

## CHANGE REQUEST

⌘ **25.331 CR 1732** ⌘ rev **2** ⌘ Current version: **3.c.0** ⌘

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

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

<b>Title:</b>	⌘ Introduction of backwards compatible correction mechanism		
<b>Source:</b>	⌘ Nokia		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 05/Dec/2002
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ R99
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)	2	(GSM Phase 2)
	<b>A</b> (corresponds to a correction in an earlier release)	R96	(Release 1996)
	<b>B</b> (addition of feature),	R97	(Release 1997)
	<b>C</b> (functional modification of feature)	R98	(Release 1998)
	<b>D</b> (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ Currently once backwards compatibility is started for Rel-4 there will be now mechanism to allow corrections to be made to R99 ASN.1 messages definitions.		
<b>Summary of change:</b>	⌘ Extension Containers principle introduced.		
	<b>Impact Analysis:</b> No Impact There is no impact as this does not actually make any changes to the protocol specification, but introduces the mechanism so that the changes can be made.		
<b>Consequences if not approved:</b>	⌘ Once Backwards Compatibility is started for Rel-4 it will be impossible to make certain corrections to ASN.1.		

<b>Clauses affected:</b>	⌘ 9.8, 10.1.1, 11.0, 11.2, 11.5										
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">⌘</td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	⌘	X	⌘	X	⌘	X	Other core specifications	⌘
Y	N										
⌘	X										
⌘	X										
⌘	X										
		Test specifications									
		O&M Specifications									
<b>Other comments:</b>	⌘										

### 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.

## 9.8 Unexpected non-critical message extension

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, containing an undefined non-critical message extension, the UE shall:

- 1> [If the non critical extension is included in the “Variable Length Extension Container”:](#)
  - 2> [ignore the content of the extension and the contents of this container after the not comprehended extension, and continue decoding the rest of the message](#)
- 1> [otherwise](#)
  - 2> ignore the content of the extension and the message contents after the extension, but treat the parts of the message up to the extension normally.

If the UE receives a system information block on the BCCH containing an undefined non-critical message extension, the UE shall:

- 1> ignore the content of the extension and the system information block contents after the extension, but treat the parts of the system information block up to the extension normally.

If the UE receives an RRC message on the BCCH or PCCH, containing an undefined non-critical message extension, the UE shall:

- 1> ignore the content of the extension and the message contents after the extension, but treat the parts of the message up to the extension normally.

## 10.1.1 Protocol extensions

RRC messages may be extended in future versions of this protocol, either by adding values for choices, enumerated and size constrained types or by adding information elements. An important aspect concerns the behaviour of a UE, conforming to this revision of the standard, upon receiving a not comprehended future extension. The details of this error handling behaviour are provided in clause 9.

NOTE 1: By avoiding the need for partial decoding (skipping uncomprehended IEs to continue decoding the remainder of the message), the RRC protocol extension mechanism also avoids the overhead of length determinants for extensions. [“Variable length extension containers” \(i.e. non critical extension containers that have their abstract syntax defined using the ASN.1 type “BIT STRING”\) have been defined to support the introduction of extensions to a release after the subsequent release is frozen \(and UEs based on that subsequent may appear\). For this container a length determinant is used, which facilitates partial decoding of the container as well as the decoding of the extensions included after the container.](#)

Two kinds of protocol extensions are distinguished: non-critical and critical extensions. In general, a receiver shall process a message including not comprehended non-critical extensions as if the extensions were absent. However, a receiver shall entirely reject a message including not comprehended critical extensions (there is no partial rejection) and notify the sender, as specified in clause 9.

The general mechanism for adding critical extensions is by defining a new version of the message, which is indicated at the beginning of the message.

The UE shall always comprehend the complete transfer syntax specified for the protocol version it supports; if the UE comprehends the transfer syntax defined within protocol version A for message 1, it shall also comprehend the transfer syntax defined within protocol version A for message 2.

The following table shows for which messages only non-critical extensions may be added while for others both critical and non-critical extensions may be added.

NOTE 2: Critical extensions can only be added to certain downlink messages.

Extensions	Message
Critical and non-critical extensions	ACTIVE SET UPDATE 10.2.1 ASSISTANCE DATA DELIVERY 10.2.4 CELL CHANGE ORDER FROM UTRAN 10.2.5 CELL UPDATE CONFIRM 10.2.8 COUNTER CHECK 10.2.9 DOWNLINK DIRECT TRANSFER 10.2.11 HANDOVER TO UTRAN COMMAND 10.2.16a HANDOVER FROM UTRAN COMMAND 10.2.15 MEASUREMENT CONTROL 10.2.17 PHYSICAL CHANNEL RECONFIGURATION 10.2.22 PHYSICAL SHARED CHANNEL ALLOCATION 10.2.25 RADIO BEARER RECONFIGURATION 10.2.27 RADIO BEARER RELEASE 10.2.30 RADIO BEARER SETUP 10.2.33 RRC CONNECTION REJECT 10.2.36 RRC CONNECTION RELEASE 10.2.37 RRC CONNECTION SETUP 10.2.40 SECURITY MODE COMMAND 10.2.43 SIGNALLING CONNECTION RELEASE 10.2.46 TRANSPORT CHANNEL RECONFIGURATION 10.2.50 UE CAPABILITY ENQUIRY 10.2.55 UE CAPABILITY INFORMATION CONFIRM 10.2.57 UPLINK PHYSICAL CHANNEL CONTROL 10.2.59 URA UPDATE CONFIRM 10.2.61 UTRAN MOBILITY INFORMATION 10.2.62
Non-critical extensions only	ACTIVE SET UPDATE COMPLETE 10.2.2 ACTIVE SET UPDATE FAILURE 10.2.3 CELL CHANGE ORDER FROM UTRAN FAILURE 10.2.6 CELL UPDATE 10.2.7 COUNTER CHECK RESPONSE 10.2.10 HANDOVER TO UTRAN COMPLETE 10.2.16b INITIAL DIRECT TRANSFER 10.2.16c HANDOVER FROM UTRAN FAILURE 10.2.16

Extensions	Message
	MEASUREMENT CONTROL FAILURE 10.2.18 MEASUREMENT REPORT 10.2.19 PAGING TYPE 1 10.2.20 PAGING TYPE 2 10.2.21 PHYSICAL CHANNEL RECONFIGURATION COMPLETE 10.2.23 PHYSICAL CHANNEL RECONFIGURATION FAILURE 10.2.24 PUSCH CAPACITY REQUEST 10.2.26 RADIO BEARER RECONFIGURATION COMPLETE 10.2.28 RADIO BEARER RECONFIGURATION FAILURE 10.2.29 RADIO BEARER RELEASE COMPLETE 10.2.31 RADIO BEARER RELEASE FAILURE 10.2.32 RADIO BEARER SETUP COMPLETE 10.2.34 RADIO BEARER SETUP FAILURE 10.2.35 RRC CONNECTION RELEASE COMPLETE 10.2.38 RRC CONNECTION REQUEST 10.2.39 RRC CONNECTION SETUP COMPLETE 10.2.41 RRC STATUS 10.2.42 SECURITY MODE COMPLETE 10.2.44 SECURITY MODE FAILURE 10.2.45 SIGNALLING CONNECTION RELEASE INDICATION 10.2.47 Master Information Block 10.2.48.8.1 System Information Block type 1 to System Information Block type 17 10.2.48.8.2 to 10.2.48.8.19 SYSTEM INFORMATION CHANGE INDICATION 10.2.49 TRANSPORT CHANNEL RECONFIGURATION COMPLETE 10.2.51 TRANSPORT CHANNEL RECONFIGURATION FAILURE 10.2.52 TRANSPORT FORMAT COMBINATION CONTROL 10.2.53 TRANSPORT FORMAT COMBINATION CONTROL FAILURE 10.2.54 UE CAPABILITY INFORMATION 10.2.56 UPLINK DIRECT TRANSFER 10.2.58 URA UPDATE 10.2.60 UTRAN MOBILITY INFORMATION CONFIRM 10.2.63 UTRAN MOBILITY INFORMATION FAILURE 10.2.64
No extensions	SYSTEM INFORMATION 10.2.48 First Segment 10.2.48.1 Subsequent or last Segment 10.2.48.3 Complete SIB 10.2.48.5 SIB content 10.2.48.8.1

NOTE 3: For the SYSTEM INFORMATION message protocol extensions are only possible at the level of system information blocks.

### 10.1.1.1 Non-critical extensions

#### 10.1.1.1.1 Extension of an information element with additional values or choices

In future versions of this protocol, non-critical values may be added to choices, enumerated and size constrained types.

For choices, enumerated and size constrained types it is possible to indicate how many non-critical spare values need to be reserved for future extension. In this case, the tabular format should indicate the number of spare values that are needed. The value range defined in ASN.1 for the extensible IE should include the number of spares that are needed, since a value outside the range defined for this IE will result in a general ASN.1 violation error.

For downlink messages, spare values may be defined for non-critical information elements for which the need is specified to be MD or OP (or CV case leading to MD or OP). In this case, a receiver not comprehending the received spare value shall consider the information element to have the default value or consider it to be absent respectively.

For uplink messages spare values may be defined for all information elements, including those for which the need is specified to be MP (or CV case leading to MP).

In all cases at most one spare should be defined for choices. In this case, information elements applicable to the spare choices shall be added to the end of the message.

#### 10.1.1.1.2 Extension of a message with additional information elements

In future versions of this protocol, non-critical information elements may be added to RRC messages. These additional information elements shall be normally appended at the end of the message; the transfer syntax specified in this revision of the standard facilitates this. A receiver conformant to this revision of the standard shall accept such extension, and proceed as if it was not included. Extensions to a release that are introduced after the subsequent release is frozen may however be inserted prior to the end of the message. To facilitate this, "variable length extension containers" have been introduced in most messages.

#### 10.1.1.2 Critical extensions

##### 10.1.1.2.1 Extension of an information element with additional values or choices

In versions of this protocol, choices, enumerated and size constrained types may be extended with critical values. For extension with critical values the general critical extension mechanism is used, i.e. for this no spare values are reserved since backward compatibility is not required.

##### 10.1.1.2.2 Extension of a message with additional information elements

In future versions of this protocol, RRC messages may be extended with new information elements. Since messages including critical extensions are rejected by receivers not comprehending them, these messages may be modified completely, e.g. IEs may be inserted at any place and IEs may be removed or redefined.

# 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-GSM,
HandoverFromUTRANCommand-CDMA2000,
HandoverFromUTRANFailure,
MeasurementControl,
MeasurementControlFailure,
MeasurementReport,
PagingType1,
PagingType2,
PhysicalChannelReconfiguration,
PhysicalChannelReconfigurationComplete,
PhysicalChannelReconfigurationFailure,
PhysicalSharedChannelAllocation,
PUSCHCapacityRequest,
```

```

RadioBearerReconfiguration,
RadioBearerReconfigurationComplete,
RadioBearerReconfigurationFailure,
RadioBearerRelease,
RadioBearerReleaseComplete,
RadioBearerReleaseFailure,
RadioBearerSetup,
RadioBearerSetupComplete,
RadioBearerSetupFailure,
RRCConnectionReject,
RRCConnectionRelease,
RRCConnectionRelease-CCCH,
RRCConnectionReleaseComplete,
RRCConnectionRequest,
RRCConnectionSetup,
RRCConnectionSetupComplete,
RRCStatus,
SecurityModeCommand,
SecurityModeComplete,
SecurityModeFailure,
SignallingConnectionRelease,
SignallingConnectionReleaseIndication,
SystemInformation-BCH,
SystemInformation-FACH,
SystemInformationChangeIndication,
TransportChannelReconfiguration,
TransportChannelReconfigurationComplete,
TransportChannelReconfigurationFailure,
TransportFormatCombinationControl,
TransportFormatCombinationControlFailure,
UECapabilityEnquiry,
UECapabilityInformation,
UECapabilityInformationConfirm,
UplinkDirectTransfer,
UplinkPhysicalChannelControl,
URAUpdate,
URAUpdateConfirm,
URAUpdateConfirm-CCCH,
UTRANMobilityInformation,
UTRANMobilityInformationConfirm,
UTRANMobilityInformationFailure
FROM PDU-definitions

-- User Equipment IEs :
  IntegrityCheckInfo
FROM InformationElements;

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

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

DL-DCCH-MessageType ::= CHOICE {
    activeSetUpdate           ActiveSetUpdate,
    assistanceDataDelivery    AssistanceDataDelivery,
    cellChangeOrderFromUTRAN CellChangeOrderFromUTRAN,
    cellUpdateConfirm         CellUpdateConfirm,
    counterCheck              CounterCheck,
    downlinkDirectTransfer     DownlinkDirectTransfer,
    handoverFromUTRANCommand-GSM HandoverFromUTRANCommand-GSM,
    handoverFromUTRANCommand-CDMA2000 HandoverFromUTRANCommand-CDMA2000,
    measurementControl        MeasurementControl,
    pagingType2               PagingType2,
    physicalChannelReconfiguration PhysicalChannelReconfiguration,
    physicalSharedChannelAllocation PhysicalSharedChannelAllocation,
    radioBearerReconfiguration RadioBearerReconfiguration,
    radioBearerRelease         RadioBearerRelease,
    radioBearerSetup          RadioBearerSetup,
    rrcConnectionRelease      RRCConnectionRelease,
    securityModeCommand       SecurityModeCommand,
    signallingConnectionRelease SignallingConnectionRelease,
    transportChannelReconfiguration TransportChannelReconfiguration,

```

```

transportFormatCombinationControl TransportFormatCombinationControl,
ueCapabilityEnquiry UECapabilityEnquiry,
ueCapabilityInformationConfirm UECapabilityInformationConfirm,
uplinkPhysicalChannelControl UplinkPhysicalChannelControl,
uraUpdateConfirm URAUpdateConfirm,
utranMobilityInformation UTRANMobilityInformation,
spare7 NULL,
spare6 NULL,
spare5 NULL,
spare4 NULL,
spare3 NULL,
spare2 NULL,
spare1 NULL
}

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

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

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

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

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

```

```

DL-CCCH-MessageType ::= CHOICE {
    cellUpdateConfirm          CellUpdateConfirm-CCCH,
    rrcConnectionReject       RRCCConnectionReject,
    rrcConnectionRelease      RRCCConnectionRelease-CCCH,
    rrcConnectionSetup        RRCCConnectionSetup,
    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      RRCCConnectionRequest,
    uraUpdate                  URAUpdate,
    spare                      NULL
}

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

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

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

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

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

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

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

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

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

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

```

```

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

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

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

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

END

```

## 11.2 PDU definitions

```

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

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS

-- Core Network IEs :
    CN-DomainIdentity,
    CN-InformationInfo,
    CN-InformationInfoFull,
    NAS-Message,
    PagingRecordTypeID,
-- UTRAN Mobility IEs :
    URA-Identity,
-- User Equipment IEs :
    ActivationTime,
    C-RNTI,
    CapabilityUpdateRequirement,
    CellUpdateCause,
    CipheringAlgorithm,
    CipheringModeInfo,
    DSCH-RNTI,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    InitialUE-Identity,
    IntegrityProtActivationInfo,
    IntegrityProtectionModeInfo,
    N-308,
    PagingCause,
    PagingRecordList,
    ProtocolErrorIndicator,
    ProtocolErrorIndicatorWithMoreInfo,

```

```

Rb-timer-indicator,
RedirectionInfo,
RejectionCause,
ReleaseCause,
RRC-StateIndicator,
RRC-TransactionIdentifier,
SecurityCapability,
START-Value,
STARTList,
U-RNTI,
U-RNTI-Short,
UE-RadioAccessCapability,
UE-RadioAccessCapability-v370ext,
UE-RadioAccessCapability-v380ext,
UE-RadioAccessCapability-v3a0ext,
DL-PhysChCapabilityFDD-v380ext,
UE-ConnTimersAndConstants,
UE-ConnTimersAndConstants-v3a0ext,
UE-SecurityInformation,
URA-UpdateCause,
UTRAN-DRX-CycleLengthCoefficient,
WaitTime,
-- Radio Bearer IEs :
DefaultConfigIdentity,
DefaultConfigMode,
DL-CounterSynchronisationInfo,
PredefinedConfigIdentity,
PredefinedConfigStatusList,
RAB-Info,
RAB-Info-Post,
RAB-InformationList,
RAB-InformationReconfigList,
RAB-InformationSetupList,
RB-ActivationTimeInfoList,
RB-COUNT-C-InformationList,
RB-COUNT-C-MSB-InformationList,
RB-IdentityList,
RB-InformationAffectedList,
RB-InformationReconfigList,
RB-InformationReleaseList,
SRB-InformationSetupList,
SRB-InformationSetupList2,
UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
CPCH-SetID,
DL-AddReconfTransChInfo2List,
DL-AddReconfTransChInfoList,
DL-CommonTransChInfo,
DL-DeletedTransChInfoList,
DRAC-StaticInformationList,
TFC-Subset,
TFCS-Identity,
UL-AddReconfTransChInfoList,
UL-CommonTransChInfo,
UL-DeletedTransChInfoList,
-- Physical Channel IEs :
Alpha,
CCTrCH-PowerControlInfo,
ConstantValue,
ConstantValueTdd,
CPCH-SetInfo,
DL-CommonInformation,
DL-CommonInformationPost,
DL-InformationPerRL,
DL-InformationPerRL-List,
DL-InformationPerRL-ListPostFDD,
DL-InformationPerRL-PostTDD,
DL-PDSCH-Information,
DPCH-CompressedModeStatusInfo,
FrequencyInfo,
FrequencyInfoFDD,
FrequencyInfoTDD,
MaxAllowedUL-TX-Power,
PDSCH-CapacityAllocationInfo,
PDSCH-Identity,
PrimaryCCPCH-TX-Power,
PUSCH-CapacityAllocationInfo,
PUSCH-Identity,

```

```

RL-AdditionInformationList,
RL-RemovalInformationList,
SpecialBurstScheduling,
SSDT-Information,
TFC-ControlDuration,
TimeslotList,
TX-DiversityMode,
UL-ChannelRequirement,
UL-ChannelRequirementWithCPCH-SetID,
UL-DPCH-Info,
UL-DPCH-InfoPostFDD,
UL-DPCH-InfoPostTDD,
UL-TimingAdvance,
UL-TimingAdvanceControl,
-- Measurement IEs :
AdditionalMeasurementID-List,
Frequency-Band,
EventResults,
InterRAT-TargetCellDescription,
MeasuredResults,
MeasuredResults-v390ext,
MeasuredResultsList,
MeasuredResultsOnRACH,
MeasurementCommand,
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-UEB,
-- Other IEs :
BCCH-ModificationInfo,
CDMA2000-MessageList,
GSM-MessageList,
InterRAT-ChangeFailureCause,
InterRAT-HO-FailureCause,
InterRAT-UE-RadioAccessCapabilityList,
InterRAT-UE-SecurityCapList,
IntraDomainNasNodeSelector,
ProtocolErrorMoreInformation,
Rplmn-Information,
SegCount,
SegmentIndex,
SFN-Prime,
SIB-Data-fixed,
SIB-Data-variable,
SIB-Type
FROM InformationElements

maxSIBperMsg
FROM Constant-definitions;

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

ActiveSetUpdate ::= CHOICE {
  r3 SEQUENCE {
    activeSetUpdate-r3 ActiveSetUpdate-r3-IEs,
    later-than-r3NonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    activeSetUpdate-r3-add-ext BIT STRING OPTIONAL,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  later-than-r3 SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions SEQUENCE {}
  }
}

