappingInfo                  MappingInfo                  OPTIONAL,
    cellSelectQualityMeasure     CHOICE {
        cpich-Ec-N0              SEQUENCE {
            -- Default value for q-HYST-2-S is q-HYST-1-S
            q-HYST-2-S            Q-Hyst-S                  OPTIONAL
            -- Default value for q-HYST-2-S is q-HYST-1-S
        },
        cpich-RSCP                NULL
    },
    modeSpecificInfo            CHOICE {
        fdd                       SEQUENCE {
            s-Intrasearch         S-SearchQual          OPTIONAL,
            s-Intersearch        S-SearchQual          OPTIONAL,
            s-SearchHCS          S-SearchRXLEV        OPTIONAL,
            rat-List              RAT-FDD-InfoList          OPTIONAL,
            q-QualMin             Q-QualMin,
            q-RxlevMin           Q-RxlevMin
        },
        tdd                       SEQUENCE {
            s-Intrasearch         S-SearchRXLEV        OPTIONAL,
            s-Intersearch        S-SearchRXLEV        OPTIONAL,
            s-SearchHCS          S-SearchRXLEV        OPTIONAL,
            rat-List              RAT-TDD-InfoList          OPTIONAL,
            q-RxlevMin           Q-RxlevMin
        }
    },
    q-Hyst-1-S                   Q-Hyst-S,
    t-Reselection-S             T-Reselection-S,
    hcs-ServingCellInformation   HCS-ServingCellInformation OPTIONAL,
    maxAllowedUL-TX-Power       MaxAllowedUL-TX-Power
}

MapParameter ::=               INTEGER (0..99)

Mapping ::=                     SEQUENCE {
    rat                          RAT,
    mappingFunctionParameterList MappingFunctionParameterList
}

Mapping-LCR-r4 ::=             SEQUENCE {
    mappingFunctionParameterList MappingFunctionParameterList
}

MappingFunctionParameter ::=   SEQUENCE {
    functionType                 MappingFunctionType,
    mapParameter1                MapParameter          OPTIONAL,
    mapParameter2                MapParameter,
    -- The presence of upperLimit is conditional on the number of repetition
    upperLimit                   UpperLimit              OPTIONAL
}

MappingFunctionParameterList ::= SEQUENCE (SIZE (1..maxMeasIntervals)) OF
    MappingFunctionParameter

MappingFunctionType ::=        ENUMERATED {
    linear,
    functionType2,
    functionType3,
}

```

```

functionType4 }

-- In MappingInfo list, mapping for FDD and 3.84Mcps TDD is defined.
-- For 1.28Mcps TDD, Mapping-LCR-r4 is used instead.
MappingInfo ::=
    SEQUENCE (SIZE (1..maxRAT)) OF
        Mapping

-- Actual value Q-Hyst-S = IE value * 2
Q-Hyst-S ::=
    INTEGER (0..20)

RAT ::=
    ENUMERATED {
        ultra-FDD,
        ultra-TDD,
        gsm,
        cdma2000 }

RAT-FDD-Info ::=
    SEQUENCE {
        rat-Identifier
            RAT-Identifier,
        s-SearchRAT
            S-SearchQual,
        s-HCS-RAT
            S-SearchRXLEV
            OPTIONAL,
        s-Limit-SearchRAT
            S-SearchQual
    }

RAT-FDD-InfoList ::=
    SEQUENCE (SIZE (1..maxOtherRAT)) OF
        RAT-FDD-Info

RAT-Identifier ::=
    ENUMERATED {
        gsm, cdma2000 }

RAT-TDD-Info ::=
    SEQUENCE {
        rat-Identifier
            RAT-Identifier,
        s-SearchRAT
            S-SearchRXLEV,
        s-HCS-RAT
            S-SearchRXLEV
            OPTIONAL,
        s-Limit-SearchRAT
            S-SearchRXLEV
    }

RAT-TDD-InfoList ::=
    SEQUENCE (SIZE (1..maxOtherRAT)) OF
        RAT-TDD-Info

ReservedIndicator ::=
    ENUMERATED {
        reserved,
        notReserved }

-- Actual value S-SearchedQual = IE value * 2
S-SearchQual ::=
    INTEGER (-16..10)

-- Actual value S-SearchRXLEV = (IE value * 2) + 1
S-SearchRXLEV ::=
    INTEGER (-53..45)

T-Barred ::=
    ENUMERATED {
        s10, s20, s40, s80,
        s160, s320, s640, s1280 }

T-Reselection-S ::=
    INTEGER (0..31)

-- For UpperLimit, the used range depends on the RAT used.
UpperLimit ::=
    INTEGER (1..91)

URA-Identity ::=
    BIT STRING (SIZE (16))

URA-IdentityList ::=
    SEQUENCE (SIZE (1..maxURA)) OF
        URA-Identity

-- *****
--
--     USER EQUIPMENT INFORMATION ELEMENTS (10.3.3)
--
-- *****

AccessStratumReleaseIndicator ::=
    ENUMERATED {
        rel-4, rel-5, spare14, spare13,
        spare12, spare11, spare10, spare9, spare8,
        spare7, spare6, spare5, spare4, spare3,
        spare2, spare1 }

-- TABULAR : for ActivationTime, value 'now' always appear as default, and is encoded
-- by absence of the field
ActivationTime ::=
    INTEGER (0..255)

```

```

BackoffControlParams ::=          SEQUENCE {
    n-AP-RetransMax                N-AP-RetransMax,
    n-AccessFails                  N-AccessFails,
    nf-BO-NoAICH                   NF-BO-NoAICH,
    ns-BO-Busy                     NS-BO-Busy,
    nf-BO-AllBusy                  NF-BO-AllBusy,
    nf-BO-Mismatch                 NF-BO-Mismatch,
    t-CPCH                         T-CPCH
}

C-RNTI ::=                        BIT STRING (SIZE (16))

CapabilityUpdateRequirement ::=    SEQUENCE {
    ue-RadioCapabilityFDDUpdateRequirement-FDD    BOOLEAN,
    -- ue-RadioCapabilityTDDUpdateRequirement-TDD is for 3.84Mcps TDD update requirement
    ue-RadioCapabilityTDDUpdateRequirement-TDD    BOOLEAN,
    systemSpecificCapUpdateReqList                SystemSpecificCapUpdateReqList    OPTIONAL
}

CapabilityUpdateRequirement-r4-ext ::= SEQUENCE {
    ue-RadioCapabilityUpdateRequirement-TDD128    BOOLEAN
}

CapabilityUpdateRequirement-r4 ::= SEQUENCE {
    ue-RadioCapabilityFDDUpdateRequirement-FDD    BOOLEAN,
    ue-RadioCapabilityTDDUpdateRequirement-TDD384    BOOLEAN,
    ue-RadioCapabilityTDDUpdateRequirement-TDD128    BOOLEAN,
    systemSpecificCapUpdateReqList                SystemSpecificCapUpdateReqList    OPTIONAL
}

CellUpdateCause ::=              ENUMERATED {
    cellReselection,
    periodicalCellUpdate,
    uplinkDataTransmission,
    utran-pagingResponse,
    re-enteredServiceArea,
    radiolinkFailure,
    rlc-unrecoverableError,
    spare1 }

ChipRateCapability ::=           ENUMERATED {
    mcps3-84, mcps1-28 }

CipheringAlgorithm ::=          ENUMERATED {
    uea0, uea1 }

CipheringModeCommand ::=        CHOICE {
    startRestart                    CipheringAlgorithm,
    dummy                            NULL
}

CipheringModeInfo ::=           SEQUENCE {
    -- TABULAR: The ciphering algorithm is included in the CipheringModeCommand.
    cipheringModeCommand            CipheringModeCommand,
    activationTimeForDPCH           ActivationTime                    OPTIONAL,
    rb-DL-CiphActivationTimeInfo    RB-ActivationTimeInfoList        OPTIONAL
}

CN-DRX-CycleLengthCoefficient ::= INTEGER (6..9)

CN-PagedUE-Identity ::=        CHOICE {
    imsi-GSM-MAP                    IMSI-GSM-MAP,
    tmsi-GSM-MAP                    TMSI-GSM-MAP,
    p-TMSI-GSM-MAP                  P-TMSI-GSM-MAP,
    imsi-DS-41                      IMSI-DS-41,
    tmsi-DS-41                      TMSI-DS-41,
    spare3                            NULL,
    spare2                            NULL,
    spare1                            NULL
}

CompressedModeMeasCapability ::= SEQUENCE {
    fdd-Measurements                BOOLEAN,
    -- TABULAR: The IEs tdd-Measurements, gsm-Measurements and multiCarrierMeasurements
    -- are made optional since they are conditional based on another information element.
    -- Their absence corresponds to the case where the condition is not true.
    tdd-Measurements                BOOLEAN                    OPTIONAL,
}

```

```

    gsm-Measurements                GSM-Measurements                OPTIONAL,
    multiCarrierMeasurements        BOOLEAN                          OPTIONAL
}

CompressedModeMeasCapability-LCR-r4 ::= SEQUENCE {
    tdd128-Measurements              BOOLEAN                          OPTIONAL
}

CompressedModeMeasCapabFDDList ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
    CompressedModeMeasCapabFDD

CompressedModeMeasCapabFDD ::= SEQUENCE {
    radioFrequencyBandFDD           RadioFrequencyBandFDD    OPTIONAL,
    dl-MeasurementsFDD              BOOLEAN,
    ul-MeasurementsFDD              BOOLEAN
}

CompressedModeMeasCapabTDDList ::= SEQUENCE (SIZE (1..maxFreqBandsTDD)) OF
    CompressedModeMeasCapabTDD

CompressedModeMeasCapabTDD ::= SEQUENCE {
    radioFrequencyBandTDD           RadioFrequencyBandTDD,
    dl-MeasurementsTDD              BOOLEAN,
    ul-MeasurementsTDD              BOOLEAN
}

CompressedModeMeasCapabGSMList ::= SEQUENCE (SIZE (1..maxFreqBandsGSM)) OF
    CompressedModeMeasCapabGSM

CompressedModeMeasCapabGSM ::= SEQUENCE {
    radioFrequencyBandGSM           RadioFrequencyBandGSM,
    dl-MeasurementsGSM              BOOLEAN,
    ul-MeasurementsGSM              BOOLEAN
}

CompressedModeMeasCapabMC ::= SEQUENCE {
    dl-MeasurementsMC               BOOLEAN,
    ul-MeasurementsMC               BOOLEAN
}

CPCH-Parameters ::= SEQUENCE {
    initialPriorityDelayList         InitialPriorityDelayList    OPTIONAL,
    backoffControlParams            BackoffControlParams,
    -- TABULAR: TPC step size nested inside PowerControlAlgorithm
    powerControlAlgorithm           PowerControlAlgorithm,
    dl-DPCCH-BER                    DL-DPCCH-BER
}

DL-CapabilityWithSimultaneousHS-DSCHConfig ::= ENUMERATED{kbps32, kbps64, kbps128, kbps384}

DL-DPCCH-BER ::= INTEGER (0..63)

DL-PhysChCapabilityFDD ::= SEQUENCE {
    maxNoDPCH-PDSCH-Codes           INTEGER (1..8),
    maxNoPhysChBitsReceived         MaxNoPhysChBitsReceived,
    supportForSF-512                BOOLEAN,
    supportOfPDSCH                  BOOLEAN,
    simultaneousSCCPCH-DPCH-Reception SimultaneousSCCPCH-DPCH-Reception
}

DL-PhysChCapabilityFDD-v380ext ::= SEQUENCE {
    supportOfDedicatedPilotsForChEstimation SupportOfDedicatedPilotsForChEstimation    OPTIONAL
}

SupportOfDedicatedPilotsForChEstimation ::= ENUMERATED { true }

DL-PhysChCapabilityTDD ::= SEQUENCE {
    maxTS-PerFrame                  MaxTS-PerFrame,
    maxPhysChPerFrame               MaxPhysChPerFrame,
    minimumSF                       MinimumSF-DL,
    supportOfPDSCH                  BOOLEAN,
    maxPhysChPerTS                  MaxPhysChPerTS
}

DL-PhysChCapabilityTDD-LCR-r4 ::= SEQUENCE {
    maxTS-PerSubFrame               MaxTS-PerSubFrame-r4,
    maxPhysChPerFrame               MaxPhysChPerSubFrame-r4,
    minimumSF                       MinimumSF-DL,

```

```

supportOfPDSCH          BOOLEAN,
maxPhysChPerTS         MaxPhysChPerTS,
supportOf8PSK          BOOLEAN
}

DL-TransChCapability ::=
  maxNoBitsReceived      MaxNoBits,
  maxConvCodeBitsReceived MaxNoBits,
  turboDecodingSupport   TurboSupport,
  maxSimultaneousTransChs MaxSimultaneousTransChsDL,
  maxSimultaneousCCTrCH-Count MaxSimultaneousCCTrCH-Count,
  maxReceivedTransportBlocks MaxTransportBlocksDL,
  maxNumberOfTFC         MaxNumberOfTFC-DL,
  maxNumberOfTF         MaxNumberOfTF
}

DRAC-SysInfo ::=
  transmissionProbability TransmissionProbability,
  maximumBitRate         MaximumBitRate
}

DRAC-SysInfoList ::= SEQUENCE (SIZE (1..maxDRACclasses)) OF
  DRAC-SysInfo

DSCH-RNTI ::= BIT STRING (SIZE (16))

ESN-DS-41 ::= BIT STRING (SIZE (32))

EstablishmentCause ::= ENUMERATED {
  originatingConversationalCall,
  originatingStreamingCall,
  originatingInteractiveCall,
  originatingBackgroundCall,
  originatingSubscribedTrafficCall,
  terminatingConversationalCall,
  terminatingStreamingCall,
  terminatingInteractiveCall,
  terminatingBackgroundCall,
  emergencyCall,
  interRAT-CellReselection,
  interRAT-CellChangeOrder,
  registration,
  detach,
  originatingHighPrioritySignalling,
  originatingLowPrioritySignalling,
  callRe-establishment,
  terminatingHighPrioritySignalling,
  terminatingLowPrioritySignalling,
  terminatingCauseUnknown,
  spare12,
  spare11,
  spare10,
  spare9,
  spare8,
  spare7,
  spare6,
  spare5,
  spare4,
  spare3,
  spare2,
  spare1 }

FailureCauseWithProtErr ::= CHOICE {
  configurationUnsupported      NULL,
  physicalChannelFailure       NULL,
  incompatibleSimultaneousReconfiguration
                                NULL,
  compressedModeRuntimeError   TGPSI,
  protocolError                ProtocolErrorInformation,
  cellUpdateOccurred           NULL,
  invalidConfiguration         NULL,
  configurationIncomplete      NULL,
  unsupportedMeasurement       NULL,
  spare7                       NULL,
  spare6                       NULL,
  spare5                       NULL,
  spare4                       NULL,
  spare3                       NULL,
}

```

```

    spare2                NULL,
    spare1                NULL
}

FailureCauseWithProtErrTrId ::= SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    failureCause              FailureCauseWithProtErr
}

GroupIdentityWithReleaseInformation ::= SEQUENCE {
    rrc-ConnectionReleaseInformation RRC-ConnectionReleaseInformation,
    groupReleaseInformation           GroupReleaseInformation
}

GroupReleaseInformation ::= SEQUENCE {
    uRNTI-Group U-RNTI-Group
}

GSM-Measurements ::= SEQUENCE {
    gsm900      BOOLEAN,
    dcs1800    BOOLEAN,
    gsm1900    BOOLEAN
}

H-RNTI ::= BIT STRING (SIZE (16))

HSDSCH-physical-layer-category ::= INTEGER (1..64)

UESpecificBehaviourInformationIdle ::= BIT STRING (SIZE (4))

UESpecificBehaviourInformationInterRAT ::= BIT STRING (SIZE (8))

IMSI-and-ESN-DS-41 ::= SEQUENCE {
    imsi-DS-41 IMSI-DS-41,
    esn-DS-41  ESN-DS-41
}

IMSI-DS-41 ::= OCTET STRING (SIZE (5..7))

InitialPriorityDelayList ::= SEQUENCE (SIZE (1..maxASC)) OF
    NS-IP

InitialUE-Identity ::= CHOICE {
    imsi                IMSI-GSM-MAP,
    tmsi-and-LAI        TMSI-and-LAI-GSM-MAP,
    p-TMSI-and-RAI      P-TMSI-and-RAI-GSM-MAP,
    imei                IMEI,
    esn-DS-41           ESN-DS-41,
    imsi-DS-41          IMSI-DS-41,
    imsi-and-ESN-DS-41 IMSI-and-ESN-DS-41,
    tmsi-DS-41          TMSI-DS-41
}

IntegrityCheckInfo ::= SEQUENCE {
    messageAuthenticationCode MessageAuthenticationCode,
    rrc-MessageSequenceNumber RRC-MessageSequenceNumber
}

IntegrityProtActivationInfo ::= SEQUENCE {
    rrc-MessageSequenceNumberList RRC-MessageSequenceNumberList
}

IntegrityProtectionAlgorithm ::= ENUMERATED {
    uia1 }

IntegrityProtectionModeCommand ::= CHOICE {
    startIntegrityProtection SEQUENCE {
        integrityProtInitNumber IntegrityProtInitNumber
    },
    modify                    SEQUENCE {
        dl-IntegrityProtActivationInfo IntegrityProtActivationInfo
    }
}

IntegrityProtectionModeInfo ::= SEQUENCE {
    -- TABULAR: DL integrity protection activation info and Integrity

```

```

-- protection intialisation number have been nested inside
-- IntegrityProtectionModeCommand.
integrityProtectionModeCommand IntegrityProtectionModeCommand,
integrityProtectionAlgorithm IntegrityProtectionAlgorithm OPTIONAL
}

IntegrityProtInitNumber ::= BIT STRING (SIZE (32))

MaxHcContextSpace ::= ENUMERATED {
    by512, by1024, by2048, by4096,
    by8192 }

MaxHcContextSpace-r5 ::= ENUMERATED {
    by16384, by32768, by65536, by131072}

MaxROHC-ContextSessions-r4 ::= ENUMERATED {
    s2, s4, s8, s12, s16, s24, s32, s48,
    s64, s128, s256, s512, s1024, s16384 }

MaximumAM-EntityNumberRLC-Cap ::= ENUMERATED {
    dummy, am4, am5, am6,
    am8, am16, am30 }

-- Actual value MaximumBitRate = IE value * 16
MaximumBitRate ::= INTEGER (0..32)

MaximumRLC-WindowSize ::= ENUMERATED { mws2047, mws4095 }

MaxNoDPDCH-BitsTransmitted ::= ENUMERATED {
    b600, b1200, b2400, b4800,
    b9600, b19200, b28800, b38400,
    b48000, b57600 }

MaxNoBits ::= ENUMERATED {
    b640, b1280, b2560, b3840, b5120,
    b6400, b7680, b8960, b10240,
    b20480, b40960, b81920, b163840 }

MaxNoPhysChBitsReceived ::= ENUMERATED {
    dummy, b1200, b2400, b3600,
    b4800, b7200, b9600, b14400,
    b19200, b28800, b38400, b48000,
    b57600, b67200, b76800 }

MaxNoSCCPCH-RL ::= ENUMERATED {
    r11 }

MaxNumberOfTF ::= ENUMERATED {
    tf32, tf64, tf128, tf256,
    tf512, tf1024 }

MaxNumberOfTFC-DL ::= ENUMERATED {
    tfc16, tfc32, tfc48, tfc64, tfc96,
    tfc128, tfc256, tfc512, tfc1024 }

MaxNumberOfTFC-UL ::= ENUMERATED {
    dummy1, dummy2, tfc16, tfc32, tfc48, tfc64,
    tfc96, tfc128, tfc256, tfc512, tfc1024 }

-- the values 1 ...4 for MaxPhysChPerFrame are not used in this version of the protocol
MaxPhysChPerFrame ::= INTEGER (1..224)

MaxPhysChPerSubFrame-r4 ::= INTEGER (1..96)

MaxPhysChPerTimeslot ::= ENUMERATED {
    ts1, ts2 }

-- the values 1 ...4 for MaxPhysChPerTS are not used in this version of the protocol
MaxPhysChPerTS ::= INTEGER (1..16)

MaxSimultaneousCCTrCH-Count ::= INTEGER (1..8)

MaxSimultaneousTransChsDL ::= ENUMERATED {
    e4, e8, e16, e32 }

MaxSimultaneousTransChsUL ::= ENUMERATED {
    dummy, e4, e8, e16, e32 }

```

```

MaxTransportBlocksDL ::=          ENUMERATED {
                                     tb4, tb8, tb16, tb32, tb48,
                                     tb64, tb96, tb128, tb256, tb512 }

MaxTransportBlocksUL ::=          ENUMERATED {
                                     dummy, tb4, tb8, tb16, tb32, tb48,
                                     tb64, tb96, tb128, tb256, tb512 }

MaxTS-PerFrame ::=                INTEGER (1..14)

MaxTS-PerSubFrame-r4 ::=          INTEGER (1..6)

-- TABULAR: MeasurementCapability contains dependencies to UE-MultiModeRAT-Capability,
-- the conditional fields have been left mandatory for now.
MeasurementCapability ::=          SEQUENCE {
    downlinkCompressedMode          CompressedModeMeasCapability,
    uplinkCompressedMode            CompressedModeMeasCapability
}

MeasurementCapability-v370 ::=     SEQUENCE{
    compressedModeMeasCapabFDDList  CompressedModeMeasCapabFDDList,
    compressedModeMeasCapabTDDList  CompressedModeMeasCapabTDDList  OPTIONAL,
    compressedModeMeasCapabGSMList  CompressedModeMeasCapabGSMList  OPTIONAL,
    compressedModeMeasCapabMC       CompressedModeMeasCapabMC       OPTIONAL
}

MeasurementCapability-r4-ext ::=   SEQUENCE {
    downlinkCompressedMode-LCR       CompressedModeMeasCapability-LCR-r4,
    uplinkCompressedMode-LCR        CompressedModeMeasCapability-LCR-r4
}

MessageAuthenticationCode ::=     BIT STRING (SIZE (32))

MinimumSF-DL ::=                  ENUMERATED {
                                     sf1, sf16 }

MinimumSF-UL ::=                  ENUMERATED {
                                     sf1, sf2, sf4, sf8, dummy }

MultiModeCapability ::=           ENUMERATED {
                                     tdd, fdd, fdd-tdd }

MultiRAT-Capability ::=           SEQUENCE {
    supportOfGSM                     BOOLEAN,
    supportOfMulticarrier            BOOLEAN
}

MultiModeRAT-Capability-v5xyext ::= SEQUENCE {
    supportOfUTRAN-ToGERAN-NACC      BOOLEAN
}

N-300 ::=                         INTEGER (0..7)

N-301 ::=                         INTEGER (0..7)

N-302 ::=                         INTEGER (0..7)

N-304 ::=                         INTEGER (0..7)

N-308 ::=                         INTEGER (1..8)

N-310 ::=                         INTEGER (0..7)

N-312 ::=                         ENUMERATED {
                                     s1, s50, s100, s200, s400,
                                     s600, s800, s1000 }

N-312ext ::=                      ENUMERATED {
                                     s2, s4, s10, s20 }

N-312-r5 ::=                      ENUMERATED {
                                     s1, s2, s4, s10, s20,
                                     s50, s100, s200, s400,
                                     s600, s800, s1000 }

N-313 ::=                         ENUMERATED {
                                     s1, s2, s4, s10, s20,

```

```

        s50, s100, s200 }

N-315 ::=
    ENUMERATED {
        s1, s50, s100, s200, s400,
        s600, s800, s1000 }

N-315ext ::=
    ENUMERATED {
        s2, s4, s10, s20 }

N-315-r5 ::=
    ENUMERATED {
        s1, s2, s4, s10, s20,
        s50, s100, s200, s400,
        s600, s800, s1000 }

N-AccessFails ::=
    INTEGER (1..64)

N-AP-RetransMax ::=
    INTEGER (1..64)

NetworkAssistedGPS-Supported ::=
    ENUMERATED {
        networkBased,
        ue-Based,
        bothNetworkAndUE-Based,
        noNetworkAssistedGPS }

NF-BO-AllBusy ::=
    INTEGER (0..31)

NF-BO-NoAICH ::=
    INTEGER (0..31)

NF-BO-Mismatch ::=
    INTEGER (0..127)

NS-BO-Busy ::=
    INTEGER (0..63)

NS-IP ::=
    INTEGER (0..28)

P-TMSI-and-RAI-GSM-MAP ::=
    SEQUENCE {
        p-TMSI
        rai
    }

PagingCause ::=
    ENUMERATED {
        terminatingConversationalCall,
        terminatingStreamingCall,
        terminatingInteractiveCall,
        terminatingBackgroundCall,
        terminatingHighPrioritySignalling,
        terminatingLowPrioritySignalling,
        terminatingCauseUnknown,
        spare
    }

PagingRecord ::=
    CHOICE {
        cn-Identity
            SEQUENCE {
                pagingCause
                cn-DomainIdentity
                cn-pagedUE-Identity
            },
        utran-Identity
            SEQUENCE {
                u-RNTI
                cn-OriginatedPage-connectedMode-UE
                pagingCause
                cn-DomainIdentity
                pagingRecordTypeID
            }
    }
    OPTIONAL

PagingRecord-r5 ::=
    CHOICE {
        utran-SingleUE-Identity
            SEQUENCE {
                u-RNTI
                cn-OriginatedPage-connectedMode-UE
                pagingCause
                cn-DomainIdentity
                pagingRecordTypeID
            }
        rrc-ConnectionReleaseInformation
            RRC-ConnectionReleaseInformation
    },
    utran-GroupIdentity
        SEQUENCE ( SIZE (1 .. maxURNTI-Group) ) OF

```

```

GroupIdentityWithReleaseInformation
}

PagingRecordList ::= SEQUENCE (SIZE (1..maxPage1)) OF
    PagingRecord

PagingRecordList-r5 ::= SEQUENCE (SIZE (1..maxPage1)) OF
    PagingRecord-r5

PDCP-Capability ::= SEQUENCE {
    losslessSRNS-RelocationSupport    BOOLEAN,
    supportForRfc2507                  CHOICE {
        notSupported                    NULL,
        supported                        MaxHcContextSpace
    }
}

PDCP-Capability-r4-ext ::= SEQUENCE {
    supportForRfc3095                  CHOICE {
        notSupported                    NULL,
        supported                        SEQUENCE {
            maxROHC-ContextSessions     MaxROHC-ContextSessions-r4  DEFAULT s16,
            reverseCompressionDepth     INTEGER (0..65535)          DEFAULT 0
        }
    }
}

PDCP-Capability-r5-ext ::= SEQUENCE {
    supportForRfc3095ContextRelocation  BOOLEAN,
    maxHcContextSpace-r5                MaxHcContextSpace-r5
}

PhysicalChannelCapability ::= SEQUENCE {
    fddPhysChCapability                 SEQUENCE {
        downlinkPhysChCapability        DL-PhysChCapabilityFDD,
        uplinkPhysChCapability          UL-PhysChCapabilityFDD
    } OPTIONAL,
    -- tddPhysChCapability describes the 3.84Mcps TDD physical channel capability
    tddPhysChCapability                 SEQUENCE {
        downlinkPhysChCapability        DL-PhysChCapabilityTDD,
        uplinkPhysChCapability          UL-PhysChCapabilityTDD
    } OPTIONAL
}

-- PhysicalChannelCapability-LCR-r4 describes the 1.28Mcps TDD physical channel capability
PhysicalChannelCapability-LCR-r4 ::= SEQUENCE {
    tdd128-PhysChCapability             SEQUENCE {
        downlinkPhysChCapability        DL-PhysChCapabilityTDD-LCR-r4,
        uplinkPhysChCapability          UL-PhysChCapabilityTDD-LCR-r4
    } OPTIONAL
}

-- PhysicalChannelCapability-hspdsch-r5 describes the HS-PDSCH physical channel capability
PhysicalChannelCapability-hspdsch-r5 ::= SEQUENCE {
    supportOfDedicatedPilotsForChannelEstimationOfHSDSCH  BOOLEAN,
    modeSpecificInfo                                       CHOICE {
        fdd                                                 SEQUENCE {
            hspdsch-supported                               CHOICE {
                supported                                   HSDSCH-physical-layer-category,
                notsupported                                NULL
            }
        },
        tdd384                                              SEQUENCE {
            hspdsch-supported                               CHOICE {
                supported                                   HSDSCH-physical-layer-category,
                notsupported                                NULL
            }
        },
        tdd128                                              SEQUENCE {
            hspdsch-supported                               CHOICE {
                supported                                   HSDSCH-physical-layer-category,
                notsupported                                NULL
            }
        }
    }
} OPTIONAL

PNBSCH-Allocation-r4 ::= SEQUENCE {

```

```

    numberOfRepetitionsPerSFNPeriod ENUMERATED {
        c2, c3, c4, c5, c6, c7, c8, c9, c10,
        c12, c14, c16, c18, c20, c24, c28, c32,
        c36, c40, c48, c56, c64, c72, c80 }
}

ProtocolErrorCause ::=
    ENUMERATED {
        asn1-ViolationOrEncodingError,
        messageTypeNonexistent,
        messageNotCompatibleWithReceiverState,
        ie-ValueNotComprehended,
        informationElementMissing,
        messageExtensionNotComprehended,
        spare2, spare1 }

ProtocolErrorIndicator ::=
    ENUMERATED {
        noError, errorOccurred }

ProtocolErrorIndicatorWithMoreInfo ::=
    CHOICE {
        noError NULL,
        errorOccurred SEQUENCE {
            rrc-TransactionIdentifier RRC-TransactionIdentifier,
            protocolErrorInformation ProtocolErrorInformation
        }
    }

ProtocolErrorMoreInformation ::= SEQUENCE {
    diagnosticsType CHOICE {
        type1 CHOICE {
            asn1-ViolationOrEncodingError NULL,
            messageTypeNonexistent NULL,
            messageNotCompatibleWithReceiverState
                IdentificationOfReceivedMessage,
            ie-ValueNotComprehended
                IdentificationOfReceivedMessage,
            conditionalInformationElementError
                IdentificationOfReceivedMessage,
            messageExtensionNotComprehended
                IdentificationOfReceivedMessage,
            spare1 NULL,
            spare2 NULL
        },
        spare NULL
    }
}

RadioFrequencyBandFDD ::=
    ENUMERATED {
        fdd2100,
        fdd1900,
        fdd1800, spare5, spare4, spare3, spare2, spare1 }

RadioFrequencyBandTDDList ::=
    ENUMERATED {
        a, b, c, ab, ac, bc, abc, spare }

RadioFrequencyBandTDD ::=
    ENUMERATED {a, b, c, spare}

RadioFrequencyBandGSM ::=
    ENUMERATED {
        gsm450,
        gsm480,
        gsm850,
        gsm900P,
        gsm900E,
        gsm1800,
        gsm1900,
        spare9, spare8, spare7, spare6, spare5,
        spare4, spare3, spare2, spare1}

Rb-timer-indicator ::=
    SEQUENCE {
        t314-expired BOOLEAN,
        t315-expired BOOLEAN }

Re-EstablishmentTimer ::=
    ENUMERATED {
        useT314, useT315
    }

RedirectionInfo ::=
    CHOICE {
        frequencyInfo FrequencyInfo,
        interRATInfo InterRATInfo
    }

```

```

RejectionCause ::=
    ENUMERATED {
        congestion,
        unspecified }

ReleaseCause ::=
    ENUMERATED {
        normalEvent,
        unspecified,
        pre-emptiveRelease,
        congestion,
        re-establishmentReject,
        directedsignallingconnectionre-establishment,
        userInactivity,
        spare }

RF-Capability ::=
    SEQUENCE {
        fddRF-Capability
            SEQUENCE {
                ue-PowerClass
                TxRxFrequencySeparation
            }
        tddRF-Capability
            SEQUENCE {
                ue-PowerClass
                radioFrequencyBandTDDList
                chipRateCapability
            }
    }

RF-Capability-r4-ext ::=
    SEQUENCE {
        tddRF-Capability
            SEQUENCE {
                ue-PowerClass
                radioFrequencyBandTDDList
                chipRateCapability
            }
    }

RLC-Capability ::=
    SEQUENCE {
        totalRLC-AM-BufferSize
        maximumRLC-WindowSize
        maximumAM-EntityNumber
    }

RLC-Capability-r5-ext ::=
    SEQUENCE {
        totalRLC-AM-BufferSize
        TotalRLC-AM-BufferSize-r5-ext
    }

RRC-ConnectionReleaseInformation ::=
    CHOICE {
        noRelease
        release
            SEQUENCE {
                releaseCause
            }
    }

RRC-MessageSequenceNumber ::=
    INTEGER (0..15)

RRC-MessageSequenceNumberList ::=
    SEQUENCE (SIZE (4..5)) OF
        RRC-MessageSequenceNumber

RRC-StateIndicator ::=
    ENUMERATED {
        cell-DCH, cell-FACH, cell-PCH, ura-PCH }

RRC-TransactionIdentifier ::=
    INTEGER (0..3)

S-RNTI ::=
    BIT STRING (SIZE (20))

S-RNTI-2 ::=
    BIT STRING (SIZE (10))

SecurityCapability ::=
    SEQUENCE {
        cipheringAlgorithmCap
            BIT STRING {
                -- For each bit value "0" means false/ not supported
                spare15(0),
                spare14(1),
                spare13(2),
                spare12(3),
                spare11(4),
                spare10(5),
                spare9(6),
                spare8(7),
            }
    }

```

```

        spare7(8),
        spare6(9),
        spare5(10),
        spare4(11),
        spare3(12),
        spare2(13),
        uea1(14),
        uea0(15)
    } (SIZE (16)),
integrityProtectionAlgorithmCap BIT STRING {
    -- For each bit value "0" means false/ not supported
    spare15(0),
    spare14(1),
    spare13(2),
    spare12(3),
    spare11(4),
    spare10(5),
    spare9(6),
    spare8(7),
    spare7(8),
    spare6(9),
    spare5(10),
    spare4(11),
    spare3(12),
    spare2(13),
    uia1(14),
    spare0(15)
} (SIZE (16))
}

SimultaneousSCCPCH-DPCH-Reception ::= CHOICE {
    notSupported          NULL,
    supported             SEQUENCE {
        maxNoSCCPCH-RL    MaxNoSCCPCH-RL,
        -- simultaneousSCCPCH-DPCH-DPDCH-Reception is applicable only if
        -- the IE Support of PDSCH = TRUE
        simultaneousSCCPCH-DPCH-DPDCH-Reception    BOOLEAN
    }
}

SRNC-Identity ::=          BIT STRING (SIZE (12))

START-Value ::=          BIT STRING (SIZE (20))

STARTList ::=          SEQUENCE (SIZE (1..maxCNdomains)) OF
                        STARTSingle

STARTSingle ::=          SEQUENCE {
    cn-DomainIdentity      CN-DomainIdentity,
    start-Value            START-Value
}

SystemSpecificCapUpdateReq ::=          ENUMERATED {
    gsm }

SystemSpecificCapUpdateReqList ::= SEQUENCE (SIZE (1..maxSystemCapability)) OF
    SystemSpecificCapUpdateReq

T-300 ::=          ENUMERATED {
    ms100, ms200, ms400, ms600, ms800,
    ms1000, ms1200, ms1400, ms1600,
    ms1800, ms2000, ms3000, ms4000,
    ms6000, ms8000 }

T-301 ::=          ENUMERATED {
    ms100, ms200, ms400, ms600, ms800,
    ms1000, ms1200, ms1400, ms1600,
    ms1800, ms2000, ms3000, ms4000,
    ms6000, ms8000, spare }

T-302 ::=          ENUMERATED {
    ms100, ms200, ms400, ms600, ms800,
    ms1000, ms1200, ms1400, ms1600,
    ms1800, ms2000, ms3000, ms4000,
    ms6000, ms8000, spare }

```

```

T-304 ::=
    ENUMERATED {
        ms100, ms200, ms400,
        ms1000, ms2000, spare3, spare2, spare1 }

T-305 ::=
    ENUMERATED {
        noUpdate, m5, m10, m30,
        m60, m120, m360, m720 }

T-307 ::=
    ENUMERATED {
        s5, s10, s15, s20,
        s30, s40, s50, spare }

T-308 ::=
    ENUMERATED {
        ms40, ms80, ms160, ms320 }

T-309 ::=
    INTEGER (1..8)

T-310 ::=
    ENUMERATED {
        ms40, ms80, ms120, ms160,
        ms200, ms240, ms280, ms320 }

T-311 ::=
    ENUMERATED {
        ms250, ms500, ms750, ms1000,
        ms1250, ms1500, ms1750, ms2000 }

-- The value 0 for T-312 is not used in this version of the specification
T-312 ::=
    INTEGER (0..15)

T-313 ::=
    INTEGER (0..15)

T-314 ::=
    ENUMERATED {
        s0, s2, s4, s6, s8,
        s12, s16, s20 }

T-315 ::=
    ENUMERATED {
        s0, s10, s30, s60, s180,
        s600, s1200, s1800 }

T-316 ::=
    ENUMERATED {
        s0, s10, s20, s30, s40,
        s50, s-inf, spare }

-- All the values are changed to "infinity" in Rel-5
T-317 ::=
    ENUMERATED {
        infinity0, infinity1, infinity2, infinity3, infinity4,
        infinity5, infinity6, infinity7}

T-CPCH ::=
    ENUMERATED {
        ct0, ct1 }

TMSI-and-LAI-GSM-MAP ::=
    SEQUENCE {
        tmsi
        lai
    }

TMSI-DS-41 ::=
    OCTET STRING (SIZE (2..17))

TotalRLC-AM-BufferSize ::=
    ENUMERATED {
        dummy, kb10, kb50, kb100,
        kb150, kb500, kb1000, spare }

TotalRLC-AM-BufferSize-r5-ext ::=
    ENUMERATED {
        kb200, kb300, kb400, kb750}

TotalBufferSize ::=
    ENUMERATED {
        kb50, kb100, kb150, kb200,
        kb300, spare3, spare2, spare1 }

-- Actual value TransmissionProbability = IE value * 0.125
TransmissionProbability ::=
    INTEGER (1..8)

TransportChannelCapability ::=
    SEQUENCE {
        dl-TransChCapability
        ul-TransChCapability
    }

```

```

TurboSupport ::=
    notSupported
    supported
}

TxRxFrequencySeparation ::=
    ENUMERATED {
        mhz190, mhz174-8-205-2,
        mhz134-8-245-2 }

U-RNTI ::=
    srnc-Identity
    s-RNTI
}

U-RNTI-Group ::=
    CHOICE {
-- TABULAR: not following the tabular strictly, but this will most likely save bits
    all
    u-RNTI-BitMaskIndex-b1          BIT STRING (SIZE (31)),
    u-RNTI-BitMaskIndex-b2          BIT STRING (SIZE (30)),
    u-RNTI-BitMaskIndex-b3          BIT STRING (SIZE (29)),
    u-RNTI-BitMaskIndex-b4          BIT STRING (SIZE (28)),
    u-RNTI-BitMaskIndex-b5          BIT STRING (SIZE (27)),
    u-RNTI-BitMaskIndex-b6          BIT STRING (SIZE (26)),
    u-RNTI-BitMaskIndex-b7          BIT STRING (SIZE (25)),
    u-RNTI-BitMaskIndex-b8          BIT STRING (SIZE (24)),
    u-RNTI-BitMaskIndex-b9          BIT STRING (SIZE (23)),
    u-RNTI-BitMaskIndex-b10         BIT STRING (SIZE (22)),
    u-RNTI-BitMaskIndex-b11         BIT STRING (SIZE (21)),
    u-RNTI-BitMaskIndex-b12         BIT STRING (SIZE (20)),
    u-RNTI-BitMaskIndex-b13         BIT STRING (SIZE (19)),
    u-RNTI-BitMaskIndex-b14         BIT STRING (SIZE (18)),
    u-RNTI-BitMaskIndex-b15         BIT STRING (SIZE (17)),
    u-RNTI-BitMaskIndex-b16         BIT STRING (SIZE (16)),
    u-RNTI-BitMaskIndex-b17         BIT STRING (SIZE (15)),
    u-RNTI-BitMaskIndex-b18         BIT STRING (SIZE (14)),
    u-RNTI-BitMaskIndex-b19         BIT STRING (SIZE (13)),
    u-RNTI-BitMaskIndex-b20         BIT STRING (SIZE (12)),
    u-RNTI-BitMaskIndex-b21         BIT STRING (SIZE (11)),
    u-RNTI-BitMaskIndex-b22         BIT STRING (SIZE (10)),
    u-RNTI-BitMaskIndex-b23         BIT STRING (SIZE (9)),
    u-RNTI-BitMaskIndex-b24         BIT STRING (SIZE (8)),
    u-RNTI-BitMaskIndex-b25         BIT STRING (SIZE (7)),
    u-RNTI-BitMaskIndex-b26         BIT STRING (SIZE (6)),
    u-RNTI-BitMaskIndex-b27         BIT STRING (SIZE (5)),
    u-RNTI-BitMaskIndex-b28         BIT STRING (SIZE (4)),
    u-RNTI-BitMaskIndex-b29         BIT STRING (SIZE (3)),
    u-RNTI-BitMaskIndex-b30         BIT STRING (SIZE (2)),
    u-RNTI-BitMaskIndex-b31         BIT STRING (SIZE (1))
}

U-RNTI-Short ::=
    srnc-Identity
    s-RNTI-2
}

UE-ConnTimersAndConstants ::=
    SEQUENCE {
-- Optional is used also for parameters for which the default value is the last one read in SIB1
-- t-301 and n-301 should not be used by the UE in this version of the specification
    t-301          T-301          DEFAULT ms2000,
    n-301          N-301          DEFAULT 2,
    t-302          T-302          DEFAULT ms4000,
    n-302          N-302          DEFAULT 3,
    t-304          T-304          DEFAULT ms2000,
    n-304          N-304          DEFAULT 2,
    t-305          T-305          DEFAULT m30,
    t-307          T-307          DEFAULT s30,
    t-308          T-308          DEFAULT ms160,
    t-309          T-309          DEFAULT 5,
    t-310          T-310          DEFAULT ms160,
    n-310          N-310          DEFAULT 4,
    t-311          T-311          DEFAULT ms2000,
    t-312          T-312          DEFAULT 1,
-- n-312 shall be ignored if n-312 in UE-ConnTimersAndConstants-v3a0ext is present, and the
-- value of that element shall be used instead.
    n-312          N-312          DEFAULT s1,
    t-313          T-313          DEFAULT 3,
    n-313          N-313          DEFAULT s20,

```

```

t-314          T-314          DEFAULT s12,
t-315          T-315          DEFAULT s180,
-- n-315 shall be ignored if n-315 in UE-ConnTimersAndConstants-v3a0ext is present, and the
-- value of that element shall be used instead.
n-315          N-315          DEFAULT s1,
t-316          T-316          DEFAULT s30,
t-317          T-317          DEFAULT infinity4
}

UE-ConnTimersAndConstants-v3a0ext ::=          SEQUENCE {
n-312          N-312ext          OPTIONAL,
n-315          N-315ext          OPTIONAL
}

UE-ConnTimersAndConstants-r5 ::=          SEQUENCE {
-- Optional is used also for parameters for which the default value is the last one read in SIB1
-- t-301 and n-301 should not be used by the UE in this version of the specification
t-301          T-301          DEFAULT ms2000,
n-301          N-301          DEFAULT 2,
t-302          T-302          DEFAULT ms4000,
n-302          N-302          DEFAULT 3,
t-304          T-304          DEFAULT ms2000,
n-304          N-304          DEFAULT 2,
t-305          T-305          DEFAULT m30,
t-307          T-307          DEFAULT s30,
t-308          T-308          DEFAULT ms160,
t-309          T-309          DEFAULT 5,
t-310          T-310          DEFAULT ms160,
n-310          N-310          DEFAULT 4,
t-311          T-311          DEFAULT ms2000,
t-312          T-312          DEFAULT 1,
n-312          N-312-r5          DEFAULT s1,
t-313          T-313          DEFAULT 3,
n-313          N-313          DEFAULT s20,
t-314          T-314          DEFAULT s12,
t-315          T-315          DEFAULT s180,
n-315          N-315-r5          DEFAULT s1,
t-316          T-316          DEFAULT s30,
t-317          T-317          DEFAULT infinity4
}

UE-IdleTimersAndConstants ::=          SEQUENCE {
t-300          T-300,
n-300          N-300,
t-312          T-312,
-- n-312 shall be ignored if n-312 in UE-IdleTimersAndConstants-v3a0ext is present, and the
-- value of that element shall be used instead.
n-312          N-312
}

UE-IdleTimersAndConstants-v3a0ext ::=          SEQUENCE {
n-312          N-312ext          OPTIONAL
}

UE-MultiModeRAT-Capability ::=          SEQUENCE {
multiRAT-CapabilityList          MultiRAT-Capability,
multiModeCapability          MultiModeCapability
}

UE-PowerClass ::=          INTEGER (1..4)

UE-PowerClass-v370 ::=          ENUMERATED {class1, class2, class3, class4,
spare4, spare3, spare2, spare1 }

UE-RadioAccessCapability ::=          SEQUENCE {
pdcp-Capability          PDCP-Capability,
rlc-Capability          RLC-Capability,
transportChannelCapability          TransportChannelCapability,
rf-Capability          RF-Capability,
physicalChannelCapability          PhysicalChannelCapability,
ue-MultiModeRAT-Capability          UE-MultiModeRAT-Capability,
securityCapability          SecurityCapability,
ue-positioning-Capability          UE-Positioning-Capability,
measurementCapability          MeasurementCapability          OPTIONAL
}

UE-RadioAccessCapabilityInfo ::=          SEQUENCE {
ue-RadioAccessCapability          UE-RadioAccessCapability,

```

```

    ue-RadioAccessCapability-v370ext
  }
UE-RadioAccessCapability-v370ext ::= SEQUENCE {
    ue-RadioAccessCapabBandFDDList
}
UE-RadioAccessCapability-v380ext ::= SEQUENCE {
    ue-PositioningCapabilityExt-v380
}
UE-RadioAccessCapability-v3a0ext ::= SEQUENCE {
    ue-PositioningCapabilityExt-v3a0
}
UE-RadioAccessCapability-v3g0ext ::= SEQUENCE {
    ue-PositioningCapabilityExt-v3g0
}
UE-PositioningCapabilityExt-v380 ::= SEQUENCE {
    rx-tx-TimeDifferenceType2Capable
}
UE-PositioningCapabilityExt-v3a0 ::= SEQUENCE {
    validity-CellPCH-UraPCH
}
UE-PositioningCapabilityExt-v3g0 ::= SEQUENCE {
    sfn-sfnType2Capability
}
UE-RadioAccessCapabBandFDDList ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
    UE-RadioAccessCapabBandFDD
UE-RadioAccessCapabBandFDD ::= SEQUENCE{
    radioFrequencyBandFDD          RadioFrequencyBandFDD,
    fddRF-Capability                SEQUENCE {
        ue-PowerClass              UE-PowerClass-v370,
        txRxFrequencySeparation    TxRxFrequencySeparation
    } OPTIONAL,
    measurementCapability           MeasurementCapability-v370
}
UE-RadioAccessCapability-v4xyext ::= SEQUENCE {
    pdcp-Capability-r4-ext          PDCP-Capability-r4-ext,
    tdd-CapabilityExt              SEQUENCE {
        rf-Capability              RF-Capability-r4-ext,
        physicalChannelCapability-LCR PhysicalChannelCapability-LCR-r4,
        measurementCapability-r4-ext MeasurementCapability-r4-ext
    } OPTIONAL,
    -- IE " AccessStratumReleaseIndicator" is not needed in RRC CONNECTION SETUP COMPLETE
    accessStratumReleaseIndicator  AccessStratumReleaseIndicator OPTIONAL
}
UE-RadioAccessCapabilityComp ::= SEQUENCE {
    totalAM-RLCMemoryExceeds10kB  BOOLEAN,
    rf-CapabilityComp              RF-CapabilityComp
}
RF-CapabilityComp ::= SEQUENCE {
    fdd                            CHOICE {
        notSupported              NULL,
        supported                  RF-CapabBandListFDDComp
    },
    tdd                            CHOICE {
        notSupported              NULL,
        supported                  RF-CapabBandListTDDComp
    }
}
RF-CapabBandFDDComp ::= ENUMERATED { notSupported, mhz190,
    mhz174-8-205-2, mhz134-8-245-2 }
RF-CapabBandListFDDComp ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
    -- the first entry corresponds with the first value of IE RadioFrequencyBandFDD,
    -- fdd2100, and so on
    RF-CapabBandFDDComp

```

```

RF-CapabBandListTDDComp ::= SEQUENCE {
    radioFrequencyBandTDDList    RadioFrequencyBandTDDList,
    chipRateCapability            ChipRateCapability
}