ActiveSetUpdate-r3-IEs ::= SEQUENCE {
  -- User equipment IEs

```

```

rrc-TransactionIdentifier      RRC-TransactionIdentifier,
-- 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
}

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

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

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

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

AssistanceDataDelivery ::= CHOICE {
  r3                             SEQUENCE {
    assistanceDataDelivery-r3     AssistanceDataDelivery-r3-IEs,
    v3a0NonCriticalExtensions     SEQUENCE {
      assistanceDataDelivery-v3a0ext AssistanceDataDelivery-v3a0ext,
      laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions
        assistanceDataDelivery-r3-add-ext BIT STRING OPTIONAL,

```

```

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

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

AssistanceDataDelivery-v3a0ext ::= SEQUENCE {
  sfm-Offset-Validity SFM-Offset-Validity 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,
      nonCriticalExtensions SEQUENCE {} 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
}

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

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

CellUpdateConfirm-r3-IEs ::= SEQUENCE {
-- User equipment IES
rrc-TransactionIdentifier      RRC-TransactionIdentifier,
integrityProtectionModeInfo    IntegrityProtectionModeInfo      OPTIONAL,
cipheringModeInfo              CipheringModeInfo                 OPTIONAL,
activationTime                  ActivationTime                     OPTIONAL,
new-U-RNTI                      U-RNTI                           OPTIONAL,
new-C-RNTI                      C-RNTI                           OPTIONAL,
rrc-StateIndicator              RRC-StateIndicator,
utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
rlc-Re-establishIndicatorRb2-3or4 BOOLEAN,
rlc-Re-establishIndicatorRb5orAbove BOOLEAN,
-- CN information elements
cn-InformationInfo              CN-InformationInfo                OPTIONAL,

```

```

-- UTRAN mobility IEs
  ura-Identity          URA-Identity          OPTIONAL,
-- Radio bearer IEs
  rb-InformationReleaseList  RB-InformationReleaseList  OPTIONAL,
  rb-InformationReconfigList  RB-InformationReconfigList  OPTIONAL,
  rb-InformationAffectedList  RB-InformationAffectedList  OPTIONAL,
  dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo  OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo      UL-CommonTransChInfo      OPTIONAL,
  ul-deletedTransChInfoList  UL-DeletedTransChInfoList  OPTIONAL,
  ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList  OPTIONAL,
  modeSpecificTransChInfo    CHOICE {
    fdd          SEQUENCE {
      cpch-SetID          CPCH-SetID          OPTIONAL,
      addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
    },
    tdd          NULL
  },
  dl-CommonTransChInfo      DL-CommonTransChInfo      OPTIONAL,
  dl-DeletedTransChInfoList  DL-DeletedTransChInfoList  OPTIONAL,
  dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList  OPTIONAL,
-- Physical channel IEs
  frequencyInfo            FrequencyInfo            OPTIONAL,
  maxAllowedUL-TX-Power    MaxAllowedUL-TX-Power    OPTIONAL,
  ul-ChannelRequirement     UL-ChannelRequirement     OPTIONAL,
  modeSpecificPhysChInfo    CHOICE {
    fdd          SEQUENCE {
      dl-PDSCH-Information      DL-PDSCH-Information      OPTIONAL
    },
    tdd          NULL
  },
  dl-CommonInformation      DL-CommonInformation      OPTIONAL,
  dl-InformationPerRL-List  DL-InformationPerRL-List  OPTIONAL
}

```

```

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

```

```

-- *****
--
-- 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,
    nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    } OPTIONAL
  },
  later-than-r3          SEQUENCE {
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    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,
  Extension mechanism for non-release99 information
  laterNonCriticalExtensions  SEQUENCE {} OPTIONAL
  -- 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 {} OPTIONAL
    -- Container for additional R99 extensions
    downlinkDirectTransfer-r3-add-ext  BIT STRING  OPTIONAL,
    nonCriticalExtensions  SEQUENCE {}  OPTIONAL
  } OPTIONAL
},
  later-than-r3          SEQUENCE {
    rrc-TransactionIdentifier  RRC-TransactionIdentifier,
    criticalExtensions          SEQUENCE {}
  }
}

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

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

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

HandoverToUTRANCommand-r3-IEs ::= SEQUENCE {
  -- User equipment IEs

```

```

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

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

HandoverToUTRANComplete ::= SEQUENCE {
  --TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  -- TABULAR: startList is conditional on history.
  startList              STARTList                OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime  ActivationTime          OPTIONAL,
  Extension mechanism for non-release99 information
  laterNonCriticalExtensions SEQUENCE {} OPTIONAL
  -- Container for additional R99 extensions
  handoverToUTRANComplete-r3-add-ext BIT STRING  OPTIONAL,

```



```

        single-GSM-Message          SEQUENCE {},
        gsm-MessageList             SEQUENCE {
            gsm-Messages             GSM-MessageList
        }
    }
}

HandoverFromUTRANCommand-CDMA2000 ::= CHOICE {
    r3                               SEQUENCE {
        handoverFromUTRANCommand-CDMA2000-r3
        HandoverFromUTRANCommand-CDMA2000-r3-IEs,
        laterNonCriticalExtensions SEQUENCE {} OPTIONAL
        -- Container for additional R99 extensions
        handoverFromUTRANCommand-CDMA2000-r3-add-ext
        nonCriticalExtensions BIT STRING OPTIONAL,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
},
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier    RRC-TransactionIdentifier,
        criticalExtensions           SEQUENCE {}
    }
}

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

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

HandoverFromUTRANFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    -- Other IEs
    interRAT-HO-FailureCause        InterRAT-HO-FailureCause    OPTIONAL,
    interRATMessage                  CHOICE {
        gsm                           SEQUENCE {
            gsm-MessageList            GSM-MessageList
        },
        cdma2000                       SEQUENCE {
            cdma2000-MessageList       CDMA2000-MessageList
        }
    } OPTIONAL,
    Extension mechanism for non-release99 information
    laterNonCriticalExtensions SEQUENCE {} OPTIONAL
    -- Container for additional R99 extensions
    handoverFromUTRANFailure-r3-add-ext BIT STRING OPTIONAL,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
}

-- *****
--
-- INTER RAT HANOVER 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,
-- Reserved for future non critical extension
v3a0NonCriticalExtensions SEQUENCE {
interRATHandoverInfo-v3a0ext InterRATHandoverInfo-v3a0ext-IEs,
Reserved for future non critical extension
laterNonCriticalExtensions SEQUENCE {
-- Container for additional R99 extensions
interRATHandoverInfo-r3-add-ext BIT STRING OPTIONAL,
nonCriticalExtensions SEQUENCE {} OPTIONAL
} OPTIONAL
} OPTIONAL
}
}

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

InterRATHandoverInfo-v3a0ext-IEs ::= SEQUENCE {
-- User equipment IEs
ue-RadioAccessCapability-v3a0ext UE-RadioAccessCapability-v3a0ext 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 {} OPTIONAL
-- Container for additional R99 extensions
measurementControl-r3-add-ext BIT STRING OPTIONAL,
nonCriticalExtensions SEQUENCE {} OPTIONAL
} OPTIONAL
} OPTIONAL
},
later-than-r3 SEQUENCE {
rrc-TransactionIdentifier RRC-TransactionIdentifier,
criticalExtensions SEQUENCE {}
}
}

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

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

```

```

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

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

MeasurementControlFailure ::= SEQUENCE {
    -- User equipment IES
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    failureCause                 FailureCauseWithProtErr,
    Extension mechanism for non-release99 information
    laterNonCriticalExtensions   SEQUENCE {} OPTIONAL
    -- Container for additional R99 extensions
    measurementControlFailure-r3-add-ext BIT STRING OPTIONAL,
    nonCriticalExtensions        SEQUENCE {} OPTIONAL
} OPTIONAL

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

MeasurementReport ::= SEQUENCE {
    -- Measurement IES
    measurementIdentity          MeasurementIdentity,
    measuredResults              MeasuredResults              OPTIONAL,
    measuredResultsOnRACH        MeasuredResultsOnRACH        OPTIONAL,
    additionalMeasuredResults    MeasuredResultsList          OPTIONAL,
    eventResults                 EventResults                OPTIONAL,
    -- Non-critical extensions
    v390nonCriticalExtensions    SEQUENCE {
        measurementReport-v390ext MeasurementReport-v390ext,
        Extension mechanism for non-release99 information
        laterNonCriticalExtensions SEQUENCE {} OPTIONAL
        -- Container for additional R99 extensions
        measurementReport-r3-add-ext BIT STRING OPTIONAL,
        nonCriticalExtensions        SEQUENCE {} OPTIONAL
    } OPTIONAL
} OPTIONAL

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

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

PagingType1 ::= SEQUENCE {
    -- User equipment IES
    pagingRecordList            PagingRecordList            OPTIONAL,
    -- Other IES
    bcch-ModificationInfo       BCCH-ModificationInfo          OPTIONAL,
    Extension mechanism for non-release99 information
    laterNonCriticalExtensions   SEQUENCE {} OPTIONAL
    -- Container for additional R99 extensions
    pagingType1-r3-add-ext      BIT STRING OPTIONAL,
    nonCriticalExtensions        SEQUENCE {} OPTIONAL
} OPTIONAL

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

PagingType2 ::= SEQUENCE {
    -- User equipment IES

```

```

rrc-TransactionIdentifier      RRC-TransactionIdentifier,
pagingCause                    PagingCause,
-- Core network IEs
cn-DomainIdentity              CN-DomainIdentity,
pagingRecordTypeID             PagingRecordTypeID,
Extension mechanism for non-release99 information
laterNonCriticalExtensions      SEQUENCE {} OPTIONAL
-- Container for additional R99 extensions
pagingType2-r3-add-ext         BIT STRING OPTIONAL,
nonCriticalExtensions          SEQUENCE {} OPTIONAL
} OPTIONAL
}

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

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

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

```

```

-- *****

PhysicalChannelReconfigurationComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo     IntegrityProtActivationInfo      OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance              UL-TimingAdvance                OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime        ActivationTime                OPTIONAL,
  rb-UL-CiphActivationTimeInfo   RB-ActivationTimeInfoList    OPTIONAL,
  ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo  OPTIONAL,
  -- Extension mechanism for non-release99 information
  later-NonCriticalExtensions   SEQUENCE {} OPTIONAL
  -- Container for additional R99 extensions
  physicalChannelReconfigurationComplete-r3-add-ext
  BIT STRING                    OPTIONAL,
  nonCriticalExtensions         SEQUENCE {} OPTIONAL
}

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

PhysicalChannelReconfigurationFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier      OPTIONAL,
  failureCause                  FailureCauseWithProtErr,
  -- Extension mechanism for non-release99 information
  later-NonCriticalExtensions   SEQUENCE {} OPTIONAL
  -- Container for additional R99 extensions
  physicalChannelReconfigurationFailure-r3-add-ext
  BIT STRING                    OPTIONAL,
  nonCriticalExtensions         SEQUENCE {} OPTIONAL
}

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

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

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

```

```

}

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

PUSCHCapacityRequest ::= SEQUENCE {
  -- User equipment IEs
  dsch-RNTI                DSCH-RNTI                OPTIONAL,
  -- Measurement IEs
  trafficVolume            TrafficVolumeMeasuredResultsList  OPTIONAL,
  timeslotListWithISCP    TimeslotListWithISCP    OPTIONAL,
  primaryCCPCH-RSCP       PrimaryCCPCH-RSCP         OPTIONAL,
  allocationConfirmation   CHOICE {
    pdschConfirmation      PDSCH-Identity,
    pusSchConfirmation     PUSCH-Identity
  }
  protocolErrorIndicator  ProtocolErrorIndicatorWithMoreInfo,
  Extension mechanism for non-release99 information
  laterNonCriticalExtensions SEQUENCE {} OPTIONAL
  -- Container for additional R99 extensions
  pusSchCapacityRequest-r3-add-ext BIT STRING OPTIONAL,
  nonCriticalExtensions   SEQUENCE {} OPTIONAL
} OPTIONAL

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

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

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

```

```

        cpch-SetID                CPCH-SetID                OPTIONAL,
        addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd                            NULL
}
dl-CommonTransChInfo             DL-CommonTransChInfo             OPTIONAL,
dl-DeletedTransChInfoList        DL-DeletedTransChInfoList        OPTIONAL,
dl-AddReconfTransChInfoList      DL-AddReconfTransChInfo2List     OPTIONAL,
-- Physical channel IEs
frequencyInfo                    FrequencyInfo                    OPTIONAL,
maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power            OPTIONAL,
ul-ChannelRequirement            UL-ChannelRequirement            OPTIONAL,
modeSpecificPhysChInfo           CHOICE {
    fdd                            SEQUENCE {
        dl-PDSCH-Information        DL-PDSCH-Information            OPTIONAL
    },
    tdd                            NULL
},
dl-CommonInformation             DL-CommonInformation             OPTIONAL,
-- NOTE: IE dl-InformationPerRL-List should be optional in later versions
-- of this message
dl-InformationPerRL-List         DL-InformationPerRL-List
}

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

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

RadioBearerReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo     IntegrityProtActivationInfo       OPTIONAL,
    -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance              UL-TimingAdvance                 OPTIONAL,
    -- Radio bearer IEs
    count-C-ActivationTime        ActivationTime                    OPTIONAL,
    rb-UL-CiphActivationTimeInfo   RB-ActivationTimeInfoList        OPTIONAL,
    ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo    OPTIONAL,
    -- Extension mechanism for non-release99 information
    laterNonCriticalExtensions     SEQUENCE {} OPTIONAL
    -- 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,
    -- Extension mechanism for non-release99 information
    laterNonCriticalExtensions     SEQUENCE {} OPTIONAL
    -- 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 {} OPTIONAL
        -- Container for additional R99 extensions
        radioBearerRelease-r3-add-ext BIT STRING OPTIONAL,
        nonCriticalExtensions        SEQUENCE {} OPTIONAL
      } OPTIONAL
    },
  later-than-r3
    SEQUENCE {
      rrc-TransactionIdentifier      RRC-TransactionIdentifier,
      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
  } OPTIONAL,
  dl-CommonTransChInfo          DL-CommonTransChInfo         OPTIONAL,
  dl-DeletedTransChInfoList     DL-DeletedTransChInfoList    OPTIONAL,
  dl-AddReconfTransChInfoList   DL-AddReconfTransChInfo2List OPTIONAL,
  -- Physical channel IEs
  frequencyInfo                 FrequencyInfo                 OPTIONAL,
  maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power       OPTIONAL,
  ul-ChannelRequirement         UL-ChannelRequirement       OPTIONAL,
  modeSpecificPhysChInfo        CHOICE {
    fdd
      SEQUENCE {
        dl-PDSCH-Information      DL-PDSCH-Information      OPTIONAL
      },
    tdd
      NULL
  },
  dl-CommonInformation          DL-CommonInformation         OPTIONAL,
  dl-InformationPerRL-List      DL-InformationPerRL-List     OPTIONAL
}

```

```

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

```

```

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

```

```

RadioBearerReleaseComplete ::= SEQUENCE {

```

```

-- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo     IntegrityProtActivationInfo      OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance              UL-TimingAdvance                        OPTIONAL,
-- Radio bearer IEs
  count-C-ActivationTime        ActivationTime                      OPTIONAL,
  rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList      OPTIONAL,
  ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo    OPTIONAL,
-- Extension mechanism for non-release99 information
  laterNonCriticalExtensions    SEQUENCE {} OPTIONAL
-- 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,
-- Extension mechanism for non-release99 information
  laterNonCriticalExtensions    SEQUENCE {} OPTIONAL
-- 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 {} OPTIONAL
      -- Container for additional R99 extensions
      radioBearerSetup-r3-add-ext BIT STRING OPTIONAL,
      nonCriticalExtensions       SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  later-than-r3                  SEQUENCE {
    rrc-TransactionIdentifier     RRC-TransactionIdentifier,
    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
}

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

RadioBearerSetupComplete ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo       IntegrityProtActivationInfo     OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance                 UL-TimingAdvance               OPTIONAL,
    start-Value                      START-Value                    OPTIONAL,
-- Radio bearer IEs
    count-C-ActivationTime           ActivationTime                  OPTIONAL,
    rb-UL-CiphActivationTimeInfo     RB-ActivationTimeInfoList     OPTIONAL,
    ul-CounterSynchronisationInfo    UL-CounterSynchronisationInfo  OPTIONAL,
-- Extension mechanism for non-release99 information
    laterNonCriticalExtensions       SEQUENCE {} OPTIONAL
-- 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,
-- Extension mechanism for non-release99 information
    laterNonCriticalExtensions       SEQUENCE {} OPTIONAL
-- 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 {} OPTIONAL
    -- Container for additional R99 extensions
    rrcConnectionReject-r3-add-ext BIT STRING OPTIONAL,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  later-than-r3                    SEQUENCE {
    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 {} OPTIONAL
    -- 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              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
}

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

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

```

```

        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
}

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

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

RRCConnectionReleaseComplete ::= SEQUENCE {
    -- User equipment IES
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    errorIndication                    FailureCauseWithProtErr          OPTIONAL,
    Extension mechanism for non- release99 information
    laterNonCriticalExtensions        SEQUENCE {} OPTIONAL
    -- Container for additional R99 extensions
    rrcConnectionReleaseComplete-r3-add-ext BIT STRING          OPTIONAL,
    nonCriticalExtensions              SEQUENCE {}          OPTIONAL
} OPTIONAL
}

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

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

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

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

```



```

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

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

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

RRCStatus ::= SEQUENCE {
  -- Other IEs
  -- TABULAR: Identification of received message is nested in
  -- ProtocolErrorMoreInformation
  protocolErrorInformation ProtocolErrorMoreInformation,
  Extension mechanism for non-release99 information
  laterNonCriticalExtensions SEQUENCE {} OPTIONAL
  -- Container for additional R99 extensions
  rrcStatus-r3-add-ext BIT STRING OPTIONAL,
  nonCriticalExtensions SEQUENCE {} OPTIONAL
}

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

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

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

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

SecurityModeComplete ::= SEQUENCE {

```

```

-- TABULAR: Integrity protection shall always be performed on this message.
-- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo     IntegrityProtActivationInfo      OPTIONAL,
-- Radio bearer IEs
  rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList      OPTIONAL,
-- Extension mechanism for non-release99 information
  later<NonCriticalExtensions    SEQUENCE {} OPTIONAL
  -- Container for additional R99 extensions
  securityModeComplete-r3-add-ext BIT STRING      OPTIONAL,
  nonCriticalExtensions          SEQUENCE {}      OPTIONAL
}
}

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

SecurityModeFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
-- Extension mechanism for non-release99 information
  later<NonCriticalExtensions    SEQUENCE {}      OPTIONAL
  -- Container for additional R99 extensions
  securityModeFailure-r3-add-ext BIT STRING      OPTIONAL,
  nonCriticalExtensions          SEQUENCE {}      OPTIONAL
}

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

SignallingConnectionRelease ::= CHOICE {
  r3                               SEQUENCE {
    signallingConnectionRelease-r3 SignallingConnectionRelease-r3-IEs,
    later<NonCriticalExtensions    SEQUENCE {}      OPTIONAL
    -- 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,
-- Extension mechanism for non-release99 information
  later<NonCriticalExtensions    SEQUENCE {}      OPTIONAL
  -- Container for additional R99 extensions
  signallingConnectionReleaseIndication-r3-add-ext BIT STRING      OPTIONAL,
  nonCriticalExtensions          SEQUENCE {}      OPTIONAL
}
}

-- *****

```

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

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

```

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

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

```

```

        spare1                NULL
    }
}
-- *****
--
-- First segment
-- *****

FirstSegment ::=
    SEQUENCE {
        -- Other information elements
        sib-Type                SIB-Type,
        seg-Count                SegCount,
        sib-Data-fixed            SIB-Data-fixed
    }
-- *****
--
-- First segment (short)
-- *****

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

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

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

CompleteSIB-List ::=
    SEQUENCE (SIZE (1..maxSIBperMsg)) OF
        CompleteSIBshort
-- *****
--
CompleteSIB ::=
    SEQUENCE {
        -- Other information elements
        sib-Type                SIB-Type,
        -- for sib-Data-fixed, in case the SIB data is less than 226 bits, padding
    }

```

```

-- shall be used. The same padding bits shall be used as defined in clause 12.1
sib-Data-fixed          BIT STRING (SIZE (226))
}

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

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

SystemInformationChangeIndication ::= SEQUENCE {
  -- Other IEs
  bcch-ModificationInfo BCCH-ModificationInfo,
  Extension mechanism for non-release99 information
  laterNonCriticalExtensions SEQUENCE {} OPTIONAL
  -- Container for additional R99 extensions
  systemInformationChangeIndication-r3-add-ext BIT STRING OPTIONAL,
  nonCriticalExtensions SEQUENCE {} OPTIONAL
} OPTIONAL
}

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

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

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

TransportChannelReconfigurationComplete ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier     RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo    IntegrityProtActivationInfo  OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance             UL-TimingAdvance            OPTIONAL,
-- Radio bearer IEs
    count-C-ActivationTime       ActivationTime              OPTIONAL,
    rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList  OPTIONAL,
    ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo  OPTIONAL,
-- Extension mechanism for non-release99 information
    laterNonCriticalExtensions   SEQUENCE {} OPTIONAL
-- 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,
-- Extension mechanism for non-release99 information
    laterNonCriticalExtensions   SEQUENCE {} OPTIONAL
-- Container for additional R99 extensions
    transportChannelReconfigurationFailure-r3-add-ext  BIT STRING  OPTIONAL,
    nonCriticalExtensions        SEQUENCE {}  OPTIONAL
}

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

TransportFormatCombinationControl ::= SEQUENCE {
-- rrc-TransactionIdentifier is always included in this version of the
-- specification.
    rrc-TransactionIdentifier     RRC-TransactionIdentifier    OPTIONAL,
    modeSpecificInfo              CHOICE {
        fdd                      NULL,
        tdd                      SEQUENCE {
            tfcs-ID              TFCS-Identity    OPTIONAL
        }
    }
}

```

```

    },
    dpch-TFCS-InUplink          TFC-Subset,
    activationTimeForTFCSubset  ActivationTime          OPTIONAL,
    tfc-ControlDuration         TFC-ControlDuration      OPTIONAL,
    -- Extension mechanism for non-release99 information
    later#NonCriticalExtensions SEQUENCE {} OPTIONAL
    -- Container for additional R99 extensions
    transportFormatCombinationControl-r3-add-ext
                                     BIT STRING          OPTIONAL,
    nonCriticalExtensions       SEQUENCE {}             OPTIONAL
    } OPTIONAL
}

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

TransportFormatCombinationControlFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier  RRC-TransactionIdentifier,
    failureCause               FailureCauseWithProtErr,
    -- Extension mechanism for non-release99 information
    later#NonCriticalExtensions SEQUENCE {} OPTIONAL
    -- Container for additional R99 extensions
    transportFormatCombinationControlFailure-r3-add-ext BIT STRING          OPTIONAL,
    nonCriticalExtensions       SEQUENCE {}             OPTIONAL
    } OPTIONAL
}

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

UECapabilityEnquiry ::= CHOICE {
    r3 SEQUENCE {
        ueCapabilityEnquiry-r3 UECapabilityEnquiry-r3-IEs,
        later#NonCriticalExtensions SEQUENCE {} OPTIONAL
        -- Container for additional R99 extensions
        ueCapabilityEnquiry-r3-add-ext BIT STRING          OPTIONAL,
        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
}

-- *****
--
-- 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,
    -- Non critical extensions
    v370NonCriticalExtensions SEQUENCE {
        ueCapabilityInformation-v370ext UECapabilityInformation-v370ext,
        v380NonCriticalExtensions SEQUENCE {
            ueCapabilityInformation-v380ext UECapabilityInformation-v380ext-IEs,
            -- Reserved for future non critical extension
        }
        v3a0NonCriticalExtensions SEQUENCE {

```

```

        ueCapabilityInformation-v3a0ext UECapabilityInformation-v3a0ext-IEs,
        laterNonCriticalExtensions SEQUENCE {} OPTIONAL
        -- Container for additional R99 extensions
        ueCapabilityInformation-r3-add-ext BIT STRING OPTIONAL,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
} OPTIONAL
} OPTIONAL

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

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

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

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

UECapabilityInformationConfirm ::= CHOICE {
    r3 SEQUENCE {
        ueCapabilityInformationConfirm-r3
        UECapabilityInformationConfirm-r3-IEs,
        laterNonCriticalExtensions SEQUENCE {} OPTIONAL
        -- 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,
    Extension mechanism for non release99 information
    laterNonCriticalExtensions SEQUENCE {} OPTIONAL
    -- 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 {} OPTIONAL
    -- Container for additional R99 extensions
    uplinkPhysicalChannelControl-r3-add-ext BIT STRING OPTIONAL,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  } OPTIONAL
},
  later-than-r3                     SEQUENCE {
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    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
}

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

URAUpdate ::= SEQUENCE {
  -- User equipment IEs
  u-RNTI                           U-RNTI,
  ura-UpdateCause                   URA-UpdateCause,
  protocolErrorIndicator            ProtocolErrorIndicatorWithMoreInfo,
  Extension mechanism for non-release99 information
  laterNonCriticalExtensions        SEQUENCE {} OPTIONAL
  -- Container for additional R99 extensions
  uraUpdate-r3-add-ext BIT STRING OPTIONAL,
  nonCriticalExtensions SEQUENCE {} OPTIONAL
} OPTIONAL
}

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

URAUpdateConfirm ::= CHOICE {
  r3                               SEQUENCE {
    uraUpdateConfirm-r3             URAUpdateConfirm-r3-IEs,
    laterNonCriticalExtensions      SEQUENCE {} OPTIONAL
    -- 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               SEQUENCE {}
  }
}

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

```

```

    utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient      OPTIONAL,
-- CN information elements
    cn-InformationInfo              CN-InformationInfo                      OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                    URA-Identity                            OPTIONAL,
-- Radio bearer IEs
    dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo          OPTIONAL
}

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

URUpdateConfirm-CCCH ::= CHOICE {
    r3                               SEQUENCE {
        uraUpdateConfirm-CCCH-r3    URAUpdateConfirm-CCCH-r3-IEs,
        later-than-r3NonCriticalExtensions SEQUENCE {} OPTIONAL
        -- Container for additional R99 extensions
        uraUpdateConfirm-CCCH-r3-add-ext BIT STRING OPTIONAL,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier    RRC-TransactionIdentifier,
        criticalExtensions           SEQUENCE {}
    }
}

URUpdateConfirm-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 {
        uranMobilityInformation-r3  UTRANMobilityInformation-r3-IEs,
        v3a0NonCriticalExtensions   SEQUENCE {
            uranMobilityInformation-v3a0ext UTRANMobilityInformation-v3a0ext-IEs,
            later-than-r3NonCriticalExtensions SEQUENCE {} OPTIONAL
            -- Container for additional R99 extensions
            uranMobilityInformation-r3-add-ext BIT STRING OPTIONAL,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier    RRC-TransactionIdentifier,
        criticalExtensions           SEQUENCE {}
    }
}

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

```

```

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

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

UTRANMobilityInformationConfirm ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo      IntegrityProtActivationInfo      OPTIONAL,
    -- Radio bearer IEs
    count-C-ActivationTime          ActivationTime                  OPTIONAL,
    rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList   OPTIONAL,
    ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo OPTIONAL,
    -- Extension mechanism for non-release99 information
    laterNonCriticalExtensions      SEQUENCE {} OPTIONAL
    -- Container for additional R99 extensions
    utranMobilityInformationConfirm-r3-add-ext BIT STRING          OPTIONAL,
    nonCriticalExtensions           SEQUENCE {}                    OPTIONAL
} OPTIONAL

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

UTRANMobilityInformationFailure ::= SEQUENCE {
    -- UE information elements
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    failureCause                   FailureCauseWithProtErr,
    -- Extension mechanism for non-release99 information
    laterNonCriticalExtensions      SEQUENCE {} OPTIONAL
    -- Container for additional R99 extensions
    utranMobilityInformationFailure-r3-add-ext BIT STRING          OPTIONAL,
    nonCriticalExtensions           SEQUENCE {}                    OPTIONAL
}

END

```

## 11.3 Information element definitions

```
InformationElements DEFINITIONS AUTOMATIC TAGS ::=
```

```

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

```

```
BEGIN
```

```
IMPORTS
```

```

    hiPDSCHidentities,
    hiPUSCHidentities,
    hiRM,
    maxAC,
    maxAdditionalMeas,
    maxASC,
    maxASCmap,
    maxASCpersist,
    maxCCTrCH,
    maxCellMeas,
    maxCellMeas-1,
    maxCNdomains,
    maxCPCHsets,
    maxDPCH-DLchan,
    maxDPDCH-UL,
    maxDRACclasses,

```

```

maxFACHPCH,
maxFreq,
maxFreqBandsFDD,
maxFreqBandsTDD,
maxFreqBandsGSM,
maxInterSysMessages,
maxLoCHperRLC,
maxMeasEvent,
maxMeasIntervals,
maxMeasParEvent,
maxNumCDMA2000Freqs,
maxNumFDDFreqs,
maxNumGSMFreqRanges,
maxNumTDDFreqs,
maxOtherRAT,
maxOtherRAT-16,
maxPagel,
maxPCPCH-Apsig,
maxPCPCH-ApsubCh,
maxPCPCH-CDsig,
maxPCPCH-CDsubCh,
maxPCPCH-SF,
maxPCPCHs,
maxPDCPAlgoType,
maxPDSCH,
maxPDSCH-TFCIgroups,
maxPRACH,
maxPredefConfig,
maxPUSCH,
maxRABsetup,
maxRAT,
maxRB,
maxRBallRABs,
maxRBMuxOptions,
maxRBperRAB,
maxReportedGSMCells,
maxSRBsetup,
maxRL,
maxRL-1,
maxSCCPCH,
maxSat,
maxSIB,
maxSIB-FACH,
maxSystemCapability,
maxTF,
maxTF-CPCH,
maxTFC,
maxTFCI-2-Combs,
maxTGPS,
maxTrCH,
maxTrCHpreconf,
maxTS,
maxTS-1,
maxURA
FROM Constant-definitions;

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

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

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

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

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

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

```

```

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

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

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

CN-InformationInfoFull ::=
  SEQUENCE {
    PLMN-Identity
    NAS-SystemInformationGSM-MAP
    CN-DomainInformationList
  }

Digit ::=
  INTEGER (0..9)

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

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

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

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

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

```

```

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

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

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

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

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

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

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

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

AccessClassBarred ::=
    ENUMERATED {
        barred, notBarred }

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

```

```

AllowedIndicator ::=
    ENUMERATED {
        allowed, notAllowed }

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

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

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

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
            },
            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
    }

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 }

```

```

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

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

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

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

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

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

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

```

```

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

CapabilityUpdateRequirement ::= SEQUENCE {
    ue-RadioCapabilityFDDUpdateRequirement BOOLEAN,
    ue-RadioCapabilityTDDUpdateRequirement 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
    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
}

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

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

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

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

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

EstablishmentCause ::= ENUMERATED {
    originatingConversationalCall,
    originatingStreamingCall,
    originatingInteractiveCall,
    originatingBackgroundCall,
    originatingSubscribedTrafficCall,
    terminatingConversationalCall,
    terminatingStreamingCall,
    terminatingInteractiveCall,
}

```

```

        terminatingBackgroundCall,
        emergencyCall,
        interRAT-CellReselection,
        interRAT-CellChangeOrder,
        registration,
        detach,
        originatingHighPrioritySignalling,
        originatingLowPrioritySignalling,
        callRe-establishment,
        terminatingHighPrioritySignalling,
        terminatingLowPrioritySignalling,
        terminatingCauseUnknown,
        spare12,
        spare11,
        spare10,
        spare9,
        spare8,
        spare7,
        spare6,
        spare5,
        spare4,
        spare3,
        spare2,
        spare1 }

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

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

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

AccessStratumReleaseIndicator ::= ENUMERATED {
    r99 }

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 {
    uial }

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

IntegrityProtectionModeInfo ::= SEQUENCE {
    -- TABULAR: DL integrity protection 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 }

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

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

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

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

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

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

MaxNoSCCPCH-RL ::= ENUMERATED {
    r11 }

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

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

MaxNumberOfTFC-UL ::= ENUMERATED {
    tfc4, tfc8, tfc16, tfc32, tfc48, tfc64,

```

```

        tfc96, tfc128, tfc256, tfc512, tfc1024 }

MaxPhysChPerFrame ::=                INTEGER (1..224)

MaxPhysChPerTimeslot ::=            ENUMERATED {
        ts1, ts2 }

MaxPhysChPerTS ::=                  INTEGER (1..16)

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

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

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

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

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

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

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

MeasurementCapabilityExt ::=         SEQUENCE{
        compressedModeMeasCapabFDDList CompressedModeMeasCapabFDDList,
        compressedModeMeasCapabTDDList CompressedModeMeasCapabTDDList OPTIONAL,
        compressedModeMeasCapabGSMList CompressedModeMeasCapabGSMList OPTIONAL,
        compressedModeMeasCapabMC      CompressedModeMeasCapabMC      OPTIONAL
}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

```

        s50, s100, s200 }
N-315 ::=
    ENUMERATED {
        s1, s50, s100, s200, s400,
        s600, s800, s1000 }
N-315ext ::=
    ENUMERATED {
        s2, s4, s10, s20 }
N-AccessFails ::=
    INTEGER (1..64)
N-AP-RetransMax ::=
    INTEGER (1..64)
NetworkAssistedGPS-Supported ::=
    ENUMERATED {
        networkBased,
        ue-Based,
        bothNetworkAndUE-Based,
        noNetworkAssistedGPS }
NF-BO-AllBusy ::=
    INTEGER (0..31)
NF-BO-NoAICH ::=
    INTEGER (0..31)
NF-BO-Mismatch ::=
    INTEGER (0..127)
NS-BO-Busy ::=
    INTEGER (0..63)
NS-IP ::=
    INTEGER (0..28)
P-TMSI-and-RAI-GSM-MAP ::=
    SEQUENCE {
        p-TMSI
        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
PagingRecordList ::=
    SEQUENCE (SIZE (1..maxPage1)) OF
        PagingRecord
PDCP-Capability ::=
    SEQUENCE {
        losslessSRNS-RelocationSupport
        supportForRfc2507
        notSupported
        supported
    }
PhysicalChannelCapability ::=
    SEQUENCE {
        fddPhysChCapability
            SEQUENCE {
                downlinkPhysChCapability
                uplinkPhysChCapability
            }
        tddPhysChCapability
            SEQUENCE {
                DL-PhysChCapabilityFDD,
                UL-PhysChCapabilityFDD
            }
            OPTIONAL,
    }

```

```

        downlinkPhysChCapability          DL-PhysChCapabilityTDD,
        uplinkPhysChCapability            UL-PhysChCapabilityTDD
    }
    }
    OPTIONAL

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

ProtocolErrorIndicator ::=
    ENUMERATED {
        noError, errorOccurred }

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

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

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

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

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

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

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

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

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

RejectionCause ::=
    ENUMERATED {

```

```

        congestion,
        unspecified }

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

RF-Capability ::=
    SEQUENCE {
        fddRF-Capability
            SEQUENCE {
                ue-PowerClass
                    UE-PowerClass,
                txRxFrequencySeparation
                    TxRxFrequencySeparation
            }
            OPTIONAL,
        tddRF-Capability
            SEQUENCE {
                ue-PowerClass
                    UE-PowerClass,
                radioFrequencyTDDBandList
                    RadioFrequencyBandTDDList,
                chipRateCapability
                    ChipRateCapability
            }
            OPTIONAL
    }

RLC-Capability ::=
    SEQUENCE {
        totalRLC-AM-BufferSize
            TotalRLC-AM-BufferSize,
        maximumRLC-WindowSize
            MaximumRLC-WindowSize,
        maximumAM-EntityNumber
            MaximumAM-EntityNumberRLC-Cap
    }

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

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

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

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

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

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

SecurityCapability ::=
    SEQUENCE {
        cipheringAlgorithmCap
            BIT STRING {
                spare15(0),
                spare14(1),
                spare13(2),
                spare12(3),
                spare11(4),
                spare10(5),
                spare9(6),
                spare8(7),
                spare7(8),
                spare6(9),
                spare5(10),
                spare4(11),
                spare3(12),
                spare2(13),
                uea1(14),
                uea0(15)
            } (SIZE (16)),
        integrityProtectionAlgorithmCap
            BIT STRING {
                spare15(0),
                spare14(1),
                spare13(2),
                spare12(3),
                spare11(4),
                spare10(5),
                spare9(6),
                spare8(7),
                spare7(8),
                spare6(9),
                spare5(10),
            }
    }

```

```

        spare4(11),
        spare3(12),
        spare2(13),
        uial(14),
        spare0(15)
    } (SIZE (16))
}

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

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

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

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

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

SystemSpecificCapUpdateReq ::= ENUMERATED {
    gsm }

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

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

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

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

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

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

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

UE-ConnTimersAndConstants ::=
    SEQUENCE {
-- Optional is used also for parameters for which the default value is the last one read in SIB1
-- t-301 and n-301 should not be used by the UE in this version of the specification
        t-301      T-301      DEFAULT ms2000,
        n-301      N-301      DEFAULT 2,
        t-302      T-302      DEFAULT ms4000,
        n-302      N-302      DEFAULT 3,
        t-304      T-304      DEFAULT ms2000,
        n-304      N-304      DEFAULT 2,
        t-305      T-305      DEFAULT ms30,
        t-307      T-307      DEFAULT s30,
        t-308      T-308      DEFAULT ms160,
    }