UE-RadioAccessCapability-v5xyext ::= SEQUENCE {
    dl-CapabilityWithSimultaneousHS-DSCHConfig DL-CapabilityWithSimultaneousHS-DSCHConfig
    OPTIONAL,
    pdcp-Capability-r5-ext                PDCP-Capability-r5-ext,
    rlc-Capability-r5-ext                 RLC-Capability-r5-ext,
    physicalChannelCapability            PhysicalChannelCapability-hspdsch-r5,
    multiModerAT-Capability-v5xyext      MultiModerAT-Capability-v5xyext
}

UL-PhysChCapabilityFDD ::= SEQUENCE {
    maxNoDPDCH-BitsTransmitted          MaxNoDPDCH-BitsTransmitted,
    supportOfPCPCH                      BOOLEAN
}

UL-PhysChCapabilityTDD ::= SEQUENCE {
    maxTS-PerFrame                      MaxTS-PerFrame,
    maxPhysChPerTimeslot                MaxPhysChPerTimeslot,
    minimumSF                           MinimumSF-UL,
    supportOfPUSCH                      BOOLEAN
}

UL-PhysChCapabilityTDD-LCR-r4 ::= SEQUENCE {
    maxTS-PerSubFrame                  MaxTS-PerSubFrame-r4,
    maxPhysChPerTimeslot                MaxPhysChPerTimeslot,
    minimumSF                           MinimumSF-UL,
    supportOfPUSCH                      BOOLEAN,
    supportOf8PSK                      BOOLEAN
}

UL-TransChCapability ::= SEQUENCE {
    maxNoBitsTransmitted                MaxNoBits,
    maxConvCodeBitsTransmitted          MaxNoBits,
    turboEncodingSupport                TurboSupport,
    maxSimultaneousTransChs             MaxSimultaneousTransChsUL,
    modeSpecificInfo                   CHOICE {
        fdd                             NULL,
        tdd                             SEQUENCE {
            maxSimultaneousCCTrCH-Count  MaxSimultaneousCCTrCH-Count
        }
    },
    maxTransportedBlocks                 MaxTransportBlocksUL,
    maxNumberOfTFC                       MaxNumberOfTFC-UL,
    maxNumberOfTF                        MaxNumberOfTF
}

UE-Positioning-Capability ::= SEQUENCE {
    standaloneLocMethodsSupported       BOOLEAN,
    ue-BasedOTDOA-Supported             BOOLEAN,
    networkAssistedGPS-Supported        NetworkAssistedGPS-Supported,
    supportForUE-GPS-TimingOfCellFrames BOOLEAN,
    supportForIPDL                      BOOLEAN
}

UE-SecurityInformation ::= SEQUENCE {
    start-CS                             START-Value
}

URA-UpdateCause ::= ENUMERATED {
    changeOfURA,
    periodicURAUpdate,
    dummy,
    spare1 }

UTRAN-DRX-CycleLengthCoefficient ::= INTEGER (3..9)

WaitTime ::= INTEGER (0..15)

-- *****
--
-- RADIO BEARER INFORMATION ELEMENTS (10.3.4)
--

```

```

-- *****
AlgorithmSpecificInfo ::=          CHOICE {
    rfc2507-Info                    RFC2507-Info
}

AlgorithmSpecificInfo-r4 ::=      CHOICE {
    rfc2507-Info                    RFC2507-Info,
    rfc3095-Info                    RFC3095-Info-r4
}

CID-InclusionInfo-r4 ::=          ENUMERATED {
    pdcp-Header,
    rfc3095-PacketFormat }

-- Upper limit COUNT-C is 2^32 - 1
COUNT-C ::=                     INTEGER (0..4294967295)

-- Upper limit COUNT-C-MSB is 2^25 - 1
COUNT-C-MSB ::=                INTEGER (0..33554431)

DefaultConfigIdentity ::=        INTEGER (0..10)

DefaultConfigIdentity-r4 ::=     INTEGER (0..12)

DefaultConfigIdentity-r5 ::=     INTEGER (0..13)

DefaultConfigMode ::=            ENUMERATED {
    fdd,
    tdd }

DL-AM-RLC-Mode ::=              SEQUENCE {
    inSequenceDelivery              BOOLEAN,
    receivingWindowSize            ReceivingWindowSize,
    dl-RLC-StatusInfo              DL-RLC-StatusInfo
}

DL-CounterSynchronisationInfo ::= SEQUENCE {
    rB-WithPDCP-InfoList           RB-WithPDCP-InfoList    OPTIONAL
}

DL-CounterSynchronisationInfo-r5 ::= SEQUENCE {
    rB-WithPDCP-InfoList           RB-WithPDCP-InfoList    OPTIONAL,
    rB-PDCPContextRelocationList   RB-PDCPContextRelocationList  OPTIONAL
}

DL-LogicalChannelMapping ::=     SEQUENCE {
    -- TABULAR: DL-TransportChannelType contains TransportChannelIdentity as well.
    dl-TransportChannelType        DL-TransportChannelType,
    logicalChannelIdentity         LogicalChannelIdentity    OPTIONAL
}

DL-LogicalChannelMapping-r5 ::=   SEQUENCE {
    -- TABULAR: DL-TransportChannelType contains TransportChannelIdentity as well.
    dl-TransportChannelType        DL-TransportChannelType-r5,
    logicalChannelIdentity         LogicalChannelIdentity    OPTIONAL
}

DL-LogicalChannelMappingList ::= SEQUENCE (SIZE (1..maxLoCHperRLC)) OF
    DL-LogicalChannelMapping

DL-LogicalChannelMappingList-r5 ::= SEQUENCE (SIZE (1..maxLoCHperRLC)) OF
    DL-LogicalChannelMapping-r5

DL-RFC3095-r4 ::=                SEQUENCE {
    cid-InclusionInfo               CID-InclusionInfo-r4,
    max-CID                        INTEGER (1..16383)
    reverseDecompressionDepth      INTEGER (0..65535)
    DEFAULT 15,
    DEFAULT 0
}

DL-RLC-Mode ::=                  CHOICE {
    dl-AM-RLC-Mode                 DL-AM-RLC-Mode,
    dl-UM-RLC-Mode                 NULL,
    dl-TM-RLC-Mode                 DL-TM-RLC-Mode
}

DL-RLC-StatusInfo ::=            SEQUENCE {
    timerStatusProhibit            TimerStatusProhibit    OPTIONAL,

```

```

-- dummy is not used in this version of the specification, it should not be sent
-- and if received they should be ignored.
dummy                               TimerEPC                               OPTIONAL,
missingPDU-Indicator                BOOLEAN,
timerStatusPeriodic                 TimerStatusPeriodic                OPTIONAL
}

DL-TM-RLC-Mode ::=                   SEQUENCE {
  segmentationIndication             BOOLEAN
}

DL-TransportChannelType ::=          CHOICE {
  dch                                TransportChannelIdentity,
  fach                                NULL,
  dsch                                TransportChannelIdentity,
  dch-and-dsch                        TransportChannelIdentityDCHandDSCH
}

DL-TransportChannelType-r5 ::=       CHOICE {
  dch                                TransportChannelIdentity,
  fach                                NULL,
  dsch                                TransportChannelIdentity,
  dch-and-dsch                        TransportChannelIdentityDCHandDSCH,
  hsdSCH                              MAC-d-FlowIdentity,
  dch-and-hsdSCH                      MAC-d-FlowIdentityDCHandHSDSCH
}

ExpectReordering ::=                ENUMERATED {
  reorderingNotExpected,
  reorderingExpected }

ExplicitDiscard ::=                 SEQUENCE {
  timerMRW                            TimerMRW,
  timerDiscard                         TimerDiscard,
  maxMRW                               MaxMRW
}

HeaderCompressionInfo ::=           SEQUENCE {
  algorithmSpecificInfo
}

HeaderCompressionInfoList ::=       SEQUENCE (SIZE (1..maxPDCPALgoType)) OF
  HeaderCompressionInfo

HeaderCompressionInfo-r4 ::=         SEQUENCE {
  algorithmSpecificInfo-r4
}

HeaderCompressionInfoList-r4 ::=     SEQUENCE (SIZE (1..maxPDCPALgoType)) OF
  HeaderCompressionInfo-r4

LogicalChannelIdentity ::=           INTEGER (1..15)

LosslessSRNS-RelocSupport ::=       CHOICE {
  supported                            MaxPDCP-SN-WindowSize,
  notSupported                          NULL
}

MAC-d-HFN-initial-value ::=         BIT STRING (SIZE (24))

MAC-LogicalChannelPriority ::=       INTEGER (1..8)

MaxDAT ::=                           ENUMERATED {
  dat1, dat2, dat3, dat4, dat5, dat6,
  dat7, dat8, dat9, dat10, dat15, dat20,
  dat25, dat30, dat35, dat40 }

MaxDAT-Retransmissions ::=          SEQUENCE {
  maxDAT                               MaxDAT,
  timerMRW                             TimerMRW,
  maxMRW                               MaxMRW
}

MaxMRW ::=                           ENUMERATED {
  mm1, mm4, mm6, mm8, mm12, mm16,
  mm24, mm32 }

MaxPDCP-SN-WindowSize ::=           ENUMERATED {

```

```

        sn255, sn65535 }

MaxRST ::=
    ENUMERATED {
        rst1, rst4, rst6, rst8, rst12,
        rst16, rst24, rst32 }

NoExplicitDiscard ::=
    ENUMERATED {
        dt10, dt20, dt30, dt40, dt50,
        dt60, dt70, dt80, dt90, dt100 }

PDCP-Info ::=
    SEQUENCE {
        losslessSRNS-RelocSupport      LosslessSRNS-RelocSupport      OPTIONAL,
        -- TABULAR: pdcP-PDU-Header is MD in the tabular format and it can be encoded
        -- in one bit, so the OPTIONAL is removed for compactness.
        pdcP-PDU-Header                PDCP-PDU-Header,
        headerCompressionInfoList      HeaderCompressionInfoList      OPTIONAL
    }

PDCP-Info-r4 ::=
    SEQUENCE {
        losslessSRNS-RelocSupport      LosslessSRNS-RelocSupport      OPTIONAL,
        -- TABULAR: pdcP-PDU-Header is MD in the tabular format and it can be encoded
        -- in one bit, so the OPTIONAL is removed for compactness.
        pdcP-PDU-Header                PDCP-PDU-Header,
        headerCompressionInfoList-r4    HeaderCompressionInfoList-r4    OPTIONAL
    }

PDCP-InfoReconfig ::=
    SEQUENCE {
        pdcP-Info                      PDCP-Info,
        -- dummy is not used in this version of the specification and
        -- it should be ignored.
        dummy                          INTEGER (0..65535)
    }

PDCP-InfoReconfig-r4 ::=
    SEQUENCE {
        pdcP-Info                      PDCP-Info-r4
    }

PDCP-PDU-Header ::=
    ENUMERATED {
        present, absent }

PDCP-SN-Info ::=
    INTEGER (0..65535)

Poll-PDU ::=
    ENUMERATED {
        pdu1, pdu2, pdu4, pdu8, pdu16,
        pdu32, pdu64, pdu128 }

Poll-SDU ::=
    ENUMERATED {
        sdu1, sdu4, sdu16, sdu64 }

PollingInfo ::=
    SEQUENCE {
        timerPollProhibit              TimerPollProhibit              OPTIONAL,
        timerPoll                      TimerPoll                      OPTIONAL,
        poll-PDU                       Poll-PDU                      OPTIONAL,
        poll-SDU                       Poll-SDU                      OPTIONAL,
        lastTransmissionPDU-Poll       BOOLEAN,
        lastRetransmissionPDU-Poll     BOOLEAN,
        pollWindow                     PollWindow                     OPTIONAL,
        timerPollPeriodic              TimerPollPeriodic              OPTIONAL
    }

PollWindow ::=
    ENUMERATED {
        pw50, pw60, pw70, pw80, pw85,
        pw90, pw95, pw99 }

PredefinedConfigIdentity ::=
    INTEGER (0..15)

PredefinedConfigValueTag ::=
    INTEGER (0..15)

PredefinedRB-Configuration ::=
    SEQUENCE {
        re-EstablishmentTimer          Re-EstablishmentTimer,
        srb-InformationList             SRB-InformationSetupList,
        rb-InformationList              RB-InformationSetupList
    }

PreDefRadioConfiguration ::=
    SEQUENCE {
        -- Radio bearer IEs
        predefinedRB-Configuration     PredefinedRB-Configuration,
        -- Transport channel IEs
    }

```

```

    preDefTransChConfiguration      PreDefTransChConfiguration,
    -- Physical channel IEs
    preDefPhyChConfiguration       PreDefPhyChConfiguration
}

PredefinedConfigStatusList ::=      SEQUENCE (SIZE (maxPredefConfig)) OF
                                      PredefinedConfigStatusInfo

PredefinedConfigStatusInfo ::=      CHOICE {
    storedWithValueTagSameAsPrevious  NULL,
    other                             CHOICE {
        notStored                     NULL,
        storedWithDifferentValueTag   PredefinedConfigValueTag
    }
}

PredefinedConfigStatusListComp ::= SEQUENCE {
    setsWithDifferentValueTag         PredefinedConfigSetsWithDifferentValueTag,
    otherEntries                     PredefinedConfigStatusListVarSz          OPTIONAL
}

PredefinedConfigSetsWithDifferentValueTag ::= SEQUENCE (SIZE (1..2)) OF
                                                PredefinedConfigSetWithDifferentValueTag

PredefinedConfigSetWithDifferentValueTag ::= SEQUENCE {
    startPosition                     INTEGER (0..10)          DEFAULT 0,
    -- numberOfEntries                 INTEGER (6..16),
    -- numberOfEntries is covered by the size of the list in IE PredefinedConfigValueTagList
    valueTagList                     PredefinedConfigValueTagList
}

PredefinedConfigValueTagList ::=      SEQUENCE (SIZE (1..maxPredefConfig)) OF
                                      PredefinedConfigValueTag

PredefinedConfigStatusListVarSz ::= SEQUENCE (SIZE (1..maxPredefConfig)) OF
                                      PredefinedConfigStatusInfo

RAB-Info ::=                          SEQUENCE {
    rab-Identity                      RAB-Identity,
    cn-DomainIdentity                 CN-DomainIdentity,
    nas-Synchronisation-Indicator     NAS-Synchronisation-Indicator  OPTIONAL,
    re-EstablishmentTimer             Re-EstablishmentTimer
}

RAB-InformationList ::=               SEQUENCE (SIZE (1..maxRABsetup)) OF
                                      RAB-Info

RAB-InformationReconfigList ::=       SEQUENCE (SIZE (1.. maxRABsetup)) OF
                                      RAB-InformationReconfig

RAB-InformationReconfig ::=           SEQUENCE {
    rab-Identity                      RAB-Identity,
    cn-DomainIdentity                 CN-DomainIdentity,
    nas-Synchronisation-Indicator     NAS-Synchronisation-Indicator
}

RAB-Info-Post ::=                    SEQUENCE {
    rab-Identity                      RAB-Identity,
    cn-DomainIdentity                 CN-DomainIdentity,
    nas-Synchronisation-Indicator     NAS-Synchronisation-Indicator  OPTIONAL
}

RAB-InformationSetup ::=              SEQUENCE {
    rab-Info                          RAB-Info,
    rb-InformationSetupList           RB-InformationSetupList
}

RAB-InformationSetup-r4 ::=           SEQUENCE {
    rab-Info                          RAB-Info,
    rb-InformationSetupList           RB-InformationSetupList-r4
}

RAB-InformationSetupList ::=          SEQUENCE (SIZE (1..maxRABsetup)) OF
                                      RAB-InformationSetup

RAB-InformationSetupList-r4 ::=       SEQUENCE (SIZE (1..maxRABsetup)) OF
                                      RAB-InformationSetup-r4

```

```

RB-ActivationTimeInfo ::= SEQUENCE {
    rb-Identity          RB-Identity,
    rlc-SequenceNumber  RLC-SequenceNumber
}

RB-ActivationTimeInfoList ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-ActivationTimeInfo

RB-COUNT-C-Information ::= SEQUENCE {
    rb-Identity          RB-Identity,
    count-C-UL           COUNT-C,
    count-C-DL          COUNT-C
}

RB-COUNT-C-InformationList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
    RB-COUNT-C-Information

RB-COUNT-C-MSB-Information ::= SEQUENCE {
    rb-Identity          RB-Identity,
    count-C-MSB-UL      COUNT-C-MSB,
    count-C-MSB-DL      COUNT-C-MSB
}

RB-COUNT-C-MSB-InformationList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
    RB-COUNT-C-MSB-Information

RB-Identity ::= INTEGER (1..32)

RB-IdentityList ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-Identity

RB-InformationAffected ::= SEQUENCE {
    rb-Identity          RB-Identity,
    rb-MappingInfo      RB-MappingInfo
}

RB-InformationAffected-r5 ::= SEQUENCE {
    rb-Identity          RB-Identity,
    rb-MappingInfo      RB-MappingInfo
}

RB-InformationAffectedList ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-InformationAffected

RB-InformationAffectedList-r5 ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-InformationAffected-r5

RB-InformationReconfig ::= SEQUENCE {
    rb-Identity          RB-Identity,
    pdcp-Info           PDCP-InfoReconfig          OPTIONAL,
    pdcp-SN-Info        PDCP-SN-Info              OPTIONAL,
    rlc-Info            RLC-Info                  OPTIONAL,
    rb-MappingInfo      RB-MappingInfo           OPTIONAL,
    rb-StopContinue     RB-StopContinue          OPTIONAL
}

RB-InformationReconfig-r4 ::= SEQUENCE {
    rb-Identity          RB-Identity,
    pdcp-Info           PDCP-InfoReconfig-r4      OPTIONAL,
    rlc-Info            RLC-Info                  OPTIONAL,
    rb-MappingInfo      RB-MappingInfo           OPTIONAL,
    rb-StopContinue     RB-StopContinue          OPTIONAL
}

RB-InformationReconfig-r5 ::= SEQUENCE {
    rb-Identity          RB-Identity,
    pdcp-Info           PDCP-InfoReconfig-r4      OPTIONAL,
    rlc-Info            RLC-Info                  OPTIONAL,
    rb-MappingInfo      RB-MappingInfo-r5        OPTIONAL,
    rb-StopContinue     RB-StopContinue          OPTIONAL
}

RB-InformationReconfigList ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-InformationReconfig

RB-InformationReconfigList-r4 ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-InformationReconfig-r4

```

```

RB-InformationReconfigList-r5 ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-InformationReconfig-r5

RB-InformationReleaseList ::= SEQUENCE (SIZE (1..maxRB)) OF
    RB-Identity

RB-InformationSetup ::= SEQUENCE {
    rb-Identity RB-Identity,
    pdcp-Info PDCP-Info OPTIONAL,
    rlc-InfoChoice RLC-InfoChoice,
    rb-MappingInfo RB-MappingInfo
}

RB-InformationSetup-r4 ::= SEQUENCE {
    rb-Identity RB-Identity,
    pdcp-Info PDCP-Info-r4 OPTIONAL,
    rlc-InfoChoice RLC-InfoChoice,
    rb-MappingInfo RB-MappingInfo
}

RB-InformationSetupList ::= SEQUENCE (SIZE (1..maxRBperRAB)) OF
    RB-InformationSetup

RB-InformationSetupList-r4 ::= SEQUENCE (SIZE (1..maxRBperRAB)) OF
    RB-InformationSetup-r4

RB-MappingInfo ::= SEQUENCE (SIZE (1..maxRBMuxOptions)) OF
    RB-MappingOption

RB-MappingInfo-r5 ::= SEQUENCE (SIZE (1..maxRBMuxOptions)) OF
    RB-MappingOption-r5

RB-MappingOption ::= SEQUENCE {
    ul-LogicalChannelMappings UL-LogicalChannelMappings OPTIONAL,
    dl-LogicalChannelMappingList DL-LogicalChannelMappingList OPTIONAL
}

RB-MappingOption-r5 ::= SEQUENCE {
    ul-LogicalChannelMappings UL-LogicalChannelMappings OPTIONAL,
    dl-LogicalChannelMappingList-r5 DL-LogicalChannelMappingList-r5 OPTIONAL
}

RB-PDCPContextRelocation ::= SEQUENCE {
    rb-Identity RB-Identity,
    dl-RFC3095-Context-Relocation BOOLEAN,
    ul-RFC3095-Context-Relocation BOOLEAN
}

RB-PDCPContextRelocationList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
    RB-PDCPContextRelocation

RB-StopContinue ::= ENUMERATED {
    stopRB, continueRB }

RB-WithPDCP-Info ::= SEQUENCE {
    rb-Identity RB-Identity,
    pdcp-SN-Info PDCP-SN-Info
}

RB-WithPDCP-InfoList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
    RB-WithPDCP-Info

ReceivingWindowSize ::= ENUMERATED {
    rw1, rw8, rw16, rw32, rw64, rw128, rw256,
    rw512, rw768, rw1024, rw1536, rw2047,
    rw2560, rw3072, rw3584, rw4095 }

RFC2507-Info ::= SEQUENCE {
    f-MAX-PERIOD INTEGER (1..65535) DEFAULT 256,
    f-MAX-TIME INTEGER (1..255) DEFAULT 5,
    max-HEADER INTEGER (60..65535) DEFAULT 168,
    tcp-SPACE INTEGER (3..255) DEFAULT 15,
    non-TCP-SPACE INTEGER (3..65535) DEFAULT 15,
    -- TABULAR: expectReordering has only two possible values, so using Optional or Default
    -- would be wasteful
    expectReordering ExpectReordering
}

```

```

RFC3095-Info-r4 ::=          SEQUENCE {
    rohcProfileList          ROHC-ProfileList-r4,
    ul-RFC3095                UL-RFC3095-r4                OPTIONAL,
    dl-RFC3095                DL-RFC3095-r4                OPTIONAL
}

RLC-Info ::=                SEQUENCE {
    ul-RLC-Mode              UL-RLC-Mode                OPTIONAL,
    dl-RLC-Mode              DL-RLC-Mode                OPTIONAL
}

RLC-InfoChoice ::=         CHOICE {
    rlc-Info                 RLC-Info,
    same-as-RB               RB-Identity
}

RLC-SequenceNumber ::=    INTEGER (0..4095)

RLC-SizeInfo ::=          SEQUENCE {
    rlc-SizeIndex            INTEGER (1..maxTF)
}

RLC-SizeExplicitList ::=  SEQUENCE (SIZE (1..maxTF)) OF
    RLC-SizeInfo

ROHC-Profile-r4 ::=       INTEGER (1..3)

ROHC-ProfileList-r4 ::=   SEQUENCE (SIZE (1..maxROHC-Profile-r4)) OF
    ROHC-Profile-r4

ROHC-PacketSize-r4 ::=    INTEGER (2..1500)

ROHC-PacketSizeList-r4 ::= SEQUENCE (SIZE (1..maxROHC-PacketSizes-r4)) OF
    ROHC-PacketSize-r4

SRB-InformationSetup ::=  SEQUENCE {
    -- The default value for rb-Identity is the smallest value not used yet.
    rb-Identity              RB-Identity                OPTIONAL,
    rlc-InfoChoice           RLC-InfoChoice,
    rb-MappingInfo          RB-MappingInfo
}

SRB-InformationSetupList ::= SEQUENCE (SIZE (1..maxSRBsetup)) OF
    SRB-InformationSetup

SRB-InformationSetupList2 ::= SEQUENCE (SIZE (3..4)) OF
    SRB-InformationSetup

TimerDiscard ::=         ENUMERATED {
    td0-1, td0-25, td0-5, td0-75,
    td1, td1-25, td1-5, td1-75,
    td2, td2-5, td3, td3-5, td4,
    td4-5, td5, td7-5 }

TimerEPC ::=             ENUMERATED {
    te50, te60, te70, te80, te90,
    te100, te120, te140, te160, te180,
    te200, te300, te400, te500, te700,
    te900 }

TimerMRW ::=             ENUMERATED {
    te50, te60, te70, te80, te90, te100,
    te120, te140, te160, te180, te200,
    te300, te400, te500, te700, te900 }

TimerPoll ::=           ENUMERATED {
    tp10, tp20, tp30, tp40, tp50,
    tp60, tp70, tp80, tp90, tp100,
    tp110, tp120, tp130, tp140, tp150,
    tp160, tp170, tp180, tp190, tp200,
    tp210, tp220, tp230, tp240, tp250,
    tp260, tp270, tp280, tp290, tp300,
    tp310, tp320, tp330, tp340, tp350,
    tp360, tp370, tp380, tp390, tp400,
    tp410, tp420, tp430, tp440, tp450,
    tp460, tp470, tp480, tp490, tp500,
    tp510, tp520, tp530, tp540, tp550,
    tp600, tp650, tp700, tp750, tp800,

```

```

        tp850, tp900, tp950, tp1000 }

TimerPollPeriodic ::=          ENUMERATED {
        tper100, tper200, tper300, tper400,
        tper500, tper750, tper1000, tper2000 }

TimerPollProhibit ::=         ENUMERATED {
        tpp10, tpp20, tpp30, tpp40, tpp50,
        tpp60, tpp70, tpp80, tpp90, tpp100,
        tpp110, tpp120, tpp130, tpp140, tpp150,
        tpp160, tpp170, tpp180, tpp190, tpp200,
        tpp210, tpp220, tpp230, tpp240, tpp250,
        tpp260, tpp270, tpp280, tpp290, tpp300,
        tpp310, tpp320, tpp330, tpp340, tpp350,
        tpp360, tpp370, tpp380, tpp390, tpp400,
        tpp410, tpp420, tpp430, tpp440, tpp450,
        tpp460, tpp470, tpp480, tpp490, tpp500,
        tpp510, tpp520, tpp530, tpp540, tpp550,
        tpp600, tpp650, tpp700, tpp750, tpp800,
        tpp850, tpp900, tpp950, tpp1000 }

TimerRST ::=                   ENUMERATED {
        tr50, tr100, tr150, tr200, tr250, tr300,
        tr350, tr400, tr450, tr500, tr550,
        tr600, tr700, tr800, tr900, tr1000 }

TimerStatusPeriodic ::=       ENUMERATED {
        tsp100, tsp200, tsp300, tsp400, tsp500,
        tsp750, tsp1000, tsp2000 }

TimerStatusProhibit ::=       ENUMERATED {
        tsp10, tsp20, tsp30, tsp40, tsp50,
        tsp60, tsp70, tsp80, tsp90, tsp100,
        tsp110, tsp120, tsp130, tsp140, tsp150,
        tsp160, tsp170, tsp180, tsp190, tsp200,
        tsp210, tsp220, tsp230, tsp240, tsp250,
        tsp260, tsp270, tsp280, tsp290, tsp300,
        tsp310, tsp320, tsp330, tsp340, tsp350,
        tsp360, tsp370, tsp380, tsp390, tsp400,
        tsp410, tsp420, tsp430, tsp440, tsp450,
        tsp460, tsp470, tsp480, tsp490, tsp500,
        tsp510, tsp520, tsp530, tsp540, tsp550,
        tsp600, tsp650, tsp700, tsp750, tsp800,
        tsp850, tsp900, tsp950, tsp1000 }

TransmissionRLC-Discard ::=    CHOICE {
        timerBasedExplicit      ExplicitDiscard,
        timerBasedNoExplicit     NoExplicitDiscard,
        maxDAT-Retransmissions   MaxDAT-Retransmissions,
        noDiscard                 MaxDAT
    }

TransmissionWindowSize ::=     ENUMERATED {
        tw1, tw8, tw16, tw32, tw64, tw128, tw256,
        tw512, tw768, tw1024, tw1536, tw2047,
        tw2560, tw3072, tw3584, tw4095 }

UL-AM-RLC-Mode ::=            SEQUENCE {
        transmissionRLC-Discard  TransmissionRLC-Discard,
        transmissionWindowSize   TransmissionWindowSize,
        timerRST                  TimerRST,
        max-RST                    MaxRST,
        pollingInfo                PollingInfo                                OPTIONAL
    }

UL-CounterSynchronisationInfo ::= SEQUENCE {
        rB-WithPDCP-InfoList     RB-WithPDCP-InfoList     OPTIONAL,
        startList                  STARTList
    }

UL-LogicalChannelMapping ::=   SEQUENCE {
        -- TABULAR: UL-TransportChannelType contains TransportChannelIdentity as well.
        ul-TransportChannelType   UL-TransportChannelType,
        logicalChannelIdentity     LogicalChannelIdentity     OPTIONAL,
        rlc-SizeList                CHOICE {
            allSizes                NULL,
            configured                NULL,
            explicitList              RLC-SizeExplicitList
        }
    }

```

```

    },
    mac-LogicalChannelPriority          MAC-LogicalChannelPriority
}

UL-LogicalChannelMappingList ::= SEQUENCE {
    -- rlc-LogicalChannelMappingIndicator shall be set to TRUE in this version
    -- of the specification
    rlc-LogicalChannelMappingIndicator  BOOLEAN,
    ul-LogicalChannelMapping            SEQUENCE (SIZE (maxLoCHperRLC)) OF
                                        UL-LogicalChannelMapping
}

UL-LogicalChannelMappings ::= CHOICE {
    oneLogicalChannel                   UL-LogicalChannelMapping,
    twoLogicalChannels                  UL-LogicalChannelMappingList
}

UL-RFC3095-r4 ::= SEQUENCE {
    cid-InclusionInfo                   CID-InclusionInfo-r4,
    max-CID                             INTEGER (1..16383)           DEFAULT 15,
    rohcPacketSizeList                 ROHC-PacketSizeList-r4
}

UL-RLC-Mode ::= CHOICE {
    ul-AM-RLC-Mode                     UL-AM-RLC-Mode,
    ul-UM-RLC-Mode                     UL-UM-RLC-Mode,
    ul-TM-RLC-Mode                     UL-TM-RLC-Mode,
    spare                               NULL
}

UL-TM-RLC-Mode ::= SEQUENCE {
    transmissionRLC-Discard             TransmissionRLC-Discard   OPTIONAL,
    segmentationIndication             BOOLEAN
}

UL-UM-RLC-Mode ::= SEQUENCE {
    transmissionRLC-Discard             TransmissionRLC-Discard   OPTIONAL
}

UL-TransportChannelType ::= CHOICE {
    dch                                 TransportChannelIdentity,
    rach                                NULL,
    cpch                                NULL,
    usch                                TransportChannelIdentity
}

-- *****
--
-- TRANSPORT CHANNEL INFORMATION ELEMENTS (10.3.5)
--
-- *****

AddOrReconfMAC-dFlow ::= SEQUENCE {
    mac-hs-AddReconfQueue-List         MAC-hs-AddReconfQueue-List OPTIONAL,
    mac-hs-DelQueue-List               MAC-hs-DelQueue-List   OPTIONAL
}

AllowedTFC-List ::= SEQUENCE (SIZE (1..maxTFC)) OF
    TFC-Value

AllowedTFI-List ::= SEQUENCE (SIZE (1..maxTF)) OF
    INTEGER (0..31)

BitModeRLC-SizeInfo ::= CHOICE {
    sizeType1                          INTEGER (0..127),
    -- Actual value sizeType2 = (part1 * 8) + 128 + part2
    sizeType2                          SEQUENCE {
        part1                          INTEGER (0..15),
        part2                          INTEGER (1..7)           OPTIONAL
    },
    -- Actual value sizeType3 = (part1 * 16) + 256 + part2
    sizeType3                          SEQUENCE {
        part1                          INTEGER (0..47),
        part2                          INTEGER (1..15)           OPTIONAL
    },
    -- Actual value sizeType4 = (part1 * 64) + 1024 + part2
    sizeType4                          SEQUENCE {

```

```

        part1                INTEGER (0..62),
        part2                INTEGER (1..63)                OPTIONAL
    }
}

-- Actual value BLER-QualityValue = IE value * 0.1
BLER-QualityValue ::=      INTEGER (-63..0)

ChannelCodingType ::=      CHOICE {
    -- noCoding is only used for TDD in this version of the specification,
    -- otherwise it should be ignored
    noCoding                NULL,
    convolutional           CodingRate,
    turbo                   NULL
}

CodingRate ::=             ENUMERATED {
    half,
    third }

CommonDynamicTF-Info ::=  SEQUENCE {
    rlc-Size                CHOICE {
        fdd                 SEQUENCE {
            octetModeRLC-SizeInfoType2    OctetModeRLC-SizeInfoType2
        },
        tdd                 SEQUENCE {
            commonTDD-Choice              CHOICE {
                bitModeRLC-SizeInfo      BitModeRLC-SizeInfo,
                octetModeRLC-SizeInfoType1  OctetModeRLC-SizeInfoType1
            }
        },
        numberOfTbSizeList              SEQUENCE (SIZE (1..maxTF)) OF
                                         NumberOfTransportBlocks,
        logicalChannelList              LogicalChannelList
    }
}

CommonDynamicTF-Info-DynamicTTI ::= SEQUENCE {
    commonTDD-Choice          CHOICE {
        bitModeRLC-SizeInfo      BitModeRLC-SizeInfo,
        octetModeRLC-SizeInfoType1  OctetModeRLC-SizeInfoType1
    },
    numberOfTbSizeAndTTIList    NumberOfTbSizeAndTTIList,
    logicalChannelList          LogicalChannelList
}

CommonDynamicTF-InfoList ::= SEQUENCE (SIZE (1..maxTF)) OF
    CommonDynamicTF-Info

CommonDynamicTF-InfoList-DynamicTTI ::= SEQUENCE (SIZE (1..maxTF)) OF
    CommonDynamicTF-Info-DynamicTTI

CommonTransChTFS ::=      SEQUENCE {
    tti                      CHOICE {
        tti10                CommonDynamicTF-InfoList,
        tti20                CommonDynamicTF-InfoList,
        tti40                CommonDynamicTF-InfoList,
        tti80                CommonDynamicTF-InfoList,
        dynamic              CommonDynamicTF-InfoList-DynamicTTI
    },
    semistaticTF-Information    SemistaticTF-Information
}

CommonTransChTFS-LCR ::=  SEQUENCE {
    tti                      CHOICE {
        tti5                 CommonDynamicTF-InfoList,
        tti10                CommonDynamicTF-InfoList,
        tti20                CommonDynamicTF-InfoList,
        tti40                CommonDynamicTF-InfoList,
        tti80                CommonDynamicTF-InfoList,
        dynamic              CommonDynamicTF-InfoList-DynamicTTI
    },
    semistaticTF-Information    SemistaticTF-Information
}

CPCH-SetID ::=            INTEGER (1..maxCPCHsets)

CRC-Size ::=              ENUMERATED {

```

```

        crc0, crc8, crc12, crc16, crc24 }

DedicatedDynamicTF-Info ::=
    rlc-Size                SEQUENCE {
        bitMode              CHOICE {
            octetModeType1   BitModeRLC-SizeInfo,
                            OctetModeRLC-SizeInfoType1
        },
        numberOfTbSizeList   SEQUENCE (SIZE (1..maxTF)) OF
        NumberOfTransportBlocks,
        logicalChannelList   LogicalChannelList
    }

DedicatedDynamicTF-Info-DynamicTTI ::= SEQUENCE {
    rlc-Size                CHOICE {
        bitMode              BitModeRLC-SizeInfo,
        octetModeType1      OctetModeRLC-SizeInfoType1
    },
    numberOfTbSizeAndTTIList  NumberOfTbSizeAndTTIList,
    logicalChannelList        LogicalChannelList
}

DedicatedDynamicTF-InfoList ::= SEQUENCE (SIZE (1..maxTF)) OF
    DedicatedDynamicTF-Info

DedicatedDynamicTF-InfoList-DynamicTTI ::= SEQUENCE (SIZE (1..maxTF)) OF
    DedicatedDynamicTF-Info-DynamicTTI

DedicatedTransChTFS ::= SEQUENCE {
    tti                    CHOICE {
        tti10              DedicatedDynamicTF-InfoList,
        tti20              DedicatedDynamicTF-InfoList,
        tti40              DedicatedDynamicTF-InfoList,
        tti80              DedicatedDynamicTF-InfoList,
        dynamic            DedicatedDynamicTF-InfoList-DynamicTTI
    },
    semistaticTF-Information  SemistaticTF-Information
}

-- The maximum allowed size of DL-AddReconfTransChInfo2List sequence is 16
DL-AddReconfTransChInfo2List ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation2

-- The maximum allowed size of DL-AddReconfTransChInfoList sequence is 16
DL-AddReconfTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation

-- The maximum allowed size of DL-AddReconfTransChInfoList-r4 sequence is 16
DL-AddReconfTransChInfoList-r4 ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation-r4

-- The maximum allowed size of DL-AddReconfTransChInfoList-r5 sequence is 16
DL-AddReconfTransChInfoList-r5 ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation-r5

-- ASN.1 for IE "Added or Reconfigured DL TrCH information"
-- in case of messages other than: Radio Bearer Release message and
-- Radio Bearer Reconfiguration message
DL-AddReconfTransChInformation ::= SEQUENCE {
    dl-TransportChannelType  DL-TrCH-Type,
    dl-transportChannelIdentity  TransportChannelIdentity,
    tfs-SignallingMode       CHOICE {
        explicit-config      TransportFormatSet,
        sameAsULTrCH         UL-TransportChannelIdentity
    },
    dch-QualityTarget        QualityTarget                OPTIONAL,
    -- dummy is not used in this version of the specification and should be ignored.
    dummy                    TM-SignallingInfo           OPTIONAL
}

DL-AddReconfTransChInformation-r4 ::= SEQUENCE {
    dl-TransportChannelType  DL-TrCH-Type,
    dl-transportChannelIdentity  TransportChannelIdentity,
    tfs-SignallingMode       CHOICE {
        explicit-config      TransportFormatSet,
        sameAsULTrCH         UL-TransportChannelIdentity
    },
    dch-QualityTarget        QualityTarget                OPTIONAL
}

```

```

}

DL-AddReconfTransChInformation-r5 ::= SEQUENCE {
  dl-TransportChannelType          DL-TrCH-Type-r5,
  dl-transportChannelIdentity      TransportChannelIdentity,
  tfs-SignallingMode              CHOICE {
    explicit-config               TransportFormatSet,
    sameAsULTrCH                 UL-TransportChannelIdentity,
    hsdSCH                       HSDSCH-Info
  },
  dch-QualityTarget               QualityTarget          OPTIONAL
}

-- ASN.1 for IE "Added or Reconfigured DL TrCH information"
-- in case of Radio Bearer Release message and
-- Radio Bearer Reconfiguration message
DL-AddReconfTransChInformation2 ::= SEQUENCE {
  dl-TransportChannelType          DL-TrCH-Type,
  transportChannelIdentity        TransportChannelIdentity,
  tfs-SignallingMode              CHOICE {
    explicit-config               TransportFormatSet,
    sameAsULTrCH                 UL-TransportChannelIdentity
  },
  qualityTarget                   QualityTarget          OPTIONAL
}

DL-CommonTransChInfo ::= SEQUENCE {
  sccpch-TFCS                     TFCS                  OPTIONAL,
  -- modeSpecificInfo should be optional. A new version of this IE should be defined
  -- to be used in later versions of messages using this IE
  modeSpecificInfo                 CHOICE {
    fdd                            SEQUENCE {
      dl-Parameters                CHOICE {
        dl-DCH-TFCS                TFCS,
        sameAsUL                   NULL
      }
    },
    tdd                            SEQUENCE {
      individualDL-CCTrCH-InfoList IndividualDL-CCTrCH-InfoList OPTIONAL
    }
  }
}

DL-CommonTransChInfo-r4 ::= SEQUENCE {
  sccpch-TFCS                     TFCS                  OPTIONAL,
  modeSpecificInfo                 CHOICE {
    fdd                            SEQUENCE {
      dl-Parameters                CHOICE {
        dl-DCH-TFCS                SEQUENCE {
          tfcs                      TFCS          OPTIONAL
        },
        sameAsUL                   NULL
      }
    },
    tdd                            SEQUENCE {
      individualDL-CCTrCH-InfoList IndividualDL-CCTrCH-InfoList OPTIONAL
    }
  }
} OPTIONAL

DL-DeletedTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
  DL-TransportChannelIdentity

DL-DeletedTransChInfoList-r5 ::= SEQUENCE (SIZE (1..maxTrCH)) OF
  DL-TransportChannelIdentity-r5

DL-TransportChannelIdentity ::= SEQUENCE {
  dl-TransportChannelType          DL-TrCH-Type,
  dl-TransportChannelIdentity      TransportChannelIdentity
}

DL-TransportChannelIdentity-r5 ::= SEQUENCE {
  dl-TransportChannelType          DL-TrCH-Type-r5
}

DL-TrCH-Type ::= ENUMERATED {dch, dsch}

```

```

DL-TrCH-Type-r5 ::=
    dch
    dsch
    hsdSCH
}

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
}

HSDSCH-Info ::=
    harqInfo
    mac-hsResetIndicator
    addOrReconfMAC-dFlow
}

HARQ-Info ::=
    numberOfProcesses
    memoryPartitioning
    implicit
    explicit
}

HARQMemorySize ::=
    ENUMERATED {
        hms800, hms1600, hms2400, hms3200, hms4000,
        hms4800, hms5600, hms6400, hms7200, hms8000,
        hms8800, hms9600, hms10400, hms11200, hms12000,
        hms12800, hms13600, hms14400, hms15200, hms16000,
        hms17600, hms19200, hms20800, hms22400, hms24000,
        hms25600, hms27200, hms28800, hms30400, hms32000,
        hms36000, hms40000, hms44000, hms48000, hms52000,
        hms56000, hms60000, hms64000, hms68000, hms72000,
        hms76000, hms80000, hms88000, hms96000, hms104000,
        hms112000, hms120000, hms128000, hms136000, hms144000,
        hms152000, hms160000, hms176000, hms192000, hms208000,
        hms224000, hms240000, hms256000, hms272000, hms288000,
        hms304000 }

IndividualDL-CCTrCH-Info ::=
    dl-TFCS-Identity
    tfcs-SignallingMode
    explicit-config
    sameAsUL
}

IndividualDL-CCTrCH-InfoList ::=
    SEQUENCE (SIZE (1..maxCCTrCH)) OF
        IndividualDL-CCTrCH-Info

IndividualUL-CCTrCH-Info ::=
    ul-TFCS-Identity
}

```

```

    ul-TFCS                TFCS ,
    tfc-Subset             TFC-Subset
}

IndividualUL-CCTrCH-InfoList ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
    IndividualUL-CCTrCH-Info

LogicalChannelByRB ::= SEQUENCE {
    rb-Identity            RB-Identity,
    logChOfRb             INTEGER (0..1)
}
OPTIONAL

LogicalChannelList ::= CHOICE {
    allSizes              NULL,
    configured            NULL,
    explicitList          SEQUENCE (SIZE (1..15)) OF
        LogicalChannelByRB
}

MAC-d-FlowIdentityDCHandHSDSCH ::= SEQUENCE {
    dch-transport-ch-id  TransportChannelIdentity,
    hsdSCH-transport-ch-id MAC-d-FlowIdentity
}

MAC-d-FlowIdentity ::= INTEGER (0..7)

MAC-d-PDU-SizeInfo-List ::= SEQUENCE (SIZE(1.. maxMAC-d-PDU-sizes)) OF
    MAC-d-PDUsizeInfo

--MAC-d-Pdu sizes need to be defined
MAC-d-PDUsizeInfo ::= SEQUENCE{
    mac-d-PDU-Size      INTEGER (1..5000),
    mac-d-PDU-Index    INTEGER(0..7)
}

MAC-hs-AddReconfQueue-List ::= SEQUENCE (SIZE(1..maxQueueIDs)) OF
    MAC-hs-AddReconfQueue

MAC-hs-AddReconfQueue ::= SEQUENCE {
    mac-hsQueueId      INTEGER(0..7),
    mac-dFlowId        MAC-d-FlowIdentity,
    reorderingReleaseTimer T1-ReleaseTimer,
    mac-hsWindowSize   MAC-hs-WindowSize,
    mac-d-PDU-SizeInfo-List MAC-d-PDU-SizeInfo-List
}

MAC-hs-DelQueue-List ::= SEQUENCE (SIZE(1..maxQueueIDs)) OF
    MAC-hs-DelQueue

MAC-hs-DelQueue ::= SEQUENCE {
    mac-hsQueueId      INTEGER(0..7)
}

MAC-hs-WindowSize ::= ENUMERATED {
    mws4, mws6, mws8, mws12, mws16, mws24, mws32 }

NumberOfTbSizeAndTTLList ::= SEQUENCE (SIZE (1..maxTF)) OF SEQUENCE {
    numberOfTransportBlocks    NumberOfTransportBlocks,
    transmissionTimeInterval   TransmissionTimeInterval
}

MessType ::= ENUMERATED {
    transportFormatCombinationControl }

Non-allowedTFC-List ::= SEQUENCE (SIZE (1..maxTFC)) OF
    TFC-Value

NumberOfTransportBlocks ::= CHOICE {
    zero          NULL,
    one           NULL,
    small         INTEGER (2..17),
    large        INTEGER (18..512)
}

OctetModeRLC-SizeInfoType1 ::= CHOICE {
    -- Actual size = (8 * sizeType1) + 16
    sizeType1    INTEGER (0..31),
    sizeType2    SEQUENCE {

```

```

        -- Actual size = (32 * part1) + 272 + (part2 * 8)
        part1                INTEGER (0..23),
        part2                INTEGER (1..3)
    },
    sizeType3                SEQUENCE {
        -- Actual size = (64 * part1) + 1040 + (part2 * 8)
        part1                INTEGER (0..61),
        part2                INTEGER (1..7)
    }
}
OPTIONAL
OPTIONAL

OctetModeRLC-SizeInfoType2 ::= CHOICE {
    -- Actual size = (sizeType1 * 8) + 48
    sizeType1                INTEGER (0..31),
    -- Actual size = (sizeType2 * 16) + 312
    sizeType2                INTEGER (0..63),
    -- Actual size = (sizeType3 * 64) + 1384
    sizeType3                INTEGER (0..56)
}

PowerOffsetInformation ::= SEQUENCE {
    gainFactorInformation    GainFactorInformation,
    -- PowerOffsetPp-m is always absent in TDD
    powerOffsetPp-m        PowerOffsetPp-m
}
OPTIONAL

PowerOffsetPp-m ::= INTEGER (-5..10)

PreDefTransChConfiguration ::= SEQUENCE {
    ul-CommonTransChInfo    UL-CommonTransChInfo,
    ul-AddReconfTrChInfoList UL-AddReconfTransChInfoList,
    dl-CommonTransChInfo    DL-CommonTransChInfo,
    dl-TrChInfoList         DL-AddReconfTransChInfoList
}

QualityTarget ::= SEQUENCE {
    bler-QualityValue       BLER-QualityValue
}

RateMatchingAttribute ::= INTEGER (1..hiRM)

ReferenceTFC-ID ::= INTEGER (0..3)

RestrictedTrChInfo ::= SEQUENCE {
    ul-TransportChannelType UL-TrCH-Type,
    restrictedTrChIdentity  TransportChannelIdentity,
    allowedTFI-List        AllowedTFI-List
}
OPTIONAL

RestrictedTrChInfoList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    RestrictedTrChInfo

SemistaticTF-Information ::= SEQUENCE {
    -- TABULAR: Transmission time interval has been included in the IE CommonTransChTFS.
    channelCodingType       ChannelCodingType,
    rateMatchingAttribute   RateMatchingAttribute,
    crc-Size                CRC-Size
}

SignalledGainFactors ::= SEQUENCE {
    modeSpecificInfo        CHOICE {
        fdd                  SEQUENCE {
            gainFactorBetaC  GainFactor
        },
        tdd                  NULL
    },
    gainFactorBetaD         GainFactor,
    referenceTFC-ID        ReferenceTFC-ID
}
OPTIONAL

SplitTFCI-Signalling ::= SEQUENCE {
    splitType               SplitType
    tfci-Field2-Length     INTEGER (1..10)
    tfci-Field1-Information ExplicitTFCS-Configuration
    tfci-Field2-Information TFCSI-Field2-Information
}
OPTIONAL,
OPTIONAL,
OPTIONAL,
OPTIONAL

```

```

SplitType ::=
    ENUMERATED {
        hardSplit, logicalSplit }

T1-ReleaseTimer ::=
    ENUMERATED {
        rt10, rt20, rt30, rt40, rt50,
        rt60, rt70, rt80, rt90, rt100,
        rt120, rt140, rt160, rt200, rt300,
        rt400 }

TFC-Subset ::=
    minimumAllowedTFC-Number
    allowedTFC-List
    non-allowedTFC-List
    restrictedTrChInfoList
    fullTFCS
    CHOICE {
        TFC-Value,
        AllowedTFC-List,
        Non-allowedTFC-List,
        RestrictedTrChInfoList,
        NULL
    }

TFC-Subset-ID-With3b ::=
    INTEGER (0..7)

TFC-Subset-ID-With5b ::=
    INTEGER (0..31)

TFC-Subset-ID-With10b ::=
    INTEGER (0..1023)