```

```

t-309          T-309          DEFAULT 5,
t-310          T-310          DEFAULT ms160,
n-310          N-310          DEFAULT 4,
t-311          T-311          DEFAULT ms2000,
t-312          T-312          DEFAULT 1,
-- n-312 shall be ignored if n-312 in UE-ConnTimersAndConstants-v3a0ext is present, and the
-- value of that element shall be used instead.
n-312          N-312          DEFAULT s1,
t-313          T-313          DEFAULT 3,
n-313          N-313          DEFAULT s20,
t-314          T-314          DEFAULT s12,
t-315          T-315          DEFAULT s180,
-- n-315 shall be ignored if n-315 in UE-ConnTimersAndConstants-v3a0ext is present, and the
-- value of that element shall be used instead.
n-315          N-315          DEFAULT s1,
t-316          T-316          DEFAULT s30,
t-317          T-317          DEFAULT s180
}

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

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

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

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

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

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

UE-RadioAccessCapability ::= SEQUENCE {
accessStratumReleaseIndicator AccessStratumReleaseIndicator,
pdcpcapability PDCP-Capability,
rlccapability RLC-Capability,
transportChannelCapability TransportChannelCapability,
rfcapability RF-Capability,
physicalChannelCapability PhysicalChannelCapability,
ue-MultiModeRAT-Capability UE-MultiModeRAT-Capability,
securityCapability SecurityCapability,
ue-positioning-Capability UE-Positioning-Capability,
measurementCapability MeasurementCapability OPTIONAL
}

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

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

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

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

UE-PositioningCapabilityExt-v380 ::= SEQUENCE {

```

```

    rx-tx-TimeDifferenceType2Capable    BOOLEAN
}

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

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

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

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

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

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

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

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

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

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

WaitTime ::= INTEGER (0..15)

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

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

```

```

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

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

DefaultConfigIdentity ::= INTEGER (0..10)

DefaultConfigMode ::= ENUMERATED {
    fdd,
    tdd }

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

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

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

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

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

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

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

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

ExpectReordering ::= ENUMERATED {
    reorderingNotExpected,
    reorderingExpected }

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

HeaderCompressionInfo ::= SEQUENCE {
    algorithmSpecificInfo  AlgorithmSpecificInfo
}

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

LogicalChannelIdentity ::= INTEGER (1..15)

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

```

```

    notSupported          NULL
  }

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

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

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

MaxMRW ::= ENUMERATED {
    mm1, mm4, mm6, mm8, mm12, mm16,
    mm24, mm32 }

MaxPDCP-SN-WindowSize ::= ENUMERATED {
    sn255, sn65535 }

MaxRST ::= ENUMERATED {
    rst1, rst4, rst6, rst8, rst12,
    rst16, rst24, rst32 }

NoExplicitDiscard ::= ENUMERATED {
    dt10, dt20, dt30, dt40, dt50,
    dt60, dt70, dt80, dt90, dt100 }

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

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

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

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

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

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

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

PredefinedConfigIdentity ::= INTEGER (0..15)

PredefinedConfigValueTag ::= INTEGER (0..15)

PredefinedRB-Configuration ::= SEQUENCE {

```

```

re-EstablishmentTimer          Re-EstablishmentTimer,
srb-InformationList            SRB-InformationSetupList,
rb-InformationList             RB-InformationSetupList
}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

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

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

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

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

TimerPollProhibit ::=
    ENUMERATED {
        tpp10, tpp20, tpp30, tpp40, tpp50,
        tpp60, tpp70, tpp80, tpp90, tpp100,
        tpp110, tpp120, tpp130, tpp140, tpp150,
        tpp160, tpp170, tpp180, tpp190, tpp200,
        tpp210, tpp220, tpp230, tpp240, tpp250,
        tpp260, tpp270, tpp280, tpp290, tpp300,
        tpp310, tpp320, tpp330, tpp340, tpp350,
        tpp360, tpp370, tpp380, tpp390, tpp400,
        tpp410, tpp420, tpp430, tpp440, tpp450,

```

```

        tpp460, tpp470, tpp480, tpp490, tpp500,
        tpp510, tpp520, tpp530, tpp540, tpp550,
        tpp600, tpp650, tpp700, tpp750, tpp800,
        tpp850, tpp900, tpp950, tpp1000 }

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

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

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

TransmissionRLC-Discard ::= CHOICE {
    timerBasedExplicit
    timerBasedNoExplicit
    maxDAT-Retransmissions
    noDiscard
}

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

UL-AM-RLC-Mode ::= SEQUENCE {
    transmissionRLC-Discard
    transmissionWindowSize
    timerRST
    max-RST
    pollingInfo
}

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

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

UL-LogicalChannelMappingList ::= SEQUENCE {
    -- rlc-LogicalChannelMappingIndicator 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
    twoLogicalChannels
}

```

```

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

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

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

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

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

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

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

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

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

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

CodingRate ::=
    ENUMERATED {
        half,
        third
    }

CommonDynamicTF-Info ::=
    rlc-Size
    fdd
    octetModeRLC-SizeInfoType2
    },
    tdd
    commonTDD-Choice
    SEQUENCE {
        CHOICE {
            SEQUENCE {
                OctetModeRLC-SizeInfoType2
            }
            SEQUENCE {
                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
}

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

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

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

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

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

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

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

```

-- The maximum allowed size of DL-AddReconfTransChInfo2List sequence is 16

```

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

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

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

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

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

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

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

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

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

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

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

ExplicitTFCS-Configuration ::= CHOICE {
    complete TFCS-ReconfAdd,
    addition TFCS-ReconfAdd,
}

```

```

removal                TFCS-RemovalList,
replacement            SEQUENCE {
  tfcsRemoval          TFCS-RemovalList,
  tfcsAdd              TFCS-ReconfAdd
}
}

GainFactor ::=          INTEGER (0..15)

GainFactorInformation ::= CHOICE {
  signalledGainFactors  SignalledGainFactors,
  computedGainFactors   ReferenceTFC-ID
}

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

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

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

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

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

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

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

MessType ::=           ENUMERATED {
  transportFormatCombinationControl
}

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

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

OctetModeRLC-SizeInfoType1 ::= CHOICE {
  -- 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                               OPTIONAL,
  tfci-Field2-Length                       INTEGER (1..10)                           OPTIONAL,
  tfci-Field1-Information                   ExplicitTFCS-Configuration                 OPTIONAL,
  tfci-Field2-Information                   TFCI-Field2-Information                     OPTIONAL
}

SplitType ::=                          ENUMERATED {
  hardSplit, logicalSplit }

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

```

```

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

TFCI-Field2-Information ::= CHOICE {
    tfci-Range
    explicit-config
}

TFCI-Range ::= SEQUENCE {
    maxTFCIField2Value
    tfcs-InfoForDSCH
}

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

TFCS ::= CHOICE {
    normalTFCS-Signalling
    splitTFCS-Signalling
}

TFCS-Identity ::= SEQUENCE {
    tfcs-ID
    sharedChannelIndicator
}

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

TFCS-InfoForDSCH ::= CHOICE {
    ctfc2bit
    ctfc4bit
    ctfc6bit
    ctfc8bit
    ctfc12bit
    ctfc16bit
    ctfc24bit
}

TFCS-ReconfAdd ::= SEQUENCE{
    ctfcSize
        ctfc2Bit
            ctfc2
            powerOffsetInformation
        },
        ctfc4Bit
            ctfc4
            powerOffsetInformation
        },
        ctfc6Bit
            ctfc6
            powerOffsetInformation
        },
        ctfc8Bit
            ctfc8
            powerOffsetInformation
        },
        ctfc12Bit
            ctfc12
            powerOffsetInformation
        },
        ctfc16Bit
            ctfc16
            powerOffsetInformation
        },
        ctfc24Bit
            ctfc24
            powerOffsetInformation
    }
}

TFCS-Removal ::= SEQUENCE {
    tfci
}

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

```

```

TimeDurationBeforeRetry ::=          INTEGER (1..256)

TM-SignallingInfo ::=                SEQUENCE {
  messageType                MesType,
  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
}

-- 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 {
  -- tfc-Subset is applicable to FDD only, TDD specifies tfc-subset in
  -- individual CCTrCH Info
  tfc-Subset                   TFC-Subset                OPTIONAL,
  prach-TFCS                   TFCS                    OPTIONAL,
  modeSpecificInfo             CHOICE {
    fdd                         SEQUENCE {
      ul-TFCS
    },
    tdd                         SEQUENCE {
      individualUL-CCTrCH-InfoList IndividualUL-CCTrCH-InfoList
                                OPTIONAL
    }
  }
}

-- in UL-ControlledTrChList TrCH-Type is always DCH
UL-ControlledTrChList ::=            SEQUENCE (SIZE (1..maxTrCH)) OF
  TransportChannelIdentity

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

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

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

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

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

```

```

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

AccessServiceClass-FDD ::= SEQUENCE {
    availableSignatureStartIndex INTEGER (0..15),
    availableSignatureEndIndex  INTEGER (0..15),

    assignedSubChannelNumber    BIT STRING {
                                   b3(0),
                                   b2(1),
                                   b1(2),
                                   b0(3)
                                } (SIZE(4))
}

AccessServiceClass-TDD ::= SEQUENCE {
    channelisationCodeIndices BIT STRING {
                                   chCodeIndex7(0),
                                   chCodeIndex6(1),
                                   chCodeIndex5(2),
                                   chCodeIndex4(3),
                                   chCodeIndex3(4),
                                   chCodeIndex2(5),
                                   chCodeIndex1(6),
                                   chCodeIndex0(7)
                                } (SIZE(8)) OPTIONAL,

    subchannelSize CHOICE {
        size1 NULL,
        size2 SEQUENCE {
            -- subch0 means bitstring '01' in the tabular, subch1 means bitstring '10'
            subchannels ENUMERATED { subch0, subch1 } OPTIONAL
        },
        size4 SEQUENCE {
            subchannels BIT STRING {
                subCh3(0),
                subCh2(1),
                subCh1(2),
                subCh0(3)
            } (SIZE(4)) OPTIONAL
        },
        size8 SEQUENCE {
            subchannels BIT STRING {
                subCh7(0),
                subCh6(1),
                subCh5(2),
                subCh4(3),
                subCh3(4),
                subCh2(5),
                subCh1(6),
                subCh0(7)
            } (SIZE(8)) OPTIONAL
        }
    }
}

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

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

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

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

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 {

```

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                                type1, type2 }

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

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)

Cfntargetsfnsframeoffset ::= 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)

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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 }

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)

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

DL-CCTrChListToRemove ::=           SEQUENCE (SIZE (1..maxCCTrCH)) OF
    TFCS-IdentityPlain

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,

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```

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

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

DL-CommonInformationPredef ::= SEQUENCE {
  dl-DPCH-InfoCommon          DL-DPCH-InfoCommonPredef  OPTIONAL
}

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

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

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

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

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

```



```

        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
        }
    }
}

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
        }
    }
}

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

-- Actual value DPCCH-PowerOffset = IE value * 2.
DPCCH-PowerOffset ::= INTEGER (-82..-3)

-- Actual value DPCCH-PowerOffset2 = 2 + (IE value * 4)
DPCCH-PowerOffset2 ::= INTEGER (-28..-13)

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

DPCH-CompressedModeStatusInfo ::= SEQUENCE {
    tgps-Reconfiguration-CFN TGPS-Reconfiguration-CFN,
    tgp-SequenceShortList SEQUENCE (SIZE (1..maxTGPS)) OF
        TGP-SequenceShort
}

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

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

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

```

```

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

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

DurationTimeInfo ::= INTEGER (1..4096)

DynamicPersistenceLevel ::= INTEGER (1..8)

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

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

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

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

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

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

FrequencyInfoTDD ::= SEQUENCE {
    uarfcn-Nt UARFCN
}

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

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)

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

MidambleConfigurationBurstType1and3 ::= ENUMERATED {ms4, ms8, ms16}

MidambleConfigurationBurstType2 ::= ENUMERATED {ms3, ms6}

MidambleShiftAndBurstType ::= SEQUENCE {
    burstType CHOICE {
        type1 SEQUENCE {
            midambleConfigurationBurstType1and3 MidambleConfigurationBurstType1and3,
            midambleAllocationMode CHOICE {
                defaultMidamble NULL,
                commonMidamble NULL,
                ueSpecificMidamble SEQUENCE {
                    midambleShift MidambleShiftLong
                }
            }
        }
    }
}

```

```

    }
  },
  type2
    SEQUENCE {
      midambleConfigurationBurstType2 MidambleConfigurationBurstType2,
      midambleAllocationMode CHOICE {
        defaultMidamble NULL,
        commonMidamble NULL,
        ueSpecificMidamble SEQUENCE {
          midambleShift MidambleShiftShort
        }
      }
    }
  },
  type3
    SEQUENCE {
      midambleConfigurationBurstTypeLand3 MidambleConfigurationBurstTypeLand3,
      midambleAllocationMode CHOICE {
        defaultMidamble NULL,
        ueSpecificMidamble SEQUENCE {
          midambleShift MidambleShiftLong
        }
      }
    }
  }
}

```

```

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

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

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

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

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

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

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

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

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

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

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

```

```

PDSCH-SysInfoList ::= SEQUENCE (SIZE (1..maxPDSCH)) OF
                      PDSCH-SysInfo

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

PersistenceScalingFactor ::= ENUMERATED {
                              psf0-9, psf0-8, psf0-7, psf0-6,
                              psf0-5, psf0-4, psf0-3, psf0-2 }

PersistenceScalingFactorList ::= SEQUENCE (SIZE (1..maxASCpersist)) OF
                                 PersistenceScalingFactor

PI-CountPerFrame ::= ENUMERATED {
                      e18, e36, e72, e144 }

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

PilotBits128 ::= ENUMERATED {
                  pb4, pb8 }

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

PositionFixedOrFlexible ::= ENUMERATED {
                              fixed,
                              flexible }

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

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

PowerRampStep ::= INTEGER (1..8)

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

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

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

PreambleRetransMax ::= INTEGER (1..64)

PreambleScramblingCodeWordNumber ::= INTEGER (0..15)

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

PrimaryCCPCH-Info ::= CHOICE {
    fdd                           SEQUENCE {
        tx-DiversityIndicator      BOOLEAN
    },
    tdd                           SEQUENCE {
        syncCase                   CHOICE {
            syncCase1              SEQUENCE {
                timeslot           TimeslotNumber
            },
            syncCase2              SEQUENCE {
                timeslotSync2      TimeslotSync2
            }
        }
        cellParametersID           CellParametersID                OPTIONAL,
        sctd-Indicator             BOOLEAN                OPTIONAL
    }
}

PrimaryCCPCH-InfoPost ::= SEQUENCE {
    syncCase                       CHOICE {
        syncCase1                  SEQUENCE {
            timeslot               TimeslotNumber
        },
        syncCase2                  SEQUENCE {
            timeslotSync2          TimeslotSync2
        }
    },
    cellParametersID              CellParametersID,
    sctd-Indicator                BOOLEAN
}

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

PrimaryCPICH-Info ::= SEQUENCE {

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

PUSCH-Info ::=                     SEQUENCE {
    tfcs-ID                         TFCS-IdentityPlain        DEFAULT 1,
    commonTimeslotInfo              CommonTimeslotInfo        OPTIONAL,
    pusch-TimeslotsCodes            UplinkTimeslotsCodes      OPTIONAL
}

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

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

PUSCH-SysInfoList-SFN ::=         SEQUENCE (SIZE (1..maxPUSCH)) OF
    SEQUENCE {
        pusch-SysInfo              PUSCH-SysInfo,
        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-SystemInformation ::=      SEQUENCE {
  secondaryCCPCH-Info              SecondaryCCPCH-Info,
  tfcs                             TFCS,
  fach-PCH-InformationList         FACH-PCH-InformationList      OPTIONAL,
  pich-Info                        PICH-Info                       OPTIONAL
}

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

ScramblingCodeChange ::=         ENUMERATED {
                                   codeChange, noCodeChange }

ScramblingCodeType ::=          ENUMERATED {
                                   shortSC,
                                   longSC }

SecondaryCCPCH-Info ::=          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
    }
  }
}

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
}

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-CCodeList ::= CHOICE {

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sf8                               SEQUENCE (SIZE (1..8)) OF
                                  TDD-PRACH-CCode8,
sf16                              SEQUENCE (SIZE (1..8)) OF
                                  TDD-PRACH-CCode16
}

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

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

TGCFN ::=                        INTEGER (0..255)

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

TGL ::=                          INTEGER (1..14)

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

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

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

TimeslotNumber ::= INTEGER (0..14)

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,
    closedLoopModel1,
    closedLoopMode2 }

UARFCN ::= INTEGER (0..16383)

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

UL-CCTrCH ::= SEQUENCE {
    tfcs-ID                    TFCS-IdentityPlain      DEFAULT 1,
    ul-TargetSIR               UL-TargetSIR,
    timeInfo                   TimeInfo,
    commonTimeslotInfo          CommonTimeslotInfo      OPTIONAL,
    ul-CCTrCH-TimeslotsCodes    UplinkTimeslotsCodes    OPTIONAL
}

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

UL-CCTrCHListToRemove ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
    TFCS-IdentityPlain

-- The size of UL-CCTrChTPCList should be from 1..maxCCTrCH
-- This should be corrected in a later release of the specification
UL-CCTrChTPCList ::= SEQUENCE (SIZE (0..maxCCTrCH)) OF
    TFCS-Identity

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

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

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

```

```

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

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

UL-DPCH-Info ::=
  SEQUENCE {
    ul-DPCH-PowerControlInfo
    modeSpecificInfo
      CHOICE {
        fdd
          SEQUENCE {
            scramblingCodeType
            scramblingCodeType
            numberOfDPDCH
            spreadingFactor
            tfci-Existence
            -- numberOFfBI-Bits is conditional based on history
            numberOfFBI-Bits
            puncturingLimit
          },
        tdd
          SEQUENCE {
            ul-TimingAdvance
            ul-CCTrCHList
            ul-CCTrCHListToRemove
          }
      }
  }

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

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

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

UL-DPCH-PowerControlInfo ::=
  CHOICE {
    fdd
      SEQUENCE {
        dpcch-PowerOffset
        pc-Preamble
        srb-delay
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm
      },
    tdd
      SEQUENCE {
        ul-TargetSIR
        ul-OL-PC-Signalling
        broadcast-UL-OL-PC-info
        handoverGroup
        individualTS-InterferenceList
        dpch-ConstantValue
        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-PowerControlInfoPredef ::= CHOICE {
  fdd                         SEQUENCE {
    -- TABULAR: TPC step size nested inside PowerControlAlgorithm
    powerControlAlgorithm     PowerControlAlgorithm
  },
  tdd                         SEQUENCE {
    dpch-ConstantValue        ConstantValueTdd
  }
}

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

TDD-UL-Interference ::= INTEGER (-110..-52)

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

-- 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-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
    }
  }
}

UplinkTimeslotsCodes ::= SEQUENCE {
  dynamicSFusage              BOOLEAN,
  firstIndividualTimeslotInfo IndividualTimeslotInfo,
  ul-TS-ChannelisationCodeList UL-TS-ChannelisationCodeList,
  moreTimeslots              CHOICE {
    noMore                     NULL,
    additionalTimeslots        CHOICE {
      consecutive              SEQUENCE {

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```

        numAdditionalTimeslots          INTEGER (1..maxTS-1)
    },
    timeslotList                        SEQUENCE (SIZE (1..maxTS-1)) OF
                                        UplinkAdditionalTimeslots
    }
}

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

AcquisitionSatInfo ::=                SEQUENCE {
    satID                               SatID,
    -- Actual value doppler0thOrder = IE value * 2.5
    doppler0thOrder                     INTEGER (-2048..2047),
    extraDopplerInfo                    ExtraDopplerInfo                    OPTIONAL,
    codePhase                           INTEGER (0..1022),
    integerCodePhase                    INTEGER (0..19),
    gps-BitNumber                       INTEGER (0..3),
    codePhaseSearchWindow               CodePhaseSearchWindow,
    azimuthAndElevation                 AzimuthAndElevation                OPTIONAL
}

AcquisitionSatInfoList ::=            SEQUENCE (SIZE (1..maxSat)) OF
                                        AcquisitionSatInfo

AdditionalMeasurementID-List ::=       SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
                                        MeasurementIdentity

AlmanacSatInfo ::=                   SEQUENCE {
    dataID                              INTEGER (0..3),
    satID                               SatID,
    e                                    BIT STRING (SIZE (16)),
    t-oa                                BIT STRING (SIZE (8)),
    deltaI                              BIT STRING (SIZE (16)),
    omegaDot                            BIT STRING (SIZE (16)),
    satHealth                           BIT STRING (SIZE (8)),
    a-Sqrt                              BIT STRING (SIZE (24)),
    omega0                              BIT STRING (SIZE (24)),
    m0                                  BIT STRING (SIZE (24)),
    omega                              BIT STRING (SIZE (24)),
    af0                                 BIT STRING (SIZE (11)),
    af1                                 BIT STRING (SIZE (11))
}

AlmanacSatInfoList ::=                SEQUENCE (SIZE (1..maxSat)) OF
                                        AlmanacSatInfo

AverageRLC-BufferPayload ::=          ENUMERATED {
    pla0, pla4, pla8, pla16, pla32,
    pla64, pla128, pla256, pla512,
    pla1024, pla2k, pla4k, pla8k, pla16k,
    pla32k, pla64k, pla128k, pla256k,
    pla512k, pla1024k, spare12, spare11,
    spare10, spare9, spare8, spare7, spare6,
    spare5, spare4, spare3, spare2, spare1 }

AzimuthAndElevation ::=               SEQUENCE {
    -- Actual value azimuth = IE value * 11.25
    azimuth                             INTEGER (0..31),
    -- Actual value elevation = IE value * 11.25
    elevation                           INTEGER (0..7)
}

BadSatList ::=                        SEQUENCE (SIZE (1..maxSat)) OF
                                        INTEGER (0..63)

Frequency-Band ::=                    ENUMERATED {
    dcs1800BandUsed, pcs1900BandUsed }

BCCH-ARFCN ::=                        INTEGER (0..1023)

BLER-MeasurementResults ::=           SEQUENCE {
    transportChannelIdentity            TransportChannelIdentity,

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```

    dl-TransportChannelBLER          DL-TransportChannelBLER          OPTIONAL
  }

BLER-MeasurementResultsList ::=    SEQUENCE (SIZE (1..maxTrCH)) OF
                                     BLER-MeasurementResults

BLER-TransChIdList ::=            SEQUENCE (SIZE (1..maxTrCH)) OF
                                     TransportChannelIdentity

BSIC-VerificationRequired ::=      ENUMERATED {
                                     required, notRequired }

BSICReported ::=                  CHOICE {
  -- Value maxCellMeas is not allowed for verifiedBSIC
  verifiedBSIC                      INTEGER (0..maxCellMeas),
  nonVerifiedBSIC                   BCCH-ARFCN
}

BurstModeParameters ::=           SEQUENCE {
  burstStart                         INTEGER (0..15),
  burstLength                       INTEGER (10..25),
  burstFreq                         INTEGER (1..16)
}

CellDCH-ReportCriteria ::=        CHOICE {
  intraFreqReportingCriteria        IntraFreqReportingCriteria,
  periodicalReportingCriteria       PeriodicalReportingCriteria
}

-- 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
    }
  }
}

CellInfoSI-RSCP ::=              SEQUENCE {
  cellIndividualOffset              CellIndividualOffset          DEFAULT 0,
  referenceTimeDifferenceToCell     ReferenceTimeDifferenceToCell  OPTIONAL,
  modeSpecificInfo                 CHOICE {
    fdd                             SEQUENCE {
      primaryCPICH-Info             PrimaryCPICH-Info          OPTIONAL,
      primaryCPICH-TX-Power         PrimaryCPICH-TX-Power     OPTIONAL,
      readSFN-Indicator            BOOLEAN,
      tx-DiversityIndicator         BOOLEAN
    },
    tdd                             SEQUENCE {
      primaryCCPCH-Info             PrimaryCCPCH-Info,
      primaryCCPCH-TX-Power         PrimaryCCPCH-TX-Power     OPTIONAL,
      timeslotInfoList             TimeslotInfoList          OPTIONAL,
      readSFN-Indicator            BOOLEAN
    }
  },
  cellSelectionReselectionInfo     CellSelectReselectInfoSIB-11-12-RSCP  OPTIONAL
}

CellInfoSI-ECNO ::=              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-ECNO    OPTIONAL
}

CellInfoSI-HCS-RSCP ::=
cellIndividualOffset              CellIndividualOffset                DEFAULT 0,
referenceTimeDifferenceToCell     ReferenceTimeDifferenceToCell    OPTIONAL,
modeSpecificInfo                  CHOICE {
    fdd                            SEQUENCE {
        primaryCPICH-Info          PrimaryCPICH-Info            OPTIONAL,
        primaryCPICH-TX-Power      PrimaryCPICH-TX-Power        OPTIONAL,
        readSFN-Indicator          BOOLEAN,
        tx-DiversityIndicator      BOOLEAN
    },
    tdd                            SEQUENCE {
        primaryCCPCH-Info          PrimaryCCPCH-Info,
        primaryCCPCH-TX-Power      PrimaryCCPCH-TX-Power        OPTIONAL,
        timeslotInfoList          TimeslotInfoList    OPTIONAL,
        readSFN-Indicator          BOOLEAN
    }
},
cellSelectionReselectionInfo      CellSelectReselectInfoSIB-11-12-HCS-RSCP    OPTIONAL
}

CellInfoSI-HCS-ECNO ::=
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-ECNO    OPTIONAL
}

CellMeasuredResults ::=
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 ::=
fdd                                SEQUENCE (SIZE (1..maxCellMeas)) OF

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```

        PrimaryCPICH-Info,
tdd      SEQUENCE (SIZE (1..maxCellMeas)) OF
        PrimaryCCPCH-Info
    }

CellReportingQuantities ::= SEQUENCE {
    -- dummy is not used in this version of the specification, it should
    -- be ignored by the receiver
    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 {
            q-RxlevMin Q-RxlevMin OPTIONAL
        }
    }
}

```

```

    }
}

CellSelectReselectInfoSIB-11-12-HCS-RSCP ::= SEQUENCE {
    q-OffsetS-N                Q-OffsetS-N                DEFAULT 0,
    maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power      OPTIONAL,
    hcs-NeighbouringCellInformation-RSCP HCS-NeighbouringCellInformation-RSCP
    OPTIONAL,
    modeSpecificInfo          CHOICE {
        fdd                    SEQUENCE {
            q-QualMin          Q-QualMin                OPTIONAL,
            q-RxlevMin         Q-RxlevMin         OPTIONAL
        },
        tdd                    SEQUENCE {
            q-RxlevMin         Q-RxlevMin         OPTIONAL
        },
        gsm                    SEQUENCE {
            q-RxlevMin         Q-RxlevMin         OPTIONAL
        }
    }
}

CellSelectReselectInfoSIB-11-12-HCS-ECNO ::= SEQUENCE {
    q-Offset1S-N              Q-OffsetS-N                DEFAULT 0,
    q-Offset2S-N              Q-OffsetS-N                DEFAULT 0,
    maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power      OPTIONAL,
    hcs-NeighbouringCellInformation-ECNO HCS-NeighbouringCellInformation-ECNO
    OPTIONAL,
    modeSpecificInfo          CHOICE {
        fdd                    SEQUENCE {
            q-QualMin          Q-QualMin                OPTIONAL,
            q-RxlevMin         Q-RxlevMin         OPTIONAL
        },
        tdd                    SEQUENCE {
            q-RxlevMin         Q-RxlevMin         OPTIONAL
        },
        gsm                    SEQUENCE {
            q-RxlevMin         Q-RxlevMin         OPTIONAL
        }
    }
}

CellsForInterFreqMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    InterFreqCellID
CellsForInterRATMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    InterRATCellID
CellsForIntraFreqMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    IntraFreqCellID

CellSynchronisationInfo ::= SEQUENCE {
    modeSpecificInfo          CHOICE {
        fdd                    SEQUENCE {
            countC-SFN-Frame-difference CountC-SFN-Frame-difference OPTIONAL,
            tm                  INTEGER(0..38399)
        },
        tdd                    SEQUENCE {
            countC-SFN-Frame-difference CountC-SFN-Frame-difference OPTIONAL
        }
    }
}

CellToReport ::= SEQUENCE {
    bsicReported              BSICReported
}

CellToReportList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellToReport

CodePhaseSearchWindow ::= ENUMERATED {
    w1023, w1, w2, w3, w4, w6, w8,
    w12, w16, w24, w32, w48, w64,
    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-NO ::= INTEGER (0..63)

-- SPARE: CPICH- RSCP, Max = 91
-- Values above Max are spare
CPICH-RSCP ::= INTEGER (0..127)

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

-- Actual value DeltaRRC = IE value * 0.032
DeltaRRC ::= INTEGER (-7..7)

DGPS-CorrectionSatInfo ::= SEQUENCE {
    satID          SatID,
    iode           IODE,
    udre           UDRE,
    prc            PRC,
    rrc            RRC,
    deltaPRC2     DeltaPRC,
    deltaRRC2     DeltaRRC,
    deltaPRC3     DeltaPRC          OPTIONAL,
    deltaRRC3     DeltaRRC          OPTIONAL
}

DGPS-CorrectionSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF
    DGPS-CorrectionSatInfo

DiffCorrectionStatus ::= ENUMERATED {
    udre-1-0, udre-0-75, udre-0-5, udre-0-3,
    udre-0-2, udre-0-1, noData, invalidData }

DL-TransportChannelBLER ::= INTEGER (0..63)

DopplerUncertainty ::= ENUMERATED {
    hz12-5, hz25, hz50, hz100, hz200,
    spare3, spare2, spare1 }

EllipsoidPoint ::= SEQUENCE {
    latitudeSign   ENUMERATED { north, south },
    latitude       INTEGER (0..8388607),
    longitude      INTEGER (-8388608..8388607)
}

EllipsoidPointAltitude ::= SEQUENCE {
    latitudeSign   ENUMERATED { north, south },
    latitude       INTEGER (0..8388607),
    longitude      INTEGER (-8388608..8388607),
    altitudeDirection ENUMERATED {height, depth},
    altitude       INTEGER (0..32767)
}

EllipsoidPointAltitudeEllipsoide ::= SEQUENCE {
    latitudeSign   ENUMERATED { north, south },
    latitude       INTEGER (0..8388607),
    longitude      INTEGER (-8388608..8388607),
    altitudeDirection ENUMERATED {height, depth},
    altitude       INTEGER (0..32767),
    uncertaintySemiMajor INTEGER (0..127),
    uncertaintySemiMinor INTEGER (0..127),
    orientationMajorAxis INTEGER (0..89),
    uncertaintyAltitude INTEGER (0..127),
    confidence     INTEGER (0..100)
}

EllipsoidPointUncertCircle ::= SEQUENCE {
    latitudeSign   ENUMERATED { north, south },
    latitude       INTEGER (0..8388607),
    longitude      INTEGER (-8388608..8388607),
    uncertaintyCode INTEGER (0..127)
}

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EllipsoidPointUncertEllipse ::= SEQUENCE {
    latitudeSign      ENUMERATED { north, south },
    latitude          INTEGER (0..8388607),
    longitude         INTEGER (-8388608..8388607),
    uncertaintySemiMajor  INTEGER (0..127),
    uncertaintySemiMinor  INTEGER (0..127),
    orientationMajorAxis  INTEGER (0..89),
    confidence        INTEGER (0..100)
}

EnvironmentCharacterisation ::= ENUMERATED {
    possibleHeavyMultipathNLOS,
    lightMultipathLOS,
    notDefined,
    spare }

Event1a ::= SEQUENCE {
    triggeringCondition  TriggeringCondition2,
    reportingRange      ReportingRange,
    forbiddenAffectCellList  ForbiddenAffectCellList      OPTIONAL,
    w                   W,
    reportDeactivationThreshold  ReportDeactivationThreshold,
    reportingAmount     ReportingAmount,
    reportingInterval   ReportingInterval
}

Event1b ::= SEQUENCE {
    triggeringCondition  TriggeringCondition1,
    reportingRange      ReportingRange,
    forbiddenAffectCellList  ForbiddenAffectCellList      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,

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    usedFreqW                W,
    hysteresis                HysteresisInterFreq,
    timeToTrigger            TimeToTrigger,
    reportingCellStatus      ReportingCellStatus                OPTIONAL
}

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

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

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

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

Event3c ::=
    thresholdOtherSystem      Threshold,
    hysteresis                Hysteresis,
    timeToTrigger            TimeToTrigger,
    reportingCellStatus      ReportingCellStatus                OPTIONAL
}

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

EventIDInterFreq ::=
    ENUMERATED {
        e2a, e2b, e2c, e2d, e2e, e2f, spare2, spare1 }

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

EventIDIntraFreq ::=
    ENUMERATED {
        e1a, e1b, e1c, e1d, e1e,
        e1f, e1g, e1h, e1i, spare7,
        spare6, spare5, spare4, spare3, spare2,
        spare1 }

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

ExtraDopplerInfo ::=
    SEQUENCE {
        -- Actual value doppler1stOrder = IE value * 0.023
        doppler1stOrder          INTEGER (-42..21),
        dopplerUncertainty       DopplerUncertainty
    }

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}

FACH-MeasurementOccasionInfo ::= SEQUENCE {
    fACH-meas-occasion-coeff          INTEGER (1..12)           OPTIONAL,
    inter-freq-FDD-meas-ind           BOOLEAN,
    inter-freq-TDD-meas-ind           BOOLEAN,
    inter-RAT-meas-ind                SEQUENCE (SIZE (1..maxOtherRAT)) OF
                                      RAT-Type                       OPTIONAL
}

FilterCoefficient ::= ENUMERATED {
    fc0, fc1, fc2, fc3, fc4, fc5,
    fc6, fc7, fc8, fc9, fc11, fc13,
    fc15, fc17, fc19, spare1 }

-- Actual value FinesSFN-SFN = IE value * 0.0625
FinesSFN-SFN ::= INTEGER (0..15)

ForbiddenAffectCell ::= CHOICE {
    fdd          PrimaryCPICH-Info,
    tdd          PrimaryCCPCH-Info
}

ForbiddenAffectCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    ForbiddenAffectCell

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,             OPTIONAL,
    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
    penaltyTime              PenaltyTime-RSCP
}

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}

HCS-CellReselectInformation-ECNO ::= SEQUENCE {
    -- TABULAR: The default value for penaltyTime is "notUsed"
    -- Temporary offset is nested inside PenaltyTime
    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
}

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

InterFreqCellInfoList ::= SEQUENCE {
    removedInterFreqCellList OPTIONAL,
    newInterFreqCellList OPTIONAL,
    cellsForInterFreqMeasList OPTIONAL
}

InterFreqCellInfoSI-List-RSCP ::= SEQUENCE {
    removedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-RSCP OPTIONAL
}

InterFreqCellInfoSI-List-ECNO ::= SEQUENCE {
    removedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-ECNO OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP ::= SEQUENCE {
    removedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-HCS-RSCP OPTIONAL
}

InterFreqCellInfoSI-List-HCS-ECNO ::= SEQUENCE {
    removedInterFreqCellList OPTIONAL,
    newInterFreqCellList NewInterFreqCellSI-List-HCS-ECNO OPTIONAL
}

InterFreqCellList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqCell

InterFreqCellMeasuredResultsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellMeasuredResults

InterFreqEvent ::= CHOICE {
    event2a Event2a,
    event2b Event2b,
    event2c Event2c,
    event2d Event2d,
    event2e Event2e,

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    event2f                                Event2f
}

InterFreqEventList ::=                     SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                           InterFreqEvent

InterFreqEventResults ::=                 SEQUENCE {
    eventID                                EventIDInterFreq,
    interFreqCellList                      InterFreqCellList                                OPTIONAL
}

InterFreqMeasQuantity ::=                 SEQUENCE {
    reportingCriteria                       CHOICE {
        intraFreqReportingCriteria         SEQUENCE {
            intraFreqMeasQuantity          IntraFreqMeasQuantity
        },
        interFreqReportingCriteria         SEQUENCE {
            filterCoefficient              FilterCoefficient                                DEFAULT fc0,
            modeSpecificInfo                CHOICE {
                fdd                         SEQUENCE {
                    freqQualityEstimateQuantity-FDD    FreqQualityEstimateQuantity-FDD
                },
                tdd                         SEQUENCE {
                    freqQualityEstimateQuantity-TDD    FreqQualityEstimateQuantity-TDD
                }
            }
        }
    }
}

InterFreqMeasuredResults ::=              SEQUENCE {
    frequencyInfo                           FrequencyInfo                                OPTIONAL,
    ultra-CarrierRSSI                       UTRA-CarrierRSSI                                OPTIONAL,
    interFreqCellMeasuredResultsList         InterFreqCellMeasuredResultsList                OPTIONAL
}

InterFreqMeasuredResultsList ::=          SEQUENCE (SIZE (1..maxFreq)) OF
                                           InterFreqMeasuredResults

InterFreqMeasurementSysInfo-RSCP ::=      SEQUENCE {
    interFreqCellInfoSI-List                 InterFreqCellInfoSI-List-RSCP                    OPTIONAL
}

InterFreqMeasurementSysInfo-ECNO ::=      SEQUENCE {
    interFreqCellInfoSI-List                 InterFreqCellInfoSI-List-ECNO                    OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP ::=  SEQUENCE {
    interFreqCellInfoSI-List                 InterFreqCellInfoSI-List-HCS-RSCP                OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-ECNO ::=  SEQUENCE {
    interFreqCellInfoSI-List                 InterFreqCellInfoSI-List-HCS-ECNO                OPTIONAL
}

InterFreqReportCriteria ::=              CHOICE {
    intraFreqReportingCriteria               IntraFreqReportingCriteria,
    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,
}

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interFreqReportingQuantity      InterFreqReportingQuantity      OPTIONAL,
measurementValidity             MeasurementValidity              OPTIONAL,
interFreqSetUpdate              UE-AutonomousUpdateMode        OPTIONAL,
reportCriteria                   InterFreqReportCriteria
}

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
}

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
}

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
}

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
}

IntraFreqEvent ::= CHOICE {
    e1a                           Event1a,
    e1b                           Event1b,
    e1c                           Event1c,
    e1d                           NULL,
    e1e                           Event1e,
    e1f                           Event1f,
    e1g                           NULL,
    e1h                           ThresholdUsedFrequency,
    e1i                           ThresholdUsedFrequency
}

```

```

}

IntraFreqEventCriteria ::=          SEQUENCE {
    event                          IntraFreqEvent,
    hysteresis                      Hysteresis,
    timeToTrigger                   TimeToTrigger,
    reportingCellStatus             ReportingCellStatus          OPTIONAL
}

IntraFreqEventCriteriaList ::=      SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria

IntraFreqEventResults ::=           SEQUENCE {
    eventID                         EventIDIntraFreq,
    cellMeasurementEventResults     CellMeasurementEventResults
}