TFC-SubsetList ::=
    modeSpecificInfo
        fdd
        tdd
        tfcs-ID
    },
    tfc-Subset
    SEQUENCE (SIZE (1.. maxTFCsub)) OF SEQUENCE {
        CHOICE {
            NULL,
            SEQUENCE {
                TFCS-Identity
            }
        }
        TFC-Subset
    }

TFC-Value ::=
    INTEGER (0..1023)

TFCI-Field2-Information ::=
    tfci-Range
    explicit-config
    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 {
        TFCS-IdentityPlain
        BOOLEAN
    }

TFCS-IdentityPlain ::=
    INTEGER (1..8)

TFCS-InfoForDSCH ::=
    ctfc2bit
    ctfc4bit
    ctfc6bit
    ctfc8bit
    ctfc12bit
    ctfc16bit
    ctfc24bit
    CHOICE {
        INTEGER (0..3),
        INTEGER (0..15),
        INTEGER (0..63),
        INTEGER (0..255),
        INTEGER (0..4095),
        INTEGER (0..65535),
        INTEGER (0..16777215)
    }

TFCS-ReconfAdd ::=
    ctfcSize
        ctfc2Bit
        ctfc2
        powerOffsetInformation
    },
    ctfc4Bit
    ctfc4
    SEQUENCE{
        CHOICE{
            SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
                INTEGER (0..3),
                PowerOffsetInformation
            }
            SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
                INTEGER (0..15),
            }
        }
    }

```

```

    powerOffsetInformation      PowerOffsetInformation      OPTIONAL
  },
  ctfc6Bit                      SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    ctfc6                        INTEGER (0..63),
    powerOffsetInformation      PowerOffsetInformation      OPTIONAL
  },
  ctfc8Bit                      SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    ctfc8                        INTEGER (0..255),
    powerOffsetInformation      PowerOffsetInformation      OPTIONAL
  },
  ctfc12Bit                     SEQUENCE (SIZE(1..maxTFC)) OF SEQUENCE {
    ctfc12                       INTEGER (0..4095),
    powerOffsetInformation      PowerOffsetInformation      OPTIONAL
  },
  ctfc16Bit                     SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    ctfc16                       INTEGER(0..65535),
    powerOffsetInformation      PowerOffsetInformation      OPTIONAL
  },
  ctfc24Bit                     SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
    ctfc24                       INTEGER(0..16777215),
    powerOffsetInformation      PowerOffsetInformation      OPTIONAL
  }
}

TFCS-Removal ::= SEQUENCE {
  tfci INTEGER (0..1023)
}

TFCS-RemovalList ::= SEQUENCE (SIZE (1..maxTFC)) OF
  TFCS-Removal

TimeDurationBeforeRetry ::= INTEGER (1..256)

TM-SignallingInfo ::= SEQUENCE {
  messType MessType,
  tm-SignallingMode CHOICE {
    mode1 NULL,
    mode2 SEQUENCE {
      -- in ul-controlledTrChList, TrCH-Type is always DCH
      ul-controlledTrChList UL-ControlledTrChList
    }
  }
}

TransmissionTimeInterval ::= ENUMERATED {
  tti10, tti20, tti40, tti80 }

TransmissionTimeValidity ::= INTEGER (1..256)

TransportChannelIdentity ::= INTEGER (1..32)

TransportChannelIdentityDCHandDSCH ::= SEQUENCE {
  dch-transport-ch-id TransportChannelIdentity,
  dsch-transport-ch-id TransportChannelIdentity
}

TransportFormatSet ::= CHOICE {
  dedicatedTransChTFS DedicatedTransChTFS,
  commonTransChTFS CommonTransChTFS
}

TransportFormatSet-LCR ::= CHOICE {
  dedicatedTransChTFS DedicatedTransChTFS,
  commonTransChTFS-LCR CommonTransChTFS-LCR
}

-- The maximum allowed size of UL-AddReconfTransChInfoList sequence is 16
UL-AddReconfTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
  UL-AddReconfTransChInformation

UL-AddReconfTransChInformation ::= SEQUENCE {
  ul-TransportChannelType UL-TrCH-Type,
  transportChannelIdentity TransportChannelIdentity,
  transportFormatSet TransportFormatSet
}

```

```

UL-CommonTransChInfo ::=          SEQUENCE {
  -- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
  -- CCH Info.
  tfc-Subset          TFC-Subset          OPTIONAL,
  prach-TFCS          TFCS                OPTIONAL,
  modeSpecificInfo   CHOICE {
    fdd                SEQUENCE {
      ul-TFCS
    },
    tdd                SEQUENCE {
      IndividualUL-CCH-InfoList          IndividualUL-CCH-InfoList          OPTIONAL
    }
  }
}

```

```

UL-CommonTransChInfo-r4 ::=       SEQUENCE {
  -- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
  -- CCH Info.
  tfc-Subset          TFC-Subset          OPTIONAL,
  prach-TFCS          TFCS                OPTIONAL,
  modeSpecificInfo   CHOICE {
    fdd                SEQUENCE {
      ul-TFCS
    },
    tdd                SEQUENCE {
      IndividualUL-CCH-InfoList          IndividualUL-CCH-InfoList          OPTIONAL
    }
  }
  tfc-SubsetList      TFC-SubsetList      OPTIONAL,
}

```

```

-- In UL-ControlledTrChList, TrCH-Type is always DCH
UL-ControlledTrChList ::=         SEQUENCE (SIZE (1..maxTrCH)) OF
                                  TransportChannelIdentity

```

```

UL-DeletedTransChInfoList ::=     SEQUENCE (SIZE (1..maxTrCH)) OF
                                  UL-TransportChannelIdentity

```

```

UL-TransportChannelIdentity ::=   SEQUENCE {
  ul-TransportChannelType          UL-TrCH-Type,
  ul-TransportChannelIdentity      TransportChannelIdentity
}

```

```

UL-TrCH-Type ::= ENUMERATED {dch, usch}

```

```

USCH-TransportChannelsInfo ::=    SEQUENCE (SIZE (1..maxTrCH)) OF
                                  SEQUENCE {
  usch-TransportChannelIdentity    TransportChannelIdentity,
  usch-TFS                          TransportFormatSet
}

```

```

-- *****
--
--   PHYSICAL CHANNEL INFORMATION ELEMENTS (10.3.6)
--
-- *****

```

```

ACK-NACK-repetitionFactor ::=    INTEGER(1..4)

```

```

AC-To-ASC-Mapping ::=            INTEGER (0..7)

```

```

AC-To-ASC-MappingTable ::=       SEQUENCE (SIZE (maxASCmap)) OF
                                  AC-To-ASC-Mapping

```

```

AccessServiceClass-FDD ::=       SEQUENCE {
  availableSignatureStartIndex    INTEGER (0..15),
  availableSignatureEndIndex      INTEGER (0..15),

  assignedSubChannelNumber        BIT STRING {
    b3(0),
    b2(1),
    b1(2),
    b0(3)
  } (SIZE(4))
}

```

```

AccessServiceClass-TDD ::=
  channelisationCodeIndices
  subchannelSize
  size1
  size2
  subchannels
  },
  size4
  subchannels
  },
  size8
  subchannels
}

SEQUENCE {
  BIT STRING {
    chCodeIndex7(0),
    chCodeIndex6(1),
    chCodeIndex5(2),
    chCodeIndex4(3),
    chCodeIndex3(4),
    chCodeIndex2(5),
    chCodeIndex1(6),
    chCodeIndex0(7)
  } (SIZE(8)) OPTIONAL,
  CHOICE {
    NULL,
    SEQUENCE {
      -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'
      subchannels
        ENUMERATED { subch0, subch1 } OPTIONAL
    },
    SEQUENCE {
      BIT STRING {
        subCh3(0),
        subCh2(1),
        subCh1(2),
        subCh0(3)
      } (SIZE(4)) OPTIONAL
    },
    SEQUENCE {
      BIT STRING {
        subCh7(0),
        subCh6(1),
        subCh5(2),
        subCh4(3),
        subCh3(4),
        subCh2(5),
        subCh1(6),
        subCh0(7)
      } (SIZE(8)) OPTIONAL
    }
  }
}

```

```

AccessServiceClass-TDD-LCR-r4 ::=
  availableSYNC-UlCodesIndics
  subchannelSize
  size1
  size2
  subchannels
  },
  size4
  subchannels
  },
  size8
  subchannels
}

SEQUENCE {
  BIT STRING {
    sulCodeIndex7(0),
    sulCodeIndex6(1),
    sulCodeIndex5(2),
    sulCodeIndex4(3),
    sulCodeIndex3(4),
    sulCodeIndex2(5),
    sulCodeIndex1(6),
    sulCodeIndex0(7)
  } (SIZE(8)) OPTIONAL,
  CHOICE {
    NULL,
    SEQUENCE {
      -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'.
      subchannels
        ENUMERATED { subch0, subch1 } OPTIONAL
    },
    SEQUENCE {
      BIT STRING {
        subCh3(0),
        subCh2(1),
        subCh1(2),
        subCh0(3)
      } (SIZE(4)) OPTIONAL
    },
    SEQUENCE {
      BIT STRING {
        subCh7(0),
        subCh6(1),
        subCh5(2),
        subCh4(3),
        subCh3(4),
        subCh2(5),
        subCh1(6),
        subCh0(7)
      } (SIZE(8)) OPTIONAL
    }
  }
}

```

```

}

AICH-Info ::=
    channelisationCode256      SEQUENCE {
        channelisationCode256,
        sttd-Indicator          BOOLEAN,
        aich-TransmissionTiming AICH-TransmissionTiming
    }

AICH-PowerOffset ::=          INTEGER (-22..5)

AICH-TransmissionTiming ::=  ENUMERATED {
        e0, e1 }

AllocationPeriodInfo ::=     SEQUENCE {
        allocationActivationTime INTEGER (0..255),
        allocationDuration      INTEGER (1..256)
    }

-- Actual value Alpha = IE value * 0.125
Alpha ::=                    INTEGER (0..8)

AP-AICH-ChannelisationCode ::= INTEGER (0..255)

AP-PreambleScramblingCode ::= INTEGER (0..79)

AP-Signature ::=            INTEGER (0..15)

AP-Signature-VCAM ::=       SEQUENCE {
        ap-Signature            AP-Signature,
        availableAP-SubchannelList AvailableAP-SubchannelList OPTIONAL
    }

AP-Subchannel ::=           INTEGER (0..11)

ASCSetting-FDD ::=          SEQUENCE {
    -- TABULAR: accessServiceClass-FDD is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available signature and sub-channels
    accessServiceClass-FDD      AccessServiceClass-FDD OPTIONAL
}

ASCSetting-TDD ::=          SEQUENCE {
    -- TABULAR: accessServiceClass-TDD is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available channelisation codes and
    -- all available sub-channels with subchannelSize=size1.
    accessServiceClass-TDD      AccessServiceClass-TDD OPTIONAL
}

ASCSetting-TDD-LCR-r4 ::=   SEQUENCE {
    -- TABULAR: accessServiceClass-TDD-LCR is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available SYNC_UL codes and
    -- all available sub-channels with subchannelSize=size1.
    accessServiceClass-TDD-LCR  AccessServiceClass-TDD-LCR-r4 OPTIONAL
}

AvailableAP-Signature-VCAMList ::= SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
    AP-Signature-VCAM

AvailableAP-SignatureList ::= SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
    AP-Signature

AvailableAP-SubchannelList ::= SEQUENCE (SIZE (1..maxPCPCH-APsubCh)) OF
    AP-Subchannel

AvailableMinimumSF-ListVCAM ::= SEQUENCE (SIZE (1..maxPCPCH-SF)) OF
    AvailableMinimumSF-VCAM

AvailableMinimumSF-VCAM ::= SEQUENCE {
    minimumSpreadingFactor      MinimumSpreadingFactor,
    nf-Max                      NF-Max,
    maxAvailablePCPCH-Number    MaxAvailablePCPCH-Number,
    availableAP-Signature-VCAMList AvailableAP-Signature-VCAMList
}

AvailableSignatures ::=     BIT STRING {

```

```

signature15(0),
signature14(1),
signature13(2),
signature12(3),
signature11(4),
signature10(5),
signature9(6),
signature8(7),
signature7(8),
signature6(9),
signature5(10),
signature4(11),
signature3(12),
signature2(13),
signature1(14),
signature0(15)
} (SIZE(16))

AvailableSubChannelNumbers ::= BIT STRING {
    subCh11(0),
    subCh10(1),
    subCh9(2),
    subCh8(3),
    subCh7(4),
    subCh6(5),
    subCh5(6),
    subCh4(7),
    subCh3(8),
    subCh2(9),
    subCh1(10),
    subCh0(11)
} (SIZE(12))

BurstType ::= ENUMERATED {
    short1, long2 }

-- Actual value Bler-Target = IE value * 0.05
Bler-Target ::= INTEGER (-63..0)

CCTrCH-PowerControlInfo ::= SEQUENCE {
    tfcs-Identity          TFCS-Identity          OPTIONAL,
    ul-DPCH-PowerControlInfo  UL-DPCH-PowerControlInfo
}

CCTrCH-PowerControlInfo-r4 ::= SEQUENCE {
    tfcs-Identity          TFCS-Identity          OPTIONAL,
    ul-DPCH-PowerControlInfo-r4  UL-DPCH-PowerControlInfo-r4
}

CD-AccessSlotSubchannel ::= INTEGER (0..11)

CD-AccessSlotSubchannelList ::= SEQUENCE (SIZE (1..maxPCPCH-CDsubCh)) OF
    CD-AccessSlotSubchannel

CD-CA-ICH-ChannelisationCode ::= INTEGER (0..255)

CD-PreambleScramblingCode ::= INTEGER (0..79)

CD-SignatureCode ::= INTEGER (0..15)

CD-SignatureCodeList ::= SEQUENCE (SIZE (1..maxPCPCH-CDsig)) OF
    CD-SignatureCode

CellAndChannelIdentity ::= SEQUENCE {
    burstType          BurstType,
    midambleShift      MidambleShiftLong,
    timeslot           TimeslotNumber,
    cellParametersID   CellParametersID
}

CellParametersID ::= INTEGER (0..127)

Cfntargetsfnframeoffset ::= INTEGER(0..255)

ChannelAssignmentActive ::= CHOICE {
    notActive          NULL,
    isActive           AvailableMinimumSF-ListVCAM
}

```

```

ChannelisationCode256 ::=                INTEGER (0..255)

ChannelReqParamsForUCSM ::=              SEQUENCE {
    availableAP-SignatureList             AvailableAP-SignatureList,
    availableAP-SubchannelList            AvailableAP-SubchannelList           OPTIONAL
}

ClosedLoopTimingAdjMode ::=              ENUMERATED {
    slot1, slot2 }

CodeNumberDSCH ::=                       INTEGER (0..255)

CodeRange ::=                            SEQUENCE {
    pdsch-CodeMapList                     PDSCH-CodeMapList
}

CodeWordSet ::=                          ENUMERATED {
    longCWS,
    mediumCWS,
    shortCWS,
    ssdtOff }

CommonTimeslotInfo ::=                   SEQUENCE {
    -- TABULAR: secondInterleavingMode is MD, but since it can be encoded in a single
    -- bit it is not defined as OPTIONAL.
    secondInterleavingMode                SecondInterleavingMode,
    tfci-Coding                           TFCI-Coding                       OPTIONAL,
    puncturingLimit                       PuncturingLimit,
    repetitionPeriodAndLength              RepetitionPeriodAndLength         OPTIONAL
}

CommonTimeslotInfoSCCPCH ::=             SEQUENCE {
    -- TABULAR: secondInterleavingMode is MD, but since it can be encoded in a single
    -- bit it is not defined as OPTIONAL.
    secondInterleavingMode                SecondInterleavingMode,
    tfci-Coding                           TFCI-Coding                       OPTIONAL,
    puncturingLimit                       PuncturingLimit,
    repetitionPeriodLengthAndOffset        RepetitionPeriodLengthAndOffset    OPTIONAL
}

ConstantValue ::=                       INTEGER (-35..-10)

ConstantValueTdd ::=                    INTEGER (-35..10)

CPCH-PersistenceLevels ::=              SEQUENCE {
    cpch-SetID                             CPCH-SetID,
    dynamicPersistenceLevelTF-List         DynamicPersistenceLevelTF-List
}

CPCH-PersistenceLevelsList ::=          SEQUENCE (SIZE (1..maxCPCHsets)) OF
    CPCH-PersistenceLevels

CPCH-SetInfo ::=                        SEQUENCE {
    cpch-SetID                             CPCH-SetID,
    transportFormatSet                     TransportFormatSet,
    tfcs                                    TFCS,
    ap-PreambleScramblingCode              AP-PreambleScramblingCode,
    ap-AICH-ChannelisationCode              AP-AICH-ChannelisationCode,
    cd-PreambleScramblingCode              CD-PreambleScramblingCode,
    cd-CA-ICH-ChannelisationCode           CD-CA-ICH-ChannelisationCode,
    cd-AccessSlotSubchannelList            CD-AccessSlotSubchannelList         OPTIONAL,
    cd-SignatureCodeList                   CD-SignatureCodeList                OPTIONAL,
    deltaPp-m                              DeltaPp-m,
    ul-DPCCH-SlotFormat                    UL-DPCCH-SlotFormat,
    n-StartMessage                         N-StartMessage,
    n-EOT                                   N-EOT,
    -- TABULAR: VCAM info has been nested inside ChannelAssignmentActive,
    -- which in turn is mandatory since it's only a binary choice.
    channelAssignmentActive                ChannelAssignmentActive,
    cpch-StatusIndicationMode              CPCH-StatusIndicationMode,
    pcpc-ChannelInfoList                   PCPCH-ChannelInfoList
}

CPCH-SetInfoList ::=                    SEQUENCE (SIZE (1..maxCPCHsets)) OF
    CPCH-SetInfo

CPCH-StatusIndicationMode ::=           ENUMERATED {

```

```

        pa-mode,
        pamsf-mode }

CQI-RepetitionFactor ::=          INTEGER(1..4)

CSICH-PowerOffset ::=            INTEGER (-10..5)

-- DefaultDPCH-OffsetValueFDD and DefaultDPCH-OffsetValueTDD corresponds to
-- IE "Default DPCH Offset Value" depending on the mode.
-- Actual value DefaultDPCH-OffsetValueFDD = IE value * 512
DefaultDPCH-OffsetValueFDD ::=   INTEGER (0..599)

DefaultDPCH-OffsetValueTDD ::=   INTEGER (0..7)

DeltaPp-m ::=                    INTEGER (-10..10)

DeltaCQI ::=                      INTEGER (0..8)

DeltaNACK ::=                     INTEGER (0..8)

DeltaACK ::=                      INTEGER (0..8)

-- Actual value DeltaSIR = IE value * 0.1
DeltaSIR ::=                     INTEGER (0..30)

DL-CCTrCh ::=                    SEQUENCE {
    tfcs-ID                       TFCS-IdentityPlain           DEFAULT 1,
    timeInfo                      TimeInfo,
    commonTimeslotInfo            CommonTimeslotInfo           OPTIONAL,
    dl-CCTrCH-TimeslotsCodes      DownlinkTimeslotsCodes      OPTIONAL,
    ul-CCTrChTPCList             UL-CCTrChTPCList             OPTIONAL
}

DL-CCTrCh-r4 ::=                SEQUENCE {
    tfcs-ID                       TFCS-IdentityPlain           DEFAULT 1,
    timeInfo                      TimeInfo,
    commonTimeslotInfo            CommonTimeslotInfo           OPTIONAL,
    tddOption                     CHOICE {
        tdd384                   SEQUENCE {
            dl-CCTrCH-TimeslotsCodes DownlinkTimeslotsCodes OPTIONAL
        },
        tdd128                   SEQUENCE {
            dl-CCTrCH-TimeslotsCodes DownlinkTimeslotsCodes-LCR-r4 OPTIONAL
        }
    },
    ul-CCTrChTPCList             UL-CCTrChTPCList             OPTIONAL
}

DL-CCTrChList ::=              SEQUENCE (SIZE (1..maxCCTrCH)) OF
    DL-CCTrCh

DL-CCTrChList-r4 ::=          SEQUENCE (SIZE (1..maxCCTrCH)) OF
    DL-CCTrCh-r4

DL-CCTrChListToRemove ::=     SEQUENCE (SIZE (1..maxCCTrCH)) OF
    TFCS-IdentityPlain

DL-CCTrChTPCList ::=          SEQUENCE (SIZE (0..maxCCTrCH)) OF
    TFCS-Identity

DL-ChannelisationCode ::=     SEQUENCE {
    secondaryScramblingCode       SecondaryScramblingCode   OPTIONAL,
    sf-AndCodeNumber             SF512-AndCodeNumber,
    scramblingCodeChange         ScramblingCodeChange           OPTIONAL
}

DL-ChannelisationCodeList ::= SEQUENCE (SIZE (1..maxDPCH-DLchan)) OF
    DL-ChannelisationCode

DL-CommonInformation ::=      SEQUENCE {
    dl-DPCH-InfoCommon           DL-DPCH-InfoCommon       OPTIONAL,
    modeSpecificInfo            CHOICE {
        fdd                     SEQUENCE {
            defaultDPCH-OffsetValue DefaultDPCH-OffsetValueFDD OPTIONAL,
            dpch-CompressedModeInfo DPCH-CompressedModeInfo  OPTIONAL,
            tx-DiversityMode      TX-DiversityMode             OPTIONAL,
            ssdt-Information      SSDT-Information             OPTIONAL
        }
    },

```

```

        tdd
        defaultDPCH-OffsetValue
    }
}

DL-CommonInformation-r4 ::=
    dl-DPCH-InfoCommon
    modeSpecificInfo
        fdd
            defaultDPCH-OffsetValue
            dpch-CompressedModeInfo
            tx-DiversityMode
            ssdt-Information
        },
        tdd
            tddOption
                tdd384
                tdd128
                tstd-Indicator
            },
            defaultDPCH-OffsetValue
    }
}

DL-CommonInformation-r5 ::=
    dl-DPCH-InfoCommon
    modeSpecificInfo
        fdd
            defaultDPCH-OffsetValue
            dpch-CompressedModeInfo
            tx-DiversityMode
            ssdt-Information
        },
        tdd
            tddOption
                tdd384
                tdd128
                tstd-Indicator
            },
            defaultDPCH-OffsetValue
    }
    mac-hsResetIndicator
}

DL-CommonInformationPost ::=
    dl-DPCH-InfoCommon
}

DL-CommonInformationPredef ::=
    dl-DPCH-InfoCommon
}

DL-CompressedModeMethod ::=
    puncturing, sf-2,
    higherLayerScheduling }

DL-DPCH-InfoCommon ::=
    cfnHandling
        maintain
        initialise
        cfntargetsfnsframeoffset
    },
    modeSpecificInfo
        fdd
            dl-DPCH-PowerControlInfo
            powerOffsetPilot-pdpch
            dl-rate-matching-restriction
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot
            positionFixedOrFlexible
            tfci-Existence
        },

```

```

        tdd
        dl-DPCH-PowerControlInfo
    }
}
DL-DPCH-InfoCommon-r4 ::=
    cfncHandling
        maintain
        initialise
        cfntargetsfnsframeoffset
    },
    modeSpecificInfo
        fdd
            dl-DPCH-PowerControlInfo
            powerOffsetPilot-pdpdch
            dl-rate-matching-restriction
            spreadingFactorAndPilot
            positionFixedOrFlexible
            tfci-Existence
        },
        tdd
            dl-DPCH-PowerControlInfo
    },
-- The IE mac-d-HFN-initial-value should be absent in the RRCConnectionSetup-r4-IEs or
-- RRCConnectionSetup-r5-IEs or HandoverToUTRANCommand-r4-IEs or HandoverToUTRANCommand-r5-IEs and
-- if the IE is included, the general error handling for conditional IEs applies.
    mac-d-HFN-initial-value
}

DL-DPCH-InfoCommonPost ::=
    dl-DPCH-PowerControlInfo
}

DL-DPCH-InfoCommonPredef ::=
    modeSpecificInfo
        fdd
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot
            positionFixedOrFlexible
            tfci-Existence
        },
        tdd
            commonTimeslotInfo
    }
}

DL-DPCH-InfoPerRL ::=
    fdd
        pCPICH-UsageForChannelEst
        dpch-FrameOffset
        secondaryCPICH-Info
        dl-ChannelisationCodeList
        tpc-CombinationIndex
        ssdt-CellIdentity
        closedLoopTimingAdjMode
    },
    tdd
        dl-CCTrChListToEstablish
        dl-CCTrChListToRemove
    }
}

DL-DPCH-InfoPerRL-r4 ::=
    fdd
        pCPICH-UsageForChannelEst
        dpch-FrameOffset
        secondaryCPICH-Info
        dl-ChannelisationCodeList
        tpc-CombinationIndex
        ssdt-CellIdentity
        closedLoopTimingAdjMode

```

```

    },
    tdd
      dl-CCTrChListToEstablish
      dl-CCTrChListToRemove
    }
  }

DL-DPCH-InfoPerRL-PostFDD ::=
  pCPICH-UsageForChannelEst
  dl-ChannelisationCode
  tpc-CombinationIndex
}

DL-DPCH-InfoPerRL-PostTDD ::=
  dl-DPCH-TimeslotsCodes
}

DL-DPCH-InfoPerRL-PostTDD-LCR-r4 ::=
  dl-CCTrCH-TimeslotsCodes
}

DL-DPCH-PowerControlInfo ::=
  modeSpecificInfo
  fdd
    dpc-Mode
  },
  tdd
    tpc-StepSizeTDD
  }
}

DL-FrameType ::=
  ENUMERATED {
    dl-FrameTypeA, dl-FrameTypeB }

DL-HSPDSCH-Information ::=
  hs-scch-Info
  measurement-feedback-Info
  modeSpecificInfo
  tdd
    tdd384
      dl-HSPDSCH-TS-Configuration
    },
    tdd128
      HS-PDSCH-Midamble-Configuration-TDD128
  },
  fdd
    NULL
}

DL-HSPDSCH-TS-Configuration ::=
  timeslot
  midambleShiftAndBurstType
}
-- This IE only applies to tdd-384 R-5

DL-InformationPerRL ::=
  modeSpecificInfo
  fdd
    primaryCPICH-Info
    pdsch-SHO-DCH-Info
    pdsch-CodeMapping
  },
  tdd
    PrimaryCCPCH-Info
  },
  dl-DPCH-InfoPerRL
  sccpch-InfoForFACH
}

DL-InformationPerRL-r4 ::=
  modeSpecificInfo
  fdd
    primaryCPICH-Info
    pdsch-SHO-DCH-Info
    pdsch-CodeMapping
  },
  tdd
    PrimaryCCPCH-Info-r4
}

```

SEQUENCE {
DL-CCTrChList-r4 OPTIONAL,
DL-CCTrChListToRemove OPTIONAL

SEQUENCE {
PCPICH-UsageForChannelEst,
DL-ChannelisationCode,
TPC-CombinationIndex

SEQUENCE {
DownlinkTimeslotsCodes

SEQUENCE {
DownlinkTimeslotsCodes-LCR-r4

SEQUENCE {
CHOICE {
SEQUENCE {
DPC-Mode

SEQUENCE {
TPC-StepSizeTDD OPTIONAL

ENUMERATED {
dl-FrameTypeA, dl-FrameTypeB }

SEQUENCE {
HS-SCCH-Info OPTIONAL,
Measurement-Feedback-Info OPTIONAL,
CHOICE {
CHOICE {
SEQUENCE {
DL-HSPDSCH-TS-Configuration OPTIONAL
},
HS-PDSCH-Midamble-Configuration-TDD128
},
NULL

SEQUENCE (SIZE (1..maxTS)) OF
SEQUENCE {
TimeslotNumber,
MidambleShiftAndBurstType

SEQUENCE {
CHOICE {
SEQUENCE {
PrimaryCPICH-Info,
PDSCH-SHO-DCH-Info OPTIONAL,
PDSCH-CodeMapping OPTIONAL

PrimaryCCPCH-Info

DL-DPCH-InfoPerRL OPTIONAL,
SCCPCH-InfoForFACH OPTIONAL

SEQUENCE {
CHOICE {
SEQUENCE {
PrimaryCPICH-Info,
PDSCH-SHO-DCH-Info OPTIONAL,
PDSCH-CodeMapping OPTIONAL

PrimaryCCPCH-Info-r4

```

    },
    dl-DPCH-InfoPerRL
    sccpch-InfoForFACH
    cell-id
}
DL-InformationPerRL-r5 ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            primaryCPICH-Info PrimaryCPICH-Info,
            pdsch-SHO-DCH-Info PDSCH-SHO-DCH-Info,
            pdsch-CodeMapping PDSCH-CodeMapping,
            servingHSDSCH-RL-indicator BOOLEAN
        },
        tdd PrimaryCCPCH-Info-r4
    },
    dl-DPCH-InfoPerRL DL-DPCH-InfoPerRL-r4,
    sccpch-InfoForFACH SCCPCH-InfoForFACH-r4,
    cell-id CellIdentity
}
DL-InformationPerRL-List ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-InformationPerRL
DL-InformationPerRL-List-r4 ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-InformationPerRL-r4
DL-InformationPerRL-List-r5 ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-InformationPerRL-r5
DL-InformationPerRL-ListPostFDD ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-InformationPerRL-PostFDD
DL-InformationPerRL-PostFDD ::= SEQUENCE {
    primaryCPICH-Info PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL DL-DPCH-InfoPerRL-PostFDD
}
DL-InformationPerRL-PostTDD ::= SEQUENCE {
    primaryCCPCH-Info PrimaryCCPCH-InfoPost,
    dl-DPCH-InfoPerRL DL-DPCH-InfoPerRL-PostTDD
}
DL-InformationPerRL-PostTDD-LCR-r4 ::= SEQUENCE {
    primaryCCPCH-Info PrimaryCCPCH-InfoPostTDD-LCR-r4,
    dl-DPCH-InfoPerRL DL-DPCH-InfoPerRL-PostTDD-LCR-r4
}
DL-PDSCH-Information ::= SEQUENCE {
    pdsch-SHO-DCH-Info PDSCH-SHO-DCH-Info,
    pdsch-CodeMapping PDSCH-CodeMapping
}
Dl-rate-matching-restriction ::= SEQUENCE {
    restrictedTrCH-InfoList RestrictedTrCH-InfoList
}
DL-TS-ChannelisationCode ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }
DL-TS-ChannelisationCodesShort ::= SEQUENCE {
    codesRepresentation CHOICE {
        consecutive SEQUENCE {
            firstChannelisationCode DL-TS-ChannelisationCode,
            lastChannelisationCode DL-TS-ChannelisationCode
        },
        bitmap BIT STRING {
            chCode16-SF16(0),
            chCode15-SF16(1),
            chCode14-SF16(2),
            chCode13-SF16(3),
            chCode12-SF16(4),
            chCode11-SF16(5),
            chCode10-SF16(6),
            chCode9-SF16(7),
        }
    }
}

```

```

        chCode8-SF16(8),
        chCode7-SF16(9),
        chCode6-SF16(10),
        chCode5-SF16(11),
        chCode4-SF16(12),
        chCode3-SF16(13),
        chCode2-SF16(14),
        chCode1-SF16(15)
    } (SIZE (16))
}
}

DownlinkAdditionalTimeslots ::= SEQUENCE {
    parameters CHOICE {
        sameAsLast SEQUENCE {
            timeslotNumber TimeslotNumber
        },
        newParameters SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo,
            dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort
        }
    }
}

DownlinkAdditionalTimeslots-LCR-r4 ::= SEQUENCE {
    parameters CHOICE {
        sameAsLast SEQUENCE {
            timeslotNumber TimeslotNumber-LCR-r4
        },
        newParameters SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo-LCR-r4,
            dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort
        }
    }
}

DownlinkTimeslotsCodes ::= SEQUENCE {
    firstIndividualTimeslotInfo IndividualTimeslotInfo,
    dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort,
    moreTimeslots CHOICE {
        noMore NULL,
        additionalTimeslots CHOICE {
            consecutive INTEGER (1..maxTS-1),
            timeslotList SEQUENCE (SIZE (1..maxTS-1)) OF
                DownlinkAdditionalTimeslots
        }
    }
}

DownlinkTimeslotsCodes-LCR-r4 ::= SEQUENCE {
    firstIndividualTimeslotInfo IndividualTimeslotInfo-LCR-r4,
    dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort,
    moreTimeslots CHOICE {
        noMore NULL,
        additionalTimeslots CHOICE {
            consecutive INTEGER (1..maxTS-LCR-1),
            timeslotList SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                DownlinkAdditionalTimeslots-LCR-r4
        }
    }
}

DPC-Mode ::= ENUMERATED {
    singleTPC,
    tpcTripletInSoft }

-- Actual value DPCCH-PowerOffset = IE value * 2
DPCCH-PowerOffset ::= INTEGER (-82..-3)

-- Actual value DPCCH-PowerOffset = 2 + (IE value * 4)
DPCCH-PowerOffset2 ::= INTEGER (-28..-13)

DPCH-CompressedModeInfo ::= SEQUENCE {
    tgp-SequenceList TGP-SequenceList
}

DPCH-CompressedModeStatusInfo ::= SEQUENCE {

```

```

    tgps-Reconfiguration-CFN          TGPS-Reconfiguration-CFN,
    tgp-SequenceShortList            SEQUENCE (SIZE (1..maxTGPS)) OF
                                     TGP-SequenceShort
}

-- Actual value DPCH-FrameOffset = IE value * 256
DPCH-FrameOffset ::= INTEGER (0..149)

DSCH-Mapping ::= SEQUENCE {
    maxTFCI-Field2Value             MaxTFCI-Field2Value,
    spreadingFactor                 SF-PDSCH,
    codeNumber                      CodeNumberDSCH,
    multiCodeInfo                  MultiCodeInfo
}

DSCH-MappingList ::= SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
    DSCH-Mapping

DSCH-RadioLinkIdentifier ::= INTEGER (0..511)

DSCH-TransportChannelsInfo ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    SEQUENCE {
        dsch-transport-channel-identity TransportChannelIdentity,
        dsch-TFS                       TransportFormatSet
    }
}

DurationTimeInfo ::= INTEGER (1..4096)

DynamicPersistenceLevel ::= INTEGER (1..8)

DynamicPersistenceLevelList ::= SEQUENCE (SIZE (1..maxPRACH)) OF
    DynamicPersistenceLevel

DynamicPersistenceLevelTF-List ::= SEQUENCE (SIZE (1..maxTF-CPCH)) OF
    DynamicPersistenceLevel

FACH-PCH-Information ::= SEQUENCE {
    transportFormatSet             TransportFormatSet,
    transportChannelIdentity       TransportChannelIdentity,
    ctch-Indicator                 BOOLEAN
}
}

FACH-PCH-InformationList ::= SEQUENCE (SIZE (1..maxFACHPCH)) OF
    FACH-PCH-Information

Feedback-cycle ::= ENUMERATED {
    fc0, fc2, fc4, fc8, fc10, fc20, fc40, fc80, fc160}

FPACH-Info-r4 ::= SEQUENCE {
    timeslot                       TimeslotNumber-LCR-r4,
    channelisationCode             TDD-FPACH-CCode16-r4,
    midambleShiftAndBurstType     MidambleShiftAndBurstType-LCR-r4,
    wi                             Wi-LCR
}
}

FrequencyInfo ::= SEQUENCE {
    modeSpecificInfo              CHOICE {
        fdd                       FrequencyInfoFDD,
        tdd                       FrequencyInfoTDD
    }
}

FrequencyInfoFDD ::= SEQUENCE {
    uarfcn-UL                     UARFCN                OPTIONAL,
    uarfcn-DL                     UARFCN
}
}

FrequencyInfoTDD ::= SEQUENCE {
    uarfcn-Nt                     UARFCN
}
}

HS-ChannelisationCode ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

HS-ChannelisationCode-LCR ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,

```

cc16-5, cc16-6, cc16-7, cc16-8,
 cc16-9, cc16-10, cc16-11, cc16-12,
 cc16-13, cc16-14, cc16-15, cc16-16 }

```

HS-PDSCH-Midamble-Configuration-TDD128 ::= SEQUENCE {
  midambleAllocationMode      CHOICE {
    defaultMidamble           NULL,
    commonMidamble           NULL,
    ueSpecificMidamble       INTEGER (1..15)
  },
  midambleConfiguration      INTEGER (1..8)
}

HS-SCCH-Info ::= SEQUENCE {
  modeSpecificInfo           CHOICE {
    fdd                       SEQUENCE {
      hs-SCCHChannelisationCodeInfo  SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                      HS-SCCH-Codes,
      dl-ScramblingCode             SecondaryScramblingCode    OPTIONAL
    },
    tdd                       CHOICE {
      tdd384                    SEQUENCE {
        nack-ack-power-offset      INTEGER (-7..8),
        hs-SICH-PowerControl-Info  HS-SICH-Power-Control-Info-TDD384,
        hs-SCCH-SetConfiguration  SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                      HS-SCCH-TDD384
      },
      tdd128                    SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                      HS-SCCH-TDD128
    }
  }
}

HS-SCCH-Codes ::= INTEGER (0..127)

HS-SCCH-TDD128 ::= SEQUENCE (SIZE (1..maxHSSCCHs)) OF
  HS-SCCH-TDD128List

HS-SCCH-TDD128List ::= SEQUENCE {
  timeslotNumber           TimeslotNumber-LCR-r4,
  firstChannelisationCode  HS-ChannelisationCode-LCR,
  secondChannelisationCode HS-ChannelisationCode-LCR,
  midambleAllocationMode   CHOICE {
    defaultMidamble       NULL,
    commonMidamble       NULL,
    ueSpecificMidamble    INTEGER(1..15)
  },
  -- Actual value midambleConfiguration = IE value * 2
  midambleConfiguration   INTEGER (1..8),
  bler-target              Bler-Target,
  hs-sich-configuration    HS-SICH-Configuration-TDD128
}

HS-SICH-Configuration-TDD128 ::= SEQUENCE {
  timeslotNumber           TimeslotNumber-LCR-r4,
  channelisationCode       HS-ChannelisationCode-LCR,
  midambleAllocationMode   CHOICE {
    defaultMidamble       NULL,
    ueSpecificMidamble    SEQUENCE {
      midambleShift      MidambleShiftLong
    }
  },
  -- Actual value midambleConfiguration = IE value * 2
  midambleConfiguration   INTEGER (1..8),
  nack-ack-power-offset    INTEGER (-7..8),
  power-level-HSSICH       INTEGER (-120..-58),
  tpc-step-size            ENUMERATED { s1, s2, s3 , spare1}
}

HS-SCCH-TDD384 ::= SEQUENCE (SIZE (1..maxHSSCCHs)) OF
  HS-SCCH-TDD384List

HS-SCCH-TDD384List ::= SEQUENCE {
  timeslotNumber           TimeslotNumber,
  channelisationCode       HS-ChannelisationCode,
  midambleAllocationMode   CHOICE {
    defaultMidamble       NULL,
    commonMidamble       NULL
  }
}

```

```

    },
    midambleconfiguration          MidambleConfiguration,
    bler-target                    Bler-Target,
    hs-sich-configuration          HS-SICH-Configuration-TDD384
}

HS-SICH-Configuration-TDD384 ::= SEQUENCE {
    timeslotNumber                TimeslotNumber,
    channelisationCode            HS-ChannelisationCode,
    midambleAllocationMode        CHOICE {
        defaultMidamble           NULL,
        ueSpecificMidamble        SEQUENCE {
            midambleShift          MidambleShiftLong
        }
    },
    midambleconfiguration          MidambleConfiguration
}

HS-SICH-Power-Control-Info-TDD384 ::= SEQUENCE {
    -- Actual value ul-target-SIR = IE value * 0.5
    ul-target-SIR                 INTEGER (-22..40),
    hs-sich-ConstantValue         ConstantValue
}

IndividualTimeslotInfo ::= SEQUENCE {
    timeslotNumber                TimeslotNumber,
    tfci-Existence                BOOLEAN,
    midambleShiftAndBurstType      MidambleShiftAndBurstType
}

IndividualTimeslotInfo-LCR-r4 ::= SEQUENCE {
    timeslotNumber                TimeslotNumber-LCR-r4,
    tfci-Existence                BOOLEAN,
    midambleShiftAndBurstType      MidambleShiftAndBurstType-LCR-r4,
    modulation                     ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols                 ENUMERATED { zero, one, sixteenOverSF },
    additionalSS-TPC-Symbols        INTEGER(1..15) OPTIONAL
}

IndividualTimeslotInfo-LCR-r4-ext ::= SEQUENCE {
    -- timeslotNumber and tfci-Existence is taken from IndividualTimeslotInfo.
    -- midambleShiftAndBurstType in IndividualTimeslotInfo shall be ignored.
    midambleShiftAndBurstType      MidambleShiftAndBurstType-LCR-r4,
    modulation                     ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols                 ENUMERATED { zero, one, sixteenOverSF }
}

IndividualTS-Interference ::= SEQUENCE {
    timeslot                      TimeslotNumber,
    ul-TimeslotInterference        TDD-UL-Interference
}

IndividualTS-InterferenceList ::= SEQUENCE (SIZE (1..maxTS)) OF
    IndividualTS-Interference

ITP ::= ENUMERATED {
    mode0, mode1
}

NidentifyAbort ::= INTEGER (1..128)

MaxAllowedUL-TX-Power ::= INTEGER (-50..33)

MaxAvailablePCPCH-Number ::= INTEGER (1..64)

MaxPowerIncrease-r4 ::= INTEGER (0..3)

MaxTFCI-Field2Value ::= INTEGER (1..1023)

Measurement-Feedback-Info ::= SEQUENCE {
    modeSpecificInfo              CHOICE {
        fdd                       SEQUENCE {
            pohsdsch                Po-hsdsch,
            feedback-cycle           Feedback-cycle,
            cqi-RepetitionFactor      CQI-RepetitionFactor,
            deltaCQI                 DeltaCQI
        },
        tdd                       NULL
    }
}

```

```

    }
}

MidambleConfiguration ::=          ENUMERATED {ms4, ms8, ms16}

MidambleConfigurationBurstTypeand3 ::= ENUMERATED {ms4, ms8, ms16}

MidambleConfigurationBurstType2 ::=          ENUMERATED {ms3, ms6}

MidambleShiftAndBurstType ::=          SEQUENCE {
    burstType
    type1
        SEQUENCE {
            midambleConfigurationBurstTypeand3 MidambleConfigurationBurstTypeand3,
            midambleAllocationMode
                CHOICE {
                    defaultMidamble
                        NULL,
                    commonMidamble
                        NULL,
                    ueSpecificMidamble
                        SEQUENCE {
                            midambleShift
                                MidambleShiftLong
                        }
                }
        },
    type2
        SEQUENCE {
            midambleConfigurationBurstType2 MidambleConfigurationBurstType2,
            midambleAllocationMode
                CHOICE {
                    defaultMidamble
                        NULL,
                    commonMidamble
                        NULL,
                    ueSpecificMidamble
                        SEQUENCE {
                            midambleShift
                                MidambleShiftShort
                        }
                }
        },
    type3
        SEQUENCE {
            midambleConfigurationBurstTypeand3 MidambleConfigurationBurstTypeand3,
            midambleAllocationMode
                CHOICE {
                    defaultMidamble
                        NULL,
                    ueSpecificMidamble
                        SEQUENCE {
                            midambleShift
                                MidambleShiftLong
                        }
                }
        }
}

MidambleShiftAndBurstType-LCR-r4 ::=          SEQUENCE {
    midambleAllocationMode
        CHOICE {
            defaultMidamble
                NULL,
            commonMidamble
                NULL,
            ueSpecificMidamble
                SEQUENCE {
                    midambleShift
                        INTEGER (0..15)
                }
        }
},
-- Actual value midambleConfiguration = IE value * 2
midambleConfiguration
    INTEGER (1..8)
}

MidambleShiftLong ::=          INTEGER (0..15)

MidambleShiftShort ::=          INTEGER (0..5)

MinimumSpreadingFactor ::=          ENUMERATED {
    sf4, sf8, sf16, sf32,
    sf64, sf128, sf256 }

MultiCodeInfo ::=          INTEGER (1..16)

N-EOT ::=          INTEGER (0..7)

N-GAP ::=          ENUMERATED {
    f2, f4, f8 }

N-PCH ::=          INTEGER (1..8)

N-StartMessage ::=          INTEGER (1..8)

NB01 ::=          INTEGER (0..50)

```

```

NF-Max ::= INTEGER (1..64)

NumberOfDPDCH ::= INTEGER (1..maxDPDCH-UL)

NumberOfFBI-Bits ::= INTEGER (1..2)

OpenLoopPowerControl-TDD ::= SEQUENCE {
    primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power,
    -- alpha, prach-ConstantValue, dpch-ConstantValue and pusch-ConstantValue
    -- shall be ignored in 1.28Mcps TDD mode.
    alpha Alpha OPTIONAL,
    prach-ConstantValue ConstantValueTdd,
    dpch-ConstantValue ConstantValueTdd,
    pusch-ConstantValue ConstantValueTdd OPTIONAL
}

OpenLoopPowerControl-IPDL-TDD-r4 ::= SEQUENCE {
    ipdl-alpha Alpha,
    maxPowerIncrease MaxPowerIncrease-r4
}

PagingIndicatorLength ::= ENUMERATED {
    pi4, pi8, pi16 }

PC-Preamble ::= INTEGER (0..7)

PCP-Length ::= ENUMERATED {
    as0, as8 }

PCPCH-ChannelInfo ::= SEQUENCE {
    pcpch-UL-ScramblingCode INTEGER (0..79),
    pcpch-DL-ChannelisationCode INTEGER (0..511),
    pcpch-DL-ScramblingCode SecondaryScramblingCode OPTIONAL,
    pcp-Length PCP-Length,
    ucsM-Info UCSM-Info OPTIONAL
}

PCPCH-ChannelInfoList ::= SEQUENCE (SIZE (1..maxPCPCHs)) OF
    PCPCH-ChannelInfo

PCPICH-UsageForChannelEst ::= ENUMERATED {
    maybeUsed,
    shallNotBeUsed }

PDSCH-CapacityAllocationInfo ::= SEQUENCE {
    -- pdsch-PowerControlInfo is conditional on new-configuration branch below, if this
    -- selected the IE is OPTIONAL otherwise it should not be sent
    pdsch-PowerControlInfo PDSCH-PowerControlInfo OPTIONAL,
    pdsch-AllocationPeriodInfo AllocationPeriodInfo,
    configuration CHOICE {
        old-Configuration SEQUENCE {
            tfcs-ID TFCS-IdentityPlain DEFAULT 1,
            pdsch-Identity PDSCH-Identity
        },
        new-Configuration SEQUENCE {
            pdsch-Info PDSCH-Info,
            pdsch-Identity PDSCH-Identity OPTIONAL
        }
    }
}

PDSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
    pdsch-AllocationPeriodInfo AllocationPeriodInfo,
    configuration CHOICE {
        old-Configuration SEQUENCE {
            tfcs-ID TFCS-IdentityPlain DEFAULT 1,
            pdsch-Identity PDSCH-Identity
        },
        new-Configuration SEQUENCE {
            pdsch-Info PDSCH-Info-r4,
            pdsch-Identity PDSCH-Identity OPTIONAL,
            pdsch-PowerControlInfo PDSCH-PowerControlInfo OPTIONAL
        }
    }
}

PDSCH-CodeInfo ::= SEQUENCE {
    spreadingFactor SF-PDSCH,

```

```

    codeNumber                CodeNumberDSCH,
    multiCodeInfo             MultiCodeInfo
}

PDSCH-CodeInfoList ::=
    SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
        PDSCH-CodeInfo

PDSCH-CodeMap ::=
    SEQUENCE {
        spreadingFactor        SF-PDSCH,
        multiCodeInfo          MultiCodeInfo,
        codeNumberStart        CodeNumberDSCH,
        codeNumberStop         CodeNumberDSCH
    }

PDSCH-CodeMapList ::=
    SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
        PDSCH-CodeMap

PDSCH-CodeMapping ::=
    dl-ScramblingCode
    signallingMethod
    codeRange
    tfci-Range
    explicit-config
    replace
}

PDSCH-Identity ::=
    INTEGER (1..hiPDSCHidentities)

PDSCH-Info ::=
    tfcs-ID
    commonTimeslotInfo
    pdsch-TimeslotsCodes
}

PDSCH-Info-r4 ::=
    tfcs-ID
    commonTimeslotInfo
    tddOption
    tdd384
    pdsch-TimeslotsCodes
},
    tdd128
    pdsch-TimeslotsCodes
}

PDSCH-Info-LCR-r4 ::=
    tfcs-ID
    commonTimeslotInfo
    pdsch-TimeslotsCodes
}

PDSCH-PowerControlInfo ::=
    tpc-StepSizeTDD
    ul-CCTrChTPCList
}

PDSCH-SHO-DCH-Info ::=
    dsch-RadioLinkIdentifier
    rl-IdentifierList
}

PDSCH-SysInfo ::=
    pdsch-Identity
    pdsch-Info
    dsch-TFS
    dsch-TFCS
}

PDSCH-SysInfo-HCR-r5 ::=
    pdsch-Identity
    pdsch-Info
    dsch-TransportChannelsInfo
    dsch-TFCS
}

```

```

PDSCH-SysInfo-LCR-r4 ::= SEQUENCE {
    pdsch-Identity          PDSCH-Identity,
    pdsch-Info              PDSCH-Info-LCR-r4,
    dsch-TFS                TransportFormatSet          OPTIONAL,
    dsch-TFCS               TFCS                        OPTIONAL
}

PDSCH-SysInfoList ::= SEQUENCE (SIZE (1..maxPDSCH)) OF
    PDSCH-SysInfo

PDSCH-SysInfoList-HCR-r5 ::= SEQUENCE (SIZE (1..maxPDSCH)) OF PDSCH-SysInfo-HCR-r5

PDSCH-SysInfoList-LCR-r4 ::= SEQUENCE (SIZE (1..maxPDSCH)) OF
    PDSCH-SysInfo-LCR-r4

PDSCH-SysInfoList-SFN ::= SEQUENCE (SIZE (1..maxPDSCH)) OF
    SEQUENCE {
        pdsch-SysInfo      PDSCH-SysInfo,
        sfm-TimeInfo       SFN-TimeInfo          OPTIONAL
    }

PDSCH-SysInfoList-SFN-HCR-r5 ::= SEQUENCE (SIZE (1..maxPDSCH)) OF
    SEQUENCE {
        pdsch-SysInfo      PDSCH-SysInfo-HCR-r5,
        sfm-TimeInfo       SFN-TimeInfo          OPTIONAL
    }

PDSCH-SysInfoList-SFN-LCR-r4 ::= SEQUENCE (SIZE (1..maxPDSCH)) OF
    SEQUENCE {
        pdsch-SysInfo      PDSCH-SysInfo-LCR-r4,
        sfm-TimeInfo       SFN-TimeInfo          OPTIONAL
    }

PersistenceScalingFactor ::= ENUMERATED {
    psf0-9, psf0-8, psf0-7, psf0-6,
    psf0-5, psf0-4, psf0-3, psf0-2 }

PersistenceScalingFactorList ::= SEQUENCE (SIZE (1..maxASCpersist)) OF
    PersistenceScalingFactor

PI-CountPerFrame ::= ENUMERATED {
    e18, e36, e72, e144 }

PichChannelisationCodeList-LCR-r4 ::= SEQUENCE (SIZE (1..2)) OF
    DL-TS-ChannelisationCode

PICH-Info ::= CHOICE {
    fdd SEQUENCE {
        channelisationCode256 ChannelisationCode256,
        pi-CountPerFrame      PI-CountPerFrame,
        sttd-Indicator         BOOLEAN
    },
    tdd SEQUENCE {
        channelisationCode      TDD-PICH-CCode          OPTIONAL,
        timeslot                 TimeslotNumber          OPTIONAL,
        midambleShiftAndBurstType MidambleShiftAndBurstType,
        repetitionPeriodLengthOffset RepPerLengthOffset-PICH OPTIONAL,
        pagingIndicatorLength     PagingIndicatorLength   DEFAULT pi4,
        n-GAP                     N-GAP                  DEFAULT f4,
        n-PCH                     N-PCH                   DEFAULT 2
    }
}

PICH-Info-LCR-r4 ::= SEQUENCE {
    timeslot          TimeslotNumber-LCR-r4          OPTIONAL,
    pichChannelisationCodeList-LCR-r4 PichChannelisationCodeList-LCR-r4,
    midambleShiftAndBurstType-LCR-r4 MidambleShiftAndBurstType-LCR-r4,
    repetitionPeriodLengthOffset-LCR-r4 RepPerLengthOffset-PICH OPTIONAL,
    pagingIndicatorLength-LCR-r4 PagingIndicatorLength DEFAULT pi4,
    n-GAP-LCR-r4      N-GAP                        DEFAULT f4,
    n-PCH-LCR-r4      N-PCH                        DEFAULT 2
}

PICH-PowerOffset ::= INTEGER (-10..5)

PilotBits128 ::= ENUMERATED {
    pb4, pb8 }

```

```

PilotBits256 ::=
    ENUMERATED {
        pb2, pb4, pb8 }

    -- Actual value Po-hsdSCH = IE value * 0.5
Po-hsdSCH ::=
    INTEGER (-12..26)

PositionFixedOrFlexible ::=
    ENUMERATED {
        fixed,
        flexible }

PowerControlAlgorithm ::=
    CHOICE {
        algorithm1
            TPC-StepSizeFDD,
        algorithm2
            NULL
    }

PowerOffsetPilot-pdpdch ::=
    INTEGER (0..24)

PowerRampStep ::=
    INTEGER (1..8)

PRACH-ChanCodes-LCR-r4 ::=
    SEQUENCE (SIZE (1..4)) OF
        TDD-PRACH-CCode-LCR-r4

PRACH-Definition-LCR-r4 ::=
    SEQUENCE {
        timeslot
            TimeslotNumber-PRACH-LCR-r4,
        prach-ChanCodes-LCR
            PRACH-ChanCodes-LCR-r4,
        midambleShiftAndBurstType
            MidambleShiftAndBurstType-LCR-r4,
        fpach-Info
            FPACH-Info-r4
    }

PRACH-Midamble ::=
    ENUMERATED {
        direct,
        direct-Inverted }

PRACH-Partitioning ::=
    CHOICE {
        fdd
            SEQUENCE (SIZE (1..maxASC)) OF
                -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-FDD are listed,
                -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
                ASCSetting-FDD,
        tdd
            SEQUENCE (SIZE (1..maxASC)) OF
                -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-TDD are listed,
                -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
                ASCSetting-TDD
    }

PRACH-Partitioning-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxASC)) OF
        -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-TDD-LCR-r4 are listed,
        -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
        ASCSetting-TDD-LCR-r4

PRACH-PowerOffset ::=
    SEQUENCE {
        powerRampStep
            PowerRampStep,
        preambleRetransMax
            PreambleRetransMax
    }

PRACH-RACH-Info ::=
    SEQUENCE {
        modeSpecificInfo
            CHOICE {
                fdd
                    SEQUENCE {
                        availableSignatures
                            AvailableSignatures,
                        availableSF
                            SF-PRACH,
                        preambleScramblingCodeWordNumber
                            PreambleScramblingCodeWordNumber,
                        puncturingLimit
                            PuncturingLimit,
                        availableSubChannelNumbers
                            AvailableSubChannelNumbers
                    },
                tdd
                    SEQUENCE {
                        timeslot
                            TimeslotNumber,
                        channelisationCodeList
                            TDD-PRACH-CCodeList,
                        prach-Midamble
                            PRACH-Midamble
                    }
            }
    }

PRACH-RACH-Info-LCR-r4 ::=
    SEQUENCE {
        sync-UL-Info
            SYNC-UL-Info-r4,
        prach-DefinitionList
            SEQUENCE (SIZE (1..maxPRACH-FPACH)) OF
                PRACH-Definition-LCR-r4
    }

```

```

PRACH-SystemInformation ::= SEQUENCE {
    prach-RACH-Info PRACH-RACH-Info,
    transportChannelIdentity TransportChannelIdentity,
    rach-TransportFormatSet TransportFormatSet OPTIONAL,
    rach-TFCS TFCS OPTIONAL,
    prach-Partitioning PRACH-Partitioning OPTIONAL,
    persistenceScalingFactorList PersistenceScalingFactorList OPTIONAL,
    ac-To-ASC-MappingTable AC-To-ASC-MappingTable OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            primaryCPICH-TX-Power PrimaryCPICH-TX-Power OPTIONAL,
            constantValue ConstantValue OPTIONAL,
            prach-PowerOffset PRACH-PowerOffset OPTIONAL,
            rach-TransmissionParameters RACH-TransmissionParameters OPTIONAL,
            aich-Info AICH-Info OPTIONAL
        },
        tdd NULL
    }
}

PRACH-SystemInformation-LCR-r4 ::= SEQUENCE {
    prach-RACH-Info-LCR PRACH-RACH-Info-LCR-r4,
    rach-TransportFormatSet-LCR TransportFormatSet-LCR OPTIONAL,
    prach-Partitioning-LCR PRACH-Partitioning-LCR-r4 OPTIONAL
}

PRACH-SystemInformationList ::= SEQUENCE (SIZE (1..maxPRACH)) OF
    PRACH-SystemInformation

PRACH-SystemInformationList-LCR-r4 ::= SEQUENCE (SIZE (1..maxPRACH)) OF
    PRACH-SystemInformation-LCR-r4

PreambleRetransMax ::= INTEGER (1..64)

PreambleScramblingCodeWordNumber ::= INTEGER (0..15)

PreDefPhyChConfiguration ::= SEQUENCE {
    ul-DPCH-InfoPredef UL-DPCH-InfoPredef,
    dl-CommonInformationPredef DL-CommonInformationPredef OPTIONAL
}

PrimaryCCPCH-Info ::= CHOICE {
    fdd SEQUENCE {
        tx-DiversityIndicator BOOLEAN
    },
    tdd SEQUENCE {
        -- syncCase should be ignored for 1.28Mcps TDD mode
        syncCase CHOICE {
            syncCase1 SEQUENCE {
                timeslot TimeslotNumber
            },
            syncCase2 SEQUENCE {
                timeslotSync2 TimeslotSync2
            }
        }
    }
    cellParametersID CellParametersID OPTIONAL,
    sctd-Indicator BOOLEAN OPTIONAL
}

PrimaryCCPCH-Info-r4 ::= CHOICE {
    fdd SEQUENCE {
        tx-DiversityIndicator BOOLEAN
    },
    tdd SEQUENCE {
        tddOption CHOICE {
            tdd384 SEQUENCE {
                syncCase CHOICE {
                    syncCase1 SEQUENCE {
                        timeslot TimeslotNumber
                    },
                    syncCase2 SEQUENCE {
                        timeslotSync2 TimeslotSync2
                    }
                }
            }
        }
    }
    tdd128 SEQUENCE {
        tstd-Indicator BOOLEAN
    }
}

```

```

    }
    },
    cellParametersID          CellParametersID          OPTIONAL,
    blockSTTD-Indicator       BOOLEAN
  }
}

PrimaryCCPCH-Info-LCR-r4 ::= SEQUENCE {
  tstd-Indicator             BOOLEAN,
  cellParametersID          CellParametersID          OPTIONAL,
  blockSTTD-Indicator       BOOLEAN
}

-- For 1.28Mcps TDD, the following IE includes elements for the PCCPCH Info additional to those
-- in PrimaryCCPCH-Info
PrimaryCCPCH-Info-LCR-r4-ext ::= SEQUENCE {
  tstd-Indicator             BOOLEAN
}

PrimaryCCPCH-InfoPost ::= SEQUENCE {
  syncCase                   CHOICE {
    syncCase1                 SEQUENCE {
      timeslot                TimeslotNumber
    },
    syncCase2                 SEQUENCE {
      timeslotSync2           TimeslotSync2
    }
  },
  cellParametersID          CellParametersID,
  sctd-Indicator            BOOLEAN
}

PrimaryCCPCH-InfoPostTDD-LCR-r4 ::= SEQUENCE {
  tstd-Indicator             BOOLEAN,
  cellParametersID          CellParametersID,
  blockSTTD-Indicator       BOOLEAN
}

PrimaryCCPCH-TX-Power ::= INTEGER (6..43)

PrimaryCPICH-Info ::= SEQUENCE {
  primaryScramblingCode     PrimaryScramblingCode
}

PrimaryCPICH-TX-Power ::= INTEGER (-10..50)

PrimaryScramblingCode ::= INTEGER (0..511)

PuncturingLimit ::= ENUMERATED {
  p10-40, p10-44, p10-48, p10-52, p10-56,
  p10-60, p10-64, p10-68, p10-72, p10-76,
  p10-80, p10-84, p10-88, p10-92, p10-96, p11 }

PUSCH-CapacityAllocationInfo ::= SEQUENCE {
  pusch-Allocation          CHOICE {
    pusch-AllocationPending NULL,
    pusch-AllocationAssignment SEQUENCE {
      pusch-AllocationPeriodInfo AllocationPeriodInfo,
      pusch-PowerControlInfo UL-TargetSIR OPTIONAL,
      configuration CHOICE {
        old-Configuration SEQUENCE {
          tfcs-ID          TFCS-IdentityPlain DEFAULT 1,
          pusch-Identity   PUSCH-Identity
        },
        new-Configuration SEQUENCE {
          pusch-Info       PUSCH-Info,
          pusch-Identity   PUSCH-Identity OPTIONAL
        }
      }
    }
  }
}

PUSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
  pusch-Allocation          CHOICE {
    pusch-AllocationPending NULL,
    pusch-AllocationAssignment SEQUENCE {
      pusch-AllocationPeriodInfo AllocationPeriodInfo,

```

```

pusch-PowerControlInfo configuration
  old-Configuration
    tfcs-ID
    pusch-Identity
  },
  new-Configuration
    pusch-Info
    pusch-Identity
  }
}
}
}
}
}

PUSCH-Identity ::= INTEGER (1..hiPUSCHidentities)

PUSCH-Info ::= SEQUENCE {
  tfcs-ID                TFCS-IdentityPlain           DEFAULT 1,
  commonTimeslotInfo    CommonTimeslotInfo       OPTIONAL,
  pusch-TimeslotsCodes  UplinkTimeslotsCodes     OPTIONAL
}

PUSCH-Info-r4 ::= SEQUENCE {
  tfcs-ID                TFCS-IdentityPlain           DEFAULT 1,
  commonTimeslotInfo    CommonTimeslotInfo       OPTIONAL,
  tddOption              CHOICE {
    tdd384                SEQUENCE {
      pusch-TimeslotsCodes UplinkTimeslotsCodes     OPTIONAL
    },
    tdd128                SEQUENCE {
      pusch-TimeslotsCodes UplinkTimeslotsCodes-LCR-r4 OPTIONAL
    }
  }
}

PUSCH-Info-LCR-r4 ::= SEQUENCE {
  tfcs-ID                TFCS-IdentityPlain           DEFAULT 1,
  commonTimeslotInfo    CommonTimeslotInfo       OPTIONAL,
  pusch-TimeslotsCodes  UplinkTimeslotsCodes-LCR-r4 OPTIONAL
}

PUSCH-PowerControlInfo-r4 ::= SEQUENCE {
  -- The IE ul-TargetSIR corresponds to PRX-PUSCHdes for 1.28Mcps TDD
  -- Actual value PRX-PUSCHdes = (value of IE "ul-TargetSIR" - 120)
  ul-TargetSIR          UL-TargetSIR,
  tddOption              CHOICE {
    tdd384                NULL,
    tdd128                SEQUENCE {
      tpc-StepSize        TPC-StepSizeTDD           OPTIONAL
    }
  }
}

PUSCH-SysInfo ::= SEQUENCE {
  pusch-Identity        PUSCH-Identity,
  pusch-Info            PUSCH-Info,
  usch-TFS              TransportFormatSet         OPTIONAL,
  usch-TFCS            TFCS                       OPTIONAL
}

PUSCH-SysInfo-HCR-r5 ::= SEQUENCE {
  pusch-Identity        PUSCH-Identity,
  pusch-Info            PUSCH-Info,
  usch-TransportChannelsInfo USCH-TransportChannelsInfo OPTIONAL,
  usch-TFCS            TFCS                       OPTIONAL
}

PUSCH-SysInfo-LCR-r4 ::= SEQUENCE {
  pusch-Identity        PUSCH-Identity,
  pusch-Info            PUSCH-Info-LCR-r4,
  usch-TFS              TransportFormatSet         OPTIONAL,
  usch-TFCS            TFCS                       OPTIONAL
}

PUSCH-SysInfoList ::= SEQUENCE (SIZE (1..maxPUSCH)) OF
  PUSCH-SysInfo

```

```

PUSCH-SysInfoList-HCR-r5 ::= SEQUENCE (SIZE (1..maxPUSCH)) OF PUSCH-SysInfo-HCR-r5
PUSCH-SysInfoList-LCR-r4 ::= SEQUENCE (SIZE (1..maxPUSCH)) OF
    PUSCH-SysInfo-LCR-r4
PUSCH-SysInfoList-SFN ::= SEQUENCE (SIZE (1..maxPUSCH)) OF
    SEQUENCE {
        pusch-SysInfo          PUSCH-SysInfo,
        sfn-TimeInfo           SFN-TimeInfo
    } OPTIONAL
PUSCH-SysInfoList-SFN-HCR-r5 ::= SEQUENCE (SIZE (1..maxPUSCH)) OF
    SEQUENCE {
        pusch-SysInfo          PUSCH-SysInfo-HCR-r5,
        sfn-TimeInfo           SFN-TimeInfo
    } OPTIONAL
PUSCH-SysInfoList-SFN-LCR-r4 ::= SEQUENCE (SIZE (1..maxPUSCH)) OF
    SEQUENCE {
        pusch-SysInfo          PUSCH-SysInfo-LCR-r4,
        sfn-TimeInfo           SFN-TimeInfo
    } OPTIONAL
RACH-TransmissionParameters ::= SEQUENCE {
    mmax          INTEGER (1..32),
    nb01Min       NB01,
    nb01Max       NB01
}
ReducedScramblingCodeNumber ::= INTEGER (0..8191)
RepetitionPeriodAndLength ::= CHOICE {
    repetitionPeriod1      NULL,
    -- repetitionPeriod2 could just as well be NULL also.
    repetitionPeriod2      INTEGER (1..1),
    repetitionPeriod4      INTEGER (1..3),
    repetitionPeriod8      INTEGER (1..7),
    repetitionPeriod16     INTEGER (1..15),
    repetitionPeriod32     INTEGER (1..31),
    repetitionPeriod64     INTEGER (1..63)
}
RepetitionPeriodLengthAndOffset ::= CHOICE {
    repetitionPeriod1      NULL,
    repetitionPeriod2      SEQUENCE {
        length             NULL,
        offset             INTEGER (0..1)
    },
    repetitionPeriod4      SEQUENCE {
        length             INTEGER (1..3),
        offset             INTEGER (0..3)
    },
    repetitionPeriod8      SEQUENCE {
        length             INTEGER (1..7),
        offset             INTEGER (0..7)
    },
    repetitionPeriod16     SEQUENCE {
        length             INTEGER (1..15),
        offset             INTEGER (0..15)
    },
    repetitionPeriod32     SEQUENCE {
        length             INTEGER (1..31),
        offset             INTEGER (0..31)
    },
    repetitionPeriod64     SEQUENCE {
        length             INTEGER (1..63),
        offset             INTEGER (0..63)
    }
}
ReplacedPDSCH-CodeInfo ::= SEQUENCE {
    tfci-Field2           MaxTFCI-Field2Value,
    spreadingFactor       SF-PDSCH,
    codeNumber            CodeNumberDSCH,
    multiCodeInfo         MultiCodeInfo
}

```

```

ReplacedPDSCH-CodeInfoList ::= SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
                                ReplacedPDSCH-CodeInfo

RepPerLengthOffset-PICH ::= CHOICE {
    rpp4-2          INTEGER (0..3),
    rpp8-2          INTEGER (0..7),
    rpp8-4          INTEGER (0..7),
    rpp16-2         INTEGER (0..15),
    rpp16-4         INTEGER (0..15),
    rpp32-2         INTEGER (0..31),
    rpp32-4         INTEGER (0..31),
    rpp64-2         INTEGER (0..63),
    rpp64-4         INTEGER (0..63)
}

RestrictedTrCh ::= SEQUENCE {
    dl-restrictedTrCh-Type DL-TrCH-Type,
    restrictedDL-TrCH-Identity TransportChannelIdentity,
    allowedTFIList AllowedTFI-List
}

RestrictedTrCH-InfoList ::= SEQUENCE (SIZE(1..maxTrCH)) OF
                             RestrictedTrCH

RL-AdditionInformation ::= SEQUENCE {
    primaryCPICH-Info PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL DL-DPCH-InfoPerRL,
    tfci-CombiningIndicator BOOLEAN,
    sccpch-InfoForFACH SCCPCH-InfoForFACH OPTIONAL
}

RL-AdditionInformationList ::= SEQUENCE (SIZE (1..maxRL-1)) OF
                                RL-AdditionInformation

RL-IdentifierList ::= SEQUENCE (SIZE (1..maxRL)) OF
                       PrimaryCPICH-Info

RL-RemovalInformationList ::= SEQUENCE (SIZE (1..maxRL)) OF
                                PrimaryCPICH-Info

RPP ::= ENUMERATED {
    mode0, mode1 }

S-Field ::= ENUMERATED {
    e1bit, e2bits }

SCCPCH-ChannelisationCode ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

SCCPCH-ChannelisationCodeList ::= SEQUENCE (SIZE (1..16)) OF
                                   SCCPCH-ChannelisationCode

SCCPCH-InfoForFACH ::= SEQUENCE {
    secondaryCCPCH-Info SecondaryCCPCH-Info,
    tfcs TFCS,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            fach-PCH-InformationList FACH-PCH-InformationList,
            sib-ReferenceListFACH SIB-ReferenceListFACH
        },
        tdd SEQUENCE {
            fach-PCH-InformationList FACH-PCH-InformationList
        }
    }
}

SCCPCH-InfoForFACH-r4 ::= SEQUENCE {
    secondaryCCPCH-Info-r4 SecondaryCCPCH-Info-r4,
    tfcs TFCS,
    fach-PCH-InformationList FACH-PCH-InformationList,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            sib-ReferenceListFACH SIB-ReferenceListFACH
        },
        tdd NULL
    }
}

```

```

    }
}

SCCPCH-SystemInformation ::=          SEQUENCE {
    secondaryCCPCH-Info              SecondaryCCPCH-Info,
    tfcs                             TFCS                                OPTIONAL,
    fach-PCH-InformationList         FACH-PCH-InformationList        OPTIONAL,
    pich-Info                         PICH-Info                          OPTIONAL
}

SCCPCH-SystemInformation-LCR-r4-ext ::= SEQUENCE {
    secondaryCCPCH-LCR-Extensions    SecondaryCCPCH-Info-LCR-r4-ext,
    -- pich-Info in the SCCPCH-SystemInformation IE shall be absent,
    -- and instead the following used.
    pich-Info                         PICH-Info-LCR-r4                    OPTIONAL
}

SCCPCH-SystemInformationList ::=      SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                        SCCPCH-SystemInformation

-- SCCPCH-SystemInformationList-LCR-r4-ext includes elements additional to those in
-- SCCPCH-SystemInformationList for the 1.28Mcps TDD. The order of the IEs
-- indicates which SCCPCH-SystemInformation-LCR-r4-ext IE extends which
-- SCCPCH-SystemInformation IE.
SCCPCH-SystemInformationList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                                SCCPCH-SystemInformation-LCR-r4-ext

ScramblingCodeChange ::=             ENUMERATED {
                                        codeChange, noCodeChange }

ScramblingCodeType ::=               ENUMERATED {
                                        shortSC,
                                        longSC }

SecondaryCCPCH-Info ::=               SEQUENCE {
    modeSpecificInfo                 CHOICE {
        fdd                          SEQUENCE {
            -- dummy1 is not used in this version of the specification and should be ignored.
            dummy1                    PCPICH-UsageForChannelEst,
            -- dummy2 is not used in this version of the specification. It should not
            -- be sent and if received it should be ignored.
            dummy2                    SecondaryCPICH-Info                OPTIONAL,
            secondaryScramblingCode    SecondaryScramblingCode        OPTIONAL,
            sttd-Indicator              BOOLEAN,
            sf-AndCodeNumber            SF256-AndCodeNumber,
            pilotSymbolExistence        BOOLEAN,
            tfci-Existence              BOOLEAN,
            positionFixedOrFlexible     PositionFixedOrFlexible,
            timingOffset                TimingOffset                    DEFAULT 0
        },
        tdd                            SEQUENCE {
            -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
            commonTimeslotInfo          CommonTimeslotInfoSCCPCH,
            individualTimeslotInfo      IndividualTimeslotInfo,
            channelisationCode          SCCPCH-ChannelisationCodeList
        }
    }
}

SecondaryCCPCH-Info-r4 ::=            SEQUENCE {
    modeSpecificInfo                 CHOICE {
        fdd                          SEQUENCE {
            secondaryScramblingCode    SecondaryScramblingCode        OPTIONAL,
            sttd-Indicator              BOOLEAN,
            sf-AndCodeNumber            SF256-AndCodeNumber,
            pilotSymbolExistence        BOOLEAN,
            tfci-Existence              BOOLEAN,
            positionFixedOrFlexible     PositionFixedOrFlexible,
            timingOffset                TimingOffset                    DEFAULT 0
        },
        tdd                            SEQUENCE {
            -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
            commonTimeslotInfo          CommonTimeslotInfoSCCPCH,
            tddOption                   CHOICE {
                tdd384                 SEQUENCE {
                    individualTimeslotInfo IndividualTimeslotInfo
                },
                tdd128                 SEQUENCE {

```

```

        individualTimeslotInfo      IndividualTimeslotInfo-LCR-r4
    },
    channelisationCode              SCCPCH-ChannelisationCodeList
}
}
}

SecondaryCCPCH-Info-LCR-r4-ext ::= SEQUENCE {
    individualTimeslotLCR-Ext      IndividualTimeslotInfo-LCR-r4-ext
}

SecondaryCPICH-Info ::=
    SEQUENCE {
        secondaryDL-ScramblingCode SecondaryScramblingCode          OPTIONAL,
        channelisationCode          ChannelisationCode256
    }

SecondaryScramblingCode ::=
    INTEGER (1..15)

SecondInterleavingMode ::=
    ENUMERATED {
        frameRelated, timeslotRelated }

-- SF256-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF256-AndCodeNumber ::=
    CHOICE {
        sf4          INTEGER (0..3),
        sf8          INTEGER (0..7),
        sf16         INTEGER (0..15),
        sf32         INTEGER (0..31),
        sf64         INTEGER (0..63),
        sf128        INTEGER (0..127),
        sf256        INTEGER (0..255)
    }

-- SF512-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF512-AndCodeNumber ::=
    CHOICE {
        sf4          INTEGER (0..3),
        sf8          INTEGER (0..7),
        sf16         INTEGER (0..15),
        sf32         INTEGER (0..31),
        sf64         INTEGER (0..63),
        sf128        INTEGER (0..127),
        sf256        INTEGER (0..255),
        sf512        INTEGER (0..511)
    }

-- SF512-AndPilot encodes both "Spreading factor" and "Number of bits for Pilot bits"
SF512-AndPilot ::=
    CHOICE {
        sfd4         NULL,
        sfd8         NULL,
        sfd16        NULL,
        sfd32        NULL,
        sfd64        NULL,
        sfd128       PilotBits128,
        sfd256       PilotBits256,
        sfd512       NULL
    }

SF-PDSCH ::=
    ENUMERATED {
        sfp4, sfp8, sfp16, sfp32,
        sfp64, sfp128, sfp256 }

SF-PRACH ::=
    ENUMERATED {
        sfpr32, sfpr64, sfpr128, sfpr256 }

SFN-TimeInfo ::=
    SEQUENCE {
        activationTimeSFN      INTEGER (0..4095),
        physChDuration         DurationTimeInfo
    }

SpecialBurstScheduling ::=
    INTEGER (0..7)

SpreadingFactor ::=
    ENUMERATED {
        sf4, sf8, sf16, sf32,
        sf64, sf128, sf256 }

SRB-delay ::=
    INTEGER (0..7)

SSDT-CellIdentity ::=
    ENUMERATED {
        ssdt-id-a, ssdt-id-b, ssdt-id-c,

```

```

                                ssdt-id-d, ssdt-id-e, ssdt-id-f,
                                ssdt-id-g, ssdt-id-h }

SSDT-Information ::=          SEQUENCE {
    s-Field                  S-Field,
    codeWordSet              CodeWordSet
}

SSDT-Information-r4 ::=      SEQUENCE {
    s-Field                  S-Field,
    codeWordSet              CodeWordSet,
    ssdt-UL                  SSDT-UL-r4
}
                                                                    OPTIONAL

-- SSDT-UL-r4 is used to extend the
-- SSDT-Information IE from Release 4 onwards.
SSDT-UL-r4 ::=              ENUMERATED {
    ul, ul-AndDL }

SynchronisationParameters-r4 ::= SEQUENCE {
    sync-UL-CodesBitmap      BIT STRING {
        code7(0),
        code6(1),
        code5(2),
        code4(3),
        code3(4),
        code2(5),
        code1(6),
        code0(7)
    } (SIZE (8)),
    fpach-Info                FPACH-Info-r4,
    -- Actual value prxUpPCHdes = IE value - 120
    prxUpPCHdes              INTEGER (0..62),
    sync-UL-Procedure         SYNC-UL-Procedure-r4
}
                                                                    OPTIONAL

SYNC-UL-Procedure-r4 ::=    SEQUENCE {
    max-SYNC-UL-Transmissions ENUMERATED { tr1, tr2, tr4, tr8 },
    powerRampStep            INTEGER (0..3)
}

SYNC-UL-Info-r4 ::=        SEQUENCE {
    sync-UL-Codes-Bitmap     BIT STRING {
        code7(0),
        code6(1),
        code5(2),
        code4(3),
        code3(4),
        code2(5),
        code1(6),
        code0(7)
    } (SIZE (8)),
    -- Actual value prxUpPCHdes = IE value - 120
    prxUpPCHdes              INTEGER (0..62),
    powerRampStep            INTEGER (0..3),
    max-SYNC-UL-Transmissions ENUMERATED { tr1, tr2, tr4, tr8 } ,
    mmax                     INTEGER(1..32)
}

TDD-FPACH-CCode16-r4 ::=   ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-UL-Interference ::=    INTEGER (-110..-52)

TDD-PICH-CCode ::=        ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode8 ::=      ENUMERATED {
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8 }

TDD-PRACH-CCode16 ::=     ENUMERATED {

```

```

cc16-1, cc16-2, cc16-3, cc16-4,
cc16-5, cc16-6, cc16-7, cc16-8,
cc16-9, cc16-10, cc16-11, cc16-12,
cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode-LCR-r4 ::=          ENUMERATED {
                                     cc4-1, cc4-2, cc4-3, cc4-4,
                                     cc8-1, cc8-2, cc8-3, cc8-4,
                                     cc8-5, cc8-6, cc8-7, cc8-8,
                                     cc16-1, cc16-2, cc16-3, cc16-4,
                                     cc16-5, cc16-6, cc16-7, cc16-8,
                                     cc16-9, cc16-10, cc16-11, cc16-12,
                                     cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCodeList ::=            CHOICE {
    sf8                               SEQUENCE (SIZE (1..8)) OF
                                     TDD-PRACH-CCode8,
    -- Channelisation codes cc16-9, cc16-10, cc16-11, cc16-12, cc16-13, cc16-14,
    -- cc16-15 and cc16-16 shall not be used
    sf16                              SEQUENCE (SIZE (1..8)) OF
                                     TDD-PRACH-CCode16
}

TFC-ControlDuration ::=            ENUMERATED {
                                     tfc-cd1, tfc-cd2, tfc-cd4, tfc-cd8,
                                     tfc-cd16, tfc-cd24, tfc-cd32,
                                     tfc-cd48, tfc-cd64, tfc-cd128,
                                     tfc-cd192, tfc-cd256, tfc-cd512 }

TFCI-Coding ::=                    ENUMERATED {
                                     tfci-bits-4, tfci-bits-8,
                                     tfci-bits-16, tfci-bits-32 }

TGCFN ::=                          INTEGER (0..255)

-- In TGD, value 270 represents "undefined" in the tabular description.
TGD ::=                            INTEGER (15..270)

TGL ::=                            INTEGER (1..14)

TGMP ::=                            ENUMERATED {
                                     tdd-Measurement, fdd-Measurement,
                                     gsm-CarrierRSSIMeasurement,
                                     gsm-initialBSICIdentification, gsmBSICReconfirmation,
                                     multi-carrier }

TGP-Sequence ::=                   SEQUENCE {
    tgpsi                             TGPSI,
    tgps-Status                       CHOICE {
        activate                       SEQUENCE {
            tgcfn                       TGCFN
        },
        deactivate                     NULL
    },
    tgps-ConfigurationParams          TGPS-ConfigurationParams          OPTIONAL
}

TGPS-Reconfiguration-CFN ::=       INTEGER (0..255)

TGP-SequenceList ::=               SEQUENCE (SIZE (1..maxTGPS)) OF
    TGP-Sequence

TGP-SequenceShort ::=              SEQUENCE {
    tgpsi                             TGPSI,
    tgps-Status                       CHOICE {
        activate                       SEQUENCE {
            tgcfn                       TGCFN
        },
        deactivate                     NULL
    }
}

TGPL ::=                          INTEGER (1..144)

-- TABULAR: In TGPRC, value 0 represents "infinity" in the tabular description.
TGPRC ::=                          INTEGER (0..511)

TGPS-ConfigurationParams ::=       SEQUENCE {

```

```

    tgmprc          TGMP,
    tgprc           TGPRC,
    tgsn            TGSN,
    tgl1            TGL,
    tgl2            TGL,
    tgd             TGD,
    tgpl1           TGPL,
    tgpl2           TGPL,
    rpp             RPP,
    itp             ITP,
    -- TABULAR: Compressed mode method is nested inside UL-DL-Mode
    ul-DL-Mode      UL-DL-Mode,
    dl-FrameType    DL-FrameType,
    deltaSIR1       DeltaSIR,
    deltaSIRAfter1  DeltaSIR,
    deltaSIR2       DeltaSIR,
    deltaSIRAfter2  DeltaSIR,
    nidentifyAbort  NidentifyAbort,
    treconfirmAbort TreconfirmAbort
}

TGPSI ::=          INTEGER (1..maxTGPS)

TGSN ::=           INTEGER (0..14)

TimeInfo ::=       SEQUENCE {
    activationTime  ActivationTime,
    durationTimeInfo 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-r4
}

-- If TimeslotNumber is included for a 1.28Mcps TDD description, it shall take values from 0..6
TimeslotNumber ::= INTEGER (0..14)

TimeslotNumber-LCR-r4 ::= INTEGER (0..6)

TimeslotNumber-PRACH-LCR-r4 ::= INTEGER (1..6)

TimeslotSync2 ::=  INTEGER (0..6)

-- Actual value TimingOffset = IE value * 256
TimingOffset ::=   INTEGER (0..149)

TPC-CombinationIndex ::= INTEGER (0..5)

-- Actual value TPC-StepSizeFDD = IE value + 1
TPC-StepSizeFDD ::= INTEGER (0..1)

TPC-StepSizeTDD ::= INTEGER (1..3)

-- Actual value TreconfirmAbort = IE value * 0.5 seconds
TreconfirmAbort ::= INTEGER (1..20)

TX-DiversityMode ::= ENUMERATED {
    noDiversity,
    sttd,
    closedLoopMode1,
    closedLoopMode2 }

UARFCN ::=         INTEGER (0..16383)

UCSM-Info ::=      SEQUENCE {
    minimumSpreadingFactor MinimumSpreadingFactor,
    nf-Max             NF-Max,
    channelReqParamsForUCSM ChannelReqParamsForUCSM
}

UL-CCTrCH ::=      SEQUENCE {
    tfcs-ID            TFCS-IdentityPlain
}

```

```

    ul-TargetSIR                UL-TargetSIR,
    timeInfo                    TimeInfo,
    commonTimeslotInfo          CommonTimeslotInfo
    ul-CCTrCH-TimeslotsCodes    UplinkTimeslotsCodes
}                                OPTIONAL,
                                OPTIONAL

UL-CCTrCH-r4 ::=                SEQUENCE {
    tfcs-ID                     TFCS-IdentityPlain          DEFAULT 1,
    -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
    -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
    ul-TargetSIR                UL-TargetSIR,
    timeInfo                    TimeInfo,
    commonTimeslotInfo          CommonTimeslotInfo          OPTIONAL,
    tddOption                   CHOICE {
        tdd384                  SEQUENCE {
            ul-CCTrCH-TimeslotsCodes    UplinkTimeslotsCodes    OPTIONAL
        },
        tdd128                  SEQUENCE {
            ul-CCTrCH-TimeslotsCodes    UplinkTimeslotsCodes-LCR-r4 OPTIONAL
        }
    }
}

UL-CCTrCHList ::=              SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                UL-CCTrCH

UL-CCTrCHList-r4 ::=           SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                UL-CCTrCH-r4

UL-CCTrCHListToRemove ::=      SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                TFCS-IdentityPlain

UL-CCTrChTPCList ::=           SEQUENCE (SIZE (0..maxCCTrCH)) OF
                                TFCS-Identity

UL-ChannelRequirement ::=      CHOICE {
    ul-DPCH-Info                UL-DPCH-Info,
    cpch-SetInfo                CPCH-SetInfo
}

UL-ChannelRequirement-r4 ::=   CHOICE {
    ul-DPCH-Info                UL-DPCH-Info-r4,
    cpch-SetInfo                CPCH-SetInfo
}

UL-ChannelRequirement-r5 ::=   CHOICE {
    ul-DPCH-Info                UL-DPCH-Info-r5,
    cpch-SetInfo                CPCH-SetInfo
}

UL-ChannelRequirementWithCPCH-SetID ::= CHOICE {
    ul-DPCH-Info                UL-DPCH-Info,
    cpch-SetInfo                CPCH-SetInfo,
    cpch-SetID                  CPCH-SetID
}

UL-ChannelRequirementWithCPCH-SetID-r4 ::= CHOICE {
    ul-DPCH-Info                UL-DPCH-Info-r4,
    cpch-SetInfo                CPCH-SetInfo,
    cpch-SetID                  CPCH-SetID
}

UL-ChannelRequirementWithCPCH-SetID-r5 ::= CHOICE {
    ul-DPCH-Info                UL-DPCH-Info-r5,
    cpch-SetInfo                CPCH-SetInfo,
    cpch-SetID                  CPCH-SetID
}

UL-CompressedModeMethod ::=    ENUMERATED {
    sf-2,
    higherLayerScheduling }

UL-DL-Mode ::=                 CHOICE {
    ul                           UL-CompressedModeMethod,
    dl                           DL-CompressedModeMethod,
    ul-and-dl                    SEQUENCE {
        ul                       UL-CompressedModeMethod,
        dl                       DL-CompressedModeMethod
    }
}

```

```

}}
UL-DPCH-SlotFormat ::=          ENUMERATED {
                                slf0, slf1, slf2 }
UL-DPCH-Info ::=              SEQUENCE {
    ul-DPCH-PowerControlInfo    UL-DPCH-PowerControlInfo    OPTIONAL,
    modeSpecificInfo            CHOICE {
        fdd                     SEQUENCE {
            scramblingCodeType   ScramblingCodeType,
            scramblingCode       UL-ScramblingCode,
            numberOfDPDCH        NumberOfDPDCH            DEFAULT 1,
            spreadingFactor      SpreadingFactor,
            tfci-Existence       BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits     NumberOfFBI-Bits        OPTIONAL,
            puncturingLimit      PuncturingLimit
        },
        tdd                     SEQUENCE {
            ul-TimingAdvance     UL-TimingAdvanceControl  OPTIONAL,
            ul-CCTrCHList        UL-CCTrCHList            OPTIONAL,
            ul-CCTrCHListToRemove UL-CCTrCHListToRemove  OPTIONAL
        }
    }
}
UL-DPCH-Info-r4 ::=          SEQUENCE {
    ul-DPCH-PowerControlInfo    UL-DPCH-PowerControlInfo-r4    OPTIONAL,
    modeSpecificInfo            CHOICE {
        fdd                     SEQUENCE {
            scramblingCodeType   ScramblingCodeType,
            scramblingCode       UL-ScramblingCode,
            numberOfDPDCH        NumberOfDPDCH            DEFAULT 1,
            spreadingFactor      SpreadingFactor,
            tfci-Existence       BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits     NumberOfFBI-Bits        OPTIONAL,
            puncturingLimit      PuncturingLimit
        },
        tdd                     SEQUENCE {
            ul-TimingAdvance     UL-TimingAdvanceControl-r4  OPTIONAL,
            ul-CCTrCHList        UL-CCTrCHList-r4          OPTIONAL,
            ul-CCTrCHListToRemove UL-CCTrCHListToRemove    OPTIONAL
        }
    }
}
UL-DPCH-Info-r5 ::=          SEQUENCE {
    ul-DPCH-PowerControlInfo    UL-DPCH-PowerControlInfo-r5    OPTIONAL,
    modeSpecificInfo            CHOICE {
        fdd                     SEQUENCE {
            scramblingCodeType   ScramblingCodeType,
            scramblingCode       UL-ScramblingCode,
            numberOfDPDCH        NumberOfDPDCH            DEFAULT 1,
            spreadingFactor      SpreadingFactor,
            tfci-Existence       BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits     NumberOfFBI-Bits        OPTIONAL,
            puncturingLimit      PuncturingLimit
        },
        tdd                     SEQUENCE {
            ul-TimingAdvance     UL-TimingAdvanceControl-r4  OPTIONAL,
            ul-CCTrCHList        UL-CCTrCHList-r4          OPTIONAL,
            ul-CCTrCHListToRemove UL-CCTrCHListToRemove    OPTIONAL
        }
    }
}
UL-DPCH-InfoPostFDD ::=      SEQUENCE {
    ul-DPCH-PowerControlInfo    UL-DPCH-PowerControlInfoPostFDD,
    scramblingCodeType          ScramblingCodeType,
    reducedScramblingCodeNumber ReducedScramblingCodeNumber,
    spreadingFactor              SpreadingFactor
}
UL-DPCH-InfoPostTDD ::=      SEQUENCE {
    ul-DPCH-PowerControlInfo    UL-DPCH-PowerControlInfoPostTDD,

```

```

    ul-TimingAdvance          UL-TimingAdvanceControl          OPTIONAL,
    ul-CCTrCH-TimeslotsCodes  UplinkTimeslotsCodes
  }

UL-DPCH-InfoPostTDD-LCR-r4 ::= SEQUENCE {
    ul-DPCH-PowerControlInfo  UL-DPCH-PowerControlInfoPostTDD-LCR-r4,
    ul-TimingAdvance          UL-TimingAdvanceControl-LCR-r4          OPTIONAL,
    ul-CCTrCH-TimeslotsCodes  UplinkTimeslotsCodes-LCR-r4
}

UL-DPCH-InfoPredef ::= SEQUENCE {
    ul-DPCH-PowerControlInfo  UL-DPCH-PowerControlInfoPredef,
    modeSpecificInfo          CHOICE {
        fdd                    SEQUENCE {
            tfci-Existence     BOOLEAN,
            puncturingLimit    PuncturingLimit
        },
        tdd                    SEQUENCE {
            commonTimeslotInfo CommonTimeslotInfo
        }
    }
}

UL-DPCH-PowerControlInfo ::= CHOICE {
    fdd                    SEQUENCE {
        dpcch-PowerOffset     DPCCH-PowerOffset,
        pc-Preamble           PC-Preamble,
        sRB-delay             SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm PowerControlAlgorithm
    },
    tdd                    SEQUENCE {
        ul-TargetSIR          UL-TargetSIR          OPTIONAL,
        ul-OL-PC-Signalling   CHOICE {
            broadcast-UL-OL-PC-info  NULL,
            individuallySignalled    SEQUENCE {
                individualTS-InterferenceList  IndividualTS-InterferenceList,
                dpch-ConstantValue            ConstantValueTdd,
                primaryCCPCH-TX-Power        PrimaryCCPCH-TX-Power
            }
        }
    }
}

UL-DPCH-PowerControlInfo-r4 ::= CHOICE {
    fdd                    SEQUENCE {
        dpcch-PowerOffset     DPCCH-PowerOffset,
        pc-Preamble           PC-Preamble,
        sRB-delay             SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm PowerControlAlgorithm
    },
    tdd                    SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
        -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
        ul-TargetSIR          UL-TargetSIR          OPTIONAL,
        ul-OL-PC-Signalling   CHOICE {
            broadcast-UL-OL-PC-info  NULL,
            individuallySignalled    SEQUENCE {
                tddOption            CHOICE {
                    tdd384            SEQUENCE {
                        individualTS-InterferenceList  IndividualTS-InterferenceList,
                        dpch-ConstantValue            ConstantValue
                    },
                    tdd128            SEQUENCE {
                        tpc-StepSize    TPC-StepSizeTDD
                    }
                }
            },
            primaryCCPCH-TX-Power    PrimaryCCPCH-TX-Power
        }
    }
}

UL-DPCH-PowerControlInfo-r5 ::= CHOICE {
    fdd                    SEQUENCE {
        dpcch-PowerOffset     DPCCH-PowerOffset,
        pc-Preamble           PC-Preamble,

```

```

-- TABULAR: TPC step size nested inside PowerControlAlgorithm
powerControlAlgorithm      PowerControlAlgorithm,
deltaACK                    DeltaACK      OPTIONAL,
deltaNACK                   DeltaNACK    OPTIONAL,
ack-NACK-repetition-factor  ACK-NACK-repetitionFactor  OPTIONAL
},
tdd                          SEQUENCE {
-- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
-- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
ul-TargetSIR                UL-TargetSIR      OPTIONAL,
ul-OL-PC-Signalling          CHOICE {
  broadcast-UL-OL-PC-info    NULL,
  individuallySignalled      SEQUENCE {
    tddOption                 CHOICE {
      tdd384                  SEQUENCE {
        individualTS-InterferenceList  IndividualTS-InterferenceList,
        dpch-ConstantValue            ConstantValue
      },
      tdd128                   SEQUENCE {
        tpc-StepSize           TPC-StepSizeTDD
      }
    }
  },
  primaryCCPCH-TX-Power      PrimaryCCPCH-TX-Power
}
}
}
}

UL-DPCH-PowerControlInfoPostFDD ::= SEQUENCE {
-- DPCCH-PowerOffset2 has a smaller range to save bits
dpcch-PowerOffset          DPCCH-PowerOffset2,
pc-Preamble                PC-Preamble,
sRB-delay                  SRB-delay
}

UL-DPCH-PowerControlInfoPostTDD ::= SEQUENCE {
ul-TargetSIR               UL-TargetSIR,
ul-TimeslotInterference    TDD-UL-Interference
}

UL-DPCH-PowerControlInfoPostTDD-LCR-r4 ::= SEQUENCE {
-- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
-- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
ul-TargetSIR               UL-TargetSIR
}

UL-DPCH-PowerControlInfoPredef ::= CHOICE {
  fdd                       SEQUENCE {
-- TABULAR: TPC step size nested inside PowerControlAlgorithm
powerControlAlgorithm      PowerControlAlgorithm
  },
  tdd                       SEQUENCE {
-- dpch-ConstantValue shall be ignored if in 1.28Mcps TDD mode.
dpch-ConstantValue         ConstantValueTdd
  }
}

UL-Interference ::= INTEGER (-110..-70)

UL-ScramblingCode ::= INTEGER (0..16777215)

UL-SynchronisationParameters-r4 ::= SEQUENCE {
  stepSize                  INTEGER (1..8),
  frequency                 INTEGER (1..8)
}

-- Actual value UL-TargetSIR = (IE value * 0.5) - 11
UL-TargetSIR ::= INTEGER (0..62)

UL-TimingAdvance ::= INTEGER (0..63)

UL-TimingAdvanceControl ::= CHOICE {
  disabled                  NULL,
  enabled                   SEQUENCE {
    ul-TimingAdvance        UL-TimingAdvance      OPTIONAL,
    activationTime          ActivationTime          OPTIONAL
  }
}

```

```

}

UL-TimingAdvanceControl-r4 ::= CHOICE {
    disabled NULL,
    enabled SEQUENCE {
        tddOption CHOICE {
            tdd384 SEQUENCE {
                ul-TimingAdvance UL-TimingAdvance OPTIONAL,
                activationTime ActivationTime OPTIONAL
            },
            tdd128 SEQUENCE {
                ul-SynchronisationParameters UL-SynchronisationParameters-r4 OPTIONAL,
                synchronisationParameters SynchronisationParameters-r4 OPTIONAL
            }
        }
    }
}

UL-TimingAdvanceControl-LCR-r4 ::= CHOICE {
    disabled NULL,
    enabled SEQUENCE {
        ul-SynchronisationParameters UL-SynchronisationParameters-r4 OPTIONAL,
        synchronisationParameters SynchronisationParameters-r4 OPTIONAL
    }
}

UL-TS-ChannelisationCode ::= ENUMERATED {
    cc1-1, cc2-1, cc2-2,
    cc4-1, cc4-2, cc4-3, cc4-4,
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8,
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

UL-TS-ChannelisationCodeList ::= SEQUENCE (SIZE (1..2)) OF
    UL-TS-ChannelisationCode

UplinkAdditionalTimeslots ::= SEQUENCE {
    parameters CHOICE {
        sameAsLast SEQUENCE {
            timeslotNumber TimeslotNumber
        },
        newParameters SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo,
            ul-TS-ChannelisationCodeList UL-TS-ChannelisationCodeList
        }
    }
}