IntraFreqMeasQuantity ::=           SEQUENCE {
    filterCoefficient              FilterCoefficient          DEFAULT fc0,
    modeSpecificInfo               CHOICE {
        fdd                         SEQUENCE {
            intraFreqMeasQuantity-FDD  IntraFreqMeasQuantity-FDD
        },
        tdd                         SEQUENCE {
            intraFreqMeasQuantity-TDDList  IntraFreqMeasQuantity-TDDList
        }
    }
}

-- If IntraFreqMeasQuantity-FDD is used in InterRATMeasQuantity, then only
-- cpich-Ec-N0 and cpich-RSCP are allowed.
-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
IntraFreqMeasQuantity-FDD ::=       ENUMERATED {
    cpich-Ec-N0,
    cpich-RSCP,
    pathloss,
    dummy }

-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
IntraFreqMeasQuantity-TDD ::=       ENUMERATED {
    primaryCCPCH-RSCP,
    pathloss,
    timeslotISCP,
    dummy }

IntraFreqMeasQuantity-TDDList ::=   SEQUENCE (SIZE (1..4)) OF
    IntraFreqMeasQuantity-TDD

IntraFreqMeasuredResultsList ::=    SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellMeasuredResults

IntraFreqMeasurementSysInfo-RSCP ::= SEQUENCE {
    intraFreqMeasurementID         MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List       IntraFreqCellInfoSI-List-RSCP  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH         MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH        ReportingInfoForCellDCH       OPTIONAL
}

IntraFreqMeasurementSysInfo-ECN0 ::= SEQUENCE {
    intraFreqMeasurementID         MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List       IntraFreqCellInfoSI-List-ECN0  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH         MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH        ReportingInfoForCellDCH       OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP ::= SEQUENCE {
    intraFreqMeasurementID         MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List       IntraFreqCellInfoSI-List-HCS-RSCP  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH         MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH        ReportingInfoForCellDCH       OPTIONAL
}

```

```

}

IntraFreqMeasurementSysInfo-HCS-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
}

IntraFreqReportCriteria ::= CHOICE {
    intraFreqReportingCriteria    IntraFreqReportingCriteria,
    periodicalReportingCriteria   PeriodicalWithReportingCellStatus,
    noReporting                   ReportingCellStatusOpt
}

IntraFreqReportingCriteria ::= SEQUENCE {
    eventCriteriaList             IntraFreqEventCriteriaList  OPTIONAL
}

IntraFreqReportingQuantity ::= SEQUENCE {
    activeSetReportingQuantities CellReportingQuantities,
    monitoredSetReportingQuantities CellReportingQuantities,
    detectedSetReportingQuantities CellReportingQuantities      OPTIONAL
}

IntraFreqReportingQuantityForRACH ::= SEQUENCE {
    sfn-SFN-OTD-Type            SFN-SFN-OTD-Type,
    modeSpecificInfo            CHOICE {
        fdd                      SEQUENCE {
            intraFreqRepQuantityRACH-FDD IntraFreqRepQuantityRACH-FDD
        },
        tdd                      SEQUENCE {
            intraFreqRepQuantityRACH-TDDList IntraFreqRepQuantityRACH-TDDList
        }
    }
}

IntraFreqRepQuantityRACH-FDD ::= ENUMERATED {
    cpich-EcN0, cpich-RSCP,
    pathloss, noReport }

IntraFreqRepQuantityRACH-TDD ::= ENUMERATED {
    timeslotISCP,
    primaryCCPCH-RSCP,
    noReport }

IntraFreqRepQuantityRACH-TDDList ::= SEQUENCE (SIZE (1..2)) OF
    IntraFreqRepQuantityRACH-TDD

IntraFrequencyMeasurement ::= SEQUENCE {
    intraFreqCellInfoList      IntraFreqCellInfoList          OPTIONAL,
    intraFreqMeasQuantity       IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantity   IntraFreqReportingQuantity        OPTIONAL,
    measurementValidity         MeasurementValidity            OPTIONAL,
    reportCriteria              IntraFreqReportCriteria            OPTIONAL
}

IODE ::= INTEGER (0..255)

IP-Length ::= ENUMERATED {
    ip15, ip110 }

IP-Spacing ::= ENUMERATED {
    e5, e7, e10, e15, e20,
    e30, e40, e50 }

IS-2000SpecificMeasInfo ::= ENUMERATED {
    frequency, timeslot, colourcode,
    outputpower, pn-Offset }

MaxNumberOfReportingCellsType1 ::= ENUMERATED {
    e1, e2, e3, e4, e5, e6}

MaxNumberOfReportingCellsType2 ::= ENUMERATED {
    e1, e2, e3, e4, e5, e6, e7, e8, e9, e10, e11, e12}

```

```

MaxNumberOfReportingCellsType3 ::= ENUMERATED {
    viactCellsPlus1,
    viactCellsPlus2,
    viactCellsPlus3,
    viactCellsPlus4,
    viactCellsPlus5,
    viactCellsPlus6 }

MaxReportedCellsOnRACH ::= ENUMERATED {
    noReport,
    currentCell,
    currentAnd-1-BestNeighbour,
    currentAnd-2-BestNeighbour,
    currentAnd-3-BestNeighbour,
    currentAnd-4-BestNeighbour,
    currentAnd-5-BestNeighbour,
    currentAnd-6-BestNeighbour }

MeasuredResults ::= CHOICE {
    intraFreqMeasuredResultsList      IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList      InterFreqMeasuredResultsList,
    interRATMeasuredResultsList      InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList  TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults            QualityMeasuredResults,
    ue-InternalMeasuredResults        UE-InternalMeasuredResults,
    ue-positioning-MeasuredResults    UE-Positioning-MeasuredResults,
    spare                              NULL
}

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

MeasuredResultsList ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasuredResults

MeasuredResultsOnRACH ::= SEQUENCE {
    currentCell          SEQUENCE {
        modeSpecificInfo CHOICE {
            fdd SEQUENCE {
                measurementQuantity CHOICE {
                    cpich-Ec-N0      CPICH-Ec-N0,
                    cpich-RSCP       CPICH-RSCP,
                    pathloss         Pathloss,
                    spare            NULL
                }
            },
            tdd SEQUENCE {
                timeslotISCP      TimeslotISCP-List      OPTIONAL,
                primaryCCPCH-RSCP PrimaryCCPCH-RSCP    OPTIONAL
            }
        },
        monitoredCells          MonitoredCellRACH-List      OPTIONAL
    }
}

MeasurementCommand ::= CHOICE {
    setup      MeasurementType,
    modify     SEQUENCE {
        measurementType      MeasurementType      OPTIONAL
    },
    release    NULL
}

MeasurementControlSysInfo ::= SEQUENCE {
    use-of-HCS          CHOICE {
        hcs-not-used    SEQUENCE {
            cellSelectQualityMeasure CHOICE {
                cpich-RSCP SEQUENCE {
                    intraFreqMeasurementSysInfo      IntraFreqMeasurementSysInfo-RSCP
                }
            },
            interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-RSCP      OPTIONAL
        },
        cpich-Ec-N0 SEQUENCE {
            intraFreqMeasurementSysInfo      IntraFreqMeasurementSysInfo-ECN0
        }
    },
    interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-ECN0      OPTIONAL
}

```

```

    },
    interRATMeasurementSysInfo      InterRATMeasurementSysInfo-B      OPTIONAL
  },
  hcs-used                          SEQUENCE {
    cellSelectQualityMeasure        CHOICE {
      cpich-RSCP                    SEQUENCE {
        intraFreqMeasurementSysInfo      IntraFreqMeasurementSysInfo-HCS-RSCP
      }
    }
  } OPTIONAL,
  interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-HCS-RSCP
} OPTIONAL
  },
  cpich-Ec-N0                      SEQUENCE {
    intraFreqMeasurementSysInfo      IntraFreqMeasurementSysInfo-HCS-ECN0
  } OPTIONAL,
  interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-HCS-ECN0
} OPTIONAL
  }
},
interRATMeasurementSysInfo      InterRATMeasurementSysInfo      OPTIONAL
},
},
trafficVolumeMeasSysInfo          TrafficVolumeMeasSysInfo          OPTIONAL,
-- dummy is not used in this version of specification and it shall be ignored by the UE.
dummy                              UE-InternalMeasurementSysInfo      OPTIONAL
}

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
}

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 ::=
  n-CR
  t-CRMaxHyst
}

SEQUENCE {
  INTEGER (1..16)
  T-CRMaxHyst
}
DEFAULT 8,

NavigationModelSatInfo ::=
  satID
  satelliteStatus
  ephemerisParameter
}

SEQUENCE {
  SatID,
  SatelliteStatus,
  EphemerisParameter
}
OPTIONAL

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

EphemerisParameter ::=
  codeOnL2
  uraIndex
  satHealth
  iodc
  l2Pflag
  sflRevd
  t-GD
  t-oc
  af2
  af1
  af0
  c-rs
  delta-n
  m0
  c-uc
  e
  c-us
  a-Sqrt
  t-oe
  fitInterval
  aodo
  c-ic
  omega0
  c-is
  i0
  c-rc
  omega
  omegaDot
  iDot
}

SEQUENCE {
  BIT STRING (SIZE (2)),
  BIT STRING (SIZE (4)),
  BIT STRING (SIZE (6)),
  BIT STRING (SIZE (10)),
  BIT STRING (SIZE (1)),
  SubFrame1Reserved,
  BIT STRING (SIZE (8)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (8)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (22)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (32)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (32)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (32)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (32)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (32)),
  BIT STRING (SIZE (16)),
  BIT STRING (SIZE (24)),
  BIT STRING (SIZE (14))
}

NC-Mode ::=
  BIT STRING (SIZE (3))

Neighbour ::=
  modeSpecificInfo
  fdd
    neighbourIdentity
    ue-RX-TX-TimeDifferenceType2Info
  },
  tdd
    neighbourAndChannelIdentity
  },
  neighbourQuality
  sfN-SFN-ObsTimeDifference2
}

SEQUENCE {
  CHOICE {
    SEQUENCE {
      PrimaryCPICH-Info
      UE-RX-TX-TimeDifferenceType2Info
    }
    SEQUENCE {
      CellAndChannelIdentity
    }
  }
  NeighbourQuality,
  SFN-SFN-ObsTimeDifference2
}
OPTIONAL,
OPTIONAL
OPTIONAL

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

SEQUENCE {
  CHOICE {
    SEQUENCE {
      FrequencyInfo
    }
    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

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```

Neighbour-v390ext
NeighbourQuality ::= SEQUENCE {
    uE-Positioning-OTDOA-Quality
}
NewInterFreqCell ::= SEQUENCE {
    interFreqCellID          OPTIONAL,
    frequencyInfo            OPTIONAL,
    cellInfo
}
NewInterFreqCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCell
NewInterFreqCellSI-RSCP ::= SEQUENCE {
    interFreqCellID          OPTIONAL,
    frequencyInfo            OPTIONAL,
    cellInfoSI-RSCP
}
NewInterFreqCellSI-ECNO ::= SEQUENCE {
    interFreqCellID          OPTIONAL,
    frequencyInfo            OPTIONAL,
    cellInfoSI-ECNO
}
NewInterFreqCellSI-HCS-RSCP ::= SEQUENCE {
    interFreqCellID          OPTIONAL,
    frequencyInfo            OPTIONAL,
    cellInfoSI-HCS-RSCP
}
NewInterFreqCellSI-HCS-ECNO ::= SEQUENCE {
    interFreqCellID          OPTIONAL,
    frequencyInfo            OPTIONAL,
    cellInfoSI-HCS-ECNO
}
NewInterFreqCellSI-List-ECNO ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-ECNO
NewInterFreqCellSI-List-HCS-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-RSCP
NewInterFreqCellSI-List-HCS-ECNO ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-ECNO
NewInterFreqCellSI-List-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-RSCP
NewInterRATCell ::= SEQUENCE {
    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 IE NewInterRATCell was absent
        absent NULL,
        spare1 NULL
    }
}
NewInterRATCell-B ::= SEQUENCE {
    interRATCellID          OPTIONAL,

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```

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. UE shall consider IE NewInterRATCell-B with
  -- technologySpecificInfo set to "absent" as valid and handle the message
  -- as if 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
}

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

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

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

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

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

NewIntraFreqCellSI-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

NonUsedFreqParameter ::=       SEQUENCE {
  -- 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"
  nonUsedFreqThreshold          Threshold,
  nonUsedFreqW                  W
}

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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
    SEQUENCE {
        plmn-Identity          PLMN-Identity           OPTIONAL
    }

PLMNsOfIntraFreqCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    SEQUENCE {
        plmn-Identity          PLMN-Identity           OPTIONAL
    }

PLMNsOfInterRATCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    SEQUENCE {
        plmn-Identity          PLMN-Identity           OPTIONAL
    }

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

```

```

    ellipsoidPointAltitudeEllipse      EllipsoidPointAltitudeEllipsoide
}

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

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

-- SPARE: PrimaryCCPCH-RSCP, Max = 91
-- Values above Max are spare
PrimaryCCPCH-RSCP ::=
    INTEGER (0..127)

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

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

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

-- Actual value Q-RxlevMin = (IE value * 2) + 1
Q-RxlevMin ::=
    INTEGER (-58..-13)

QualityEventResults ::=
    SEQUENCE (SIZE (1..maxTrCH)) OF
        TransportChannelIdentity

QualityMeasuredResults ::=
    SEQUENCE {
        blerMeasurementResultsList      BLER-MeasurementResultsList      OPTIONAL,
        modeSpecificInfo                 CHOICE {
            fdd                           NULL,
            tdd                           SEQUENCE {
                sir-MeasurementResults    SIR-MeasurementList      OPTIONAL
            }
        }
    }

QualityMeasurement ::=
    SEQUENCE {
        qualityReportingQuantity         QualityReportingQuantity         OPTIONAL,
        reportCriteria                   QualityReportCriteria
    }

QualityReportCriteria ::=
    CHOICE {
        qualityReportingCriteria         QualityReportingCriteria,
        periodicalReportingCriteria      PeriodicalReportingCriteria,
        noReporting                       NULL
    }

QualityReportingCriteria ::=
    SEQUENCE (SIZE (1..maxTrCH)) OF
        QualityReportingCriteriaSingle

QualityReportingCriteriaSingle ::=
    SEQUENCE {
        transportChannelIdentity         TransportChannelIdentity,
        totalCRC                         INTEGER (1..512),
        badCRC                           INTEGER (1..512),
        pendingAfterTrigger              INTEGER (1..512)
    }

QualityReportingQuantity ::=
    SEQUENCE {
        dl-TransChBLER                   BOOLEAN,
        bler-dl-TransChIdList            BLER-TransChIdList              OPTIONAL,
        modeSpecificInfo                 CHOICE {
            fdd                           NULL,
            tdd                           SEQUENCE {
                sir-TFCS-List              SIR-TFCS-List              OPTIONAL
            }
        }
    }

RAT-Type ::=
    ENUMERATED {
        gsm, is2000 }

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

```

```

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

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

RemovedInterFreqCellList ::= CHOICE {
    removeAllInterFreqCells NULL,
    removeSomeInterFreqCells SEQUENCE (SIZE (1..maxCellMeas)) OF
        InterFreqCellID,
    removeNoInterFreqCells NULL
}

RemovedInterRATCellList ::= CHOICE {
    removeAllInterRATCells NULL,
    removeSomeInterRATCells SEQUENCE (SIZE (1..maxCellMeas)) OF
        InterRATCellID,
    removeNoInterRATCells NULL
}

RemovedIntraFreqCellList ::= CHOICE {
    removeAllIntraFreqCells NULL,
    removeSomeIntraFreqCells SEQUENCE (SIZE (1..maxCellMeas)) OF
        IntraFreqCellID,
    removeNoIntraFreqCells NULL
}

ReplacementActivationThreshold ::= ENUMERATED {
    notApplicable, t1, t2,
    t3, t4, t5, t6, t7 }

ReportDeactivationThreshold ::= ENUMERATED {
    notApplicable, t1, t2,
    t3, t4, t5, t6, t7 }

ReportingAmount ::= ENUMERATED {
    ra1, ra2, ra4, ra8, ra16, ra32,
    ra64, ra-Infinity }

ReportingCellStatus ::= CHOICE{
    withinActiveSet MaxNumberOfReportingCellsType1,
    withinMonitoredSetUsedFreq MaxNumberOfReportingCellsType1,
    withinActiveAndOrMonitoredUsedFreq MaxNumberOfReportingCellsType1,
    withinDetectedSetUsedFreq MaxNumberOfReportingCellsType1,
    withinMonitoredAndOrDetectedUsedFreq MaxNumberOfReportingCellsType1,
    allActiveplusMonitoredSet MaxNumberOfReportingCellsType3,
    allActivePlusDetectedSet MaxNumberOfReportingCellsType3,
    allActivePlusMonitoredAndOrDetectedSet MaxNumberOfReportingCellsType3,
    withinVirtualActSet MaxNumberOfReportingCellsType1,
    withinMonitoredSetNonUsedFreq MaxNumberOfReportingCellsType1,
    withinMonitoredAndOrVirtualActiveSetNonUsedFreq MaxNumberOfReportingCellsType1,
    allVirtualActSetplusMonitoredSetNonUsedFreq MaxNumberOfReportingCellsType3,
    withinActSetOrVirtualActSet-InterRATcells MaxNumberOfReportingCellsType2,
    withinActSetAndOrMonitoredUsedFreqOrVirtualActSetAndOrMonitoredNonUsedFreq MaxNumberOfReportingCellsType2
}

ReportingCellStatusOpt ::= SEQUENCE {
    reportingCellStatus ReportingCellStatus OPTIONAL
}

ReportingInfoForCellDCH ::= SEQUENCE {
    intraFreqReportingQuantity IntraFreqReportingQuantity,
    measurementReportingMode MeasurementReportingMode,
}

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    reportCriteria                CellDCH-ReportCriteria
}

ReportingInterval ::=
    ENUMERATED {
        noPeriodicalreporting, ri0-25,
        ri0-5, ril, ri2, ri4, ri8, ril6 }

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

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

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

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

RLC-BuffersPayload ::=
    ENUMERATED {
        pl0, pl4, pl8, pl16, pl32,
        pl64, pl128, pl256, pl512, pl1024,
        pl2k, pl4k, pl8k, pl16k, pl32k,
        pl64k, pl128k, pl256k, pl512k, pl1024k,
        spare12, spare11, spare10, spare9, spare8,
        spare7, spare6, spare5, spare4, spare3,
        spare2, spare1 }

-- Actual value RRC = IE value * 0.032
RRC ::=
    INTEGER (-127..127)

SatData ::=
    SEQUENCE{
        satID          SatID,
        iode           IODE
    }

SatDataList ::=
    SEQUENCE (SIZE (0..maxSat)) OF
        SatData

SatelliteStatus ::=
    ENUMERATED {
        ns-NN-U,
        es-SN,
        es-NN-U,
        rev2,
        rev }

SatID ::=
    INTEGER (0..63)

SFN-SFN-Drift ::=
    ENUMERATED {
        sfnsfndrift0, sfnsfndrift1, sfnsfndrift2, sfnsfndrift3,
        sfnsfndrift4, sfnsfndrift5, sfnsfndrift8, sfnsfndrift10,
        sfnsfndrift15, sfnsfndrift25, sfnsfndrift35, sfnsfndrift50,
        sfnsfndrift65, sfnsfndrift80, sfnsfndrift100, sfnsfndrift-1,
        sfnsfndrift-2, sfnsfndrift-3, sfnsfndrift-4, sfnsfndrift-5,
        sfnsfndrift-8, sfnsfndrift-10, sfnsfndrift-15, sfnsfndrift-25,
        sfnsfndrift-35, sfnsfndrift-50, sfnsfndrift-65, sfnsfndrift-80,
        sfnsfndrift-100}

SFN-SFN-ObsTimeDifference ::=
    CHOICE {
        type1          SFN-SFN-ObsTimeDifference1,
        type2          SFN-SFN-ObsTimeDifference2
    }

-- SPARE: SFN-SFN-ObsTimeDifference1, Max = 9830399
-- Values above Max are spare
SFN-SFN-ObsTimeDifference1 ::=
    INTEGER (0..16777215)

-- SPARE: SFN-SFN-ObsTimeDifference2, Max = 40961
-- Values above Max are spare
SFN-SFN-ObsTimeDifference2 ::=
    INTEGER (0..65535)

SFN-SFN-OTD-Type ::=
    ENUMERATED {
        noReport,

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        type1,
        type2 }

SFN-Offset-Validity ::=          ENUMERATED { false }

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-CRMax ::=                    CHOICE {
    notUsed                       NULL,
    t30                           N-CR-T-CRMaxHyst,
    t60                           N-CR-T-CRMaxHyst,
    t120                          N-CR-T-CRMaxHyst,
    t180                          N-CR-T-CRMaxHyst,
    t240                          N-CR-T-CRMaxHyst
}

T-CRMaxHyst ::=                ENUMERATED {
    notUsed, t10, t20, t30,
    t40, t50, t60, t70 }

TemporaryOffset1 ::=           ENUMERATED {
    to3, to6, to9, to12, to15,
    to18, to21, infinite }

TemporaryOffset2 ::=           ENUMERATED {
    to2, to3, to4, to6, to8,
    to10, to12, infinite }

TemporaryOffsetList ::=        SEQUENCE {
    temporaryOffset1              TemporaryOffset1,
    temporaryOffset2              TemporaryOffset2
}

Threshold ::=                  INTEGER (-115..0)

ThresholdPositionChange ::=     ENUMERATED {
    pc10, pc20, pc30, pc40, pc50,
    pc100, pc200, pc300, pc500,
    pc1000, pc2000, pc5000, pc10000,
    pc20000, pc50000, pc100000 }

ThresholdSFN-GPS-TOW ::=       ENUMERATED {

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ms1, ms2, ms3, ms5, ms10,
ms20, ms50, ms100 }

ThresholdSFN-SFN-Change ::=      ENUMERATED {
    c0-25, c0-5, c1, c2, c3, c4, c5,
    c10, c20, c50, c100, c200, c500,
    c1000, c2000, c5000 }

ThresholdUsedFrequency ::=      INTEGER (-115..165)

-- Actual value TimeInterval = IE value * 20.
TimeInterval ::=                INTEGER (1..13)

TimeslotInfo ::=                SEQUENCE {
    timeslotNumber               TimeslotNumber,
    burstType                    BurstType
}

TimeslotInfoList ::=            SEQUENCE (SIZE (1..maxTS)) OF
    TimeslotInfo

-- SPARE: TimeslotISCP, Max = 91
-- Values above Max are spare
TimeslotISCP ::=                INTEGER (0..127)

TimeslotISCP-List ::=           SEQUENCE (SIZE (1..maxTS)) OF
    TimeslotISCP

TimeslotListWithISCP ::=        SEQUENCE (SIZE (1..maxTS)) OF
    TimeslotWithISCP

TimeslotWithISCP ::=            SEQUENCE {
    timeslot                     TimeslotNumber,
    timeslotISCP                 TimeslotISCP
}

TimeToTrigger ::=                ENUMERATED {
    ttt0, ttt10, ttt20, ttt40, ttt60,
    ttt80, ttt100, ttt120, ttt160,
    ttt200, ttt240, tt320, ttt640,
    ttt1280, ttt2560, ttt5000 }

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

TrafficVolumeEventResults ::=   SEQUENCE {
    ul-transportChannelCausingEvent UL-TrCH-Identity,
    trafficVolumeEventIdentity      TrafficVolumeEventType
}

TrafficVolumeEventType ::=      ENUMERATED {
    e4a,
    e4b }

TrafficVolumeMeasQuantity ::=   CHOICE {
    rlc-BufferPayload             NULL,
    averageRLC-BufferPayload       TimeInterval,
    varianceOfRLC-BufferPayload    TimeInterval
}

TrafficVolumeMeasSysInfo ::=    SEQUENCE {
    trafficVolumeMeasurementID     MeasurementIdentity           DEFAULT 4,
    trafficVolumeMeasurementObjectList TrafficVolumeMeasurementObjectList OPTIONAL,
    trafficVolumeMeasQuantity       TrafficVolumeMeasQuantity      OPTIONAL,
    trafficVolumeReportingQuantity   TrafficVolumeReportingQuantity  OPTIONAL,
    -- dummy is not used in this version of specification, it should
    -- not be sent and if received it should be ignored.
    dummy                           TrafficVolumeReportingCriteria OPTIONAL,
    measurementValidity              MeasurementValidity             OPTIONAL,
    measurementReportingMode          MeasurementReportingMode,
    reportCriteriaSysInf              TrafficVolumeReportCriteriaSysInfo
}

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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 }

```

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TX-InterruptionAfterTrigger ::=      ENUMERATED {
                                        txiat0-25, txiat0-5, txiat1,
                                        txiat2, txiat4, txiat8, txiat16 }

UDRE ::=                              ENUMERATED {
                                        lessThan1,
                                        between1-and-4,
                                        between4-and-8,
                                        over8 }

UE-6AB-Event ::=                      SEQUENCE {
    timeToTrigger                      TimeToTrigger,
    transmittedPowerThreshold          TransmittedPowerThreshold
}

UE-6FG-Event ::=                      SEQUENCE {
    timeToTrigger                      TimeToTrigger,
    ue-RX-TX-TimeDifferenceThreshold  UE-RX-TX-TimeDifferenceThreshold
}

UE-AutonomousUpdateMode ::=          CHOICE {
    on                                  NULL,
    onWithNoReporting                 NULL,
    off                                 RL-InformationLists
}

UE-InternalEventParam ::=            CHOICE {
    event6a                            UE-6AB-Event,
    event6b                            UE-6AB-Event,
    event6c                            TimeToTrigger,
    event6d                            TimeToTrigger,
    event6e                            TimeToTrigger,
    event6f                            UE-6FG-Event,
    event6g                            UE-6FG-Event
}

UE-InternalEventParamList ::=        SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                        UE-InternalEventParam

UE-InternalEventResults ::=          CHOICE {
    event6a                            NULL,
    event6b                            NULL,
    event6c                            NULL,
    event6d                            NULL,
    event6e                            NULL,
    event6f                            PrimaryCPICH-Info,
    event6g                            PrimaryCPICH-Info,
    spare                              NULL
}

UE-InternalMeasQuantity ::=          SEQUENCE {
    measurementQuantity                UE-MeasurementQuantity,
    filterCoefficient                  FilterCoefficient                DEFAULT fc0
}

UE-InternalMeasuredResults ::=       SEQUENCE {
    modeSpecificInfo                   CHOICE {
        fdd                            SEQUENCE {
            ue-TransmittedPowerFDD      UE-TransmittedPower          OPTIONAL,
            ue-RX-TX-ReportEntryList    UE-RX-TX-ReportEntryList    OPTIONAL
        },
        tdd                            SEQUENCE {
            ue-TransmittedPowerTDD-List  UE-TransmittedPowerTDD-List  OPTIONAL,
            appliedTA                    UL-TimingAdvance             OPTIONAL
        }
    }
}

UE-InternalMeasurement ::=           SEQUENCE {
    ue-InternalMeasQuantity            UE-InternalMeasQuantity          OPTIONAL,
    ue-InternalReportingQuantity       UE-InternalReportingQuantity     OPTIONAL,
    reportCriteria                     UE-InternalReportCriteria
}

UE-InternalMeasurementSysInfo ::=    SEQUENCE {
    ue-InternalMeasurementID           MeasurementIdentity              DEFAULT 5,
    ue-InternalMeasQuantity            UE-InternalMeasQuantity
}

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}

UE-InternalReportCriteria ::= CHOICE {
    ue-InternalReportingCriteria
    periodicalReportingCriteria
    noReporting
    NULL
}

UE-InternalReportingCriteria ::= SEQUENCE {
    ue-InternalEventParamList
    UE-InternalEventParamList OPTIONAL
}

UE-InternalReportingQuantity ::= SEQUENCE {
    ue-TransmittedPower
    modeSpecificInfo
    fdd
        ue-RX-TX-TimeDifference
    },
    tdd
        appliedTA
    }
}

-- TABULAR: UE-MeasurementQuantity, for TDD only the values
-- ue-TransmittedPower and ultra-Carrier-RSSI are used.
UE-MeasurementQuantity ::= ENUMERATED {
    ue-TransmittedPower,
    ultra-Carrier-RSSI,
    ue-RX-TX-TimeDifference }

UE-RX-TX-ReportEntry ::= SEQUENCE {
    primaryCPICH-Info
    ue-RX-TX-TimeDifferenceType1
    PrimaryCPICH-Info,
    UE-RX-TX-TimeDifferenceType1
}

UE-RX-TX-ReportEntryList ::= SEQUENCE (SIZE (1..maxRL)) OF
    UE-RX-TX-ReportEntry

-- SPARE: UE-RX-TX-TimeDifferenceType1, Max = 1280
-- Values above Max are spare
UE-RX-TX-TimeDifferenceType1 ::= INTEGER (768..1791)

-- Actual value UE-RX-TX-TimeDifferenceType2 = IE value * 0.0625 + 768
UE-RX-TX-TimeDifferenceType2 ::= INTEGER (0..8191)

UE-RX-TX-TimeDifferenceType2Info ::= SEQUENCE {
    ue-RX-TX-TimeDifferenceType2
    neighbourQuality
    UE-RX-TX-TimeDifferenceType2,
    NeighbourQuality
}

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
    -- Default transport channel in the UL is either RACH or CPCH, but not both.
    rachorcpch
    usch
    TransportChannelIdentity
    NULL,
    TransportChannelIdentity
}

UE-Positioning-Accuracy ::= BIT STRING (SIZE (7))

UE-Positioning-CipherParameters ::= SEQUENCE {
    cipheringKeyFlag
    cipheringSerialNumber
    BIT STRING (SIZE (1)),
    INTEGER (0..65535)
}

UE-Positioning-Error ::= SEQUENCE {
    errorReason
    ue-positioning-GPS-additionalAssistanceDataRequest
    UE-Positioning-ErrorCause,
    UE-Positioning-GPS-
    AdditionalAssistanceDataRequest OPTIONAL
}

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UE-Positioning-ErrorCause ::=
    ENUMERATED {
        notEnoughOTDOA-Cells,
        notEnoughGPS-Satellites,
        assistanceDataMissing,
        methodNotSupported,
        undefinedError,
        requestDeniedByUser,
        notProcessedAndTimeout,
        referenceCellNotServingCell }

UE-Positioning-EventParam ::=
    SEQUENCE {
        reportingAmount          ReportingAmount,
        reportFirstFix           BOOLEAN,
        measurementInterval      UE-Positioning-MeasurementInterval,
        eventSpecificInfo        UE-Positioning-EventSpecificInfo
    }

UE-Positioning-EventParamList ::=
    SEQUENCE (SIZE (1..maxMeasEvent)) OF
    UE-Positioning-EventParam

UE-Positioning-EventSpecificInfo ::=
    CHOICE {
        e7a                      ThresholdPositionChange,
        e7b                      ThresholdSFN-SFN-Change,
        e7c                      ThresholdSFN-GPS-TOW
    }

UE-Positioning-GPS-AcquisitionAssistance ::=
    SEQUENCE {
        gps-ReferenceTime        INTEGER (0..604799999),
        utran-GPSReferenceTime   UTRAN-GPSReferenceTime          OPTIONAL,
        satelliteInformationList AcquisitionSatInfoList
    }

UE-Positioning-GPS-AdditionalAssistanceDataRequest ::=
    SEQUENCE {
        almanacRequest           BOOLEAN,
        utcModelRequest          BOOLEAN,
        ionosphericModelRequest  BOOLEAN,
        navigationModelRequest   BOOLEAN,
        dgpsCorrectionsRequest   BOOLEAN,
        referenceLocationRequest  BOOLEAN,
        referenceTimeRequest      BOOLEAN,
        aquisitionAssistanceRequest  BOOLEAN,
        realTimeIntegrityRequest  BOOLEAN,
        navModelAddDataRequest    UE-Positioning-GPS-NavModelAddDataReq  OPTIONAL
    }

UE-Positioning-GPS-Almanac ::=
    SEQUENCE {
        wn-a                     BIT STRING (SIZE (8)),
        almanacSatInfoList       AlmanacSatInfoList,
        sv-GlobalHealth          BIT STRING (SIZE (364))          OPTIONAL
    }

UE-Positioning-GPS-AssistanceData ::=
    SEQUENCE {
        ue-positioning-GPS-ReferenceTime      UE-Positioning-GPS-ReferenceTime
        OPTIONAL,
        ue-positioning-GPS-ReferenceLocation   ReferenceLocation          OPTIONAL,
        ue-positioning-GPS-DGPS-Corrections   UE-Positioning-GPS-DGPS-Corrections
        OPTIONAL,
        ue-positioning-GPS-NavigationModel     UE-Positioning-GPS-NavigationModel
        OPTIONAL,
        ue-positioning-GPS-IonosphericModel    UE-Positioning-GPS-IonosphericModel
        OPTIONAL,
        ue-positioning-GPS-UTC-Model          UE-Positioning-GPS-UTC-Model
        OPTIONAL,
        ue-positioning-GPS-Almanac            UE-Positioning-GPS-Almanac
        OPTIONAL,
        ue-positioning-GPS-AcquisitionAssistance  UE-Positioning-GPS-AcquisitionAssistance
        OPTIONAL,
        ue-positioning-GPS-Real-timeIntegrity   BadSatList          OPTIONAL,
        -- 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-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-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-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-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 {

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```

modeSpecificInfo CHOICE {
  fdd SEQUENCE {
    primaryCPICH-Info PrimaryCPICH-Info
  },
  tdd SEQUENCE{
    cellAndChannelIdentity CellAndChannelIdentity
  }
},
frequencyInfo FrequencyInfo OPTIONAL,
ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters
OPTIONAL,
sfn-SFN-RelTimeDifference SFN-SFN-RelTimeDifference1,
sfn-SFN-Drift SFN-SFN-Drift OPTIONAL,
searchWindowSize OTDOA-SearchWindowSize,
positioningMode CHOICE{
  ueBased SEQUENCE {},
  ueAssisted SEQUENCE {}
}
}

UE-Positioning-OTDOA-NeighbourCellInfo-UEB ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      primaryCPICH-Info PrimaryCPICH-Info
    },
    tdd SEQUENCE{
      cellAndChannelIdentity CellAndChannelIdentity
    }
  },
  frequencyInfo FrequencyInfo OPTIONAL,
  ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters OPTIONAL,
  sfn-SFN-RelTimeDifference SFN-SFN-RelTimeDifference1,
  sfn-SFN-Drift SFN-SFN-Drift OPTIONAL,
  searchWindowSize OTDOA-SearchWindowSize,
  relativeNorth INTEGER (-20000..20000) OPTIONAL,
  relativeEast INTEGER (-20000..20000) OPTIONAL,
  relativeAltitude INTEGER (-4000..4000) OPTIONAL,
  fineSFN-SFN FineSFN-SFN,
  -- Actual value roundTripTime = (IE value * 0.0625) + 876
  roundTripTime INTEGER (0.. 32766) OPTIONAL
}

UE-Positioning-OTDOA-NeighbourCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  UE-Positioning-OTDOA-NeighbourCellInfo

UE-Positioning-OTDOA-NeighbourCellList-UEB ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  UE-Positioning-OTDOA-NeighbourCellInfo-UEB

UE-Positioning-OTDOA-Quality ::= SEQUENCE {
  stdResolution BIT STRING (SIZE (2)),
  numberOfOTDOA-Measurements BIT STRING (SIZE (3)),
  stdOfOTDOA-Measurements BIT STRING (SIZE (5))
}

UE-Positioning-OTDOA-ReferenceCellInfo ::= SEQUENCE {
  sfn INTEGER (0..4095)
  OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      primaryCPICH-Info PrimaryCPICH-Info
    },
    tdd SEQUENCE{
      cellAndChannelIdentity CellAndChannelIdentity
    }
  },
  frequencyInfo FrequencyInfo OPTIONAL,
  positioningMode CHOICE {
    ueBased SEQUENCE {},
    ueAssisted SEQUENCE {}
  },
  ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-UEB ::= SEQUENCE {
  sfn INTEGER (0..4095)
  OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {

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```

        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-Parameters UE-Positioning-IPDL-Parameters OPTIONAL
}

UE-Positioning-PositionEstimateInfo ::=          SEQUENCE {
    referenceTime                 CHOICE {
        utran-GPSReferenceTimeResult    UTRAN-GPSReferenceTimeResult,
        gps-ReferenceTimeOnly           INTEGER (0..604799999),
        cell-Timing                    SEQUENCE {
            sfn                          INTEGER (0..4095),
            modeSpecificInfo CHOICE {
                fdd                      SEQUENCE {
                    primaryCPICH-Info    PrimaryCPICH-Info
                },
                tdd                      SEQUENCE{
                    cellAndChannelIdentity CellAndChannelIdentity
                }
            }
        }
    },
    positionEstimate              PositionEstimate
}

UE-Positioning-ReportCriteria ::=                CHOICE {
    ue-positioning-ReportingCriteria    UE-Positioning-EventParamList,
    periodicalReportingCriteria        PeriodicalReportingCriteria,
    noReporting                        NULL
}

UE-Positioning-ReportingQuantity ::=            SEQUENCE {
    methodType                     UE-Positioning-MethodType,
    positioningMethod              PositioningMethod,
    -- dummy1 is not used in this version of specification and it should
    -- be ignored.
    dummy1                         UE-Positioning-ResponseTime,
    horizontal-Accuracy            UE-Positioning-Accuracy                OPTIONAL,
    gps-TimingOfCellWanted        BOOLEAN,
    -- dummy2 is not used in this version of specification and it should
    -- be ignored.
    dummy2                         BOOLEAN,
    additionalAssistanceDataRequest BOOLEAN,
    environmentCharacterisation     EnvironmentCharacterisation            OPTIONAL
}

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

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

-- SPARE: UTRA-CarrierRSSI, Max = 76
-- Values above Max are spare
UTRA-CarrierRSSI ::=                       INTEGER (0..127)

UTRAN-GPS-DriftRate ::=                     ENUMERATED {
    utran-GPSDrift0, utran-GPSDrift1, utran-GPSDrift2,
    utran-GPSDrift5, utran-GPSDrift10, utran-GPSDrift15,
    utran-GPSDrift25, utran-GPSDrift50, utran-GPSDrift-1,
    utran-GPSDrift-2, utran-GPSDrift-5, utran-GPSDrift-10,
    utran-GPSDrift-15, utran-GPSDrift-25, utran-GPSDrift-50}

UTRAN-GPSReferenceTime ::=                  SEQUENCE {
    -- For utran-GPSTimingOfCell values above 2322431999999 are not
    -- used in this version of the specification
    -- Actual value utran-GPSTimingOfCell = (ms-part * 4294967296) + ls-part
    utran-GPSTimingOfCell          SEQUENCE {
        ms-part                    INTEGER (0..1023),

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        ls-part                INTEGER (0..4294967295)
    },
    modeSpecificInfo           CHOICE {
        fdd                    SEQUENCE {
            referenceIdentity   PrimaryCPICH-Info
        },
        tdd                    SEQUENCE {
            referenceIdentity   CellParametersID
        }
    } OPTIONAL,
    sfn                        INTEGER (0..4095)
}

UTRAN-GPSReferenceTimeResult ::= SEQUENCE {
    -- For ue-GPSTimingOfCell values above 37158911999999 are not
    -- used in this version of the specification
    -- Actual value ue-GPSTimingOfCell = (ms-part * 4294967296) + ls-part
    ue-GPSTimingOfCell        SEQUENCE {
        ms-part                INTEGER (0..16383),
        ls-part                INTEGER (0..4294967295)
    },
    modeSpecificInfo           CHOICE {
        fdd                    SEQUENCE {
            referenceIdentity   PrimaryCPICH-Info
        },
        tdd                    SEQUENCE {
            referenceIdentity   CellParametersID
        }
    },
    sfn                        INTEGER (0..4095)
}

VarianceOfRLC-BufferPayload ::= ENUMERATED {
    plv0, plv4, plv8, plv16, plv32, plv64,
    plv128, plv256, plv512, plv1024,
    plv2k, plv4k, plv8k, plv16k, spare2, spare1 }

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

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

BCC ::= INTEGER (0..7)

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

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

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

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

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

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

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

CellValueTag ::= INTEGER (1..4)