UplinkAdditionalTimeslots-LCR-r4 ::= SEQUENCE {
    parameters CHOICE {
        sameAsLast SEQUENCE {
            timeslotNumber TimeslotNumber
        },
        newParameters SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo-LCR-r4,
            ul-TS-ChannelisationCodeList UL-TS-ChannelisationCodeList
        }
    }
}

UplinkTimeslotsCodes ::= SEQUENCE {
    dynamicSFusage BOOLEAN,
    firstIndividualTimeslotInfo IndividualTimeslotInfo,
    ul-TS-ChannelisationCodeList UL-TS-ChannelisationCodeList,
    moreTimeslots CHOICE {
        noMore NULL,
        additionalTimeslots CHOICE {
            consecutive SEQUENCE {
                numAdditionalTimeslots INTEGER (1..maxTS-1)
            },
            timeslotList SEQUENCE (SIZE (1..maxTS-1)) OF
                UplinkAdditionalTimeslots
        }
    }
}

```

```

UplinkTimeslotsCodes-LCR-r4 ::= SEQUENCE {
    dynamicSFusage          BOOLEAN,
    firstIndividualTimeslotInfo IndividualTimeslotInfo-LCR-r4,
    ul-TS-ChannelisationCodeList UL-TS-ChannelisationCodeList,
    moreTimeslots          CHOICE {
        noMore              NULL,
        additionalTimeslots CHOICE {
            consecutive      SEQUENCE {
                numAdditionalTimeslots INTEGER (1..maxTS-LCR-1)
            },
            timeslotList     SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                UplinkAdditionalTimeslots-LCR-r4
        }
    }
}

Wi-LCR ::= INTEGER(1..4)

-- *****
--
-- MEASUREMENT INFORMATION ELEMENTS (10.3.7)
--
-- *****

AcquisitionSatInfo ::= SEQUENCE {
    satID          SatID,
    -- Actual value dopplerOthOrder = IE value * 2.5
    dopplerOthOrder INTEGER (-2048..2047),
    extraDopplerInfo ExtraDopplerInfo OPTIONAL,
    codePhase        INTEGER (0..1022),
    integerCodePhase INTEGER (0..19),
    gps-BitNumber    INTEGER (0..3),
    codePhaseSearchWindow CodePhaseSearchWindow,
    azimuthAndElevation AzimuthAndElevation OPTIONAL
}

AcquisitionSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF
    AcquisitionSatInfo

AdditionalMeasurementID-List ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasurementIdentity

AlmanacSatInfo ::= SEQUENCE {
    dataID          INTEGER (0..3),
    satID          SatID,
    e              BIT STRING (SIZE (16)),
    t-oa           BIT STRING (SIZE (8)),
    deltaI         BIT STRING (SIZE (16)),
    omegaDot       BIT STRING (SIZE (16)),
    satHealth      BIT STRING (SIZE (8)),
    a-Sqrt         BIT STRING (SIZE (24)),
    omega0         BIT STRING (SIZE (24)),
    m0             BIT STRING (SIZE (24)),
    omega          BIT STRING (SIZE (24)),
    af0            BIT STRING (SIZE (11)),
    af1            BIT STRING (SIZE (11))
}

AlmanacSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF
    AlmanacSatInfo

AverageRLC-BufferPayload ::= ENUMERATED {
    pla0, pla4, pla8, pla16, pla32,
    pla64, pla128, pla256, pla512,
    pla1024, pla2k, pla4k, pla8k, pla16k,
    pla32k, pla64k, pla128k, pla256k,
    pla512k, pla1024k, spare12, spare11,
    spare10, spare9, spare8, spare7, spare6,
    spare5, spare4, spare3, spare2, spare1 }

AzimuthAndElevation ::= SEQUENCE {
    -- Actual value azimuth = IE value * 11.25
    azimuth          INTEGER (0..31),
    -- Actual value elevation = IE value * 11.25
    elevation        INTEGER (0..7)
}

```

```

BadSatList ::=                               SEQUENCE (SIZE (1..maxSat)) OF
                                             INTEGER (0..63)

Frequency-Band ::=                           ENUMERATED {
                                             dcs1800BandUsed, pcs1900BandUsed }

BCCH-ARFCN ::=                               INTEGER (0..1023)

BLER-MeasurementResults ::=                  SEQUENCE {
  transportChannelIdentity                    TransportChannelIdentity,
  dl-TransportChannelBLER                     DL-TransportChannelBLER           OPTIONAL
}

BLER-MeasurementResultsList ::=              SEQUENCE (SIZE (1..maxTrCH)) OF
                                             BLER-MeasurementResults

BLER-TransChIdList ::=                       SEQUENCE (SIZE (1..maxTrCH)) OF
                                             TransportChannelIdentity

BSIC-VerificationRequired ::=                ENUMERATED {
                                             required, notRequired }

BSICReported ::=                             CHOICE {
  -- Value maxCellMeas is not allowed for verifiedBSIC
  verifiedBSIC                               INTEGER (0..maxCellMeas),
  nonVerifiedBSIC                             BCC-ARFCN
}

BurstModeParameters ::=                      SEQUENCE {
  burstStart                                 INTEGER (0..15),
  burstLength                                INTEGER (10..25),
  burstFreq                                  INTEGER (1..16)
}

CellDCH-ReportCriteria ::=                   CHOICE {
  intraFreqReportingCriteria                 IntraFreqReportingCriteria,
  periodicalReportingCriteria                 PeriodicalReportingCriteria
}

CellDCH-ReportCriteria-LCR-r4 ::=             CHOICE {
  intraFreqReportingCriteria                 IntraFreqReportingCriteria-LCR-r4,
  periodicalReportingCriteria                 PeriodicalReportingCriteria
}

-- Actual value CellIndividualOffset = IE value * 0.5
CellIndividualOffset ::=                     INTEGER (-20..20)

CellInfo ::=                                 SEQUENCE {
  cellIndividualOffset                       CellIndividualOffset             DEFAULT 0,
  referenceTimeDifferenceToCell               ReferenceTimeDifferenceToCell     OPTIONAL,
  modeSpecificInfo                           CHOICE {
    fdd                                       SEQUENCE {
      primaryCPICH-Info                       PrimaryCPICH-Info                 OPTIONAL,
      primaryCPICH-TX-Power                    PrimaryCPICH-TX-Power             OPTIONAL,
      readSFN-Indicator                         BOOLEAN,
      tx-DiversityIndicator                     BOOLEAN
    },
    tdd                                       SEQUENCE {
      primaryCCPCH-Info                       PrimaryCCPCH-Info,
      primaryCCPCH-TX-Power                    PrimaryCCPCH-TX-Power             OPTIONAL,
      timeslotInfoList                          TimeslotInfoList                 OPTIONAL,
      readSFN-Indicator                         BOOLEAN
    }
  }
}

CellInfo-r4 ::=                              SEQUENCE {
  cellIndividualOffset                       CellIndividualOffset             DEFAULT 0,
  referenceTimeDifferenceToCell               ReferenceTimeDifferenceToCell     OPTIONAL,
  modeSpecificInfo                           CHOICE {
    fdd                                       SEQUENCE {
      primaryCPICH-Info                       PrimaryCPICH-Info                 OPTIONAL,
      primaryCPICH-TX-Power                    PrimaryCPICH-TX-Power             OPTIONAL,
      readSFN-Indicator                         BOOLEAN,
      tx-DiversityIndicator                     BOOLEAN
    },

```

```

    tdd
      primaryCCPCH-Info
      primaryCCPCH-TX-Power
      timeslotInfoList
      readSFN-Indicator
    }
  }
}

CellInfoSI-RSCP ::=
  cellIndividualOffset
  referenceTimeDifferenceToCell
  modeSpecificInfo
  fdd
    primaryCPICH-Info
    primaryCPICH-TX-Power
    readSFN-Indicator
    tx-DiversityIndicator
  },
  tdd
    primaryCCPCH-Info
    primaryCCPCH-TX-Power
    timeslotInfoList
    readSFN-Indicator
  },
  cellSelectionReselectionInfo
}

CellInfoSI-RSCP-LCR-r4 ::=
  cellIndividualOffset
  referenceTimeDifferenceToCell
  primaryCCPCH-Info
  primaryCCPCH-TX-Power
  timeslotInfoList
  readSFN-Indicator
  cellSelectionReselectionInfo
}

CellInfoSI-ECN0 ::=
  cellIndividualOffset
  referenceTimeDifferenceToCell
  modeSpecificInfo
  fdd
    primaryCPICH-Info
    primaryCPICH-TX-Power
    readSFN-Indicator
    tx-DiversityIndicator
  },
  tdd
    primaryCCPCH-Info
    primaryCCPCH-TX-Power
    timeslotInfoList
    readSFN-Indicator
  },
  cellSelectionReselectionInfo
}

CellInfoSI-ECN0-LCR-r4 ::=
  cellIndividualOffset
  referenceTimeDifferenceToCell
  primaryCCPCH-Info
  primaryCCPCH-TX-Power
  timeslotInfoList
  readSFN-Indicator
  cellSelectionReselectionInfo
}

CellInfoSI-HCS-RSCP ::=
  cellIndividualOffset
  referenceTimeDifferenceToCell
  modeSpecificInfo
  fdd
    primaryCPICH-Info
    primaryCPICH-TX-Power
    readSFN-Indicator

```

```

SEQUENCE {
  PrimaryCCPCH-Info-r4,
  PrimaryCCPCH-TX-Power
  TimeslotInfoList-r4
  BOOLEAN
}

SEQUENCE {
  CellIndividualOffset
  ReferenceTimeDifferenceToCell
  CHOICE {
    SEQUENCE {
      PrimaryCPICH-Info
      PrimaryCPICH-TX-Power
      BOOLEAN,
      BOOLEAN
    }
    SEQUENCE {
      PrimaryCCPCH-Info,
      PrimaryCCPCH-TX-Power
      TimeslotInfoList
      BOOLEAN
    }
  }
  CellSelectReselectInfoSIB-11-12-RSCP
}

SEQUENCE {
  CellIndividualOffset
  ReferenceTimeDifferenceToCell
  PrimaryCCPCH-Info-LCR-r4,
  PrimaryCCPCH-TX-Power
  TimeslotInfoList-LCR-r4
  BOOLEAN,
  CellSelectReselectInfoSIB-11-12-RSCP
}

SEQUENCE {
  CellIndividualOffset
  ReferenceTimeDifferenceToCell
  CHOICE {
    SEQUENCE {
      PrimaryCPICH-Info
      PrimaryCPICH-TX-Power
      BOOLEAN,
      BOOLEAN
    }
    SEQUENCE {
      PrimaryCCPCH-Info,
      PrimaryCCPCH-TX-Power
      TimeslotInfoList
      BOOLEAN
    }
  }
  CellSelectReselectInfoSIB-11-12-ECN0
}

SEQUENCE {
  CellIndividualOffset
  ReferenceTimeDifferenceToCell
  PrimaryCCPCH-Info-LCR-r4,
  PrimaryCCPCH-TX-Power
  TimeslotInfoList-LCR-r4
  BOOLEAN,
  CellSelectReselectInfoSIB-11-12-ECN0
}

SEQUENCE {
  CellIndividualOffset
  ReferenceTimeDifferenceToCell
  CHOICE {
    SEQUENCE {
      PrimaryCPICH-Info
      PrimaryCPICH-TX-Power
      BOOLEAN,
      BOOLEAN
    }

```

```

    tx-DiversityIndicator          BOOLEAN
  },
  tdd                             SEQUENCE {
    primaryCCPCH-Info             PrimaryCCPCH-Info,
    primaryCCPCH-TX-Power         PrimaryCCPCH-TX-Power    OPTIONAL,
    timeslotInfoList             TimeslotInfoList        OPTIONAL,
    readSFN-Indicator            BOOLEAN
  }
},
cellSelectionReselectionInfo     CellSelectReselectInfoSIB-11-12-HCS-RSCP  OPTIONAL
}

CellInfoSI-HCS-RSCP-LCR-r4 ::= SEQUENCE {
  cellIndividualOffset           CellIndividualOffset          DEFAULT 0,
  referenceTimeDifferenceToCell  ReferenceTimeDifferenceToCell  OPTIONAL,
  primaryCCPCH-Info             PrimaryCCPCH-Info-LCR-r4,
  primaryCCPCH-TX-Power         PrimaryCCPCH-TX-Power          OPTIONAL,
  timeslotInfoList             TimeslotInfoList-LCR-r4        OPTIONAL,
  readSFN-Indicator            BOOLEAN,
  cellSelectionReselectionInfo  CellSelectReselectInfoSIB-11-12-HCS-RSCP  OPTIONAL
}

CellInfoSI-HCS-ECN0 ::= SEQUENCE {
  cellIndividualOffset           CellIndividualOffset          DEFAULT 0,
  referenceTimeDifferenceToCell  ReferenceTimeDifferenceToCell  OPTIONAL,
  modeSpecificInfo             CHOICE {
    fdd                         SEQUENCE {
      primaryCPICH-Info         PrimaryCPICH-Info            OPTIONAL,
      primaryCPICH-TX-Power     PrimaryCPICH-TX-Power       OPTIONAL,
      readSFN-Indicator         BOOLEAN,
      tx-DiversityIndicator     BOOLEAN
    },
    tdd                         SEQUENCE {
      primaryCCPCH-Info         PrimaryCCPCH-Info,
      primaryCCPCH-TX-Power     PrimaryCCPCH-TX-Power       OPTIONAL,
      timeslotInfoList         TimeslotInfoList            OPTIONAL,
      readSFN-Indicator         BOOLEAN
    }
  },
  cellSelectionReselectionInfo  CellSelectReselectInfoSIB-11-12-HCS-ECN0  OPTIONAL
}

CellInfoSI-HCS-ECN0-LCR-r4 ::= SEQUENCE {
  cellIndividualOffset           CellIndividualOffset          DEFAULT 0,
  referenceTimeDifferenceToCell  ReferenceTimeDifferenceToCell  OPTIONAL,
  primaryCCPCH-Info             PrimaryCCPCH-Info-LCR-r4,
  primaryCCPCH-TX-Power         PrimaryCCPCH-TX-Power          OPTIONAL,
  timeslotInfoList             TimeslotInfoList-LCR-r4        OPTIONAL,
  readSFN-Indicator            BOOLEAN,
  cellSelectionReselectionInfo  CellSelectReselectInfoSIB-11-12-HCS-ECN0  OPTIONAL
}

CellMeasuredResults ::= SEQUENCE {
  cellIdentity                   CellIdentity                    OPTIONAL,
  -- dummy is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored.
  dummy                          SFN-SFN-ObsTimeDifference          OPTIONAL,
  cellSynchronisationInfo        CellSynchronisationInfo          OPTIONAL,
  modeSpecificInfo              CHOICE {
    fdd                          SEQUENCE {
      primaryCPICH-Info         PrimaryCPICH-Info,
      cpich-Ec-N0               CPICH-Ec-N0                    OPTIONAL,
      cpich-RSCP                CPICH-RSCP                      OPTIONAL,
      pathloss                   Pathloss                          OPTIONAL
    },
    tdd                          SEQUENCE {
      cellParametersID          CellParametersID,
      proposedTGSN              TGSN                                OPTIONAL,
      primaryCCPCH-RSCP         PrimaryCCPCH-RSCP              OPTIONAL,
      pathloss                   Pathloss                          OPTIONAL,
      timeslotISCP-List         TimeslotISCP-List             OPTIONAL
    }
  }
}

CellMeasurementEventResults ::= CHOICE {
  fdd                            SEQUENCE (SIZE (1..maxCellMeas)) OF
    PrimaryCPICH-Info,

```

```

tdd                               SEQUENCE (SIZE (1..maxCellMeas)) OF
}                                  PrimaryCCPCH-Info

CellMeasurementEventResults-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        PrimaryCCPCH-Info-LCR-r4

CellReportingQuantities ::=          SEQUENCE {
-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
dummy                               SFN-SFN-OTD-Type,
cellIdentity-reportingIndicator     BOOLEAN,
cellSynchronisationInfoReportingIndicator  BOOLEAN,
modeSpecificInfo                    CHOICE {
  fdd                               SEQUENCE {
    cpich-Ec-N0-reportingIndicator     BOOLEAN,
    cpich-RSCP-reportingIndicator      BOOLEAN,
    pathloss-reportingIndicator        BOOLEAN
  },
  tdd                               SEQUENCE {
    timeslotISCP-reportingIndicator    BOOLEAN,
    proposedTGSN-ReportingRequired    BOOLEAN,
    primaryCCPCH-RSCP-reportingIndicator  BOOLEAN,
    pathloss-reportingIndicator        BOOLEAN
  }
}
}

CellSelectReselectInfoSIB-11-12 ::= SEQUENCE {
q-Offset1S-N                        Q-OffsetS-N                        DEFAULT 0,
q-Offset2S-N                        Q-OffsetS-N                        OPTIONAL,
maxAllowedUL-TX-Power               MaxAllowedUL-TX-Power           OPTIONAL,
hcs-NeighbouringCellInformation-RSCP HCS-NeighbouringCellInformation-RSCP
OPTIONAL,
modeSpecificInfo                    CHOICE {
  fdd                               SEQUENCE {
    q-QualMin                         Q-QualMin                       OPTIONAL,
    q-RxlevMin                        Q-RxlevMin                       OPTIONAL
  },
  tdd                               SEQUENCE {
    q-RxlevMin                        Q-RxlevMin                       OPTIONAL
  },
  gsm                               SEQUENCE {
    q-RxlevMin                        Q-RxlevMin                       OPTIONAL
  }
}
}

CellSelectReselectInfoSIB-11-12-RSCP ::= SEQUENCE {
q-OffsetS-N                          Q-OffsetS-N                          DEFAULT 0,
maxAllowedUL-TX-Power                 MaxAllowedUL-TX-Power                 OPTIONAL,
modeSpecificInfo                       CHOICE {
  fdd                               SEQUENCE {
    q-QualMin                         Q-QualMin                       OPTIONAL,
    q-RxlevMin                        Q-RxlevMin                       OPTIONAL
  },
  tdd                               SEQUENCE {
    q-RxlevMin                        Q-RxlevMin                       OPTIONAL
  },
  gsm                               SEQUENCE {
    q-RxlevMin                        Q-RxlevMin                       OPTIONAL
  }
}
}

CellSelectReselectInfoSIB-11-12-ECNO ::= SEQUENCE {
q-Offset1S-N                          Q-OffsetS-N                          DEFAULT 0,
q-Offset2S-N                          Q-OffsetS-N                          DEFAULT 0,
maxAllowedUL-TX-Power                 MaxAllowedUL-TX-Power                 OPTIONAL,
modeSpecificInfo                       CHOICE {
  fdd                               SEQUENCE {
    q-QualMin                         Q-QualMin                       OPTIONAL,
    q-RxlevMin                        Q-RxlevMin                       OPTIONAL
  },
  tdd                               SEQUENCE {
    q-RxlevMin                        Q-RxlevMin                       OPTIONAL
  },
  gsm                               SEQUENCE {

```

```

    }
    }
}

CellSelectReselectInfoSIB-11-12-HCS-RSCP ::= SEQUENCE {
    q-OffsetS-N          Q-OffsetS-N          DEFAULT 0,
    maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
    hcs-NeighbouringCellInformation-RSCP      HCS-NeighbouringCellInformation-RSCP
    OPTIONAL,
    modeSpecificInfo    CHOICE {
        fdd              SEQUENCE {
            q-QualMin    Q-QualMin          OPTIONAL,
            q-RxlevMin   Q-RxlevMin        OPTIONAL
        },
        tdd              SEQUENCE {
            q-RxlevMin   Q-RxlevMin        OPTIONAL
        },
        gsm              SEQUENCE {
            q-RxlevMin   Q-RxlevMin        OPTIONAL
        }
    }
}

CellSelectReselectInfoSIB-11-12-HCS-ECNO ::= SEQUENCE {
    q-Offset1S-N        Q-OffsetS-N          DEFAULT 0,
    q-Offset2S-N        Q-OffsetS-N          DEFAULT 0,
    maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
    hcs-NeighbouringCellInformation-ECNO      HCS-NeighbouringCellInformation-ECNO
    OPTIONAL,
    modeSpecificInfo    CHOICE {
        fdd              SEQUENCE {
            q-QualMin    Q-QualMin          OPTIONAL,
            q-RxlevMin   Q-RxlevMin        OPTIONAL
        },
        tdd              SEQUENCE {
            q-RxlevMin   Q-RxlevMin        OPTIONAL
        },
        gsm              SEQUENCE {
            q-RxlevMin   Q-RxlevMin        OPTIONAL
        }
    }
}

CellSelectReselectInfo-v5xyExt ::= SEQUENCE {
    deltaQrxlevmin      DeltaQrxlevmin      OPTIONAL,
    deltaQhcs           DeltaRSCP           OPTIONAL
}

CellsForInterFreqMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    InterFreqCellID
CellsForInterRATMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    InterRATCellID
CellsForIntraFreqMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    IntraFreqCellID

CellSynchronisationInfo ::= SEQUENCE {
    modeSpecificInfo    CHOICE {
        fdd              SEQUENCE {
            countC-SFN-Frame-difference CountC-SFN-Frame-difference OPTIONAL,
            tm            INTEGER(0..38399)
        },
        tdd              SEQUENCE {
            countC-SFN-Frame-difference CountC-SFN-Frame-difference OPTIONAL
        }
    }
}

CellToReport ::= SEQUENCE {
    bsicReported        BSICReported
}

CellToReportList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellToReport

CodePhaseSearchWindow ::= ENUMERATED {
    w1023, w1, w2, w3, w4, w6, w8,
    w12, w16, w24, w32, w48, w64,
}

```

```

w96, w128, w192 }

CountC-SFN-Frame-difference ::= SEQUENCE {
  -- Actual value countC-SFN-High = IE value * 256
  countC-SFN-High      INTEGER(0..15),
  off                  INTEGER(0..255)
}

-- SPARE: CPICH-Ec-No, Max = 49
-- Values above Max are spare
CPICH-Ec-N0 ::= INTEGER (0..63)

-- SPARE: CPICH- RSCP, Max = 91
-- Values above Max are spare
CPICH-RSCP ::= INTEGER (0..127)

DeltaPRC ::= INTEGER (-127..127)

--Actual value DeltaQrxlevmin = IE value * 2
DeltaQrxlevmin ::= INTEGER (-2..-1)

DeltaRSCP ::= INTEGER (-5..-1)

DeltaRSCPerCell ::= SEQUENCE {
  deltaRSCP          DeltaRSCP  OPTIONAL
}

-- Actual value DeltaRRC = IE value * 0.032
DeltaRRC ::= INTEGER (-7..7)

DGPS-CorrectionSatInfo ::= SEQUENCE {
  satID              SatID,
  iode               IODE,
  udre               UDRE,
  prc                PRC,
  rrc                RRC,
  -- dummy1 and dummy2 are not used in this version of the specification and should be ignored.
  dummy1             DeltaPRC,
  dummy2             DeltaRRC,
  -- dummy3 and dummy4 are not used in this version of the specification. They should not
  -- be sent and if received they should be ignored.
  dummy3             DeltaPRC  OPTIONAL,
  dummy4             DeltaRRC  OPTIONAL
}

DGPS-CorrectionSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF
  DGPS-CorrectionSatInfo

DiffCorrectionStatus ::= ENUMERATED {
  udre-1-0, udre-0-75, udre-0-5, udre-0-3,
  udre-0-2, udre-0-1, noData, invalidData }

DL-TransportChannelBLER ::= INTEGER (0..63)

DopplerUncertainty ::= ENUMERATED {
  hz12-5, hz25, hz50, hz100, hz200,
  spare3, spare2, spare1 }

EllipsoidPoint ::= SEQUENCE {
  latitudeSign      ENUMERATED { north, south },
  latitude          INTEGER (0..8388607),
  longitude         INTEGER (-8388608..8388607)
}

EllipsoidPointAltitude ::= SEQUENCE {
  latitudeSign      ENUMERATED { north, south },
  latitude          INTEGER (0..8388607),
  longitude         INTEGER (-8388608..8388607),
  altitudeDirection ENUMERATED {height, depth},
  altitude          INTEGER (0..32767)
}

EllipsoidPointAltitudeEllipsoide ::= SEQUENCE {
  latitudeSign      ENUMERATED { north, south },
  latitude          INTEGER (0..8388607),

```

```

longitude                INTEGER (-8388608..8388607),
altitudeDirection        ENUMERATED {height, depth},
altitude                 INTEGER (0..32767),
uncertaintySemiMajor     INTEGER (0..127),
uncertaintySemiMinor     INTEGER (0..127),
-- Actual value orientationMajorAxis = IE value * 2
orientationMajorAxis     INTEGER (0..89),
uncertaintyAltitude      INTEGER (0..127),
confidence                INTEGER (0..100)
}

EllipsoidPointUncertCircle ::= SEQUENCE {
  latitudeSign            ENUMERATED { north, south },
  latitude                INTEGER (0..8388607),
  longitude               INTEGER (-8388608..8388607),
  uncertaintyCode         INTEGER (0..127)
}

EllipsoidPointUncertEllipse ::= SEQUENCE {
  latitudeSign            ENUMERATED { north, south },
  latitude                INTEGER (0..8388607),
  longitude               INTEGER (-8388608..8388607),
  uncertaintySemiMajor    INTEGER (0..127),
  uncertaintySemiMinor    INTEGER (0..127),
-- Actual value orientationMajorAxis = IE value * 2
orientationMajorAxis     INTEGER (0..89),
confidence                INTEGER (0..100)
}

EnvironmentCharacterisation ::= ENUMERATED {
  possibleHeavyMultipathNLOS,
  lightMultipathLOS,
  notDefined,
  spare }

Event1a ::= SEQUENCE {
  triggeringCondition      TriggeringCondition2,
  reportingRange           ReportingRange,
  forbiddenAffectCellList ForbiddenAffectCellList           OPTIONAL,
  w                       W,
  reportDeactivationThreshold ReportDeactivationThreshold,
  reportingAmount          ReportingAmount,
  reportingInterval        ReportingInterval
}

Event1a-r4 ::= SEQUENCE {
  triggeringCondition      TriggeringCondition2,
  reportingRange           ReportingRange,
  forbiddenAffectCellList ForbiddenAffectCellList-r4         OPTIONAL,
  w                       W,
  reportDeactivationThreshold ReportDeactivationThreshold,
  reportingAmount          ReportingAmount,
  reportingInterval        ReportingInterval
}

Event1a-LCR-r4 ::= SEQUENCE {
  triggeringCondition      TriggeringCondition2,
  reportingRange           ReportingRange,
  forbiddenAffectCellList ForbiddenAffectCellList-LCR-r4     OPTIONAL,
  w                       W,
  reportDeactivationThreshold ReportDeactivationThreshold,
  reportingAmount          ReportingAmount,
  reportingInterval        ReportingInterval
}

Event1b ::= SEQUENCE {
  triggeringCondition      TriggeringCondition1,
  reportingRange           ReportingRange,
  forbiddenAffectCellList ForbiddenAffectCellList           OPTIONAL,
  w                       W
}

Event1b-r4 ::= SEQUENCE {
  triggeringCondition      TriggeringCondition1,
  reportingRange           ReportingRange,

```

```

    forbiddenAffectCellList      ForbiddenAffectCellList-r4      OPTIONAL,
    w                             W
}

Event1b-LCR-r4 ::=              SEQUENCE {
    triggeringCondition          TriggeringCondition1,
    reportingRange              ReportingRange,
    forbiddenAffectCellList     ForbiddenAffectCellList-LCR-r4      OPTIONAL,
    w                             W
}

Event1c ::=                     SEQUENCE {
    replacementActivationThreshold ReplacementActivationThreshold,
    reportingAmount             ReportingAmount,
    reportingInterval           ReportingInterval
}

Event1e ::=                     SEQUENCE {
    triggeringCondition          TriggeringCondition2,
    thresholdUsedFrequency      ThresholdUsedFrequency
}

Event1f ::=                     SEQUENCE {
    triggeringCondition          TriggeringCondition1,
    thresholdUsedFrequency      ThresholdUsedFrequency
}

Event2a ::=                     SEQUENCE {
    -- dummy is not used in this version of the specification and should be ignored
    dummy                       Threshold,
    usedFreqW                    W,
    hysteresis                   HysteresisInterFreq,
    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus      OPTIONAL,
    nonUsedFreqParameterList     NonUsedFreqParameterList      OPTIONAL
}

Event2b ::=                     SEQUENCE {
    usedFreqThreshold           Threshold,
    usedFreqW                    W,
    hysteresis                   HysteresisInterFreq,
    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus      OPTIONAL,
    nonUsedFreqParameterList     NonUsedFreqParameterList      OPTIONAL
}

Event2c ::=                     SEQUENCE {
    hysteresis                   HysteresisInterFreq,
    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus      OPTIONAL,
    nonUsedFreqParameterList     NonUsedFreqParameterList      OPTIONAL
}

Event2d ::=                     SEQUENCE {
    usedFreqThreshold           Threshold,
    usedFreqW                    W,
    hysteresis                   HysteresisInterFreq,
    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus      OPTIONAL
}

Event2e ::=                     SEQUENCE {
    hysteresis                   HysteresisInterFreq,
    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus      OPTIONAL,
    nonUsedFreqParameterList     NonUsedFreqParameterList      OPTIONAL
}

Event2f ::=                     SEQUENCE {
    usedFreqThreshold           Threshold,
    usedFreqW                    W,
    hysteresis                   HysteresisInterFreq,
    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus      OPTIONAL
}

Event3a ::=                     SEQUENCE {
    thresholdOwnSystem           Threshold,
}

```

```

w
thresholdOtherSystem
hysteresis
timeToTrigger
reportingCellStatus
}

Event3b ::=
thresholdOtherSystem
hysteresis
timeToTrigger
reportingCellStatus
}

Event3c ::=
thresholdOtherSystem
hysteresis
timeToTrigger
reportingCellStatus
}

Event3d ::=
hysteresis
timeToTrigger
reportingCellStatus
}

EventIDInterFreq ::=
EventIDInterRAT ::=
EventIDIntraFreq ::=

EventResults ::=
intraFreqEventResults
interFreqEventResults
interRATEventResults
trafficVolumeEventResults
qualityEventResults
ue-InternalEventResults
ue-positioning-MeasurementEventResults
spare
}

ExtraDopplerInfo ::=
-- Actual value doppler1stOrder = IE value * 0.023
doppler1stOrder
dopplerUncertainty
}

FACH-MeasurementOccasionInfo ::=
fACH-meas-occasion-coeff
inter-freq-FDD-meas-ind
-- inter-freq-TDD-meas-ind is for 3.84Mcps TDD. For 1.28Mcps TDD, the IE in
-- FACH-MeasurementOccasionInfo-LCR-r4-ext is used.
inter-freq-TDD-meas-ind
inter-RAT-meas-ind
}

FACH-MeasurementOccasionInfo-LCR-r4-ext ::= SEQUENCE {
inter-freq-TDD128-meas-ind
}

FilterCoefficient ::=
}

-- Actual value FineSFN-SFN = IE value * 0.0625
FineSFN-SFN ::=

```

```

ForbiddenAffectCell ::= CHOICE {
    fdd PrimaryCPICH-Info,
    tdd PrimaryCCPCH-Info
}

ForbiddenAffectCell-r4 ::= CHOICE {
    fdd PrimaryCPICH-Info,
    tdd PrimaryCCPCH-Info-r4
}

ForbiddenAffectCell-LCR-r4 ::= SEQUENCE {
    tdd PrimaryCCPCH-Info-LCR-r4
}

ForbiddenAffectCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    ForbiddenAffectCell

ForbiddenAffectCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    ForbiddenAffectCell-r4

ForbiddenAffectCellList-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    ForbiddenAffectCell-LCR-r4

FreqQualityEstimateQuantity-FDD ::= ENUMERATED {
    cpich-Ec-N0,
    cpich-RSCP }

FreqQualityEstimateQuantity-TDD ::= ENUMERATED {
    primaryCCPCH-RSCP }

GPS-MeasurementParam ::= SEQUENCE {
    satelliteID INTEGER (0..63),
    c-N0 INTEGER (0..63),
    doppler INTEGER (-32768..32768),
    wholeGPS-Chips INTEGER (0..1022),
    fractionalGPS-Chips INTEGER (0..1023),
    multipathIndicator MultipathIndicator,
    pseudorangeRMS-Error INTEGER (0..63)
}

GPS-MeasurementParamList ::= SEQUENCE (SIZE (1..maxSat)) OF
    GPS-MeasurementParam

GSM-CarrierRSSI ::= BIT STRING (SIZE (6))

GSM-MeasuredResults ::= SEQUENCE {
    gsm-CarrierRSSI GSM-CarrierRSSI OPTIONAL,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy INTEGER (46..173) OPTIONAL,
    bsicReported BSICReported,
    observedTimeDifferenceToGSM ObservedTimeDifferenceToGSM OPTIONAL
}

GSM-MeasuredResultsList ::= SEQUENCE (SIZE (1..maxReportedGSMCells)) OF
    GSM-MeasuredResults

GPS-TOW-1msec ::= INTEGER (0..604799999)

GPS-TOW-Assist ::= SEQUENCE {
    satID SatID,
    tlm-Message BIT STRING (SIZE (14)),
    tlm-Reserved BIT STRING (SIZE (2)),
    alert BOOLEAN,
    antiSpoof BOOLEAN
}

GPS-TOW-AssistList ::= SEQUENCE (SIZE (1..maxSat)) OF
    GPS-TOW-Assist

HCS-CellReselectInformation-RSCP ::= SEQUENCE {
    -- TABULAR: The default value for penaltyTime is "notUsed"
    -- Temporary offset is nested inside PenaltyTime-RSCP
    penaltyTime PenaltyTime-RSCP
}

```

```

HCS-CellReselectInformation-ECNO ::= SEQUENCE {
  -- TABULAR: The default value for penaltyTime is "notUsed"
  -- Temporary offset is nested inside PenaltyTime-ECNO
  penaltyTime PenaltyTime-ECNO
}

HCS-NeighbouringCellInformation-RSCP ::= SEQUENCE {
  hcs-PRIO HCS-PRIO DEFAULT 0,
  q-HCS Q-HCS DEFAULT 0,
  hcs-CellReselectInformation HCS-CellReselectInformation-RSCP
}

HCS-NeighbouringCellInformation-ECNO ::= SEQUENCE {
  hcs-PRIO HCS-PRIO DEFAULT 0,
  q-HCS Q-HCS DEFAULT 0,
  hcs-CellReselectInformation HCS-CellReselectInformation-ECNO
}

HCS-PRIO ::= INTEGER (0..7)

HCS-ServingCellInformation ::= SEQUENCE {
  hcs-PRIO HCS-PRIO DEFAULT 0,
  q-HCS Q-HCS DEFAULT 0,
  t-CR-Max T-CRMax OPTIONAL
}

-- Actual value Hysteresis = IE value * 0.5
Hysteresis ::= INTEGER (0..15)

-- Actual value HysteresisInterFreq = IE value * 0.5
HysteresisInterFreq ::= INTEGER (0..29)

InterFreqCell ::= SEQUENCE {
  frequencyInfo FrequencyInfo,
  nonFreqRelatedEventResults CellMeasurementEventResults
}

InterFreqCell-LCR-r4 ::= SEQUENCE {
  frequencyInfo FrequencyInfo,
  nonFreqRelatedEventResults CellMeasurementEventResults-LCR-r4
}

InterFreqCellID ::= INTEGER (0..maxCellMeas-1)

InterFreqCellInfoList ::= SEQUENCE {
  removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
  newInterFreqCellList NewInterFreqCellList OPTIONAL,
  cellsForInterFreqMeasList CellsForInterFreqMeasList OPTIONAL
}

InterFreqCellInfoList-r4 ::= SEQUENCE {
  removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
  newInterFreqCellList NewInterFreqCellList-r4 OPTIONAL,
  cellsForInterFreqMeasList CellsForInterFreqMeasList OPTIONAL
}

InterFreqCellInfoSI-List-RSCP ::= SEQUENCE {
  removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
  newInterFreqCellList NewInterFreqCellSI-List-RSCP OPTIONAL
}

InterFreqCellInfoSI-List-ECNO ::= SEQUENCE {
  removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
  newInterFreqCellList NewInterFreqCellSI-List-ECNO OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP ::= SEQUENCE {
  removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
  newInterFreqCellList NewInterFreqCellSI-List-HCS-RSCP OPTIONAL
}

InterFreqCellInfoSI-List-HCS-ECNO ::= SEQUENCE {
  removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
  newInterFreqCellList NewInterFreqCellSI-List-HCS-ECNO OPTIONAL
}

InterFreqCellInfoSI-List-RSCP-LCR ::= SEQUENCE {
  removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
  newInterFreqCellList NewInterFreqCellSI-List-RSCP-LCR-r4 OPTIONAL
}

```

```

}

InterFreqCellInfoSI-List-ECN0-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-ECN0-LCR-r4 OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 OPTIONAL
}

InterFreqCellInfoSI-List-HCS-ECN0-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-HCS-ECN0-LCR-r4 OPTIONAL
}

InterFreqCellList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqCell

InterFreqCellList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqCell-LCR-r4

InterFreqCellMeasuredResultsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellMeasuredResults

InterFreqEvent ::= CHOICE {
    event2a Event2a,
    event2b Event2b,
    event2c Event2c,
    event2d Event2d,
    event2e Event2e,
    event2f Event2f
}

InterFreqEventList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    InterFreqEvent

--Following IE shall be used regardless of CPICH RSCP(FDD) or Primary CCPCH RSCP(TDD)
--The order of the list corresponds to the order of the cells in Inter-FrequencyMeasuredResultsList
InterFrequencyMeasuredResultsList-v5xyext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    DeltaRSCPPerCell

Inter-FreqEventCriteria-v5xyext ::= SEQUENCE {
    thresholdUsedFrequency-delta DeltaRSCP,
    thresholdNonUsedFrequency-deltaList ThresholdNonUsedFrequency-deltaList OPTIONAL
}

--The order of the list corresponds to the order of the events in Inter-FreqEventList
Inter-FreqEventCriteriaList-v5xyext ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    Inter-FreqEventCriteria-v5xyext

--The order of the list corresponds to the order of relevant events in Intra-FreqEventCriteriaList
--i.e. the first element of the list corresponds to the first occurrence of event 1e, 1f, 1h, 1i,
--the second element of the list corresponds to the second occurrence of event 1e, 1f, 1h, 1i
Intra-FreqEventCriteriaList-v5xyext ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    DeltaRSCP

--Following IE shall be used regardless of CPICH RSCP(FDD) or Primary CCPCH RSCP(TDD)
--The order of the list corresponds to the order of the cells in Intra-FrequencyMeasuredResultsList
IntraFrequencyMeasuredResultsList-v5xyext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    DeltaRSCPPerCell

IntraFreqReportingCriteria-1b-r5ext ::= SEQUENCE {
    periodicReportingInfo-1b PeriodicReportingInfo-1b
}

PeriodicReportingInfo-1b ::= SEQUENCE {
    reportingAmount ReportingAmount,
    reportingInterval ReportingInterval
}

InterFreqEventResults ::= SEQUENCE {
    eventID EventIDInterFreq,
    interFreqCellList InterFreqCellList OPTIONAL
}

InterFreqEventResults-LCR-r4-ext ::= SEQUENCE {
    eventID EventIDInterFreq,

```

```

    interFreqCellList                InterFreqCellList-LCR-r4-ext        OPTIONAL
}

InterFreqMeasQuantity ::=          SEQUENCE {
    reportingCriteria                CHOICE {
        intraFreqReportingCriteria  SEQUENCE {
            intraFreqMeasQuantity    IntraFreqMeasQuantity
        },
        interFreqReportingCriteria   SEQUENCE {
            filterCoefficient         FilterCoefficient                DEFAULT fc0,
            modeSpecificInfo          CHOICE {
                fdd                   SEQUENCE {
                    freqQualityEstimateQuantity-FDD  FreqQualityEstimateQuantity-FDD
                },
                tdd                   SEQUENCE {
                    freqQualityEstimateQuantity-TDD  FreqQualityEstimateQuantity-TDD
                }
            }
        }
    }
}

InterFreqMeasuredResults ::=       SEQUENCE {
    frequencyInfo                    FrequencyInfo                    OPTIONAL,
    ultra-CarrierRSSI                UTRA-CarrierRSSI                OPTIONAL,
    interFreqCellMeasuredResultsList InterFreqCellMeasuredResultsList OPTIONAL
}

InterFreqMeasuredResultsList ::=   SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqMeasuredResults

InterFreqMeasurementSysInfo-RSCP ::= SEQUENCE {
    interFreqCellInfoSI-List         InterFreqCellInfoSI-List-RSCP    OPTIONAL
}

InterFreqMeasurementSysInfo-ECN0 ::= SEQUENCE {
    interFreqCellInfoSI-List         InterFreqCellInfoSI-List-ECN0    OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP ::= SEQUENCE {
    interFreqCellInfoSI-List         InterFreqCellInfoSI-List-HCS-RSCP OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-ECN0 ::= SEQUENCE {
    interFreqCellInfoSI-List         InterFreqCellInfoSI-List-HCS-ECN0 OPTIONAL
}

InterFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List         InterFreqCellInfoSI-List-RSCP-LCR    OPTIONAL
}

InterFreqMeasurementSysInfo-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List         InterFreqCellInfoSI-List-ECN0-LCR    OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List         InterFreqCellInfoSI-List-HCS-RSCP-LCR    OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List         InterFreqCellInfoSI-List-HCS-ECN0-LCR    OPTIONAL
}

InterFreqReportCriteria ::=        CHOICE {
    intraFreqReportingCriteria        IntraFreqReportingCriteria,
    interFreqReportingCriteria        InterFreqReportingCriteria,
    periodicalReportingCriteria        PeriodicalWithReportingCellStatus,
    noReporting                        ReportingCellStatusOpt
}

InterFreqReportCriteria-r4 ::=      CHOICE {
    intraFreqReportingCriteria-r4      IntraFreqReportingCriteria-r4,
    interFreqReportingCriteria        InterFreqReportingCriteria,
    periodicalReportingCriteria        PeriodicalWithReportingCellStatus,
    noReporting                        ReportingCellStatusOpt
}

```

```

InterFreqReportingCriteria ::= SEQUENCE {
    interFreqEventList InterFreqEventList OPTIONAL
}

InterFreqReportingQuantity ::= SEQUENCE {
    ultra-Carrier-RSSI BOOLEAN,
    frequencyQualityEstimate BOOLEAN,
    nonFreqRelatedQuantities CellReportingQuantities
}

InterFrequencyMeasurement ::= SEQUENCE {
    interFreqCellInfoList InterFreqCellInfoList,
    interFreqMeasQuantity InterFreqMeasQuantity OPTIONAL,
    interFreqReportingQuantity InterFreqReportingQuantity OPTIONAL,
    measurementValidity MeasurementValidity OPTIONAL,
    interFreqSetUpUpdate UE-AutonomousUpdateMode OPTIONAL,
    reportCriteria InterFreqReportCriteria
}

InterFrequencyMeasurement-r4 ::= SEQUENCE {
    interFreqCellInfoList InterFreqCellInfoList-r4,
    interFreqMeasQuantity InterFreqMeasQuantity OPTIONAL,
    interFreqReportingQuantity InterFreqReportingQuantity OPTIONAL,
    measurementValidity MeasurementValidity OPTIONAL,
    interFreqSetUpUpdate UE-AutonomousUpdateMode OPTIONAL,
    reportCriteria InterFreqReportCriteria-r4
}

InterRAT-TargetCellDescription ::= SEQUENCE {
    technologySpecificInfo CHOICE {
        gsm SEQUENCE {
            bsic BSIC,
            frequency-band Frequency-Band,
            bcch-ARFCN BCCH-ARFCN,
            ncMode NC-Mode OPTIONAL
        },
        is-2000 NULL,
        spare2 NULL,
        spare1 NULL
    }
}

InterRATCellID ::= INTEGER (0..maxCellMeas-1)

InterRATCellInfoList ::= SEQUENCE {
    removedInterRATCellList RemovedInterRATCellList,
    -- NOTE: Future revisions of dedicated messages including IE newInterRATCellList
    -- should use a corrected version of this IE
    newInterRATCellList NewInterRATCellList,
    cellsForInterRATMeasList CellsForInterRATMeasList OPTIONAL
}

InterRATCellInfoList-B ::= SEQUENCE {
    removedInterRATCellList RemovedInterRATCellList,
    -- NOTE: IE newInterRATCellList should be optional. However, system information
    -- does not support message versions. Hence, this can not be corrected
    newInterRATCellList NewInterRATCellList-B
}

InterRATCellInfoList-r4 ::= SEQUENCE {
    removedInterRATCellList RemovedInterRATCellList,
    newInterRATCellList NewInterRATCellList OPTIONAL,
    cellsForInterRATMeasList CellsForInterRATMeasList OPTIONAL
}

InterRATCellIndividualOffset ::= INTEGER (-50..50)

InterRATEvent ::= CHOICE {
    event3a Event3a,
    event3b Event3b,
    event3c Event3c,
    event3d Event3d
}

InterRATEventList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    InterRATEvent

InterRATEventResults ::= SEQUENCE {

```

```

    eventID                               EventIDInterRAT,
    cellToReportList                       CellToReportList
}

InterRATInfo ::=                          ENUMERATED {
                                           gsm }

InterRATMeasQuantity ::=                  SEQUENCE {
    measQuantityUTRAN-QualityEstimate      IntraFreqMeasQuantity          OPTIONAL,
    ratSpecificInfo                         CHOICE {
        gsm                                 SEQUENCE {
            measurementQuantity            MeasurementQuantityGSM,
            filterCoefficient              FilterCoefficient              DEFAULT fc0,
            bsic-VerificationRequired      BSIC-VerificationRequired
        },
        is-2000                            SEQUENCE {
            tadd-EcIo                      INTEGER (0..63),
            tcomp-EcIo                     INTEGER (0..15),
            softSlope                       INTEGER (0..63)                OPTIONAL,
            addIntercept                    INTEGER (0..63)                OPTIONAL
        }
    }
}

InterRATMeasuredResults ::=              CHOICE {
    gsm                                     GSM-MeasuredResultsList,
    spare                                  NULL
}

InterRATMeasuredResultsList ::=          SEQUENCE (SIZE (1..maxOtherRAT-16)) OF
                                           InterRATMeasuredResults

InterRATMeasurement ::=                  SEQUENCE {
    interRATCellInfoList                   InterRATCellInfoList           OPTIONAL,
    interRATMeasQuantity                   InterRATMeasQuantity           OPTIONAL,
    interRATReportingQuantity              InterRATReportingQuantity      OPTIONAL,
    reportCriteria                         InterRATReportCriteria
}

InterRATMeasurement-r4 ::=               SEQUENCE {
    interRATCellInfoList                   InterRATCellInfoList-r4       OPTIONAL,
    interRATMeasQuantity                   InterRATMeasQuantity          OPTIONAL,
    interRATReportingQuantity              InterRATReportingQuantity     OPTIONAL,
    reportCriteria                         InterRATReportCriteria
}

InterRATMeasurementSysInfo ::=           SEQUENCE {
    interRATCellInfoList                   InterRATCellInfoList           OPTIONAL
}

InterRATMeasurementSysInfo-B ::=         SEQUENCE {
    interRATCellInfoList                   InterRATCellInfoList-B        OPTIONAL
}

InterRATReportCriteria ::=               CHOICE {
    interRATReportingCriteria              InterRATReportingCriteria,
    periodicalReportingCriteria            PeriodicalWithReportingCellStatus,
    noReporting                             ReportingCellStatusOpt
}

InterRATReportingCriteria ::=            SEQUENCE {
    interRATEventList                      InterRATEventList              OPTIONAL
}

InterRATReportingQuantity ::=            SEQUENCE {
    utran-EstimatedQuality                  BOOLEAN,
    ratSpecificInfo                         CHOICE {
        gsm                                 SEQUENCE {
            dummy                           BOOLEAN,
            observedTimeDifferenceGSM        BOOLEAN,
            gsm-Carrier-RSSI                 BOOLEAN
        }
    }
}

IntraFreqCellID ::=                     INTEGER (0..maxCellMeas-1)

IntraFreqCellInfoList ::=                SEQUENCE {

```

```

    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellList          OPTIONAL,
    cellsForIntraFreqMeasList     CellsForIntraFreqMeasList     OPTIONAL
}

IntraFreqCellInfoList-r4 ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellList-r4      OPTIONAL,
    cellsForIntraFreqMeasList     CellsForIntraFreqMeasList     OPTIONAL
}

IntraFreqCellInfoSI-List-RSCP ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-RSCP
}

IntraFreqCellInfoSI-List-ECNO ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-ECNO
}

IntraFreqCellInfoSI-List-HCS-RSCP ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-HCS-RSCP
}

IntraFreqCellInfoSI-List-HCS-ECNO ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-HCS-ECNO
}

IntraFreqCellInfoSI-List-RSCP-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-RSCP-LCR-r4
}

IntraFreqCellInfoSI-List-ECNO-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-ECNO-LCR-r4
}

IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4
}

IntraFreqCellInfoSI-List-HCS-ECNO-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-HCS-ECNO-LCR-r4
}

IntraFreqEvent ::= CHOICE {
    e1a      Event1a,
    e1b      Event1b,
    e1c      Event1c,
    e1d      NULL,
    e1e      Event1e,
    e1f      Event1f,
    e1g      NULL,
    e1h      ThresholdUsedFrequency,
    e1i      ThresholdUsedFrequency
}

IntraFreqEvent-r4 ::= CHOICE {
    e1a      Event1a-r4,
    e1b      Event1b-r4,
    e1c      Event1c,
    e1d      NULL,
    e1e      Event1e,
    e1f      Event1f,
    e1g      NULL,
    e1h      ThresholdUsedFrequency,
    e1i      ThresholdUsedFrequency
}

IntraFreqEvent-LCR-r4 ::= CHOICE {
    e1a      Event1a-LCR-r4,
    e1b      Event1b-LCR-r4,

```

```

    e1c          Event1c,
    e1d          NULL,
    e1e          Event1e,
    e1f          Event1f,
    e1g          NULL,
    e1h          ThresholdUsedFrequency,
    e1i          ThresholdUsedFrequency
}

IntraFreqEvent-1d-r5ext ::= SEQUENCE {
    triggeringCondition  TriggeringCondition2  OPTIONAL,
    useCIO              BOOLEAN              OPTIONAL
}

IntraFreqEventCriteria ::= SEQUENCE {
    event                IntraFreqEvent,
    hysteresis           Hysteresis,
    timeToTrigger        TimeToTrigger,
    reportingCellStatus ReportingCellStatus  OPTIONAL
}

IntraFreqEventCriteria-r4 ::= SEQUENCE {
    event                IntraFreqEvent-r4,
    hysteresis           Hysteresis,
    timeToTrigger        TimeToTrigger,
    reportingCellStatus ReportingCellStatus  OPTIONAL
}

IntraFreqEventCriteria-LCR-r4 ::= SEQUENCE {
    event                IntraFreqEvent-LCR-r4,
    hysteresis           Hysteresis,
    timeToTrigger        TimeToTrigger,
    reportingCellStatus ReportingCellStatus  OPTIONAL
}

IntraFreqEventCriteriaList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria

IntraFreqEventCriteriaList-r4 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria-r4

IntraFreqEventCriteriaList-LCR-r4 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria-LCR-r4

IntraFreqEventResults ::= SEQUENCE {
    eventID              EventIDIntraFreq,
    cellMeasurementEventResults CellMeasurementEventResults
}

IntraFreqMeasQuantity ::= SEQUENCE {
    filterCoefficient    FilterCoefficient  DEFAULT fc0,
    modeSpecificInfo     CHOICE {
        fdd              SEQUENCE {
            intraFreqMeasQuantity-FDD  IntraFreqMeasQuantity-FDD
        },
        tdd              SEQUENCE {
            intraFreqMeasQuantity-TDDList  IntraFreqMeasQuantity-TDDList
        }
    }
}

-- If IntraFreqMeasQuantity-FDD is used in InterRATMeasQuantity, then only
-- cpich-Ec-N0 and cpich-RSCP are allowed.
-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
IntraFreqMeasQuantity-FDD ::= ENUMERATED {
    cpich-Ec-N0,
    cpich-RSCP,
    pathloss,
    dummy }

-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
IntraFreqMeasQuantity-TDD ::= ENUMERATED {
    primaryCCPCH-RSCP,
    pathloss,
    timeslotISCP,
    dummy }

```

```

IntraFreqMeasQuantity-TDDList ::= SEQUENCE (SIZE (1..4)) OF
    IntraFreqMeasQuantity-TDD

IntraFreqMeasuredResultsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellMeasuredResults

IntraFreqMeasurementSysInfo-RSCP ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-RSCP  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH          OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH          OPTIONAL
}

IntraFreqMeasurementSysInfo-ECNO ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-ECNO  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH          OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH          OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-HCS-RSCP  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH          OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH          OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-ECNO ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-HCS-ECNO  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH          OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH          OPTIONAL
}

IntraFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-RSCP-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH          OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-ECNO-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-ECNO-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH          OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH          OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-ECNO-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-HCS-ECNO-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH          OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

```

```

IntraFreqReportCriteria ::= CHOICE {
    intraFreqReportingCriteria
    periodicalReportingCriteria
    noReporting
}

IntraFreqReportCriteria-r4 ::= CHOICE {
    intraFreqReportingCriteria-r4
    periodicalReportingCriteria
    noReporting
}

IntraFreqReportingCriteria ::= SEQUENCE {
    eventCriteriaList                OPTIONAL
}

IntraFreqReportingCriteria-r4 ::= SEQUENCE {
    eventCriteriaList-r4            OPTIONAL
}

IntraFreqReportingCriteria-LCR-r4 ::= SEQUENCE {
    eventCriteriaList-LCR-r4        OPTIONAL
}

IntraFreqReportingQuantity ::= SEQUENCE {
    activeSetReportingQuantities    CellReportingQuantities,
    monitoredSetReportingQuantities CellReportingQuantities,
    detectedSetReportingQuantities CellReportingQuantities                OPTIONAL
}

IntraFreqReportingQuantityForRACH ::= SEQUENCE {
    sfn-SFN-OTD-Type                SFN-SFN-OTD-Type,
    modeSpecificInfo                CHOICE {
        fdd                          SEQUENCE {
            intraFreqRepQuantityRACH-FDD    IntraFreqRepQuantityRACH-FDD
        },
        tdd                          SEQUENCE {
            intraFreqRepQuantityRACH-TDDList IntraFreqRepQuantityRACH-TDDList
        }
    }
}

IntraFreqRepQuantityRACH-FDD ::= ENUMERATED {
    cpich-EcN0, cpich-RSCP,
    pathloss, noReport }

IntraFreqRepQuantityRACH-TDD ::= ENUMERATED {
    timeslotISCP,
    primaryCCPCH-RSCP,
    noReport }

IntraFreqRepQuantityRACH-TDDList ::= SEQUENCE (SIZE (1..2)) OF
    IntraFreqRepQuantityRACH-TDD

IntraFrequencyMeasurement ::= SEQUENCE {
    intraFreqCellInfoList          OPTIONAL,
    intraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantity    OPTIONAL,
    measurementValidity            OPTIONAL,
    reportCriteria                 OPTIONAL
}

IntraFrequencyMeasurement-r4 ::= SEQUENCE {
    intraFreqCellInfoList-r4      OPTIONAL,
    intraFreqMeasQuantity-r4      OPTIONAL,
    intraFreqReportingQuantity-r4 OPTIONAL,
    measurementValidity-r4        OPTIONAL,
    reportCriteria-r4             OPTIONAL
}

IODE ::= INTEGER (0..255)

IP-Length ::= ENUMERATED {
    ip15, ip110 }

IP-PCCPCH-r4 ::= BOOLEAN

```

```

IP-Spacing ::= ENUMERATED {
    e5, e7, e10, e15, e20,
    e30, e40, e50 }

IP-Spacing-TDD ::= ENUMERATED {
    e30, e40, e50, e70, e100}

IS-2000SpecificMeasInfo ::= ENUMERATED {
    frequency, timeslot, colourcode,
    outputpower, pn-Offset }

MaxNumberOfReportingCellsType1 ::= ENUMERATED {
    e1, e2, e3, e4, e5, e6}

MaxNumberOfReportingCellsType2 ::= ENUMERATED {
    e1, e2, e3, e4, e5, e6, e7, e8, e9, e10, e11, e12}

MaxNumberOfReportingCellsType3 ::= ENUMERATED {
    viactCellsPlus1,
    viactCellsPlus2,
    viactCellsPlus3,
    viactCellsPlus4,
    viactCellsPlus5,
    viactCellsPlus6 }

MaxReportedCellsOnRACH ::= ENUMERATED {
    noReport,
    currentCell,
    currentAnd-1-BestNeighbour,
    currentAnd-2-BestNeighbour,
    currentAnd-3-BestNeighbour,
    currentAnd-4-BestNeighbour,
    currentAnd-5-BestNeighbour,
    currentAnd-6-BestNeighbour }

MeasuredResults ::= CHOICE {
    intraFreqMeasuredResultsList      IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList      InterFreqMeasuredResultsList,
    interRATMeasuredResultsList       InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList  TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults             QualityMeasuredResults,
    ue-InternalMeasuredResults         UE-InternalMeasuredResults,
    ue-positioning-MeasuredResults     UE-Positioning-MeasuredResults,
    spare                              NULL
}

MeasuredResults-v390ext ::= SEQUENCE {
    ue-positioning-MeasuredResults-v390ext  UE-Positioning-MeasuredResults-v390ext
}

MeasuredResults-v5xyext ::= CHOICE {
    intraFrequencyMeasuredResultsList      IntraFrequencyMeasuredResultsList-v5xyext,
    interFrequencyMeasuredResultsList      InterFrequencyMeasuredResultsList-v5xyext
}

MeasuredResults-LCR-r4 ::= CHOICE {
    intraFreqMeasuredResultsList      IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList      InterFreqMeasuredResultsList,
    interRATMeasuredResultsList       InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList  TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults             QualityMeasuredResults,
    ue-InternalMeasuredResults         UE-InternalMeasuredResults-LCR-r4,
    ue-positioning-MeasuredResults     UE-Positioning-MeasuredResults,
    spare                              NULL
}

MeasuredResultsList ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasuredResults

MeasuredResultsList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasuredResults-LCR-r4

MeasuredResultsOnRACH ::= SEQUENCE {
    currentCell          SEQUENCE {
        modeSpecificInfo CHOICE {
            fdd           SEQUENCE {
                measurementQuantity CHOICE {

```

```

        cpich-Ec-N0
        cpich-RSCP
        pathloss
        spare
    }
},
tdd
    timeslotISCP
    primaryCCPCH-RSCP
}
},
monitoredCells
    MonitoredCellRACH-List
    OPTIONAL
}

MeasurementCommand ::=
    CHOICE {
        setup
        modify
            measurementType
        },
        release
    }
    NULL

MeasurementCommand-r4 ::=
    CHOICE {
        setup
        modify
            measurementType
        },
        release
    }
    NULL

MeasurementControlSysInfo ::=
    SEQUENCE {
        use-of-HCS
        hcs-not-used
        cellSelectQualityMeasure
        cpich-RSCP
        intraFreqMeasurementSysInfo
        OPTIONAL,
        interFreqMeasurementSysInfo
        },
        cpich-Ec-N0
        intraFreqMeasurementSysInfo
        OPTIONAL,
        interFreqMeasurementSysInfo
        },
        interRATMeasurementSysInfo
        interRATMeasurementSysInfo-B
        OPTIONAL
    },
        hcs-used
        cellSelectQualityMeasure
        cpich-RSCP
        intraFreqMeasurementSysInfo
        OPTIONAL,
        interFreqMeasurementSysInfo
        OPTIONAL
        },
        cpich-Ec-N0
        intraFreqMeasurementSysInfo
        OPTIONAL,
        interFreqMeasurementSysInfo
        OPTIONAL
        },
        interRATMeasurementSysInfo
        interRATMeasurementSysInfo
        OPTIONAL
    },
        trafficVolumeMeasSysInfo
        TrafficVolumeMeasSysInfo
        OPTIONAL,
        -- dummy is not used in this version of specification and it shall be ignored by the UE.
        dummy
        UE-InternalMeasurementSysInfo
        OPTIONAL
    }

MeasurementControlSysInfo-LCR-r4-ext ::=
    SEQUENCE {
        -- CHOICE use-of-HCS shall have the same value as the use-of-HCS
        -- in MeasurementControlSysInfo
        use-of-HCS
        hcs-not-used
        cellSelectQualityMeasure
        }
        -- CHOICE cellSelectQualityMeasure shall have the same value as the
        -- cellSelectQualityMeasure in MeasurementControlSysInfo
    }

```

```

    cellSelectQualityMeasure CHOICE {
      cpich-RSCP SEQUENCE {
        intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-RSCP-LCR-r4 OPTIONAL,
        interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-RSCP-LCR-r4 OPTIONAL
      },
      cpich-Ec-N0 SEQUENCE {
        intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-ECN0-LCR-r4 OPTIONAL,
        interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-ECN0-LCR-r4 OPTIONAL
      }
    },
  },
  hcs-used SEQUENCE {
    -- CHOICE cellSelectQualityMeasure shall have the same value as the
    -- cellSelectQualityMeasure in MeasurementControlSysInfo
    cellSelectQualityMeasure CHOICE {
      cpich-RSCP SEQUENCE {
        intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4
OPTIONAL,
        interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 OPTIONAL
      },
      cpich-Ec-N0 SEQUENCE {
        intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-ECN0-LCR-r4
OPTIONAL,
        interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 OPTIONAL
      }
    }
  }
}

MeasurementIdentity ::= INTEGER (1..16)

MeasurementQuantityGSM ::= ENUMERATED {
  gsm-CarrierRSSI,
  dummy }

MeasurementReportingMode ::= SEQUENCE {
  measurementReportTransferMode TransferMode,
  periodicalOrEventTrigger PeriodicalOrEventTrigger
}

MeasurementType ::= CHOICE {
  intraFrequencyMeasurement IntraFrequencyMeasurement,
  interFrequencyMeasurement InterFrequencyMeasurement,
  interRATMeasurement InterRATMeasurement,
  ue-positioning-Measurement UE-Positioning-Measurement,
  trafficVolumeMeasurement TrafficVolumeMeasurement,
  qualityMeasurement QualityMeasurement,
  ue-InternalMeasurement UE-InternalMeasurement
}

MeasurementType-r4 ::= CHOICE {
  intraFrequencyMeasurement IntraFrequencyMeasurement-r4,
  interFrequencyMeasurement InterFrequencyMeasurement-r4,
  interRATMeasurement InterRATMeasurement-r4,
  up-Measurement UE-Positioning-Measurement-r4,
  trafficVolumeMeasurement TrafficVolumeMeasurement,
  qualityMeasurement QualityMeasurement,
  ue-InternalMeasurement UE-InternalMeasurement-r4
}

MeasurementValidity ::= SEQUENCE {
  ue-State ENUMERATED {
    cell-DCH, all-But-Cell-DCH, all-States }
}

MonitoredCellRACH-List ::= SEQUENCE (SIZE (1..8)) OF
  MonitoredCellRACH-Result

MonitoredCellRACH-Result ::= SEQUENCE {
  sfn-SFN-ObsTimeDifference SFN-SFN-ObsTimeDifference OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      primaryCPICH-Info PrimaryCPICH-Info,
      measurementQuantity CHOICE {
        cpich-Ec-N0 CPICH-Ec-N0,
        cpich-RSCP CPICH-RSCP,
        pathloss Pathloss,

```

```

        spare                                NULL                                OPTIONAL
    },
    tdd                                       SEQUENCE {
        cellParametersID                    CellParametersID,
        primaryCCPCH-RSCP                   PrimaryCCPCH-RSCP
    }
}

MultipathIndicator ::=                     ENUMERATED {
    nm,
    low,
    medium,
    high }

N-CR-T-CRMaxHyst ::=                      SEQUENCE {
    n-CR                                    INTEGER (1..16)                DEFAULT 8,
    t-CRMaxHyst                            T-CRMaxHyst
}

NavigationModelSatInfo ::=                SEQUENCE {
    satID                                    SatID,
    satelliteStatus                         SatelliteStatus,
    ephemerisParameter                     EphemerisParameter           OPTIONAL
}

NavigationModelSatInfoList ::=            SEQUENCE (SIZE (1..maxSat)) OF
    NavigationModelSatInfo

EphemerisParameter ::=                   SEQUENCE {
    codeOnL2                                BIT STRING (SIZE (2)),
    uraIndex                                BIT STRING (SIZE (4)),
    satHealth                               BIT STRING (SIZE (6)),
    iodc                                    BIT STRING (SIZE (10)),
    l2Pflag                                 BIT STRING (SIZE (1)),
    sf1Revd                                SubFrame1Reserved,
    t-GD                                    BIT STRING (SIZE (8)),
    t-oc                                    BIT STRING (SIZE (16)),
    af2                                     BIT STRING (SIZE (8)),
    af1                                     BIT STRING (SIZE (16)),
    af0                                     BIT STRING (SIZE (22)),
    c-rs                                    BIT STRING (SIZE (16)),
    delta-n                                 BIT STRING (SIZE (16)),
    m0                                      BIT STRING (SIZE (32)),
    c-uc                                    BIT STRING (SIZE (16)),
    e                                       BIT STRING (SIZE (32)),
    c-us                                    BIT STRING (SIZE (16)),
    a-Sqrt                                  BIT STRING (SIZE (32)),
    t-oe                                    BIT STRING (SIZE (16)),
    fitInterval                             BIT STRING (SIZE (1)),
    aodo                                    BIT STRING (SIZE (5)),
    c-ic                                    BIT STRING (SIZE (16)),
    omega0                                  BIT STRING (SIZE (32)),
    c-is                                    BIT STRING (SIZE (16)),
    i0                                      BIT STRING (SIZE (32)),
    c-rc                                    BIT STRING (SIZE (16)),
    omega                                  BIT STRING (SIZE (32)),
    omegaDot                               BIT STRING (SIZE (24)),
    iDot                                    BIT STRING (SIZE (14))
}

NC-Mode ::=                              BIT STRING (SIZE (3))

Neighbour ::=                             SEQUENCE {
    modeSpecificInfo                       CHOICE {
        fdd                                 SEQUENCE {
            neighbourIdentity               PrimaryCPICH-Info             OPTIONAL,
            ue-RX-TX-TimeDifferenceType2Info UE-RX-TX-TimeDifferenceType2Info OPTIONAL
        },
        tdd                                 SEQUENCE {
            neighbourAndChannelIdentity     CellAndChannelIdentity       OPTIONAL
        }
    },
    neighbourQuality                        NeighbourQuality,
    sfN-SFN-ObsTimeDifference2             SFN-SFN-ObsTimeDifference2
}

Neighbour-v390ext ::=                     SEQUENCE {
    modeSpecificInfo                       CHOICE {

```

```

        fdd                SEQUENCE {
            frequencyInfo    FrequencyInfo
        },
        tdd                NULL
    }
}

NeighbourList ::=          SEQUENCE (SIZE (1..maxCellMeas)) OF
                            Neighbour

-- The order of the cells in IE NeighbourList-v390ext shall be the
-- same as the order in IE NeighbourList
NeighbourList-v390ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                            Neighbour-v390ext

NeighbourQuality ::=      SEQUENCE {
    ue-Positioning-OTDOA-Quality    UE-Positioning-OTDOA-Quality
}

NewInterFreqCell ::=      SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                  FrequencyInfo                  OPTIONAL,
    cellInfo                        CellInfo
}

NewInterFreqCell-r4 ::=   SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                  FrequencyInfo                  OPTIONAL,
    cellInfo-r4                    CellInfo-r4
}

NewInterFreqCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                            NewInterFreqCell

NewInterFreqCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                              NewInterFreqCell-r4

NewInterFreqCellSI-RSCP ::= SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                  FrequencyInfo                  OPTIONAL,
    cellInfo                        CellInfoSI-RSCP
}

NewInterFreqCellSI-ECN0 ::= SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                  FrequencyInfo                  OPTIONAL,
    cellInfo                        CellInfoSI-ECN0
}

NewInterFreqCellSI-HCS-RSCP ::= SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                  FrequencyInfo                  OPTIONAL,
    cellInfo                        CellInfoSI-HCS-RSCP
}

NewInterFreqCellSI-HCS-ECN0 ::= SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                  FrequencyInfo                  OPTIONAL,
    cellInfo                        CellInfoSI-HCS-ECN0
}

NewInterFreqCellSI-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                  FrequencyInfo                  OPTIONAL,
    cellInfo                        CellInfoSI-RSCP-LCR-r4
}

NewInterFreqCellSI-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                  FrequencyInfo                  OPTIONAL,
    cellInfo                        CellInfoSI-ECN0-LCR-r4
}

NewInterFreqCellSI-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellID                InterFreqCellID                OPTIONAL,
    frequencyInfo                  FrequencyInfo                  OPTIONAL,
    cellInfo                        CellInfoSI-HCS-RSCP-LCR-r4
}

```

```

NewInterFreqCellSI-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellID          InterFreqCellID          OPTIONAL,
    frequencyInfo            FrequencyInfo          OPTIONAL,
    cellInfo                  CellInfoSI-HCS-ECN0-LCR-r4
}

NewInterFreqCellSI-List-ECN0 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-ECN0

NewInterFreqCellSI-List-HCS-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-HCS-RSCP

NewInterFreqCellSI-List-HCS-ECN0 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-HCS-ECN0

NewInterFreqCellSI-List-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-RSCP

NewInterFreqCellSI-List-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-ECN0-LCR-r4

NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-HCS-RSCP-LCR-r4

NewInterFreqCellSI-List-HCS-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-HCS-ECN0-LCR-r4

NewInterFreqCellSI-List-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewInterFreqCellSI-RSCP-LCR-r4

NewInterRATCell ::= SEQUENCE {
    interRATCellID          InterRATCellID          OPTIONAL,
    technologySpecificInfo CHOICE {
        gsm SEQUENCE {
            cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12 OPTIONAL,
            interRATCellIndividualOffset InterRATCellIndividualOffset,
            bsic BSIC,
            frequency-band Frequency-Band,
            bcch-ARFCN BCCH-ARFCN,
            -- dummy is not used in this version of the specification, it should
            -- not be sent and if received it should be ignored.
            dummy NULL OPTIONAL
        },
        is-2000 SEQUENCE {
            is-2000SpecificMeasInfo IS-2000SpecificMeasInfo
        },
        -- ASN.1 inconsistency: NewInterRATCellList should be optional within
        -- InterRATCellInfoList. The UE shall consider IE NewInterRATCell with
        -- technologySpecificInfo set to "absent" as valid and handle the
        -- message as if the IE NewInterRATCell was absent
        absent NULL,
        spare1 NULL
    }
}

NewInterRATCell-B ::= SEQUENCE {
    interRATCellID          InterRATCellID          OPTIONAL,
    technologySpecificInfo CHOICE {
        gsm SEQUENCE {
            cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12 OPTIONAL,
            interRATCellIndividualOffset InterRATCellIndividualOffset,
            bsic BSIC,
            frequency-band Frequency-Band,
            bcch-ARFCN BCCH-ARFCN,
            -- dummy is not used in this version of the specification, it should
            -- not be sent and if received it should be ignored.
            dummy NULL OPTIONAL
        },
        is-2000 SEQUENCE {
            is-2000SpecificMeasInfo IS-2000SpecificMeasInfo
        },
        -- ASN.1 inconsistency: NewInterRATCellList-B should be optional within
        -- InterRATCellInfoList-B. The UE shall consider IE NewInterRATCell-B with
        -- technologySpecificInfo set to "absent" as valid and handle the
        -- message as if the IE NewInterRATCell-B was absent
        absent NULL,
        spare1 NULL
    }
}

```

```

}
}
NewInterRATCellList ::=          SEQUENCE (SIZE (1..maxCellMeas)) OF
                                  NewInterRATCell

NewInterRATCellList-B ::=        SEQUENCE (SIZE (1..maxCellMeas)) OF
                                  NewInterRATCell-B

NewIntraFreqCell ::=             SEQUENCE {
    intraFreqCellID              OPTIONAL,
    cellInfo                      CellInfo
}

NewIntraFreqCell-r4 ::=          SEQUENCE {
    intraFreqCellID              OPTIONAL,
    cellInfo-r4                  CellInfo-r4
}

NewIntraFreqCellList ::=         SEQUENCE (SIZE (1..maxCellMeas)) OF
                                  NewIntraFreqCell

NewIntraFreqCellList-r4 ::=      SEQUENCE (SIZE (1..maxCellMeas)) OF
                                  NewIntraFreqCell-r4

NewIntraFreqCellSI-RSCP ::=      SEQUENCE {
    intraFreqCellID              OPTIONAL,
    cellInfo                      CellInfoSI-RSCP
}

NewIntraFreqCellSI-ECN0 ::=      SEQUENCE {
    intraFreqCellID              OPTIONAL,
    cellInfo                      CellInfoSI-ECN0
}

NewIntraFreqCellSI-HCS-RSCP ::=  SEQUENCE {
    intraFreqCellID              OPTIONAL,
    cellInfo                      CellInfoSI-HCS-RSCP
}

NewIntraFreqCellSI-HCS-ECN0 ::=  SEQUENCE {
    intraFreqCellID              OPTIONAL,
    cellInfo                      CellInfoSI-HCS-ECN0
}

NewIntraFreqCellSI-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqCellID              OPTIONAL,
    cellInfo                      CellInfoSI-RSCP-LCR-r4
}

NewIntraFreqCellSI-ECN0-LCR-r4 ::= SEQUENCE {
    intraFreqCellID              OPTIONAL,
    cellInfo                      CellInfoSI-ECN0-LCR-r4
}

NewIntraFreqCellSI-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqCellID              OPTIONAL,
    cellInfo                      CellInfoSI-HCS-RSCP-LCR-r4
}

NewIntraFreqCellSI-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    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-ECNO-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewIntraFreqCellSI-ECNO-LCR-r4

NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewIntraFreqCellSI-HCS-RSCP-LCR-r4

NewIntraFreqCellSI-List-HCS-ECNO-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
NewIntraFreqCellSI-HCS-ECNO-LCR-r4

-- IE "nonUsedFreqThreshold" is not needed in case of event 2a
-- In case of event 2a UTRAN should include value 0 within IE "nonUsedFreqThreshold"
-- In case of event 2a, the UE shall be ignore IE "nonUsedFreqThreshold"
-- In later versions of the message including this IE, a special version of
-- IE "NonUsedFreqParameterList" may be defined for event 2a, namely a
-- version not including IE "nonUsedFreqThreshold"
NonUsedFreqParameter ::= SEQUENCE {
    nonUsedFreqThreshold Threshold,
    nonUsedFreqW W
}

NonUsedFreqParameterList ::= SEQUENCE (SIZE (1..maxFreq)) OF
NonUsedFreqParameter

ObservedTimeDifferenceToGSM ::= INTEGER (0..4095)

OTDOA-SearchWindowSize ::= ENUMERATED {
    c20, c40, c80, c160, c320,
    c640, c1280, moreThan1280 }

-- SPARE: Pathloss, Max = 158
-- Values above Max are spare
Pathloss ::= INTEGER (46..173)

PenaltyTime-RSCP ::= CHOICE {
    notUsed NULL,
    pt10 TemporaryOffset1,
    pt20 TemporaryOffset1,
    pt30 TemporaryOffset1,
    pt40 TemporaryOffset1,
    pt50 TemporaryOffset1,
    pt60 TemporaryOffset1
}

PenaltyTime-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

```

```

    plmn-Identity          SEQUENCE {
    }                      PLMN-Identity          OPTIONAL

PLMNsOfIntraFreqCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    plmn-Identity          SEQUENCE {
    }                      PLMN-Identity          OPTIONAL

PLMNsOfInterRATCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    plmn-Identity          SEQUENCE {
    }                      PLMN-Identity          OPTIONAL

PositionEstimate ::= CHOICE {
    ellipsoidPoint          EllipsoidPoint,
    ellipsoidPointUncertCircle EllipsoidPointUncertCircle,
    ellipsoidPointUncertEllipse EllipsoidPointUncertEllipse,
    ellipsoidPointAltitude EllipsoidPointAltitude,
    ellipsoidPointAltitudeEllipse EllipsoidPointAltitudeEllipsoide
}

PositioningMethod ::= ENUMERATED {
    otdoa,
    gps,
    otdoaOrGPS, cellID }

-- Actual value PRC = IE value * 0.32
PRC ::= INTEGER (-2047..2047)

-- SPARE: PrimaryCCPCH-RSCP, Max = 91
-- Values above Max are spare
PrimaryCCPCH-RSCP ::= INTEGER (0..127)

Q-HCS ::= INTEGER (0..99)

Q-OffsetS-N ::= INTEGER (-50..50)

Q-QualMin ::= INTEGER (-24..0)

-- Actual value Q-RxlevMin = (IE value * 2) + 1
Q-RxlevMin ::= INTEGER (-58..-13)

QualityEventResults ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    TransportChannelIdentity

QualityMeasuredResults ::= SEQUENCE {
    blerMeasurementResultsList BLER-MeasurementResultsList OPTIONAL,
    modeSpecificInfo          CHOICE {
        fdd                    NULL,
        tdd                    SEQUENCE {
            sir-MeasurementResults SIR-MeasurementList OPTIONAL
        }
    }
}

QualityMeasurement ::= SEQUENCE {
    qualityReportingQuantity QualityReportingQuantity OPTIONAL,
    reportCriteria          QualityReportCriteria
}

QualityReportCriteria ::= CHOICE {
    qualityReportingCriteria QualityReportingCriteria,
    periodicalReportingCriteria PeriodicalReportingCriteria,
    noReporting              NULL
}

QualityReportingCriteria ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    QualityReportingCriteriaSingle

QualityReportingCriteriaSingle ::= SEQUENCE {
    transportChannelIdentity TransportChannelIdentity,
    totalCRC                 INTEGER (1..512),
    badCRC                   INTEGER (1..512),
    pendingAfterTrigger      INTEGER (1..512)
}

QualityReportingQuantity ::= SEQUENCE {

```

```

dl-TransChBLER                BOOLEAN,
bler-dl-TransChIdList          BLER-TransChIdList          OPTIONAL,
modeSpecificInfo               CHOICE {
    fdd                         NULL,
    tdd                         SEQUENCE {
        sir-TFCS-List          SIR-TFCS-List          OPTIONAL
    }
}
}

RAT-Type ::=                    ENUMERATED {
    gsm, is2000 }

ReferenceCellPosition ::=       CHOICE {
    ellipsoidPoint              EllipsoidPoint,
    ellipsoidPointWithAltitude  EllipsoidPointAltitude
}

-- ReferenceLocation, as defined in 23.032
ReferenceLocation ::=           SEQUENCE {
    ellipsoidPointAltitudeEllipsoide  EllipsoidPointAltitudeEllipsoide
}

ReferenceTimeDifferenceToCell ::= CHOICE {
    -- Actual value accuracy40 = IE value * 40
    accuracy40                  INTEGER (0..960),
    -- Actual value accuracy256 = IE value * 256
    accuracy256                 INTEGER (0..150),
    -- Actual value accuracy2560 = IE value * 2560
    accuracy2560               INTEGER (0..15)
}

RemovedInterFreqCellList ::=   CHOICE {
    removeAllInterFreqCells     NULL,
    removeSomeInterFreqCells    SEQUENCE (SIZE (1..maxCellMeas)) OF
        InterFreqCellID,
    removeNoInterFreqCells      NULL
}

RemovedInterRATCellList ::=    CHOICE {
    removeAllInterRATCells      NULL,
    removeSomeInterRATCells     SEQUENCE (SIZE (1..maxCellMeas)) OF
        InterRATCellID,
    removeNoInterRATCells      NULL
}

RemovedIntraFreqCellList ::=  CHOICE {
    removeAllIntraFreqCells     NULL,
    removeSomeIntraFreqCells    SEQUENCE (SIZE (1..maxCellMeas)) OF
        IntraFreqCellID,
    removeNoIntraFreqCells     NULL
}

ReplacementActivationThreshold ::= ENUMERATED {
    notApplicable, t1, t2,
    t3, t4, t5, t6, t7 }

ReportDeactivationThreshold ::= ENUMERATED {
    notApplicable, t1, t2,
    t3, t4, t5, t6, t7 }

ReportingAmount ::=            ENUMERATED {
    ra1, ra2, ra4, ra8, ra16, ra32,
    ra64, ra-Infinity }

ReportingCellStatus ::=        CHOICE{
    withinActiveSet              MaxNumberOfReportingCellsType1,
    withinMonitoredSetUsedFreq   MaxNumberOfReportingCellsType1,
    withinActiveAndOrMonitoredUsedFreq MaxNumberOfReportingCellsType1,
    withinDetectedSetUsedFreq    MaxNumberOfReportingCellsType1,
    withinMonitoredAndOrDetectedUsedFreq MaxNumberOfReportingCellsType1,
    allActiveplusMonitoredSet    MaxNumberOfReportingCellsType3,
    allActivePlusDetectedSet     MaxNumberOfReportingCellsType3,
    allActivePlusMonitoredAndOrDetectedSet MaxNumberOfReportingCellsType3,
    withinVirtualActSet          MaxNumberOfReportingCellsType1,
    withinMonitoredSetNonUsedFreq MaxNumberOfReportingCellsType1,
}

```

```

withinMonitoredAndOrVirtualActiveSetNonUsedFreq
    MaxNumberOfReportingCellsType1,
allVirtualActSetplusMonitoredSetNonUsedFreq
    MaxNumberOfReportingCellsType3,
withinActSetOrVirtualActSet-InterRATcells
    MaxNumberOfReportingCellsType2,
withinActSetAndOrMonitoredUsedFreqOrVirtualActSetAndOrMonitoredNonUsedFreq
    MaxNumberOfReportingCellsType2
}

ReportingCellStatusOpt ::=          SEQUENCE {
    reportingCellStatus              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 }
-- When the value "ril0" is used, the UE behaviour is not
-- defined.

-- Actual value ReportingRange = IE value * 0.5
ReportingRange ::=                 INTEGER (0..29)

RL-AdditionInfoList ::=           SEQUENCE (SIZE (1..maxRL)) OF
    PrimaryCPICH-Info

RL-InformationLists ::=           SEQUENCE {
    rl-AdditionInfoList             OPTIONAL,
    rL-RemovalInformationList       OPTIONAL
}

RLC-BuffersPayload ::=            ENUMERATED {
    p10, p14, p18, p116, p132,
    p164, p1128, p1256, p1512, p11024,
    p12k, p14k, p18k, p116k, p132k,
    p164k, p1128k, p1256k, p1512k, p11024k,
    spare12, spare11, spare10, spare9, spare8,
    spare7, spare6, spare5, spare4, spare3,
    spare2, spare1 }

-- Actual value RRC = IE value * 0.032
RRC ::=                            INTEGER (-127..127)

SatData ::=                        SEQUENCE{
    satID                           SatID,
    iode                             IODE
}

SatDataList ::=                    SEQUENCE (SIZE (0..maxSat)) OF
    SatData

SatelliteStatus ::=                ENUMERATED {
    ns-NN-U,
    es-SN,
    es-NN-U,
    rev2,
    rev }

-- Identifies the satellite and is equal to (SV ID No - 1) where SV ID No is defined in [12].

```

```

SatID ::=
    INTEGER (0..63)

SFN-Offset-Validity ::=
    ENUMERATED { false }

SFN-SFN-Drift ::=
    ENUMERATED {
        sfnsfndrift0, sfnsfndrift1, sfnsfndrift2,
        sfnsfndrift3, sfnsfndrift4, sfnsfndrift5,
        sfnsfndrift8, sfnsfndrift10, sfnsfndrift15,
        sfnsfndrift25, sfnsfndrift35, sfnsfndrift50,
        sfnsfndrift65, sfnsfndrift80, sfnsfndrift100,
        sfnsfndrift-1, sfnsfndrift-2, sfnsfndrift-3,
        sfnsfndrift-4, sfnsfndrift-5, sfnsfndrift-8,
        sfnsfndrift-10, sfnsfndrift-15, sfnsfndrift-25,
        sfnsfndrift-35, sfnsfndrift-50, sfnsfndrift-65,
        sfnsfndrift-80, sfnsfndrift-100}

SFN-SFN-ObsTimeDifference ::=
    CHOICE {
        type1
            SFN-SFN-ObsTimeDifference1,
        type2
            SFN-SFN-ObsTimeDifference2
    }

-- SPARE: SFN-SFN-ObsTimeDifference1, Max = 9830399
-- For 1.28Mcps TDD, Max value of SFN-SFN-ObsTimeDifference1 is 3276799.
-- Values above Max are spare
SFN-SFN-ObsTimeDifference1 ::=
    INTEGER (0..16777215)

-- SPARE: SFN-SFN-ObsTimeDifference2, Max = 40961
-- Values above Max are spare
SFN-SFN-ObsTimeDifference2 ::=
    INTEGER (0..65535)

SFN-SFN-OTD-Type ::=
    ENUMERATED {
        noReport,
        type1,
        type2 }

SFN-SFN-RelTimeDifference1 ::=
    SEQUENCE {
        sfn-Offset
            INTEGER (0 .. 4095),
        sfn-sfn-Reltimedifference
            INTEGER (0.. 38399)
    }

SFN-TOW-Uncertainty ::=
    ENUMERATED {
        lessThan10,
        moreThan10 }

SIR ::=
    INTEGER (0..63)

SIR-MeasurementList ::=
    SEQUENCE (SIZE (1..maxCCTrCH)) OF
        SIR-MeasurementResults

SIR-MeasurementResults ::=
    SEQUENCE {
        tfcs-ID
            TFCS-IdentityPlain,
        sir-TimeslotList
            SIR-TimeslotList
    }

SIR-TFCS ::=
    TFCS-IdentityPlain

SIR-TFCS-List ::=
    SEQUENCE (SIZE (1..maxCCTrCH)) OF
        SIR-TFCS

SIR-TimeslotList ::=
    SEQUENCE (SIZE (1..maxTS)) OF
        SIR

-- SubFrame1Reserved, reserved bits in subframe 1 of the GPS navigation message
SubFrame1Reserved ::=
    SEQUENCE {
        reserved1
            BIT STRING (SIZE (23)),
        reserved2
            BIT STRING (SIZE (24)),
        reserved3
            BIT STRING (SIZE (24)),
        reserved4
            BIT STRING (SIZE (16))
    }

T-ADVinfo ::=
    SEQUENCE {
        t-ADV
            INTEGER(0..2047),
        sfn
            INTEGER(0..4095)
    }

```

```

T-CRMax ::=
    notUsed
    t30
    t60
    t120
    t180
    t240
}

CHOICE {
    NULL,
    N-CR-T-CRMaxHyst,
    N-CR-T-CRMaxHyst,
    N-CR-T-CRMaxHyst,
    N-CR-T-CRMaxHyst,
    N-CR-T-CRMaxHyst
}

T-CRMaxHyst ::=
    ENUMERATED {
        notUsed, t10, t20, t30,
        t40, t50, t60, t70 }

TemporaryOffset1 ::=
    ENUMERATED {
        to3, to6, to9, to12, to15,
        to18, to21, infinite }

TemporaryOffset2 ::=
    ENUMERATED {
        to2, to3, to4, to6, to8,
        to10, to12, infinite }

TemporaryOffsetList ::=
    SEQUENCE {
        temporaryOffset1
        temporaryOffset2
    }

Threshold ::=
    INTEGER (-115..0)

-- The order of the list corresponds to the order of frequency defined in Inter-FreqEventCriteria
ThresholdNonUsedFrequency-deltaList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    DeltaRSCPPerCell

ThresholdPositionChange ::=
    ENUMERATED {
        pc10, pc20, pc30, pc40, pc50,
        pc100, pc200, pc300, pc500,
        pc1000, pc2000, pc5000, pc10000,
        pc20000, pc50000, pc100000 }

ThresholdSFN-GPS-TOW ::=
    ENUMERATED {
        ms1, ms2, ms3, ms5, ms10,
        ms20, ms50, ms100 }

ThresholdSFN-SFN-Change ::=
    ENUMERATED {
        c0-25, c0-5, c1, c2, c3, c4, c5,
        c10, c20, c50, c100, c200, c500,
        c1000, c2000, c5000 }

ThresholdUsedFrequency ::=
    INTEGER (-115..165)

-- Actual value TimeInterval = IE value * 20.
TimeInterval ::=
    INTEGER (1..13)

TimeslotInfo ::=
    SEQUENCE {
        timeslotNumber
        burstType
    }

TimeslotInfo-LCR-r4 ::=
    SEQUENCE {
        timeslotNumber
        TimeslotNumber-LCR-r4
    }

TimeslotInfoList ::=
    SEQUENCE (SIZE (1..maxTS)) OF
        TimeslotInfo

TimeslotInfoList-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxTS-LCR)) OF
        TimeslotInfo-LCR-r4

TimeslotInfoList-r4 ::=
    CHOICE {
        tdd384
        SEQUENCE (SIZE (1..maxTS)) OF
            TimeslotInfo,
        tdd128
        SEQUENCE (SIZE (1..maxTS-LCR)) OF
            TimeslotInfo-LCR-r4
    }

-- SPARE: TimeslotISCP, Max = 91

```

```

-- Values above Max are spare
TimeslotISCP ::= INTEGER (0..127)

-- TimeslotISCP-List shall not include more than 6 elements in 1.28Mcps TDD mode.
TimeslotISCP-List ::= SEQUENCE (SIZE (1..maxTS)) OF
    TimeslotISCP

TimeslotListWithISCP ::= SEQUENCE (SIZE (1..maxTS)) OF
    TimeslotWithISCP

TimeslotWithISCP ::= SEQUENCE {
    timeslot TimeslotNumber,
    timeslotISCP TimeslotISCP
}

TimeToTrigger ::= ENUMERATED {
    ttt0, ttt10, ttt20, ttt40, ttt60,
    ttt80, ttt100, ttt120, ttt160,
    ttt200, ttt240, 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,
    -- dummy is not used in this version of specification, it should
    -- not be sent and if received it should be ignored.
    dummy TrafficVolumeReportingCriteria OPTIONAL,
    measurementValidity MeasurementValidity OPTIONAL,
    measurementReportingMode MeasurementReportingMode,
    reportCriteriaSysInf TrafficVolumeReportCriteriaSysInfo
}

TrafficVolumeMeasuredResults ::= SEQUENCE {
    rb-Identity RB-Identity,
    rlc-BuffersPayload RLC-BuffersPayload OPTIONAL,
    averageRLC-BufferPayload AverageRLC-BufferPayload OPTIONAL,
    varianceOfRLC-BufferPayload VarianceOfRLC-BufferPayload OPTIONAL
}

TrafficVolumeMeasuredResultsList ::= SEQUENCE (SIZE (1..maxRB)) OF
    TrafficVolumeMeasuredResults

TrafficVolumeMeasurement ::= SEQUENCE {
    trafficVolumeMeasurementObjectList TrafficVolumeMeasurementObjectList OPTIONAL,
    trafficVolumeMeasQuantity TrafficVolumeMeasQuantity OPTIONAL,
    trafficVolumeReportingQuantity TrafficVolumeReportingQuantity OPTIONAL,
    measurementValidity MeasurementValidity OPTIONAL,
    reportCriteria TrafficVolumeReportCriteria
}

TrafficVolumeMeasurementObjectList ::= SEQUENCE (SIZE (1..maxTrCH)) OF

```

UL-TrCH-Identity

```

TrafficVolumeReportCriteria ::= CHOICE {
    trafficVolumeReportingCriteria    TrafficVolumeReportingCriteria,
    periodicalReportingCriteria       PeriodicalReportingCriteria,
    noReporting                        NULL
}

TrafficVolumeReportCriteriaSysInfo ::= CHOICE {
    trafficVolumeReportingCriteria    TrafficVolumeReportingCriteria,
    periodicalReportingCriteria       PeriodicalReportingCriteria
}

TrafficVolumeReportingCriteria ::= SEQUENCE {
    -- NOTE: transChCriteriaList should be mandatory in later versions of this message
    transChCriteriaList                TransChCriteriaList                OPTIONAL
}

TrafficVolumeReportingQuantity ::= SEQUENCE {
    rlc-RB-BufferPayload                BOOLEAN,
    rlc-RB-BufferPayloadAverage          BOOLEAN,
    rlc-RB-BufferPayloadVariance         BOOLEAN
}

TrafficVolumeThreshold ::= ENUMERATED {
    th8, th16, th32, th64, th128,
    th256, th512, th1024, th2k, th3k,
    th4k, th6k, th8k, th12k, th16k,
    th24k, th32k, th48k, th64k, th96k,
    th128k, th192k, th256k, th384k,
    th512k, th768k }

TransChCriteria ::= SEQUENCE {
    ul-transportChannelID                UL-TrCH-Identity                OPTIONAL,
    eventSpecificParameters              SEQUENCE (SIZE (1..maxMeasParEvent)) OF
                                         TrafficVolumeEventParam        OPTIONAL
}

TransChCriteriaList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    TransChCriteria

TransferMode ::= ENUMERATED {
    acknowledgedModeRLC,
    unacknowledgedModeRLC }

TransmittedPowerThreshold ::= INTEGER (-50..33)

TriggeringCondition1 ::= ENUMERATED {
    activeSetCellsOnly,
    monitoredSetCellsOnly,
    activeSetAndMonitoredSetCells }

TriggeringCondition2 ::= ENUMERATED {
    activeSetCellsOnly,
    monitoredSetCellsOnly,
    activeSetAndMonitoredSetCells,
    detectedSetCellsOnly,
    detectedSetAndMonitoredSetCells }

TX-InterruptionAfterTrigger ::= ENUMERATED {
    txiat0-25, txiat0-5, txiat1,
    txiat2, txiat4, txiat8, txiat16 }

UDRE ::= ENUMERATED {
    lessThan1,
    between1-and-4,
    between4-and-8,
    over8 }

UE-6AB-Event ::= SEQUENCE {
    timeToTrigger                        TimeToTrigger,
    transmittedPowerThreshold            TransmittedPowerThreshold
}

UE-6FG-Event ::= SEQUENCE {
    timeToTrigger                        TimeToTrigger,
    -- in 1.28 Mcps TDD ue-RX-TX-TimeDifferenceThreshold corresponds to TADV Threshold
    ue-RX-TX-TimeDifferenceThreshold    UE-RX-TX-TimeDifferenceThreshold
}

```

```

}

UE-AutonomousUpdateMode ::= CHOICE {
    on
    onWithNoReporting
    off
    RL-InformationLists
}

UE-InternalEventParam ::= CHOICE {
    event6a
    event6b
    event6c
    event6d
    event6e
    event6f
    event6g
    UE-6AB-Event
    UE-6AB-Event
    TimeToTrigger
    TimeToTrigger
    TimeToTrigger
    UE-6FG-Event
    UE-6FG-Event
}

UE-InternalEventParamList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    UE-InternalEventParam

UE-InternalEventResults ::= CHOICE {
    event6a
    event6b
    event6c
    event6d
    event6e
    event6f
    event6g
    spare
    PrimaryCPICH-Info
    PrimaryCPICH-Info
    NULL
}

UE-InternalMeasQuantity ::= SEQUENCE {
    measurementQuantity
    filterCoefficient
    UE-MeasurementQuantity
    FilterCoefficient
    DEFAULT fc0
}

UE-InternalMeasuredResults ::= SEQUENCE {
    modeSpecificInfo
    fdd
        ue-TransmittedPowerFDD
        ue-RX-TX-ReportEntryList
    },
    tdd
        ue-TransmittedPowerTDD-List
        appliedTA
    }
}

UE-InternalMeasuredResults-LCR-r4 ::= SEQUENCE {
    ue-TransmittedPowerTDD-List
    t-ADVinfo
    UE-TransmittedPowerTDD-List
    T-ADVinfo
    OPTIONAL,
    OPTIONAL
}

UE-InternalMeasurement ::= SEQUENCE {
    ue-InternalMeasQuantity
    ue-InternalReportingQuantity
    reportCriteria
    UE-InternalMeasQuantity
    UE-InternalReportingQuantity
    UE-InternalReportCriteria
}

UE-InternalMeasurement-r4 ::= SEQUENCE {
    ue-InternalMeasQuantity
    ue-InternalReportingQuantity
    reportCriteria
    UE-InternalMeasQuantity
    UE-InternalReportingQuantity-r4
    UE-InternalReportCriteria
    OPTIONAL,
    OPTIONAL,
}

UE-InternalMeasurementSysInfo ::= SEQUENCE {
    ue-InternalMeasurementID
    ue-InternalMeasQuantity
    MeasurementIdentity
    UE-InternalMeasQuantity
    DEFAULT 5,
}

UE-InternalReportCriteria ::= CHOICE {
    ue-InternalReportingCriteria
    periodicalReportingCriteria
    noReporting
    UE-InternalReportingCriteria,
    PeriodicalReportingCriteria,
    NULL
}

```

```

UE-InternalReportingCriteria ::= SEQUENCE {
    ue-InternalEventParamList      UE-InternalEventParamList      OPTIONAL
}

UE-InternalReportingQuantity ::= SEQUENCE {
    ue-TransmittedPower            BOOLEAN,
    modeSpecificInfo               CHOICE {
        fdd                        SEQUENCE {
            ue-RX-TX-TimeDifference    BOOLEAN
        },
        tdd                        SEQUENCE {
            appliedTA                BOOLEAN
        }
    }
}

UE-InternalReportingQuantity-r4 ::= SEQUENCE {
    ue-TransmittedPower            BOOLEAN,
    modeSpecificInfo               CHOICE {
        fdd                        SEQUENCE {
            ue-RX-TX-TimeDifference    BOOLEAN
        },
        tdd                        SEQUENCE {
            tddOption                CHOICE {
                tdd384                SEQUENCE {
                    appliedTA          BOOLEAN
                },
                tdd128                SEQUENCE {
                    t-ADVinfo          BOOLEAN
                }
            }
        }
    }
}

-- TABULAR: UE-MeasurementQuantity, for 3.84 Mcps TDD only the first two values
-- ue-TransmittedPower and ultra-Carrier-RSSI are used.
-- For 1.28 Mcps TDD ue-RX-TX-TimeDifference corresponds to T-ADV in the tabular
UE-MeasurementQuantity ::= ENUMERATED {
    ue-TransmittedPower,
    ultra-Carrier-RSSI,
    ue-RX-TX-TimeDifference }

UE-RX-TX-ReportEntry ::= SEQUENCE {
    primaryCPICH-Info              PrimaryCPICH-Info,
    ue-RX-TX-TimeDifferenceType1    UE-RX-TX-TimeDifferenceType1
}

UE-RX-TX-ReportEntryList ::= SEQUENCE (SIZE (1..maxRL)) OF
    UE-RX-TX-ReportEntry

-- SPARE: UE-RX-TX-TimeDifferenceType1, Max = 1280
-- Values above Max are spare
UE-RX-TX-TimeDifferenceType1 ::= INTEGER (768..1791)

UE-RX-TX-TimeDifferenceType2 ::= INTEGER (0..8191)

UE-RX-TX-TimeDifferenceType2Info ::= SEQUENCE {
    ue-RX-TX-TimeDifferenceType2    UE-RX-TX-TimeDifferenceType2,
    neighbourQuality                NeighbourQuality
}

-- In 1.28 Mcps TDD, actual value for
-- T-ADV Threshold = (UE-RX-TX-TimeDifferenceThreshold - 768) * 0.125
UE-RX-TX-TimeDifferenceThreshold ::= INTEGER (768..1280)

UE-TransmittedPower ::= INTEGER (0..104)

UE-TransmittedPowerTDD-List ::= SEQUENCE (SIZE (1..maxTS)) OF
    UE-TransmittedPower

UL-TrCH-Identity ::= CHOICE{
    dch                            TransportChannelIdentity,
    -- Default transport channel in the UL is either RACH or CPCH, but not both.
    rachorcpch                     NULL,
    usch                            TransportChannelIdentity
}

```

```

UE-Positioning-Accuracy ::=                               BIT STRING (SIZE (7))

UE-Positioning-CipherParameters ::=                     SEQUENCE {
  cipheringKeyFlag                                     BIT STRING (SIZE (1)),
  cipheringSerialNumber                               INTEGER (0..65535)
}

UE-Positioning-Error ::=                                SEQUENCE {
  errorReason                                         UE-Positioning-ErrorCause,
  ue-positioning-GPS-additionalAssistanceDataRequest UE-Positioning-GPS-
AdditionalAssistanceDataRequest OPTIONAL
}

UE-Positioning-ErrorCause ::=                           ENUMERATED {
  notEnoughOTDOA-Cells,
  notEnoughGPS-Satellites,
  assistanceDataMissing,
  notAccomplishedGPS-TimingOfCellFrames,
  undefinedError,
  requestDeniedByUser,
  notProcessedAndTimeout,
  referenceCellNotServingCell }

UE-Positioning-EventParam ::=                           SEQUENCE {
  reportingAmount                                     ReportingAmount,
  reportFirstFix                                     BOOLEAN,
  measurementInterval                               UE-Positioning-MeasurementInterval,
  eventSpecificInfo                                  UE-Positioning-EventSpecificInfo
}

UE-Positioning-EventParamList ::=                       SEQUENCE (SIZE (1..maxMeasEvent)) OF
UE-Positioning-EventParam

UE-Positioning-EventSpecificInfo ::=                     CHOICE {
  e7a                                                  ThresholdPositionChange,
  e7b                                                  ThresholdSFN-SFN-Change,
  e7c                                                  ThresholdSFN-GPS-TOW
}

UE-Positioning-GPS-AcquisitionAssistance ::=            SEQUENCE {
  gps-ReferenceTime                                  INTEGER (0..604799999),
  utran-GPSReferenceTime                             UTRAN-GPSReferenceTime          OPTIONAL,
  satelliteInformationList                           AcquisitionSatInfoList
}

UE-Positioning-GPS-AdditionalAssistanceDataRequest ::= SEQUENCE {
  almanacRequest                                     BOOLEAN,
  utcModelRequest                                    BOOLEAN,
  ionosphericModelRequest                            BOOLEAN,
  navigationModelRequest                             BOOLEAN,
  dgpsCorrectionsRequest                             BOOLEAN,
  referenceLocationRequest                           BOOLEAN,
  referenceTimeRequest                               BOOLEAN,
  aquisitionAssistanceRequest                       BOOLEAN,
  realTimeIntegrityRequest                           BOOLEAN,
  navModelAddDataRequest                             UE-Positioning-GPS-NavModelAddDataReq OPTIONAL
}

UE-Positioning-GPS-Almanac ::=                          SEQUENCE {
  wn-a                                                BIT STRING (SIZE (8)),
  almanacSatInfoList                                 AlmanacSatInfoList,
  sv-GlobalHealth                                    BIT STRING (SIZE (364))          OPTIONAL
}

UE-Positioning-GPS-AssistanceData ::=                   SEQUENCE {
  ue-positioning-GPS-ReferenceTime                   UE-Positioning-GPS-ReferenceTime
OPTIONAL,
  ue-positioning-GPS-ReferenceLocation                ReferenceLocation                OPTIONAL,
  ue-positioning-GPS-DGPS-Corrections                UE-Positioning-GPS-DGPS-Corrections
OPTIONAL,
  ue-positioning-GPS-NavigationModel                  UE-Positioning-GPS-NavigationModel
OPTIONAL,
  ue-positioning-GPS-IonosphericModel                UE-Positioning-GPS-IonosphericModel
OPTIONAL,
  ue-positioning-GPS-UTC-Model                       UE-Positioning-GPS-UTC-Model
OPTIONAL,

```

```

ue-positioning-GPS-Almanac                UE-Positioning-GPS-Almanac
OPTIONAL,
ue-positioning-GPS-AcquisitionAssistance  UE-Positioning-GPS-AcquisitionAssistance
OPTIONAL,
ue-positioning-GPS-Real-timeIntegrity     BadSatList                                OPTIONAL,
-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
dummy                                     UE-Positioning-GPS-ReferenceCellInfo    OPTIONAL
}

UE-Positioning-GPS-DGPS-Corrections ::= SEQUENCE {
  gps-TOW                                INTEGER (0..604799),
  statusHealth                           DiffCorrectionStatus,
  dgps-CorrectionSatInfoList             DGPS-CorrectionSatInfoList
}

UE-Positioning-GPS-IonosphericModel ::= SEQUENCE {
  alfa0                                  BIT STRING (SIZE (8)),
  alfa1                                  BIT STRING (SIZE (8)),
  alfa2                                  BIT STRING (SIZE (8)),
  alfa3                                  BIT STRING (SIZE (8)),
  beta0                                  BIT STRING (SIZE (8)),
  beta1                                  BIT STRING (SIZE (8)),
  beta2                                  BIT STRING (SIZE (8)),
  beta3                                  BIT STRING (SIZE (8))
}

UE-Positioning-GPS-MeasurementResults ::= SEQUENCE {
  referenceTime                           CHOICE {
    utran-GPSReferenceTimeResult          UTRAN-GPSReferenceTimeResult,
    gps-ReferenceTimeOnly                  INTEGER (0..604799999)
  },
  gps-MeasurementParamList                GPS-MeasurementParamList
}

UE-Positioning-GPS-NavigationModel ::= SEQUENCE {
  navigationModelSatInfoList              NavigationModelSatInfoList
}

UE-Positioning-GPS-NavModelAddDataReq ::= SEQUENCE {
  gps-Week                                INTEGER (0..1023),
  -- SPARE: gps-Toe, Max = 167
  -- Values above Max are spare
  gps-Toe                                  INTEGER (0..255),
  -- SPARE: tToeLimit, Max = 10
  -- Values above Max are spare
  tToeLimit                                INTEGER (0..15),
  satDataList                              SatDataList
}

UE-Positioning-GPS-ReferenceCellInfo ::= SEQUENCE{
  modeSpecificInfo                         CHOICE {
    fdd                                     SEQUENCE {
      referenceIdentity                     PrimaryCPICH-Info
    },
    tdd                                     SEQUENCE {
      referenceIdentity                     CellParametersID
    }
  }
}

UE-Positioning-GPS-ReferenceTime ::= SEQUENCE {
  gps-Week                                INTEGER (0..1023),
  gps-tow-lmsec                            GPS-TOW-lmsec,  utran-GPSReferenceTime    UTRAN-
GPSReferenceTime                           OPTIONAL,
  sfn-tow-Uncertainty                       SFN-TOW-Uncertainty    OPTIONAL,
  utran-GPS-DriftRate                       UTRAN-GPS-DriftRate    OPTIONAL,
  gps-TOW-AssistList                         GPS-TOW-AssistList     OPTIONAL
}

UE-Positioning-GPS-UTC-Model ::= SEQUENCE {
  a1                                         BIT STRING (SIZE (24)),
  a0                                         BIT STRING (SIZE (32)),
  t-ot                                       BIT STRING (SIZE (8)),
  wn-t                                       BIT STRING (SIZE (8)),
  delta-t-LS                                BIT STRING (SIZE (8)),
  wn-lsf                                    BIT STRING (SIZE (8)),
  dn                                         BIT STRING (SIZE (8)),

```

```

    delta-t-LSF                                BIT STRING (SIZE (8))
}

UE-Positioning-IPDL-Parameters ::=            SEQUENCE {
    ip-Spacing                                IP-Spacing,
    ip-Length                                 IP-Length,
    ip-Offset                                 INTEGER (0..9),
    seed                                       INTEGER (0..63),
    burstModeParameters                        BurstModeParameters OPTIONAL
}

UE-Positioning-IPDL-Parameters-r4 ::=         SEQUENCE {
    modeSpecificInfo                          CHOICE {
        fdd                                    SEQUENCE {
            ip-Spacing                         IP-Spacing,
            ip-Length                           IP-Length,
            ip-Offset                           INTEGER (0..9),
            seed                                 INTEGER (0..63)
        },
        tdd                                    SEQUENCE {
            ip-Spacing-TDD                     IP-Spacing-TDD,
            ip-slot                             INTEGER (0..14),
            ip-Start                             INTEGER (0..4095),
            ip-PCCPCH                            IP-PCCPCH-r4 OPTIONAL
        }
    },
    burstModeParameters                        BurstModeParameters OPTIONAL
}

UE-Positioning-IPDL-Parameters-TDD-r4-ext ::= SEQUENCE {
    ip-Spacing-TDD                            IP-Spacing-TDD,
    ip-slot                                    INTEGER (0..14),
    ip-Start                                    INTEGER (0..4095),
    ip-PCCPCH-r4                              IP-PCCPCH-r4 OPTIONAL,
    burstModeParameters                        BurstModeParameters
}

UE-Positioning-MeasuredResults ::=            SEQUENCE {
    ue-positioning-OTDOA-Measurement           UE-Positioning-OTDOA-Measurement
    OPTIONAL,
    ue-positioning-PositionEstimateInfo       UE-Positioning-PositionEstimateInfo
    OPTIONAL,
    ue-positioning-GPS-Measurement            UE-Positioning-GPS-MeasurementResults
    OPTIONAL,
    ue-positioning-Error                       UE-Positioning-Error
    OPTIONAL
}

UE-Positioning-MeasuredResults-v390ext ::=    SEQUENCE {
    ue-Positioning-OTDOA-Measurement-v390ext   UE-Positioning-OTDOA-Measurement-v390ext
}

UE-Positioning-Measurement ::=                SEQUENCE {
    ue-positioning-ReportingQuantity           UE-Positioning-ReportingQuantity,
    reportCriteria                             UE-Positioning-ReportCriteria,
    ue-positioning-OTDOA-AssistanceData       UE-Positioning-OTDOA-AssistanceData
    OPTIONAL,
    ue-positioning-GPS-AssistanceData         UE-Positioning-GPS-AssistanceData
    OPTIONAL
}

UE-Positioning-Measurement-v390ext ::=        SEQUENCE {
    ue-positioning-ReportingQuantity-v390ext   UE-Positioning-ReportingQuantity-v390ext
    OPTIONAL,
    measurementValidity                       MeasurementValidity OPTIONAL,
    ue-positioning-OTDOA-AssistanceData-UEB   UE-Positioning-OTDOA-AssistanceData-UEB
    OPTIONAL
}

UE-Positioning-Measurement-r4 ::=             SEQUENCE {
    ue-positioning-ReportingQuantity-r4        UE-Positioning-ReportingQuantity-r4,
    measurementValidity                       MeasurementValidity
    OPTIONAL,
    reportCriteria                             UE-Positioning-ReportCriteria,
    ue-positioning-OTDOA-AssistanceData-r4    UE-Positioning-OTDOA-AssistanceData-r4
    OPTIONAL,
    ue-positioning-GPS-AssistanceData         UE-Positioning-GPS-AssistanceData
    OPTIONAL
}

```

```

}

UE-Positioning-MeasurementEventResults ::= CHOICE {
    event7a      UE-Positioning-PositionEstimateInfo,
    event7b      UE-Positioning-OTDOA-Measurement,
    event7c      UE-Positioning-GPS-MeasurementResults,
    spare        NULL
}

UE-Positioning-MeasurementInterval ::= ENUMERATED {
    e5, e15, e60, e300,
    e900, e1800, e3600, e7200 }

UE-Positioning-MethodType ::= ENUMERATED {
    ue-Assisted,
    ue-Based,
    ue-BasedPreferred,
    ue-AssistedPreferred }

UE-Positioning-OTDOA-AssistanceData ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo  UE-Positioning-OTDOA-ReferenceCellInfo
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList  UE-Positioning-OTDOA-NeighbourCellList
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-r4 ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo  UE-Positioning-OTDOA-ReferenceCellInfo-r4
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList  UE-Positioning-OTDOA-NeighbourCellList-r4
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-r4ext ::= SEQUENCE {
    -- In case of TDD these IPDL parameters shall be used for the reference cell instead of
    -- IPDL Parameters in IE UE-Positioning-OTDOA-ReferenceCellInfo
    ue-Positioning-IPDL-Parameters-TDD-r4-ext  UE-Positioning-IPDL-Parameters-TDD-r4-ext
    OPTIONAL,
    -- These IPDL parameters shall be used for the neighbour cells in case of TDD instead of
    -- IPDL Parameters in IE UE-Positioning-OTDOA-NeighbourCellInfoList. The cells shall be
    -- listed in the same order as in IE UE-Positioning-OTDOA-NeighbourCellInfoList
    ue-Positioning-IPDL-Parameters-TDDList-r4-ext  UE-Positioning-IPDL-Parameters-TDDList-r4-ext
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-UEB ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo-UEB  UE-Positioning-OTDOA-ReferenceCellInfo-UEB
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList-UEB  UE-Positioning-OTDOA-NeighbourCellList-
    UEB
    OPTIONAL
}

UE-Positioning-IPDL-Parameters-TDDList-r4-ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    UE-Positioning-IPDL-Parameters-TDD-r4-ext

UE-Positioning-OTDOA-Measurement ::= SEQUENCE {
    sfn          INTEGER (0..4095),
    modeSpecificInfo CHOICE {
        fdd      SEQUENCE {
            referenceCellIdentity  PrimaryCPICH-Info,
            ue-RX-TX-TimeDifferenceType2Info  UE-RX-TX-TimeDifferenceType2Info
        },
        tdd      SEQUENCE {
            referenceCellIdentity  CellParametersID
        }
    },
    neighbourList  NeighbourList OPTIONAL
}

UE-Positioning-OTDOA-Measurement-v390ext ::= SEQUENCE {
    neighbourList-v390ext  NeighbourList-v390ext
}

UE-Positioning-OTDOA-NeighbourCellInfo ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd      SEQUENCE {
            primaryCPICH-Info  PrimaryCPICH-Info
        },

```

```

    tdd
      cellAndChannelIdentity
    },
  },
  frequencyInfo
  ue-positioning-IPDL-Parameters
  OPTIONAL,
  sfn-SFN-RelTimeDifference
  sfn-SFN-Drift
  searchWindowSize
  positioningMode CHOICE {
    ueBased
    ueAssisted
  }
}

UE-Positioning-OTDOA-NeighbourCellInfo-r4 ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd
      primaryCPICH-Info
    },
    tdd
      cellAndChannelIdentity
  },
  frequencyInfo
  ue-positioning-IPDL-Parameters
  sfn-SFN-RelTimeDifference
  sfn-Offset-Validity
  sfn-SFN-Drift
  searchWindowSize
  positioningMode CHOICE {
    ueBased
      relativeNorth
      relativeEast
      relativeAltitude
      fineSFN-SFN
      -- actual value roundTripTime = (IE value * 0.0625) + 876
      roundTripTime
    },
    ueAssisted
  }
}

UE-Positioning-OTDOA-NeighbourCellInfo-UEB ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd
      primaryCPICH-Info
    },
    tdd
      cellAndChannelIdentity
  },
  frequencyInfo
  ue-positioning-IPDL-Parameters
  sfn-SFN-RelTimeDifference
  sfn-SFN-Drift
  searchWindowSize
  relativeNorth
  relativeEast
  relativeAltitude
  fineSFN-SFN
  -- actual value roundTripTime = (IE value * 0.0625) + 876
  roundTripTime
}

UE-Positioning-OTDOA-NeighbourCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  UE-Positioning-OTDOA-NeighbourCellInfo

UE-Positioning-OTDOA-NeighbourCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  UE-Positioning-OTDOA-NeighbourCellInfo-r4

UE-Positioning-OTDOA-NeighbourCellList-UEB ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  UE-Positioning-OTDOA-NeighbourCellInfo-UEB

UE-Positioning-OTDOA-Quality ::=
  stdResolution
  numberOfOTDOA-Measurements

```

```

    stdOfOTDOA-Measurements          BIT STRING (SIZE (5))
}

UE-Positioning-OTDOA-ReferenceCellInfo ::= SEQUENCE {
    sfn                               INTEGER (0..4095)
    OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                           SEQUENCE {
            primaryCPICH-Info         PrimaryCPICH-Info
        },
        tdd                           SEQUENCE {
            cellAndChannelIdentity    CellAndChannelIdentity
        }
    },
    frequencyInfo                    FrequencyInfo                               OPTIONAL,
    positioningMode CHOICE {
        ueBased                       SEQUENCE {},
        ueAssisted                    SEQUENCE {}
    },
    ue-positioning-IPDL-Paremters     UE-Positioning-IPDL-Parameters OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-r4 ::= SEQUENCE {
    sfn                               INTEGER (0..4095)
    OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                           SEQUENCE {
            primaryCPICH-Info         PrimaryCPICH-Info
        },
        tdd                           SEQUENCE {
            cellAndChannelIdentity    CellAndChannelIdentity
        }
    },
    frequencyInfo                    FrequencyInfo                               OPTIONAL,
    positioningMode CHOICE {
        ueBased                       SEQUENCE {
            cellPosition              ReferenceCellPosition OPTIONAL,
            -- actual value roundTripTime = (IE value * 0.0625) + 876
            roundTripTime             INTEGER (0..32766)          OPTIONAL
        },
        ueAssisted                    SEQUENCE {}
    },
    ue-positioning-IPDL-Paremters     UE-Positioning-IPDL-Parameters-r4 OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-UEB ::= SEQUENCE {
    sfn                               INTEGER (0..4095)                               OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                           SEQUENCE {
            primaryCPICH-Info         PrimaryCPICH-Info
        },
        tdd                           SEQUENCE {
            cellAndChannelIdentity    CellAndChannelIdentity
        }
    },
    frequencyInfo                    FrequencyInfo                               OPTIONAL,
    cellPosition                    ReferenceCellPosition                       OPTIONAL,
    -- actual value roundTripTime = (IE value * 0.0625) + 876
    roundTripTime                    INTEGER (0..32766)                          OPTIONAL,
    ue-positioning-IPDL-Paremters     UE-Positioning-IPDL-Parameters           OPTIONAL
}

UE-Positioning-PositionEstimateInfo ::= SEQUENCE {
    referenceTime                    CHOICE {
        utran-GPSReferenceTimeResult UTRAN-GPSReferenceTimeResult,
        gps-ReferenceTimeOnly        INTEGER (0..604799999),
        cell-Timing                  SEQUENCE {
            sfn                       INTEGER (0..4095),
            modeSpecificInfo          CHOICE {
                fdd                   SEQUENCE {
                    primaryCPICH-Info PrimaryCPICH-Info
                },
                tdd                   SEQUENCE {
                    cellAndChannelIdentity CellAndChannelIdentity
                }
            }
        }
    }
}

```

```

    positionEstimate                PositionEstimate
}

UE-Positioning-ReportCriteria ::=
    ue-positioning-ReportingCriteria
    periodicalReportingCriteria
    noReporting
                                CHOICE {
                                    UE-Positioning-EventParamList,
                                    PeriodicalReportingCriteria,
                                    NULL
                                }
}

UE-Positioning-ReportingQuantity ::=
    methodType                    UE-Positioning-MethodType,
    positioningMethod              PositioningMethod,
    -- dummy1 is not used in this version of specification and it should
    -- be ignored.
    dummy1                         UE-Positioning-ResponseTime,
    accuracy                       UE-Positioning-Accuracy                OPTIONAL,
    gps-TimingOfCellWanted         BOOLEAN,
    -- dummy2 is not used in this version of specification and it should
    -- be ignored.
    dummy2                         BOOLEAN,
    additionalAssistanceDataReq    BOOLEAN,
    environmentCharacterisation     EnvironmentCharacterisation        OPTIONAL
}

UE-Positioning-ReportingQuantity-v390ext ::=
    vertical-Accuracy              UE-Positioning-Accuracy
}

UE-Positioning-ReportingQuantity-r4 ::=
    methodType                    UE-Positioning-MethodType,
    positioningMethod              PositioningMethod,
    horizontalAccuracy             UE-Positioning-Accuracy                OPTIONAL,
    verticalAccuracy               UE-Positioning-Accuracy                OPTIONAL,
    gps-TimingOfCellWanted         BOOLEAN,
    additionalAssistanceDataReq    BOOLEAN,
    environmentCharacterisation     EnvironmentCharacterisation        OPTIONAL
}

UE-Positioning-ResponseTime ::=
                                ENUMERATED {
                                    s1, s2, s4, s8, s16,
                                    s32, s64, s128 }

-- SPARE: UTRA-CarrierRSSI, Max = 76
-- Values above Max are spare
UTRA-CarrierRSSI ::=
                                INTEGER (0..127)

UTRAN-GPS-DriftRate ::=
                                ENUMERATED {
                                    utran-GPSDrift0, utran-GPSDrift1, utran-GPSDrift2,
                                    utran-GPSDrift5, utran-GPSDrift10, utran-GPSDrift15,
                                    utran-GPSDrift25, utran-GPSDrift50, utran-GPSDrift-1,
                                    utran-GPSDrift-2, utran-GPSDrift-5, utran-GPSDrift-10,
                                    utran-GPSDrift-15, utran-GPSDrift-25, utran-GPSDrift-50}

UTRAN-GPSReferenceTime ::=
    -- For utran-GPSTimingOfCell values above 2322431999999 are not
    -- used in this version of the specification
    -- Actual value utran-GPSTimingOfCell = (ms-part * 4294967296) + ls-part
    utran-GPSTimingOfCell         SEQUENCE {
        ms-part                    INTEGER (0..1023),
        ls-part                     INTEGER (0..4294967295)
    },
    modeSpecificInfo              CHOICE {
        fdd                        SEQUENCE {
            referenceIdentity       PrimaryCPICH-Info
        },
        tdd                        SEQUENCE {
            referenceIdentity       CellParametersID
        }
    }
    sfm                            OPTIONAL,
    sfm                            INTEGER (0..4095)
}

UTRAN-GPSReferenceTimeResult ::=
    -- For ue-GPSTimingOfCell values above 371589119999999 are not
    -- used in this version of the specification
    -- Actual value ue-GPSTimingOfCell = (ms-part * 4294967296) + ls-part
    ue-GPSTimingOfCell           SEQUENCE {
        ms-part                    INTEGER (0.. 16383),

```

```

    ls-part                                INTEGER (0..4294967295)
  },
  modeSpecificInfo                         CHOICE {
    fdd                                     SEQUENCE {
      referenceIdentity                    PrimaryCPICH-Info
    },
    tdd                                     SEQUENCE {
      referenceIdentity                    CellParametersID
    }
  },
  sfn                                       INTEGER (0..4095)
}

VarianceOfRLC-BufferPayload ::=          ENUMERATED {
  plv0, plv4, plv8, plv16, plv32, plv64,
  plv128, plv256, plv512, plv1024,
  plv2k, plv4k, plv8k, plv16k, spare2, spare1 }

-- Actual value W = IE value * 0.1
W ::=                                     INTEGER (0..20)

-- *****
--
--   OTHER INFORMATION ELEMENTS (10.3.8)
--
-- *****

BCC ::=                                   INTEGER (0..7)

BCCH-ModificationInfo ::=                SEQUENCE {
  mib-ValueTag                             MIB-ValueTag,
  bcch-ModificationTime                    BCCH-ModificationTime           OPTIONAL
}

-- Actual value BCCH-ModificationTime = IE value * 8
BCCH-ModificationTime ::=                INTEGER (0..511)

BSIC ::=                                  SEQUENCE {
  ncc                                       NCC,
  bcc                                       BCC
}

CBS-DRX-Level1Information ::=            SEQUENCE {
  ctch-AllocationPeriod                    INTEGER (1..256),
  cbs-FrameOffset                          INTEGER (0..255)
}

CDMA2000-Message ::=                     SEQUENCE {
  msg-Type                                 BIT STRING (SIZE (8)),
  payload                                  BIT STRING (SIZE (1..512))
}

CDMA2000-MessageList ::=                  SEQUENCE (SIZE (1..maxInterSysMessages)) OF
  CDMA2000-Message

CDMA2000-UMTS-Frequency-List ::=          SEQUENCE (SIZE (1..maxNumCDMA2000Freqs)) OF
  FrequencyInfoCDMA2000

CellValueTag ::=                          INTEGER (1..4)

--Actual value = 2^(IE value)
ExpirationTimeFactor ::=                  INTEGER (1..8)

FDD-UMTS-Frequency-List ::=              SEQUENCE (SIZE (1..maxNumFDDFreqs)) OF
  FrequencyInfoFDD

FrequencyInfoCDMA2000 ::=                 SEQUENCE {
  band-Class                               BIT STRING (SIZE (5)),
  cdma-Freq                               BIT STRING (SIZE(11))
}

GERAN-SystemInfoBlock ::=                 OCTET STRING (SIZE (1..23))

GERAN-SystemInformation ::=               SEQUENCE (SIZE (1..maxGERAN-SI)) OF GERAN-SystemInfoBlock

GSM-BA-Range ::=                          SEQUENCE {
  gsmLowRangeUARFCN                       UARFCN,
  gsmUpRangeUARFCN                       UARFCN
}

```

```

}

GSM-BA-Range-List ::= SEQUENCE (SIZE (1..maxNumGSMFreqRanges)) OF
                        GSM-BA-Range

-- This IE is formatted as 'TLV' and is coded in the same way as the Mobile Station Classmark 2
-- information element in [5]. The first octet is the Mobile station classmark 2 IEI and its value
-- shall be set to 33H. The second octet is the Length of mobile station classmark 2 and its value
-- shall be set to 3. The octet 3 contains the first octet of the value part of the Mobile Station
-- Classmark 2 information element, the octet 4 contains the second octet of the value part of the
-- Mobile Station Classmark 2 information element and so on. For each of these octets, the first/
-- leftmost/ most significant bit of the octet contains b8 of the corresponding octet of the Mobile
-- Station Classmark 2.
GSM-Classmark2 ::= OCTET STRING (SIZE (5))

-- This IE is formatted as 'V' and is coded in the same way as the value part in the Mobile station
-- classmark 3 information element in [5]
-- The value part is specified by means of CSN.1, which encoding results in a bit string, to which
-- final padding may be appended upto the next octet boundary [5]. The first/ leftmost bit of the
-- CSN.1 bit string is placed in the first/ leftmost/ most significant bit of the first
-- octet. This continues until the last bit of the CSN.1 bit string, which is placed in the last/
-- rightmost/ least significant bit of the last octet.
GSM-Classmark3 ::= OCTET STRING (SIZE (1..32))

GSM-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                    BIT STRING (SIZE (1..512))

GsmSecurityCapability ::= BIT STRING {
                            -- For each bit value "0" means false/ not supported
                            a5-7(0),
                            a5-6(1),
                            a5-5(2),
                            a5-4(3),
                            a5-3(4),
                            a5-2(5),
                            a5-1(6)
                            } (SIZE (7))

IdentificationOfReceivedMessage ::= SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    receivedMessageType       ReceivedMessageType
}

InterRAT-ChangeFailureCause ::= CHOICE {
    configurationUnacceptable NULL,
    physicalChannelFailure   NULL,
    protocolError             ProtocolErrorInformation,
    unspecified               NULL,
    spare4                     NULL,
    spare3                     NULL,
    spare2                     NULL,
    spare1                     NULL
}

GERANIu-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                        BIT STRING (SIZE (1..32768))

GERANIu-RadioAccessCapability ::= BIT STRING (SIZE (1..170))

InterRAT-UE-RadioAccessCapability ::= CHOICE {
    gsm SEQUENCE {
        gsm-Classmark2 GSM-Classmark2,
        gsm-Classmark3 GSM-Classmark3
    },
    cdma2000 SEQUENCE {
        cdma2000-MessageList CDMA2000-MessageList
    }
}

InterRAT-UE-RadioAccessCapability-r5 ::= CHOICE {
    gsm SEQUENCE {
        gsm-Classmark2 GSM-Classmark2,
        gsm-Classmark3 GSM-Classmark3
    },
    geranIu SEQUENCE {
        geranIu-RadioAccessCapability GERANIu-RadioAccessCapability
    },
}

```

```

    cdma2000
      cdma2000-MessageList
    }
}

InterRAT-UE-RadioAccessCapabilityList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
InterRAT-UE-RadioAccessCapability

InterRAT-UE-RadioAccessCapabilityList-r5 ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
InterRAT-UE-RadioAccessCapability-r5

InterRAT-UE-SecurityCapability ::= CHOICE {
  gsm
    gsmSecurityCapability
  }
}

InterRAT-UE-SecurityCapList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
InterRAT-UE-SecurityCapability

InterRAT-HO-FailureCause ::= CHOICE {
  configurationUnacceptable
  physicalChannelFailure
  protocolError
  interRAT-ProtocolError
  unspecified
  spare11
  spare10
  spare9
  spare8
  spare7
  spare6
  spare5
  spare4
  spare3
  spare2
  spare1
}

MasterInformationBlock ::= SEQUENCE {
  mib-ValueTag
  -- TABULAR: The PLMN identity and ANSI-41 core network information
  -- are included in PLMN-Type.
  plmn-Type
  sibSb-ReferenceList
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions
}

MIB-ValueTag ::= INTEGER (1..8)

NCC ::= INTEGER (0..7)

PLMN-ValueTag ::= INTEGER (1..256)

PredefinedConfigIdentityAndValueTag ::= SEQUENCE {
  predefinedConfigIdentity
  predefinedConfigValueTag
}

ProtocolErrorInformation ::= SEQUENCE {
  diagnosticsType
  type1
    protocolErrorCause
  },
  spare
}

ReceivedMessageType ::= ENUMERATED {
  activeSetUpdate,
  cellChangeOrderFromUTRAN,
  cellUpdateConfirm,
  counterCheck,
  downlinkDirectTransfer,
  interRATHandoverCommand,
  measurementControl,
}

```

```

        pagingType2,
        physicalChannelReconfiguration,
        physicalSharedChannelAllocation,
        radioBearerReconfiguration,
        radioBearerRelease,
        radioBearerSetup,
        rrcConnectionRelease,
        rrcConnectionReject,
        rrcConnectionSetup,
        securityModeCommand,
        signallingConnectionRelease,
        transportChannelReconfiguration,
        transportFormatCombinationControl,
        ueCapabilityEnquiry,
        ueCapabilityInformationConfirm,
        uplinkPhysicalChannelControl,
        uraUpdateConfirm,
        utranMobilityInformation,
        assistanceDataDelivery,
        spare5, spare4, spare3, spare2,
        spare1
    }
}

Rplmn-Information ::= SEQUENCE {
    gsm-BA-Range-List      GSM-BA-Range-List      OPTIONAL,
    fdd-UMTS-Frequency-List FDD-UMTS-Frequency-List
    OPTIONAL,
    tdd-UMTS-Frequency-List TDD-UMTS-Frequency-List
    OPTIONAL,
    cdma2000-UMTS-Frequency-List CDMA2000-UMTS-Frequency-List
    OPTIONAL
}

Rplmn-Information-r4 ::= SEQUENCE {
    gsm-BA-Range-List      GSM-BA-Range-List      OPTIONAL,
    fdd-UMTS-Frequency-List FDD-UMTS-Frequency-List OPTIONAL,
    tdd384-UMTS-Frequency-List TDD-UMTS-Frequency-List OPTIONAL,
    tdd128-UMTS-Frequency-List TDD-UMTS-Frequency-List OPTIONAL,
    cdma2000-UMTS-Frequency-List CDMA2000-UMTS-Frequency-List OPTIONAL
}

SchedulingInformation ::= SEQUENCE {
    scheduling SEQUENCE {
        segCount SegCount DEFAULT 1,
        sib-Pos CHOICE {
            -- The element name indicates the repetition period and the value
            -- (multiplied by two) indicates the position of the first segment.
            rep4 INTEGER (0..1),
            rep8 INTEGER (0..3),
            rep16 INTEGER (0..7),
            rep32 INTEGER (0..15),
            rep64 INTEGER (0..31),
            rep128 INTEGER (0..63),
            rep256 INTEGER (0..127),
            rep512 INTEGER (0..255),
            rep1024 INTEGER (0..511),
            rep2048 INTEGER (0..1023),
            rep4096 INTEGER (0..2047)
        },
        sib-PosOffsetInfo SibOFF-List OPTIONAL
    }
}

SchedulingInformationSIB ::= SEQUENCE {
    sib-Type SIB-TypeAndTag,
    scheduling SchedulingInformation
}

SchedulingInformationSIBSb ::= SEQUENCE {
    sibSb-Type SIBSb-TypeAndTag,
    scheduling SchedulingInformation
}

SegCount ::= INTEGER (1..16)

SegmentIndex ::= INTEGER (1..15)

-- Actual value SFN-Prime = 2 * IE value

```

```

SFN-Prime ::=                               INTEGER (0..2047)

SIB-Data-fixed ::=                          BIT STRING (SIZE (222))

SIB-Data-variable ::=                       BIT STRING (SIZE (1..214))

SIBOccurIdentity ::=                        INTEGER (0..15)

SIBOccurrenceIdentityAndValueTag ::=        SEQUENCE {
    sibOccurIdentity                        SIBOccurIdentity,
    sibOccurValueTag                       SIBOccurValueTag
}

SIBOccurValueTag ::=                       INTEGER (0..15)

SIB-ReferenceList ::=                      SEQUENCE (SIZE (1..maxSIB)) OF
    SchedulingInformationSIB

SIBSb-ReferenceList ::=                    SEQUENCE (SIZE (1..maxSIB)) OF
    SchedulingInformationSIBSb

SIB-ReferenceListFACH ::=                  SEQUENCE (SIZE (1..maxSIB-FACH)) OF
    SchedulingInformationSIB

SIB-Type ::=                               ENUMERATED {
    masterInformationBlock,
    systemInformationBlockType1,
    systemInformationBlockType2,
    systemInformationBlockType3,
    systemInformationBlockType4,
    systemInformationBlockType5,
    systemInformationBlockType6,
    systemInformationBlockType7,
    systemInformationBlockType8,
    systemInformationBlockType9,
    systemInformationBlockType10,
    systemInformationBlockType11,
    systemInformationBlockType12,
    systemInformationBlockType13,
    systemInformationBlockType13-1,
    systemInformationBlockType13-2,
    systemInformationBlockType13-3,
    systemInformationBlockType13-4,
    systemInformationBlockType14,
    systemInformationBlockType15,
    systemInformationBlockType15-1,
    systemInformationBlockType15-2,
    systemInformationBlockType15-3,
    systemInformationBlockType16,
    systemInformationBlockType17,
    systemInformationBlockType15-4,
    systemInformationBlockType18,
    schedulingBlock1,
    schedulingBlock2,
    systemInformationBlockType15-5,
    spare1, spare2 }

SIB-TypeAndTag ::=                         CHOICE {
    sysInfoType1                            PLMN-ValueTag,
    sysInfoType2                            CellValueTag,
    sysInfoType3                            CellValueTag,
    sysInfoType4                            CellValueTag,
    sysInfoType5                            CellValueTag,
    sysInfoType6                            CellValueTag,
    sysInfoType7                            NULL,
    sysInfoType8                            CellValueTag,
    sysInfoType9                            NULL,
    sysInfoType10                           NULL,
    sysInfoType11                           CellValueTag,
    sysInfoType12                           CellValueTag,
    sysInfoType13                           CellValueTag,
    sysInfoType13-1                         CellValueTag,
    sysInfoType13-2                         CellValueTag,
    sysInfoType13-3                         CellValueTag,
    sysInfoType13-4                         CellValueTag,
    sysInfoType14                           NULL,

```

```

sysInfoType15          CellValueTag,
sysInfoType16          PredefinedConfigIdentityAndValueTag,
sysInfoType17          NULL,
sysInfoType15-1       CellValueTag,
sysInfoType15-2       SIBOccurrenceIdentityAndValueTag,
sysInfoType15-3       SIBOccurrenceIdentityAndValueTag,
sysInfoType15-4       CellValueTag,
sysInfoType18          CellValueTag,
sysInfoType15-5       CellValueTag,
spare5                 NULL,
spare4                 NULL,
spare3                 NULL,
spare2                 NULL,
spare1                 NULL
}

SIBSb-TypeAndTag ::= CHOICE {
  sysInfoType1         PLMN-ValueTag,
  sysInfoType2         CellValueTag,
  sysInfoType3         CellValueTag,
  sysInfoType4         CellValueTag,
  sysInfoType5         CellValueTag,
  sysInfoType6         CellValueTag,
  sysInfoType7         NULL,
  sysInfoType8         CellValueTag,
  sysInfoType9         NULL,
  sysInfoType10        NULL,
  sysInfoType11        CellValueTag,
  sysInfoType12        CellValueTag,
  sysInfoType13        CellValueTag,
  sysInfoType13-1     CellValueTag,
  sysInfoType13-2     CellValueTag,
  sysInfoType13-3     CellValueTag,
  sysInfoType13-4     CellValueTag,
  sysInfoType14        NULL,
  sysInfoType15        CellValueTag,
  sysInfoType16        PredefinedConfigIdentityAndValueTag,
  sysInfoType17        NULL,
  sysInfoTypeSB1       CellValueTag,
  sysInfoTypeSB2       CellValueTag,
  sysInfoType15-1     CellValueTag,
  sysInfoType15-2     SIBOccurrenceIdentityAndValueTag,
  sysInfoType15-3     SIBOccurrenceIdentityAndValueTag,
  sysInfoType15-4     CellValueTag,
  sysInfoType18        CellValueTag,
  sysInfoType15-5     CellValueTag,
  spare3               NULL,
  spare2               NULL,
  spare1               NULL
}

SibOFF ::= ENUMERATED {
  so2, so4, so6, so8, so10,
  so12, so14, so16, so18,
  so20, so22, so24, so26,
  so28, so30, so32 }

SibOFF-List ::= SEQUENCE (SIZE (1..15)) OF
  SibOFF

SysInfoType1 ::= SEQUENCE {
  -- Core network IEs
  cn-CommonGSM-MAP-NAS-SysInfo  NAS-SystemInformationGSM-MAP,
  cn-DomainSysInfoList          CN-DomainSysInfoList,
  -- User equipment IEs
  ue-ConnTimersAndConstants      UE-ConnTimersAndConstants      OPTIONAL,
  ue-IdleTimersAndConstants      UE-IdleTimersAndConstants      OPTIONAL,
  -- Extension mechanism for non- release99 information
  v3a0NonCriticalExtensions      SEQUENCE {
    sysInfoType1-v3a0ext         SysInfoType1-v3a0ext-IEs,
    nonCriticalExtensions         SEQUENCE {} OPTIONAL
  }
}

SysInfoType1-v3a0ext-IEs ::= SEQUENCE {
  ue-ConnTimersAndConstants-v3a0ext  UE-ConnTimersAndConstants-v3a0ext,
  ue-IdleTimersAndConstants-v3a0ext  UE-IdleTimersAndConstants-v3a0ext
}

```

```

SysInfoType2 ::=
    -- UTRAN mobility IEs
    ura-IdentityList          URA-IdentityList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions     SEQUENCE {}
    OPTIONAL
}

SysInfoType3 ::=
    sib4indicator            BOOLEAN,
    -- UTRAN mobility IEs
    cellIdentity              CellIdentity,
    cellSelectReselectInfo    CellSelectReselectInfoSIB-3-4,
    cellAccessRestriction     CellAccessRestriction,
    -- Extension mechanism for non- release99 information
    v4xyNonCriticalExtensions SEQUENCE {
        sysInfoType3-v4xyext   SysInfoType3-v4xyext-IEs,
        v5xyNonCriticalExtension SEQUENCE {
            sysInfoType3-v5xyext SysInfoType3-v5xyext,
            nonCriticalExtensions SEQUENCE {}
        }
    }
    OPTIONAL
}

SysInfoType3-v4xyext-IEs ::= SEQUENCE {
    mapping-LCR          Mapping-LCR-r4
}
OPTIONAL

SysInfoType3-v5xyext ::= SEQUENCE {
    cellSelectReselectInfo-v5xyext CellSelectReselectInfo-v5xyExt
}
OPTIONAL

SysInfoType4 ::=
    -- UTRAN mobility IEs
    cellIdentity              CellIdentity,
    cellSelectReselectInfo    CellSelectReselectInfoSIB-3-4,
    cellAccessRestriction     CellAccessRestriction,
    -- Extension mechanism for non- release99 information
    v4xyNonCriticalExtensions SEQUENCE {
        sysInfoType4-v4xyext   SysInfoType4-v4xyext-IEs,
        v5xyNonCriticalExtension SEQUENCE {
            sysInfoType4-v5xyext SysInfoType4-v5xyext,
            nonCriticalExtensions SEQUENCE {}
        }
    }
    OPTIONAL
}

SysInfoType4-v4xyext-IEs ::= SEQUENCE {
    mapping-LCR          Mapping-LCR-r4
}
OPTIONAL

SysInfoType4-v5xyext ::= SEQUENCE {
    cellSelectReselectInfo-v5xyext CellSelectReselectInfo-v5xyExt
}
OPTIONAL

SysInfoType5 ::=
    sib6indicator            BOOLEAN,
    -- Physical channel IEs
    pich-PowerOffset         PICH-PowerOffset,
    modeSpecificInfo         CHOICE {
        fdd                   SEQUENCE {
            aich-PowerOffset   AICH-PowerOffset
        },
        tdd                     SEQUENCE {
            -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, the following IEs should be absent
            -- and the info included in the tdd128SpecificInfo instead.
            -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
            -- included.
            pusch-SysInfoList-SFN   PUSCH-SysInfoList-SFN   OPTIONAL,
            pdsch-SysInfoList-SFN   PDSCH-SysInfoList-SFN   OPTIONAL,
            openLoopPowerControl-TDD OpenLoopPowerControl-TDD
        }
    },
    primaryCCPCH-Info        PrimaryCCPCH-Info          OPTIONAL,
    prach-SystemInformationList PRACH-SystemInformationList,
    sccpch-SystemInformationList SCCPCH-SystemInformationList,
    -- cbs-DRX-Level1Information is conditional on any of the CTCH indicator IEs in
    -- sccpch-SystemInformationList

```

```

    cbs-DRX-Level1Information      CBS-DRX-Level1Information      OPTIONAL,
-- Extension mechanism for non- release99 information
v4xyNonCriticalExtensions        SEQUENCE {
    sysInfoType5-v4xyext          SysInfoType5-v4xyext-IEs      OPTIONAL,
-- Extension mechanism for non- rel-4 information
v5xyNonCriticalExtensions        SEQUENCE {
    sysInfoType5-v5xyext          SysInfoType5-v5xyext-IEs      OPTIONAL,
    nonCriticalExtensions          SEQUENCE {}                      OPTIONAL
    }
    }
}

SysInfoType5-v4xyext-IEs ::= SEQUENCE {
--The following IE PNBSCH-Allocation-r4 shall be used for 3.84Mcps TDD only.
pNBSCH-Allocation-r4            PNBSCH-Allocation-r4            OPTIONAL,
-- In case of TDD, the following IE is included instead of the
-- IE up-IPDL-Parameter in up-OTDOA-AssistanceData.
openLoopPowerControl-IPDL-TDD   OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL,
-- If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included in
-- PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
-- IE rach-TransportFormatSet shall be absent and the corresponding IE in the following
-- PRACH-SystemInformationList-LCR-r4 shall be used
prach-SystemInformationList-LCR-r4 PRACH-SystemInformationList-LCR-r4  OPTIONAL,
tdd128SpecificInfo              SEQUENCE {
    pusch-SysInfoList-SFN        PUSCH-SysInfoList-SFN-LCR-r4  OPTIONAL,
    pdsch-SysInfoList-SFN        PDSCH-SysInfoList-SFN-LCR-r4  OPTIONAL,
    pCCPCH-LCR-ExtensionsList    PrimaryCCPCH-Info-LCR-r4-ext  OPTIONAL,
    sCCPCH-LCR-ExtensionsList    SCCPCH-SystemInformationList-LCR-r4-ext  OPTIONAL
    }
}

SysInfoType5-v5xyext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo          SEQUENCE {
        pusch-SysInfoList-SFN    PUSCH-SysInfoList-SFN-HCR-r5  OPTIONAL,
        pdsch-SysInfoList-SFN    PDSCH-SysInfoList-SFN-HCR-r5  OPTIONAL
    }
}

SysInfoType6 ::= SEQUENCE {
-- Physical channel IEs
    pich-PowerOffset            PICH-PowerOffset,
    modeSpecificInfo            CHOICE {
        fdd                      SEQUENCE {
            aich-PowerOffset      AICH-PowerOffset,
            -- dummy is not used in this version of specification, it should
            -- not be sent and if received it should be ignored.
            dummy                  CSICH-PowerOffset      OPTIONAL
        },
        tdd                      SEQUENCE {
            -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList-SFN,
            -- pdsch-SysInfoList-SFN and openLoopPowerControl-TDD should be absent
            -- and the info included in the tdd128SpecificInfo instead.
            -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should
            -- also be included.
            pusch-SysInfoList-SFN  PUSCH-SysInfoList-SFN      OPTIONAL,
            pdsch-SysInfoList-SFN  PDSCH-SysInfoList-SFN      OPTIONAL,
            openLoopPowerControl-TDD OpenLoopPowerControl-TDD
        }
    },
    primaryCCPCH-Info            PrimaryCCPCH-Info            OPTIONAL,
    prach-SystemInformationList  PRACH-SystemInformationList  OPTIONAL,
    sCCPCH-SystemInformationList SCCPCH-SystemInformationList  OPTIONAL,
    cbs-DRX-Level1Information    CBS-DRX-Level1Information    OPTIONAL,
-- Conditional on any of the CTCH indicator IEs in
-- sCCPCH-SystemInformationList
-- Extension mechanism for non- release99 information
v4xyNonCriticalExtensions        SEQUENCE {
    sysInfoType6-v4xyext          SysInfoType6-v4xyext-IEs      OPTIONAL,
-- Extension mechanism for non- rel-4 information
v5xyNonCriticalExtensions        SEQUENCE {
    sysInfoType6-v5xyext          SysInfoType6-v5xyext-IEs      OPTIONAL,
    nonCriticalExtensions          SEQUENCE {}                      OPTIONAL
    }
    }
}

SysInfoType6-v4xyext-IEs ::= SEQUENCE {
-- openLoopPowerControl-IPDL-TDD is present only if IPDLs are applied for TDD

```

```

openLoopPowerControl-IPDL-TDD    OpenLoopPowerControl-IPDL-TDD-r4    OPTIONAL,
-- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included
-- in PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
-- IE rach-TransportFormatSet shall be absent and the corresponding IEs in the following
-- PRACH-SystemInformationList-LCR-r4 shall be used
prach-SystemInformationList-LCR-r4  PRACH-SystemInformationList-LCR-r4  OPTIONAL,
tdd128SpecificInfo                SEQUENCE {
    pusch-SysInfoList-SFN          PUSCH-SysInfoList-SFN-LCR-r4    OPTIONAL,
    pdsch-SysInfoList-SFN          PDSCH-SysInfoList-SFN-LCR-r4    OPTIONAL,
    pCCPCH-LCR-Extensions          PrimaryCCPCH-Info-LCR-r4-ext    OPTIONAL,
    sCCPCH-LCR-ExtensionsList      SCCPCH-SystemInformationList-LCR-r4-ext  OPTIONAL
}
}

SysInfoType6-v5xyext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo            SEQUENCE {
        pusch-SysInfoList-SFN      PUSCH-SysInfoList-SFN-HCR-r5    OPTIONAL,
        pdsch-SysInfoList-SFN      PDSCH-SysInfoList-SFN-HCR-r5    OPTIONAL
    }
}

SysInfoType7 ::= SEQUENCE {
    -- Physical channel IEs
    modeSpecificInfo              CHOICE {
        fdd                        SEQUENCE {
            ul-Interference        UL-Interference
        },
        tdd                        NULL
    },
    prach-Information-SIB5-List    DynamicPersistenceLevelList,
    prach-Information-SIB6-List    DynamicPersistenceLevelList    OPTIONAL,
    expirationTimeFactor          ExpirationTimeFactor            OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}

SysInfoType8 ::= SEQUENCE {
    -- User equipment IEs
    cpch-Parameters                CPCH-Parameters,
    -- Physical channel IEs
    cpch-SetInfoList               CPCH-SetInfoList,
    csich-PowerOffset              CSICH-PowerOffset,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}

SysInfoType9 ::= SEQUENCE {
    -- Physical channel IEs
    cpch-PersistenceLevelsList     CPCH-PersistenceLevelsList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}

SysInfoType10 ::= SEQUENCE {
    -- User equipment IEs
    drac-SysInfoList              DRAC-SysInfoList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {}                                OPTIONAL
}

SysInfoType11 ::= SEQUENCE {
    sib12indicator                 BOOLEAN,
    -- Measurement IEs
    fach-MeasurementOccasionInfo    FACH-MeasurementOccasionInfo    OPTIONAL,
    measurementControlSysInfo       MeasurementControlSysInfo,
    -- Extension mechanism for non- release99 information
    v4xyNonCriticalExtensions       SEQUENCE {
        sysInfoType11-v4xyext      SysInfoType11-v4xyext-IEs        OPTIONAL,
        v5xyNonCriticalExtension    SEQUENCE {
            sysInfoType11-v5xyext  SysInfoType11-v5xyext-IEs,
            nonCriticalExtensions  SEQUENCE {}                                OPTIONAL
        }
    }
}

SysInfoType11-v4xyext-IEs ::= SEQUENCE {
    fach-MeasurementOccasionInfo-LCR-Ext  FACH-MeasurementOccasionInfo-LCR-r4-ext  OPTIONAL,
    measurementControlSysInfo-LCR         MeasurementControlSysInfo-LCR-r4-ext
}

```

```

}

SysInfoType11-v5xyext-IEs ::= SEQUENCE {
  --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
  newIntraFrequencyCellInfoList-v5xyext SEQUENCE (SIZE (1..maxCellMeas)) OF
                                         CellSelectReselectInfo-v5xyExt OPTIONAL,
  --The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
  newInterFrequencyCellInfoList-v5xyext SEQUENCE (SIZE (1..maxCellMeas)) OF
                                         CellSelectReselectInfo-v5xyExt OPTIONAL,
  --The order of the list corresponds to the order of cell in newInterRATCellInfoList
  newInterRATCellInfoList-v5xyext SEQUENCE (SIZE (1..maxCellMeas)) OF
                                         CellSelectReselectInfo-v5xyExt OPTIONAL,
  intraFreqEventCriteriaList-v5xyext Intra-FreqEventCriteriaList-v5xyext OPTIONAL,
  intraFreqReportingCriteria-lb-r5ext IntraFreqReportingCriteria-lb-r5ext OPTIONAL,
  intraFreqEvent-ld-r5ext IntraFreqEvent-ld-r5ext OPTIONAL
}

SysInfoType12 ::= SEQUENCE {
  -- Measurement IEs
  fach-MeasurementOccasionInfo FACH-MeasurementOccasionInfo OPTIONAL,
  measurementControlSysInfo MeasurementControlSysInfo,
  -- Extension mechanism for non- release99 information
  v4xyNonCriticalExtensions SEQUENCE {
    sysInfoType12-v4xyext SysInfoType12-v4xyext-IEs OPTIONAL,
    v5xyNonCriticalExtension SEQUENCE {
      sysInfoType12-v5xyext SysInfoType12-v5xyext-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
  } OPTIONAL
}

SysInfoType12-v4xyext-IEs ::= SEQUENCE {
  fach-MeasurementOccasionInfo-LCR-Ext FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
  measurementControlSysInfo-LCR MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType12-v5xyext-IEs ::= SEQUENCE {
  --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
  newIntraFrequencyCellInfoList-v5xyext SEQUENCE (SIZE (1..maxCellMeas)) OF
                                         CellSelectReselectInfo-v5xyExt OPTIONAL,
  --The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
  newInterFrequencyCellInfoList-v5xyext SEQUENCE (SIZE (1..maxCellMeas)) OF
                                         CellSelectReselectInfo-v5xyExt OPTIONAL,
  --The order of the list corresponds to the order of cell in newInterRATCellInfoList
  newInterRATCellInfoList-v5xyext SEQUENCE (SIZE (1..maxCellMeas)) OF
                                         CellSelectReselectInfo-v5xyExt OPTIONAL,
  intraFreqEventCriteriaList-v5xyext Intra-FreqEventCriteriaList-v5xyext OPTIONAL,
  intraFreqReportingCriteria-lb-r5ext IntraFreqReportingCriteria-lb-r5ext OPTIONAL,
  intraFreqEvent-ld-r5ext IntraFreqEvent-ld-r5ext OPTIONAL
}

SysInfoType13 ::= SEQUENCE {
  -- Core network IEs
  cn-DomainSysInfoList CN-DomainSysInfoList,
  -- User equipment IEs
  ue-IdleTimersAndConstants UE-IdleTimersAndConstants OPTIONAL,
  capabilityUpdateRequirement CapabilityUpdateRequirement OPTIONAL,
  -- Extension mechanism for non- release99 information
  v3a0NonCriticalExtensions SEQUENCE {
    sysInfoType13-v3a0ext SysInfoType13-v3a0ext-IEs,
    v4xyNonCriticalExtensions SEQUENCE {
      sysInfoType13-v4xyext SysInfoType13-v4xyext-IEs,
      -- Extension mechanism for non- release99 information
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
  } OPTIONAL
}

SysInfoType13-v3a0ext-IEs ::= SEQUENCE {
  ue-IdleTimersAndConstants-v3a0ext UE-IdleTimersAndConstants-v3a0ext
}

SysInfoType13-v4xyext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4Ext CapabilityUpdateRequirement-r4-ext OPTIONAL
}

SysInfoType13-1 ::= SEQUENCE {
  -- ANSI-41 IEs

```

```

    ansi-41-RAND-Information      ANSI-41-RAND-Information,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType13-2 ::=              SEQUENCE {
-- ANSI-41 IEs
    ansi-41-UserZoneID-Information ANSI-41-UserZoneID-Information,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType13-3 ::=              SEQUENCE {
-- ANSI-41 IEs
    ansi-41-PrivateNeighbourListInfo ANSI-41-PrivateNeighbourListInfo,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType13-4 ::=              SEQUENCE {
-- ANSI-41 IEs
    ansi-41-GlobalServiceRedirectInfo
                                ANSI-41-GlobalServiceRedirectInfo,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType14 ::=                SEQUENCE {
-- Physical channel IEs
    individualTS-InterferenceList IndividualTS-InterferenceList,
    expirationTimeFactor          ExpirationTimeFactor                    OPTIONAL,
-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType15 ::=                SEQUENCE {
-- Measurement IEs

    ue-positioning-GPS-CipherParameters UE-Positioning-CipherParameters  OPTIONAL,
    ue-positioning-GPS-ReferenceLocation ReferenceLocation,
    ue-positioning-GPS-ReferenceTime   UE-Positioning-GPS-ReferenceTime,

    ue-positioning-GPS-Real-timeIntegrity BadSatList                    OPTIONAL,
-- Extension mechanism for non- release99 information
    v4xyNonCriticalExtensions        SEQUENCE {
        sysInfoType15-v4xyext        SysInfoType15-v4xyext-IEs,
-- Extension mechanism for non- release4 information
        nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
    } OPTIONAL
}

SysInfoType15-v4xyext-IEs ::= SEQUENCE {
    up-IPDL-Parameters-TDD          UE-Positioning-IPDL-Parameters-TDD-r4-ext  OPTIONAL
}

SysInfoType15-1 ::=              SEQUENCE {
-- DGPS corrections
    ue-positioning-GPS-DGPS-Corrections UE-Positioning-GPS-DGPS-Corrections,

-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType15-2 ::=              SEQUENCE {
-- Ephemeris and clock corrections
    transmissionTOW                INTEGER (0..604799),
    satID                            SatID,
    ephemerisParameter              EphemerisParameter,

-- Extension mechanism for non- release99 information
    nonCriticalExtensions        SEQUENCE {}                                OPTIONAL
}

SysInfoType15-3 ::=              SEQUENCE {
-- Almanac and other data
    transmissionTOW                INTEGER (0.. 604799),
    ue-positioning-GPS-Almanac      UE-Positioning-GPS-Almanac
OPTIONAL,

```

```

        ue-positioning-GPS-IonosphericModel          UE-Positioning-GPS-IonosphericModel
OPTIONAL,
        ue-positioning-GPS-UTC-Model                UE-Positioning-GPS-UTC-Model
OPTIONAL,
        satMask                                     BIT STRING (SIZE (1..32))  OPTIONAL,
        lsbTOW                                       BIT STRING (SIZE (8))    OPTIONAL,
-- Extension mechanism for non- release99 information
        nonCriticalExtensions                        SEQUENCE {}              OPTIONAL
}

SysInfoType15-4 ::=                               SEQUENCE {
-- Measurement IEs
        ue-positioning-OTDOA-CipherParameters      UE-Positioning-CipherParameters      OPTIONAL,
        ue-positioning-OTDOA-AssistanceData        UE-Positioning-OTDOA-AssistanceData,
        v3a0NonCriticalExtensions                  SEQUENCE {
                sysInfoType15-4-v3a0ext            SysInfoType15-4-v3a0ext,
-- Extension mechanism for non- release99 information
                v4xyNonCriticalExtensions          SEQUENCE {
                        sysInfoType15-4-v4xyext    SysInfoType15-4-v4xyext,
                        nonCriticalExtensions      SEQUENCE {}      OPTIONAL
                } OPTIONAL
        } OPTIONAL
}

SysInfoType15-4-v3a0ext ::= SEQUENCE {
        sfn-Offset-Validity                        SFN-Offset-Validity      OPTIONAL
}

SysInfoType15-4-v4xyext ::= SEQUENCE {
        ue-Positioning-OTDOA-AssistanceData-r4ext UE-Positioning-OTDOA-AssistanceData-r4ext  OPTIONAL
}

SysInfoType15-5 ::=                               SEQUENCE {
-- Measurement IEs
        ue-positioning-OTDOA-AssistanceData-UEB    UE-Positioning-OTDOA-AssistanceData-UEB,
        v3a0NonCriticalExtensions                  SEQUENCE {
                sysInfoType15-5-v3a0ext            SysInfoType15-5-v3a0ext,
-- Extension mechanism for non- release99 information
                nonCriticalExtensions              SEQUENCE {}      OPTIONAL
        } OPTIONAL
}

SysInfoType15-5-v3a0ext ::= SEQUENCE {
        sfn-Offset-Validity                        SFN-Offset-Validity      OPTIONAL
}

SysInfoType16 ::=                               SEQUENCE {
-- Radio bearer IEs
        preDefinedRadioConfiguration              PreDefRadioConfiguration,
-- Extension mechanism for non- release99 information
        nonCriticalExtensions                        SEQUENCE {}              OPTIONAL
}

SysInfoType17 ::=                               SEQUENCE {
-- Physical channel IEs
-- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList and
-- pdsch-SysInfoList should be absent and the info included in the
-- tddl28SpecificInfo instead.
-- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
-- included.
        pusch-SysInfoList                          PUSCH-SysInfoList        OPTIONAL,
        pdsch-SysInfoList                          PDSCH-SysInfoList        OPTIONAL,
-- Extension mechanism for non- release99 information
        v4xyNonCriticalExtensions                  SEQUENCE {
                sysInfoType17-v4xyext              SysInfoType17-v4xyext-IEs,
                v5xyNonCriticalExtensions          SEQUENCE {
                        sysInfoType17-v5xyext      SysInfoType17-v5xyext-IEs  OPTIONAL,
                        nonCriticalExtensions      SEQUENCE {}      OPTIONAL
                } OPTIONAL
        } OPTIONAL
}

SysInfoType17-v4xyext-IEs ::= SEQUENCE {
        tddl28SpecificInfo                          SEQUENCE {
                pusch-SysInfoList                  PUSCH-SysInfoList-LCR-r4  OPTIONAL,
                pdsch-SysInfoList                  PDSCH-SysInfoList-LCR-r4  OPTIONAL
        } OPTIONAL
}

```

```

SysInfoType17-v5xyext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo          SEQUENCE {
        pusch-SysInfoList      PUSCH-SysInfoList-HCR-r5    OPTIONAL,
        pdsch-SysInfoList      PDSCH-SysInfoList-HCR-r5    OPTIONAL
    }
}

SysInfoType18 ::=
    SEQUENCE {
        idleModePLMNIdentities    PLMNIdentitiesOfNeighbourCells    OPTIONAL,
        connectedModePLMNIdentities PLMNIdentitiesOfNeighbourCells    OPTIONAL,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions      SEQUENCE {}    OPTIONAL
    }

SysInfoTypeSB1 ::=
    SEQUENCE {
        -- Other IEs
        sib-ReferenceList          SIB-ReferenceList,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions      SEQUENCE {}    OPTIONAL
    }

SysInfoTypeSB2 ::=
    SEQUENCE {
        -- Other IEs
        sib-ReferenceList          SIB-ReferenceList,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions      SEQUENCE {}    OPTIONAL
    }

TDD-UMTS-Frequency-List ::=
    SEQUENCE (SIZE (1..maxNumTDDFreqs)) OF
        FrequencyInfoTDD

-- *****
--
--     ANSI-41 INFORMATION ELEMENTS (10.3.9)
--
-- *****

ANSI-41-GlobalServiceRedirectInfo ::= ANSI-41-NAS-Parameter
ANSI-41-PrivateNeighbourListInfo ::= ANSI-41-NAS-Parameter
ANSI-41-RAND-Information ::= ANSI-41-NAS-Parameter
ANSI-41-UserZoneID-Information ::= ANSI-41-NAS-Parameter
ANSI-41-NAS-Parameter ::= BIT STRING (SIZE (1..2048))

Min-P-REV ::= BIT STRING (SIZE (8))

NAS-SystemInformationANSI-41 ::= ANSI-41-NAS-Parameter
NID ::= BIT STRING (SIZE (16))

P-REV ::= BIT STRING (SIZE (8))

SID ::= BIT STRING (SIZE (15))

END

```

11.4 Constant definitions

```
Constant-definitions DEFINITIONS AUTOMATIC TAGS ::=
```

```
BEGIN
```

```

hiPDSCHidentities    INTEGER ::= 64
hiPUSCHidentities    INTEGER ::= 64
hiRM                 INTEGER ::= 256
maxAC                INTEGER ::= 16
maxAdditionalMeas    INTEGER ::= 4
maxASC               INTEGER ::= 8
maxASCmap            INTEGER ::= 7
maxASCpersist        INTEGER ::= 6
maxCCTrCH            INTEGER ::= 8
maxCellMeas          INTEGER ::= 32
maxCellMeas-1        INTEGER ::= 31
maxCNdomains         INTEGER ::= 4
maxCPCHsets          INTEGER ::= 16
maxDPCH-DLchan       INTEGER ::= 8
maxDPDCH-UL          INTEGER ::= 6
maxDRACclasses       INTEGER ::= 8

```

```

maxFACHPCH                INTEGER ::= 8
maxFreq                   INTEGER ::= 8
maxFreqBandsFDD           INTEGER ::= 8
maxFreqBandsTDD           INTEGER ::= 4
maxFreqBandsGSM           INTEGER ::= 16
maxGERAN-SI               INTEGER ::= 8
maxHProcesses             INTEGER ::= 8
maxHSDSCHTBIndex         INTEGER ::= 64
maxHSDSCHTBIndex-tdd384  INTEGER ::= 512
maxHSSCCHs                INTEGER ::= 4
maxInterSysMessages       INTEGER ::= 4
maxLoCHperRLC             INTEGER ::= 2
maxMAC-d-PDUsizes        INTEGER ::= 8
maxMeasEvent              INTEGER ::= 8
maxMeasIntervals          INTEGER ::= 3
maxMeasParEvent           INTEGER ::= 2
maxNumCDMA2000Freqs       INTEGER ::= 8
maxNumGSMFreqRanges       INTEGER ::= 32
maxNumFDDFreqs            INTEGER ::= 8
maxNumTDDFreqs            INTEGER ::= 8
maxNoOfMeas               INTEGER ::= 16
maxOtherRAT               INTEGER ::= 15
maxOtherRAT-16            INTEGER ::= 16
maxPage1                  INTEGER ::= 8
maxPCPCH-APsig            INTEGER ::= 16
maxPCPCH-APsubCh          INTEGER ::= 12
maxPCPCH-CDsig            INTEGER ::= 16
maxPCPCH-CDsubCh          INTEGER ::= 12
maxPCPCH-SF               INTEGER ::= 7
maxPCPCHs                 INTEGER ::= 64
maxPDCPAlgoType           INTEGER ::= 8
maxPDSCH                  INTEGER ::= 8
maxPDSCH-TFCigroups      INTEGER ::= 256
maxPRACH                  INTEGER ::= 16
maxPRACH-FPACH            INTEGER ::= 8
maxPredefConfig           INTEGER ::= 16
maxPUSCH                  INTEGER ::= 8
maxQueueIDs               INTEGER ::= 8
maxRABsetup               INTEGER ::= 16
maxRAT                    INTEGER ::= 16
maxRB                      INTEGER ::= 32
maxRBallRABs              INTEGER ::= 27
maxRBMuxOptions           INTEGER ::= 8
maxRBperRAB               INTEGER ::= 8
maxReportedGSMCells       INTEGER ::= 6
maxRL                      INTEGER ::= 8
maxRL-1                   INTEGER ::= 7
maxRFC3095-CID            INTEGER ::= 16384
maxROHC-PacketSizes-r4    INTEGER ::= 16
maxROHC-Profile-r4        INTEGER ::= 8
maxSat                     INTEGER ::= 16
maxSCCPCH                 INTEGER ::= 16
maxSIB                    INTEGER ::= 32
maxSIB-FACH                INTEGER ::= 8
maxSIBperMsg              INTEGER ::= 16
maxSRBsetup               INTEGER ::= 8
maxSystemCapability        INTEGER ::= 16
maxTF                      INTEGER ::= 32
maxTF-CPCH                INTEGER ::= 16
maxTFC                     INTEGER ::= 1024
maxTFCsub                  INTEGER ::= 1024
maxTFCI-2-Combs           INTEGER ::= 512
maxTGPS                    INTEGER ::= 6
maxTrCH                    INTEGER ::= 32
-- maxTrCHpreconf should be 16 but has been set to 32 for compatibility
maxTrCHpreconf            INTEGER ::= 32
maxTS                      INTEGER ::= 14
maxTS-1                    INTEGER ::= 13
maxTS-LCR                  INTEGER ::= 6
maxTS-LCR-1                INTEGER ::= 5
maxURA                     INTEGER ::= 8
maxURNTI-Group            INTEGER ::= 8

```

END

11.5 RRC information between network nodes

```
Internode-definitions DEFINITIONS AUTOMATIC TAGS ::=
```

```
BEGIN
```

```
IMPORTS
```

```

    HandoverToUTRANCommand,
    MeasurementReport,
    PhysicalChannelReconfiguration,
    RadioBearerReconfiguration,
    RadioBearerRelease,
    RadioBearerSetup,
    RRC-FailureInfo-r3-IEs,
    TransportChannelReconfiguration
FROM PDU-definitions

-- Core Network IEs :
    CN-DomainIdentity,
    CN-DomainInformationList,
    CN-DomainInformationListFull,
    CN-DRX-CycleLengthCoefficient,
    NAS-SystemInformationGSM-MAP,
-- UTRAN Mobility IEs :
    CellIdentity,
    URA-Identity,
-- User Equipment IEs :
    AccessStratumReleaseIndicator,
    C-RNTI,
    ChipRateCapability,
    DL-PhysChCapabilityFDD-v380ext,
    DL-PhysChCapabilityTDD,
    DL-PhysChCapabilityTDD-LCR-r4,
    GSM-Measurements,
    FailureCauseWithProtErr,
    MaxHcContextSpace,
    MaxNoPhysChBitsReceived,
    MaxROHC-ContextSessions-r4,
    NetworkAssistedGPS-Supported,
    RadioFrequencyBandTDDList,
    RLC-Capability,
    RRC-MessageSequenceNumber,
    SecurityCapability,
    SimultaneousSCCPCH-DPCH-Reception,
    STARTList,
    STARTSingle,
    START-Value,
    SupportOfDedicatedPilotsForChEstimation,
    TransportChannelCapability,
    TxRxFrequencySeparation,
    U-RNTI,
    UE-MultiModeRAT-Capability,
    UE-PowerClass-v370,
    UE-RadioAccessCapabBandFDDList,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-v370ext,
    UE-RadioAccessCapability-v380ext,
    UE-RadioAccessCapability-v3a0ext,
    UE-RadioAccessCapability-v3g0ext,
    UE-RadioAccessCapability-v4xyext,
    UE-RadioAccessCapability-v5xyext,
    UL-PhysChCapabilityFDD,
    UL-PhysChCapabilityTDD,
    UL-PhysChCapabilityTDD-LCR-r4,
-- Radio Bearer IEs :
    PredefinedConfigStatusList,
    PredefinedConfigValueTag,
    RAB-InformationSetupList,
    RAB-InformationSetupList-r4,
    RAB-Identity,
    RB-Identity,
    RB-Identity,
    SRB-InformationSetupList,
-- Transport Channel IEs :
    CPCH-SetID,
    DL-CommonTransChInfo,
```

```

DL-CommonTransChInfo-r4,
DL-AddReconfTransChInfoList,
DL-AddReconfTransChInfoList-r4,
DRAC-StaticInformationList,
UL-CommonTransChInfo,
UL-CommonTransChInfo-r4,
UL-AddReconfTransChInfoList,
-- Measurement IEs :
MeasurementIdentity,
MeasurementReportingMode,
MeasurementType,
MeasurementType-r4,
AdditionalMeasurementID-List,
PositionEstimate,
-- Other IEs :
InterRAT-UE-RadioAccessCapabilityList,
InterRAT-UE-RadioAccessCapabilityList-r5,
UESpecificBehaviourInformationIdle,
UESpecificBehaviourInformationInterRAT

FROM InformationElements

maxCNdomains,
maxNoOfMeas,

maxRB,
maxRBallRABs,
maxRFC3095-CID,
maxSRBsetup
FROM Constant-definitions
;

-- Part 1: Class definitions similar to what has been defined in 11.1 for RRC messages
-- Information that is transferred in the same direction and across the same path is grouped

-- *****
--
-- RRC information, to target RNC
--
-- *****
-- RRC Information to target RNC sent either from source RNC or from another RAT

ToTargetRNC-Container ::= CHOICE {
    interRATHandoverInfo          InterRATHandoverInfoWithInterRATCapabilities-r3,
    srncRelocation                SRNC-RelocationInfo-r3,
    rfc3095-ContextInfo           RFC3095-ContextInfo-r5,
    extension                     NULL
}

-- *****
--
-- RRC information, target RNC to source RNC
--
-- *****

Target-RNC-ToSourceRNC-Container ::= CHOICE {
    radioBearerSetup              RadioBearerSetup,
    radioBearerReconfiguration    RadioBearerReconfiguration,
    radioBearerRelease            RadioBearerRelease,
    transportChannelReconfiguration TransportChannelReconfiguration,
    physicalChannelReconfiguration PhysicalChannelReconfiguration,
    rrc-FailureInfo              RRC-FailureInfo-r3-IEs,
    dL-DCCHmessage               OCTET STRING,
    extension                     NULL
}

-- Part 2: Container definitions, similar to the PDU definitions in 11.2 for RRC messages
-- In alphabetical order

-- *****
--
-- Handover to UTRAN information
--
-- *****

InterRATHandoverInfoWithInterRATCapabilities-r3 ::= CHOICE {

```

```

r3
    SEQUENCE {
    -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also
    -- includes non critical extensions
    interRATHandoverInfo-r3      InterRATHandoverInfoWithInterRATCapabilities-r3-IEs,
    v390NonCriticalExtensions    SEQUENCE {
        interRATHandoverInfoWithInterRATCapabilities-v390ext
    InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs,
        -- Reserved for future non critical extension
        nonCriticalExtensions    SEQUENCE {} OPTIONAL
    }
    },
criticalExtensions              SEQUENCE {}
}

InterRATHandoverInfoWithInterRATCapabilities-r3-IEs ::= SEQUENCE {
    -- The order of the IEs may not reflect the tabular format
    -- but has been chosen to simplify the handling of the information in the BSC
    -- Other IEs
    ue-RATSpecificCapability      InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
    -- interRATHandoverInfo, Octet string is used to obtain 8 bit length field prior to
    -- actual information. This makes it possible for BSS to transparently handle information
    -- received via GSM air interface even when it includes non critical extensions.
    -- The octet string shall include the InterRATHandoverInfo information
    -- The BSS can re-use the 04.18 length field received from the MS
    interRATHandoverInfo          OCTET STRING (SIZE (0..255))
}

InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    failureCauseWithProtErr      FailureCauseWithProtErr              OPTIONAL
}

-- *****
--
-- RFC3095 context, source RNC to target RNC
--
-- *****

RFC3095-ContextInfo-r5 ::= CHOICE {
    r5
        SEQUENCE {
        rFC3095-ContextInfoList-r5      RFC3095-ContextInfoList-r5,
        -- Reserved for future non critical extension
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
        },
criticalExtensions                SEQUENCE {}
}

RFC3095-ContextInfoList-r5 ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
    RFC3095-ContextInfo

-- *****
--
-- SRNC Relocation information
--
-- *****

SRNC-RelocationInfo-r3 ::= CHOICE {
    r3
        SEQUENCE {
        sRNC-RelocationInfo-r3          SRNC-RelocationInfo-r3-IEs,
        v380NonCriticalExtensions      SEQUENCE {
            sRNC-RelocationInfo-v380ext SRNC-RelocationInfo-v380ext-IEs,
            -- Reserved for future non critical extension
            v390NonCriticalExtensions  SEQUENCE {
                sRNC-RelocationInfo-v390ext      SRNC-RelocationInfo-v390ext-IEs,
                v3a0NonCriticalExtensions  SEQUENCE {
                    sRNC-RelocationInfo-v3a0ext      SRNC-RelocationInfo-v3a0ext-IEs,
                    v3b0NonCriticalExtensions  SEQUENCE {
                        sRNC-RelocationInfo-v3b0ext      SRNC-RelocationInfo-v3b0ext-IEs,
                        v3c0NonCriticalExtensions  SEQUENCE {
                            sRNC-RelocationInfo-v3c0ext      SRNC-RelocationInfo-v3c0ext-IEs,
                            laterNonCriticalExtensions  SEQUENCE {
                                sRNC-RelocationInfo-v3d0ext      SRNC-RelocationInfo-v3d0ext-
IEs,
                                -- Container for additional R99 extensions
                                sRNC-RelocationInfo-r3-add-ext      BIT STRING          OPTIONAL,
                                v3g0NonCriticalExtensions          SEQUENCE {
                                    sRNC-RelocationInfo-v3g0ext      SRNC-RelocationInfo-v3g0ext-IEs,

```

```

v4xyNonCriticalExtensions SEQUENCE {
  sRNC-RelocationInfo-v4xyext SRNC-RelocationInfo-v4xyext-IE
  v5xyNonCriticalExtensions SEQUENCE {
    sRNC-RelocationInfo-v5xyext SRNC-
    -- Reserved for future non critical extension
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  } OPTIONAL
} OPTIONAL
} OPTIONAL
} OPTIONAL
} OPTIONAL
} OPTIONAL
},
later-than-r3 CHOICE {
  r4 SEQUENCE {
    sRNC-RelocationInfo-r4 SRNC-RelocationInfo-r4-IEs,
    v5xyNonCriticalExtensions SEQUENCE {
      sRNC-RelocationInfo-v5xyext SRNC-RelocationInfo-v5xyext-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  criticalExtensions SEQUENCE {}
}
}

SRNC-RelocationInfo-r3-IEs ::= SEQUENCE {
  -- Non-RRC IEs
  stateOfRRC StateOfRRC,
  stateOfRRC-Procedure StateOfRRC-Procedure,
  -- Ciphering related information IEs
  -- If the extension v380 is included use the extension for the ciphering status per CN domain
  cipheringStatus CipheringStatus,
  calculationTimeForCiphering CalculationTimeForCiphering OPTIONAL,
  -- The order of occurrence in the IE cipheringInfoPerRB-List is the
  -- same as the RBs in SRB-InformationSetupList in RAB-InformationSetupList.
  -- The signalling RBs are supposed to be listed
  -- first. Only UM and AM RBs that are ciphered are listed here
  cipheringInfoPerRB-List CipheringInfoPerRB-List OPTIONAL,
  count-C-List COUNT-C-List OPTIONAL,
  integrityProtectionStatus IntegrityProtectionStatus,
  -- In the IE srb-SpecificIntegrityProtInfo, the first information listed corresponds to
  -- signalling radio bearer RB0 and after the order of occurrence is the same as the SRBs in
  -- SRB-InformationSetupList
  srb-SpecificIntegrityProtInfo SRB-SpecificIntegrityProtInfoList,
  implementationSpecificParams ImplementationSpecificParams OPTIONAL,
  -- User equipment IEs
  u-RNTI U-RNTI,
  c-RNTI C-RNTI OPTIONAL,
  ue-RadioAccessCapability UE-RadioAccessCapability,
  ue-Positioning-LastKnownPos UE-Positioning-LastKnownPos OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity URA-Identity OPTIONAL,
  -- Core network IEs
  cn-CommonGSM-MAP-NAS-SysInfo NAS-SystemInformationGSM-MAP,
  cn-DomainInformationList CN-DomainInformationList OPTIONAL,
  -- Measurement IEs
  ongoingMeasRepList OngoingMeasRepList OPTIONAL,
  -- Radio bearer IEs
  predefinedConfigStatusList PredefinedConfigStatusList,
  srb-InformationList SRB-InformationSetupList,
  rab-InformationList RAB-InformationSetupList OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
  ul-TransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      cpch-SetID CPCH-SetID OPTIONAL,
      transChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd NULL
  },
  dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,

```

```

    dl-TransChInfoList          DL-AddReconfTransChInfoList          OPTIONAL,
  -- Measurement report
    measurementReport          MeasurementReport                    OPTIONAL
}

SRNC-RelocationInfo-v380ext-IEs ::= SEQUENCE {
  -- Ciphering related information IEs
    cn-DomainIdentity          CN-DomainIdentity,
    cipheringStatusList        CipheringStatusList
}

SRNC-RelocationInfo-v390ext-IEs ::= SEQUENCE {
    cn-DomainInformationList-v390ext  CN-DomainInformationList-v390ext          OPTIONAL,
    ue-RadioAccessCapability-v370ext  UE-RadioAccessCapability-v370ext          OPTIONAL,
    ue-RadioAccessCapability-v380ext  UE-RadioAccessCapability-v380ext          OPTIONAL,
    dl-PhysChCapabilityFDD-v380ext    DL-PhysChCapabilityFDD-v380ext,
    failureCauseWithProtErr          FailureCauseWithProtErr                    OPTIONAL
}

SRNC-RelocationInfo-v3a0ext-IEs ::= SEQUENCE {
  -- cn-domain identity for IE startValueForCiphering-v3a0ext is specified
  -- in subsequent extension (SRNC-RelocationInfo-v3b0ext-IEs)
    startValueForCIphering-v3a0ext    START-Value,
    cipheringInfoForSRB1-v3a0ext      CipheringInfoForSRB1-v3a0ext,
    ue-RadioAccessCapability-v3a0ext  UE-RadioAccessCapability-v3a0ext          OPTIONAL
}

SRNC-RelocationInfo-v3b0ext-IEs ::= SEQUENCE {
  -- cn-domain identity for IE startValueForCiphering-v3a0ext included in previous extension
    cn-DomainIdentity                CN-DomainIdentity,
  -- the IE startValueForCiphering-v3b0ext contains the start values for each CN Domain. The
  -- value of start indicated by the IE startValueForCiphering-v3a0ext should be set to the
  -- same value as the start-Value for the corresponding cn-DomainIdentity in the IE
  -- startValueForCiphering-v3b0ext
    startValueForCiphering-v3b0ext    STARTList2                    OPTIONAL
}

SRNC-RelocationInfo-v3c0ext-IEs ::= SEQUENCE {
  -- IE rb-identityForHOMessage includes the identity of the RB used by the source SRNC
  -- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
  -- Only included if type is "UE involved"
    rb-IdentityForHOMessage           RB-Identity                    OPTIONAL
}

SRNC-RelocationInfo-v3d0ext-IEs ::= SEQUENCE {
  -- User equipment IEs
    ueSpecificBehaviourInformationIdle  UESpecificBehaviourInformationIdle          OPTIONAL,
    ueSpecificBehaviourInformationInterRAT  UESpecificBehaviourInformationInterRAT
  OPTIONAL
}

SRNC-RelocationInfo-v3g0ext-IEs ::= SEQUENCE {
    ue-RadioAccessCapability-v3g0ext    UE-RadioAccessCapability-v3g0ext          OPTIONAL
}

STARTList2 ::=
    SEQUENCE (SIZE (2..maxCNdomains)) OF
    STARTSingle

SRNC-RelocationInfo-v4xyext-IEs ::= SEQUENCE {
    ue-RadioAccessCapability-v4xyext    UE-RadioAccessCapability-v4xyext
}

SRNC-RelocationInfo-v5xyext-IEs ::= SEQUENCE {
    ue-RadioAccessCapability-v5xyext    UE-RadioAccessCapability-v5xyext,
    ue-RATSpecificCapability-r5         InterRAT-UE-RadioAccessCapabilityList-r5  OPTIONAL
}

CipheringInfoForSRB1-v3a0ext ::= SEQUENCE {
    dl-UM-SN                            BIT STRING (SIZE (7))
}

CipheringStatusList ::=
    SEQUENCE (SIZE (1..maxCNdomains)) OF
    CipheringStatusCNdomain

CipheringStatusCNdomain ::=
    SEQUENCE {
        cn-DomainIdentity                CN-DomainIdentity,
        cipheringStatus                  CipheringStatus
    }

```

```

SRNC-RelocationInfo-r4-IEs ::=          SEQUENCE {
-- Non-RRC IEs
-- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
-- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
-- Only included if type is "UE involved"
rb-IdentityForHOMessage          RB-Identity          OPTIONAL,
stateOfRRC                      StateOfRRC,
stateOfRRC-Procedure            StateOfRRC-Procedure,
-- Ciphering related information IEs
cipheringStatusList             CipheringStatusList-r4,
latestConfiguredCN-Domain       CN-DomainIdentity,
calculationTimeForCiphering     CalculationTimeForCiphering          OPTIONAL,
count-C-List                    COUNT-C-List                          OPTIONAL,
cipheringInfoPerRB-List         CipheringInfoPerRB-List-r4          OPTIONAL,
-- Integrity protection related information IEs
integrityProtectionStatus       IntegrityProtectionStatus,
srb-SpecificIntegrityProtInfo   SRB-SpecificIntegrityProtInfoList,
implementationSpecificParams    ImplementationSpecificParams      OPTIONAL,
-- User equipment IEs
u-RNTI                          U-RNTI,
c-RNTI                          C-RNTI                              OPTIONAL,
ue-RadioAccessCapability        UE-RadioAccessCapability-r4,
ue-RadioAccessCapability-ext    UE-RadioAccessCapabBandFDDList    OPTIONAL,
ue-Positioning-LastKnownPos     UE-Positioning-LastKnownPos        OPTIONAL,
uESpecificBehaviourInformationIdle UEspecificBehaviourInformationIdle  OPTIONAL,
uESpecificBehaviourInformationInterRAT UEspecificBehaviourInformationInterRAT
OPTIONAL,
-- Other IEs
ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
-- UTRAN mobility IEs
ura-Identity                    URA-Identity                        OPTIONAL,
-- Core network IEs
cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP,
cn-DomainInformationList        CN-DomainInformationListFull        OPTIONAL,
-- Measurement IEs
ongoingMeasRepList             OngoingMeasRepList-r4              OPTIONAL,
-- Radio bearer IEs
predefinedConfigStatusList      PredefinedConfigStatusList,
srb-InformationList             SRB-InformationSetupList,
rab-InformationList             RAB-InformationSetupList-r4        OPTIONAL,
-- Transport channel IEs
ul-CommonTransChInfo           UL-CommonTransChInfo-r4            OPTIONAL,
ul-TransChInfoList             UL-AddReconfTransChInfoList        OPTIONAL,
modeSpecificInfo                CHOICE {
    fdd                          SEQUENCE {
        cpch-SetID              CPCH-SetID                        OPTIONAL,
        transChDRAC-Info        DRAC-StaticInformationList        OPTIONAL
    },
    tdd                          NULL
}
dl-CommonTransChInfo           DL-CommonTransChInfo-r4            OPTIONAL,
dl-TransChInfoList             DL-AddReconfTransChInfoList-r4      OPTIONAL,
-- Measurement report
measurementReport               MeasurementReport                    OPTIONAL,
failureCause                    FailureCauseWithProtErr              OPTIONAL
}

-- IE definitions
CalculationTimeForCiphering ::= SEQUENCE {
    cell-Id                      CellIdentity,
    sfn                          INTEGER (0..4095)
}

CipheringInfoPerRB ::= SEQUENCE {
    dl-HFN                       BIT STRING (SIZE (20..25)),
    ul-HFN                       BIT STRING (SIZE (20..25))
}

CipheringInfoPerRB-r4 ::= SEQUENCE {
    rb-Identity                  RB-Identity,
    dl-HFN                      BIT STRING (SIZE (20..25)),
    dl-UM-SN                    BIT STRING (SIZE (7))              OPTIONAL,
    ul-HFN                      BIT STRING (SIZE (20..25))
}

-- TABULAR: CipheringInfoPerRB-List, multiplicity value numberOfRadioBearers

```

```

-- has been replaced with maxRB.
CipheringInfoPerRB-List ::= SEQUENCE (SIZE (1..maxRB)) OF
    CipheringInfoPerRB

CipheringInfoPerRB-List-r4 ::= SEQUENCE (SIZE (1..maxRB)) OF
    CipheringInfoPerRB-r4

CipheringStatus ::= ENUMERATED {
    started, notStarted }

CipheringStatusList-r4 ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CipheringStatusCNdomain-r4

CipheringStatusCNdomain-r4 ::= SEQUENCE {
    cn-DomainIdentity      CN-DomainIdentity,
    cipheringStatus        CipheringStatus,
    start-Value            START-Value
}

CN-DomainInformation-v390ext ::= SEQUENCE {
    cn-DRX-CycleLengthCoeff CN-DRX-CycleLengthCoefficient
}

CN-DomainInformationList-v390ext ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CN-DomainInformation-v390ext

CompressedModeMeasCapability-r4 ::= SEQUENCE {
    fdd-Measurements          BOOLEAN,
    -- TABULAR: The IEs tdd-Measurements, gsm-Measurements and multiCarrierMeasurements
    -- are made optional since they are conditional based on another information element.
    -- Their absence corresponds to the case where the condition is not true.
    tdd384-Measurements       BOOLEAN                                OPTIONAL,
    tdd128-Measurements       BOOLEAN                                OPTIONAL,
    gsm-Measurements          GSM-Measurements                     OPTIONAL,
    multiCarrierMeasurements  BOOLEAN                                OPTIONAL
}

COUNT-C-List ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    COUNT-CSingle

COUNT-CSingle ::= SEQUENCE {
    cn-DomainIdentity
    count-C          BIT STRING (SIZE (32))
}

DL-PhysChCapabilityFDD-r4 ::= SEQUENCE {
    maxNoDPCH-PDSCH-Codes          INTEGER (1..8),
    maxNoPhysChBitsReceived        MaxNoPhysChBitsReceived,
    supportForSF-512                BOOLEAN,
    supportOfPDSCH                  BOOLEAN,
    simultaneousSCCPCH-DPCH-Reception SimultaneousSCCPCH-DPCH-Reception,
    supportOfDedicatedPilotsForChEstimation SupportOfDedicatedPilotsForChEstimation OPTIONAL
}

DL-RFC3095-Context ::= SEQUENCE {
    rfc3095-Context-Identity      INTEGER (0..16383),
    dl-mode                       ENUMERATED {u, o, r},
    dl-ref-ir                      OCTET STRING (SIZE (1..3000)),
    dl-ref-time                    INTEGER (0..4294967295)    OPTIONAL,
    dl-curr-time                   INTEGER (0..4294967295)    OPTIONAL,
    dl-syn-offset-id              INTEGER (0..65535)          OPTIONAL,
    dl-syn-slope-ts              INTEGER (0..4294967295)    OPTIONAL,
    dl-dyn-changed                BOOLEAN
}

ImplementationSpecificParams ::= BIT STRING (SIZE (1..512))

IntegrityProtectionStatus ::= ENUMERATED {
    started, notStarted }

MeasurementCapability-r4 ::= SEQUENCE {
    downlinkCompressedMode        CompressedModeMeasCapability-r4,
    uplinkCompressedMode          CompressedModeMeasCapability-r4
}

MeasurementCommandWithType ::= CHOICE {

```

```

    setup           MeasurementType,
    modify          NULL,
    release         NULL,
}

MeasurementCommandWithType-r4 ::= CHOICE {
    setup           MeasurementType-r4,
    modify          NULL,
    release         NULL,
}

OngoingMeasRep ::= SEQUENCE {
    measurementIdentity MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType
    measurementCommandWithType MeasurementCommandWithType,
    measurementReportingMode MeasurementReportingMode OPTIONAL,
    additionalMeasurementID-List AdditionalMeasurementID-List OPTIONAL
}

OngoingMeasRep-r4 ::= SEQUENCE {
    measurementIdentity MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType-r4.
    measurementCommandWithType MeasurementCommandWithType-r4,
    measurementReportingMode MeasurementReportingMode OPTIONAL,
    additionalMeasurementID-List AdditionalMeasurementID-List OPTIONAL
}

OngoingMeasRepList ::= SEQUENCE (SIZE (1..maxNoOfMeas)) OF
    OngoingMeasRep

OngoingMeasRepList-r4 ::= SEQUENCE (SIZE (1..maxNoOfMeas)) OF
    OngoingMeasRep-r4

PDCP-Capability-r4 ::= SEQUENCE {
    losslessSRNS-RelocationSupport BOOLEAN,
    supportForRfc2507 CHOICE {
        notSupported NULL,
        supported MaxHcContextSpace
    },
    supportForRfc3095 CHOICE {
        notSupported NULL,
        supported SEQUENCE {
            maxROHC-ContextSessions MaxROHC-ContextSessions-r4 DEFAULT s16,
            reverseCompressionDepth INTEGER (0..65535) DEFAULT 0
        }
    }
}

PhysicalChannelCapability-r4 ::= SEQUENCE {
    fddPhysChCapability SEQUENCE {
        downlinkPhysChCapability DL-PhysChCapabilityFDD-r4,
        uplinkPhysChCapability UL-PhysChCapabilityFDD
    } OPTIONAL,
    tdd384-PhysChCapability SEQUENCE {
        downlinkPhysChCapability DL-PhysChCapabilityTDD,
        uplinkPhysChCapability UL-PhysChCapabilityTDD
    } OPTIONAL,
    tdd128-PhysChCapability SEQUENCE {
        downlinkPhysChCapability DL-PhysChCapabilityTDD-LCR-r4,
        uplinkPhysChCapability UL-PhysChCapabilityTDD-LCR-r4
    } OPTIONAL
}

RF-Capability-r4 ::= SEQUENCE {
    fddRF-Capability SEQUENCE {
        ue-PowerClass UE-PowerClass-v370,
        txRxFrequencySeparation TxRxFrequencySeparation
    } OPTIONAL,
    tdd384-RF-Capability SEQUENCE {
        ue-PowerClass UE-PowerClass-v370,
        radioFrequencyBandTDDList RadioFrequencyBandTDDList,
        chipRateCapability ChipRateCapability
    } OPTIONAL,
    tdd128-RF-Capability SEQUENCE {
        ue-PowerClass UE-PowerClass-v370,
        radioFrequencyBandTDDList RadioFrequencyBandTDDList,

```

```

        chipRateCapability          ChipRateCapability          OPTIONAL
    }
}

RFC3095-ContextInfo ::=          SEQUENCE {
    rb-Identity                    RB-Identity,
    rfc3095-Context-List          RFC3095-Context-List
}

RFC3095-Context-List ::=        SEQUENCE (SIZE (1..maxRFC3095-CID)) OF SEQUENCE {
    dl-RFC3095-Context            DL-RFC3095-Context    OPTIONAL,
    ul-RFC3095-Context            UL-RFC3095-Context    OPTIONAL
}

SRB-SpecificIntegrityProtInfo ::= SEQUENCE {
    ul-RRC-HFN                    BIT STRING (SIZE (28)),
    dl-RRC-HFN                    BIT STRING (SIZE (28)),
    ul-RRC-SequenceNumber        RRC-MessageSequenceNumber,
    dl-RRC-SequenceNumber        RRC-MessageSequenceNumber
}

SRB-SpecificIntegrityProtInfoList ::= SEQUENCE (SIZE (4..maxSRBsetup)) OF
SRB-SpecificIntegrityProtInfo

StateOfRRC ::=                  ENUMERATED {
    cell-DCH, cell-FACH,
    cell-PCH, ura-PCH }

StateOfRRC-Procedure ::=        ENUMERATED {
    awaitNoRRC-Message,
    awaitRB-ReleaseComplete,
    awaitRB-SetupComplete,
    awaitRB-ReconfigurationComplete,
    awaitTransportCH-ReconfigurationComplete,
    awaitPhysicalCH-ReconfigurationComplete,
    awaitActiveSetUpdateComplete,
    awaitHandoverComplete,
    sendCellUpdateConfirm,
    sendUraUpdateConfirm,
    -- dummy is not used in this version of specification
    -- It should not be sent
    dummy,
    otherStates
}

UE-Positioning-Capability-r4 ::= SEQUENCE {
    standaloneLocMethodsSupported    BOOLEAN,
    ue-BasedOTDOA-Supported          BOOLEAN,
    networkAssistedGPS-Supported     NetworkAssistedGPS-Supported,
    supportForUE-GPS-TimingOfCellFrames    BOOLEAN,
    supportForIPDL                   BOOLEAN,
    rx-tx-TimeDifferenceType2Capable    BOOLEAN,
    validity-CellPCH-UraPCH          ENUMERATED { true (0) }    OPTIONAL
}

UE-Positioning-LastKnownPos ::= SEQUENCE {
    sfn                              INTEGER (0..4095),
    cell-id                          CellIdentity,
    positionEstimate                  PositionEstimate
}

UE-RadioAccessCapability-r4 ::= SEQUENCE {
    accessStratumReleaseIndicator    AccessStratumReleaseIndicator,
    pdcp-Capability                  PDCP-Capability-r4,
    rlc-Capability                    RLC-Capability,
    transportChannelCapability        TransportChannelCapability,
    rf-Capability                     RF-Capability-r4,
    physicalChannelCapability         PhysicalChannelCapability-r4,
    ue-MultiModeRAT-Capability        UE-MultiModeRAT-Capability,
    securityCapability                SecurityCapability,
    ue-positioning-Capability-r4      UE-Positioning-Capability-r4,
    measurementCapability             MeasurementCapability-r4    OPTIONAL
}

UL-RFC3095-Context ::=          SEQUENCE {
    rfc3095-Context-Identity        INTEGER (0..16383),
    ul-mode                          ENUMERATED {u, o, r},
    ul-ref-ir                         OCTET STRING ( SIZE (1..3000)),

```

Error! No text of specified style in document.

Error! No text of specified style in document.

ul-ref-time	INTEGER (0..4294967295)	OPTIONAL,
ul-curr-time	INTEGER (0..4294967295)	OPTIONAL,
ul-syn-offset-id	INTEGER (0..65535)	OPTIONAL,
ul-syn-slope-ts	INTEGER (0..4294967295)	OPTIONAL,
ul-ref-sn-1	INTEGER (0..65535)	OPTIONAL

}

END