```

```

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

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

FrequencyInfoCDMA2000 ::= SEQUENCE {
    band-Class      BIT STRING (SIZE (5)),
    cdma-Freq       BIT STRING (SIZE(11))
}

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

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

GSM-Classmark2 ::= OCTET STRING (SIZE (5))
GSM-Classmark3 ::= OCTET STRING (SIZE (1..32))

GSM-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
    BIT STRING (SIZE (1..512))

GsmSecurityCapability ::= BIT STRING {
    a5-7(0),
    a5-6(1),
    a5-5(2),
    a5-4(3),
    a5-3(4),
    a5-2(5),
    a5-1(6)
} (SIZE (7))

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

InterRAT-ChangeFailureCause ::= CHOICE {
    configurationUnacceptable    NULL,
    physicalChannelFailure       NULL,
    protocolError                ProtocolErrorInformation,
    unspecified                  NULL,
    spare4                       NULL,
    spare3                       NULL,
    spare2                       NULL,
    spare1                       NULL
}

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

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

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

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

InterRAT-HO-FailureCause ::= CHOICE {
    configurationUnacceptable    NULL,
    physicalChannelFailure       NULL,
}

```

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protocolError                ProtocolErrorInformation,
interRAT-ProtocolError      NULL,
unspecified                  NULL,
spare11                      NULL,
spare10                      NULL,
spare9                      NULL,
spare8                      NULL,
spare7                      NULL,
spare6                      NULL,
spare5                      NULL,
spare4                      NULL,
spare3                      NULL,
spare2                      NULL,
spare1                      NULL
}

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

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

NCC ::=                       INTEGER (0..7)

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

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

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

ReceivedMessageType ::=      ENUMERATED {
    activeSetUpdate,
    cellChangeOrderFromUTRAN,
    cellUpdateConfirm,
    counterCheck,
    downlinkDirectTransfer,
    interRATHandoverCommand,
    measurementControl,
    pagingType2,
    physicalChannelReconfiguration,
    physicalSharedChannelAllocation,
    radioBearerReconfiguration,
    radioBearerRelease,
    radioBearerSetup,
    rrcConnectionRelease,
    rrcConnectionReject,
    rrcConnectionSetup,
    securityModeCommand,
    signallingConnectionRelease,
    transportChannelReconfiguration,
    transportFormatCombinationControl,
    ueCapabilityEnquiry,
    ueCapabilityInformationConfirm,
    uplinkPhysicalChannelControl,
    uraUpdateConfirm,
    utranMobilityInformation,
    assistanceDataDelivery,
    spare6, spare5, spare4, spare3,
    spare2, spare1 }

Rplmn-Information           ::= SEQUENCE {

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```

OPTIONAL,
OPTIONAL,
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,

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```

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 ::=
sysInfoType1
sysInfoType2
sysInfoType3
sysInfoType4
sysInfoType5
sysInfoType6
sysInfoType7
sysInfoType8
sysInfoType9
sysInfoType10
sysInfoType11
sysInfoType12
sysInfoType13
sysInfoType13-1
sysInfoType13-2
sysInfoType13-3
sysInfoType13-4
sysInfoType14
sysInfoType15
sysInfoType16
sysInfoType17
sysInfoType15-1
sysInfoType15-2
sysInfoType15-3
sysInfoType15-4
sysInfoType18
sysInfoType15-5
spare5
spare4
spare3
spare2
spare1
}

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

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

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```

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 ::=        SEQUENCE {
  -- UTRAN mobility IEs
  ura-IdentityList              URA-IdentityList,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions         SEQUENCE {} OPTIONAL
}

SysInfoType3 ::=        SEQUENCE {
  sib4indicator                 BOOLEAN,
  -- UTRAN mobility IEs
  cellIdentity                  CellIdentity,
  cellSelectReselectInfo        CellSelectReselectInfoSIB-3-4,
  cellAccessRestriction         CellAccessRestriction,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions         SEQUENCE {} OPTIONAL
}

SysInfoType4 ::=        SEQUENCE {
  -- UTRAN mobility IEs
  cellIdentity                  CellIdentity,
  cellSelectReselectInfo        CellSelectReselectInfoSIB-3-4,
  cellAccessRestriction         CellAccessRestriction,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions         SEQUENCE {} OPTIONAL
}

SysInfoType5 ::=        SEQUENCE {
  sib6indicator                 BOOLEAN,
  -- Physical channel IEs
  pich-PowerOffset              PICH-PowerOffset,
  modeSpecificInfo              CHOICE {

```

```

    fdd                SEQUENCE {
        aich-PowerOffset    AICH-PowerOffset
    },
    tdd                SEQUENCE {
        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
nonCriticalExtensions    SEQUENCE {}    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 {
            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 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
    nonCriticalExtensions    SEQUENCE {}    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
  nonCriticalExtensions                          SEQUENCE {}                                OPTIONAL
}

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

SysInfoType13-v3a0ext-IEs ::= SEQUENCE {
  ue-IdleTimersAndConstants-v3a0ext            UE-IdleTimersAndConstants-v3a0ext
}

SysInfoType13-1 ::=                             SEQUENCE {
  -- ANSI-41 IEs
  ansi-41-RAND-Information                     ANSI-41-RAND-Information,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions                          SEQUENCE {}                                OPTIONAL
}

SysInfoType13-2 ::=                             SEQUENCE {
  -- ANSI-41 IEs
  ansi-41-UserZoneID-Information               ANSI-41-UserZoneID-Information,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions                          SEQUENCE {}                                OPTIONAL
}

SysInfoType13-3 ::=                             SEQUENCE {
  -- ANSI-41 IEs
  ansi-41-PrivateNeighbourListInfo             ANSI-41-PrivateNeighbourListInfo,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions                          SEQUENCE {}                                OPTIONAL
}

SysInfoType13-4 ::=                             SEQUENCE {
  -- ANSI-41 IEs
  ansi-41-GlobalServiceRedirectInfo            ANSI-41-GlobalServiceRedirectInfo,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions                          SEQUENCE {}                                OPTIONAL
}

SysInfoType14 ::=                               SEQUENCE {
  -- Physical channel IEs
  individualTS-InterferenceList                IndividualTS-InterferenceList,
  expirationTimeFactor                         ExpirationTimeFactor                        OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions                          SEQUENCE {}                                OPTIONAL
}

```

```

SysInfoType15 ::=                               SEQUENCE {
  -- Measurement IEs
  ue-positioning-GPS-CipherParameters          UE-Positioning-CipherParameters          OPTIONAL,
  ue-positioning-GPS-ReferenceLocation          ReferenceLocation,
  ue-positioning-GPS-ReferenceTime              UE-Positioning-GPS-ReferenceTime,
  ue-positioning-GPS-Real-timeIntegrity        BadSatList                               OPTIONAL,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions                         SEQUENCE {}                               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
  nonCriticalExtensions                         SEQUENCE {}                               OPTIONAL
}
OPTIONAL
}

SysInfoType15-4-v3a0ext ::=                     SEQUENCE {
  sfn-Offset-Validity                          SFN-Offset-Validity          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
pusch-SysInfoList          PUSCH-SysInfoList          OPTIONAL,
pdsch-SysInfoList          PDSCH-SysInfoList          OPTIONAL,
-- Extension mechanism for non- release99 information
nonCriticalExtensions      SEQUENCE {}                OPTIONAL
}

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

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

SysInfoTypeSB2 ::=
-- Other IEs
sib-ReferenceList         SIB-ReferenceList,
-- Extension mechanism for non- release99 information
nonCriticalExtensions      SEQUENCE {}                OPTIONAL
}

TDD-UMTS-Frequency-List ::=
SEQUENCE (SIZE (1..maxNumTDDFreqs)) OF
FrequencyInfoTDD

-- *****
--
-- ANSI-41 INFORMATION ELEMENTS (10.3.9)
--
-- *****

ANSI-41-GlobalServiceRedirectInfo ::= ANSI-41-NAS-Parameter
ANSI-41-PrivateNeighbourListInfo ::= ANSI-41-NAS-Parameter
ANSI-41-RAND-Information ::= ANSI-41-NAS-Parameter
ANSI-41-UserZoneID-Information ::= ANSI-41-NAS-Parameter
ANSI-41-NAS-Parameter ::= BIT STRING (SIZE (1..2048))

Min-P-REV ::= BIT STRING (SIZE (8))

NAS-SystemInformationANSI-41 ::= ANSI-41-NAS-Parameter
NID ::= BIT STRING (SIZE (16))

P-REV ::= BIT STRING (SIZE (8))

SID ::= BIT STRING (SIZE (15))

END

```

## 11.4 Constant definitions

Constant-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

```

hiPDSCHidentities          INTEGER ::= 64
hiPUSCHidentities          INTEGER ::= 64
hiRM                        INTEGER ::= 256
maxAC                       INTEGER ::= 16
maxAdditionalMeas           INTEGER ::= 4
maxASC                      INTEGER ::= 8
maxASCmap                   INTEGER ::= 7
maxASCpersist              INTEGER ::= 6
maxCCTrCH                   INTEGER ::= 8
maxCellMeas                 INTEGER ::= 32
maxCellMeas-1              INTEGER ::= 31
maxCNdomains                INTEGER ::= 4
maxCPCHsets                 INTEGER ::= 16
maxDPCH-DLchan              INTEGER ::= 8
maxDPDCH-UL                 INTEGER ::= 6
maxDRACclasses              INTEGER ::= 8
maxFACHPCH                  INTEGER ::= 8
maxFreq                     INTEGER ::= 8

```

```

maxFreqBandsFDD          INTEGER ::= 8
maxFreqBandsTDD         INTEGER ::= 4
maxFreqBandsGSM         INTEGER ::= 16
maxInterSysMessages     INTEGER ::= 4
maxLoCHperRLC           INTEGER ::= 2
maxMeasEvent            INTEGER ::= 8
maxMeasIntervals        INTEGER ::= 3
maxMeasParEvent         INTEGER ::= 2
maxNumCDMA2000Freqs     INTEGER ::= 8
maxNumGSMFreqRanges     INTEGER ::= 32
maxNumFDDFreqs          INTEGER ::= 8
maxNumTDDFreqs          INTEGER ::= 8
maxNoOfMeas             INTEGER ::= 16
maxOtherRAT             INTEGER ::= 15
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
maxPredefConfig         INTEGER ::= 16
maxPUSCH                INTEGER ::= 8
maxRABsetup             INTEGER ::= 16
maxRAT                  INTEGER ::= 16
maxRB                   INTEGER ::= 32
maxRBallRABs            INTEGER ::= 27
maxRBMuxOptions         INTEGER ::= 8
maxRBperRAB             INTEGER ::= 8
maxReportedGSMCells     INTEGER ::= 8
maxRL                   INTEGER ::= 8
maxRL-1                 INTEGER ::= 7
maxSat                  INTEGER ::= 16
maxSCCPCH               INTEGER ::= 16
maxSIB                  INTEGER ::= 32
maxSIB-FACH             INTEGER ::= 8
maxSIBperMsg            INTEGER ::= 16
maxSRBsetup             INTEGER ::= 8
maxSystemCapability     INTEGER ::= 16
maxTF                   INTEGER ::= 32
maxTF-CPCH              INTEGER ::= 16
maxTFC                  INTEGER ::= 1024
maxTFCI-2-Combs         INTEGER ::= 512
maxTGPS                 INTEGER ::= 6
maxTrCH                 INTEGER ::= 32
-- maxTrCHpreconf should be 16 but has been set to 32 for compatibility
maxTrCHpreconf          INTEGER ::= 32
maxTS                   INTEGER ::= 14
maxTS-1                 INTEGER ::= 13
maxURA                  INTEGER ::= 8

```

END

## 11.5 RRC information between network nodes

```

Internode-definitions DEFINITIONS AUTOMATIC TAGS ::=
BEGIN

IMPORTS

    HandoverToUTRANCommand,
    MeasurementReport,
    PhysicalChannelReconfiguration,
    RadioBearerReconfiguration,
    RadioBearerRelease,
    RadioBearerSetup,
    RRC-FailureInfo,
    TransportChannelReconfiguration
FROM PDU-definitions

-- Core Network IEs :
    CN-DomainIdentity,
    CN-DomainInformationList,
    CN-DRX-CycleLengthCoefficient,
    NAS-SystemInformationGSM-MAP,
-- UTRAN Mobility IEs :
    CellIdentity,
    URA-Identity,
-- User Equipment IEs :
    C-RNTI,
    DL-PhysChCapabilityFDD-v380ext,
    FailureCauseWithProtErr,
    RRC-MessageSequenceNumber,
    STARTList,
    STARTSingle,
    START-Value,
    U-RNTI,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-v370ext,
    UE-RadioAccessCapability-v380ext,
    UE-RadioAccessCapability-v3a0ext,
-- Radio Bearer IEs :
    PredefinedConfigStatusList,
    PredefinedConfigValueTag,
    RAB-InformationSetupList,
    RB-Identity,
    SRB-InformationSetupList,
-- Transport Channel IEs :
    CPCH-SetID,
    DL-CommonTransChInfo,
    DL-AddReconfTransChInfoList,
    DRAC-StaticInformationList,
    UL-CommonTransChInfo,
    UL-AddReconfTransChInfoList,
-- Measurement IEs :
    MeasurementIdentity,
    MeasurementReportingMode,
    MeasurementType,
    AdditionalMeasurementID-List,
    PositionEstimate,
-- Other IEs :
    InterRAT-UE-RadioAccessCapabilityList
FROM InformationElements

    maxCNdomains,
    maxNoOfMeas,
    maxRB,
    maxSRBsetup
FROM Constant-definitions;

-- Part 1: Class definitions similar to what has been defined in 11.1 for RRC messages
-- Information that is tranferred in the same direction and across the same path is grouped
-- *****
--
-- RRC information, to target RNC
--
-- *****

```

```

-- RRC Information to target RNC sent either from source RNC or from another RAT

ToTargetRNC-Container ::= CHOICE {
    interRATHandover          InterRATHandoverInfoWithInterRATCapabilities,
    srncRelocation            SRNC-RelocationInfo,
    extension                 NULL
}

-- *****
--
-- RRC information, target RNC to source RNC
--
-- *****

TargetRNC-ToSourceRNC-Container ::= CHOICE {
    radioBearerSetup          RadioBearerSetup,
    radioBearerReconfiguration RadioBearerReconfiguration,
    radioBearerRelease        RadioBearerRelease,
    transportChannelReconfiguration TransportChannelReconfiguration,
    physicalChannelReconfiguration PhysicalChannelReconfiguration,
    rrc-FailureInfo           RRC-FailureInfo,
    -- IE dl-DCCHmessage consists of an octet string that includes
    -- the IE DL-DCCH-Message
    dl-DCCHmessage            OCTET STRING,
    extension                 NULL
}

-- Part2: Container definitions, similar to the PDU definitions in 11.2 for RRC messages
-- In alphabetical order

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

InterRATHandoverInfoWithInterRATCapabilities ::= CHOICE {
    r3          SEQUENCE {
        -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also
        -- includes non critical extensions
        interRATHandoverInfo-r3          InterRATHandoverInfoWithInterRATCapabilities-r3-IEs,
        v390NonCriticalExtensions        SEQUENCE {
            interRATHandoverInfoWithInterRATCapabilities-v390ext
        }
        InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs,
        -- Reserved for future non critical extension
        nonCriticalExtensions            SEQUENCE {} OPTIONAL
    } OPTIONAL
},
criticalExtensions                    SEQUENCE {}
}

InterRATHandoverInfoWithInterRATCapabilities-r3-IEs ::= SEQUENCE {
    -- The order of the IEs may not reflect the tabular format
    -- but has been chosen to simplify the handling of the information in the BSC
    -- Other IEs
    ue-RATSpecificCapability            InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
    -- interRATHandoverInfo, Octet string is used to obtain 8 bit length field prior to
    -- actual information. This makes it possible for BSS to transparently handle information
    -- received via GSM air interface even when it includes non critical extensions.
    -- The octet string shall include the InterRATHandoverInfo information
    -- The BSS can re-use the 04.18 length field received from the MS
    interRATHandoverInfo                OCTET STRING (SIZE (0..255))
}

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

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

SRNC-RelocationInfo ::= CHOICE {

```

```

r3
  SRNC-RelocationInfo-r3 SEQUENCE {
    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 {} OPTIONAL
            }
            -- Container for additional R99 extensions
            SRNC-RelocationInfo-r3-add-ext BIT STRING OPTIONAL,
            -- Reserved for future non critical extension
            nonCriticalExtensions SEQUENCE {} OPTIONAL
          }
        }
      }
    }
  } OPTIONAL
},
criticalExtensions SEQUENCE {}
}

SRNC-RelocationInfo-r3-IEs ::= SEQUENCE {
  -- Non-RRC IEs
  stateOfRRC StateOfRRC,
  stateOfRRC-Procedure StateOfRRC-Procedure,
  -- Ciphering related information IEs
  -- If the extension v380 is included use the extension for the ciphering status per CN domain
  cipheringStatus CipheringStatus,
  calculationTimeForCiphering CalculationTimeForCiphering OPTIONAL,
  -- The order of occurrence in the IE cipheringInfoPerRB-List is the
  -- same as the RBs in the IE "Signalling RB information list" and in the
  -- IE "RAB information list". 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,
  srb-SpecificIntegrityProtInfo SRB-SpecificIntegrityProtInfoList,
  implementationSpecificParams ImplementationSpecificParams OPTIONAL,
  -- User equipment IEs
  u-RNTI U-RNTI,
  c-RNTI C-RNTI OPTIONAL,
  ue-RadioAccessCapability UE-RadioAccessCapability,
  ue-Positioning-LastKnownPos UE-Positioning-LastKnownPos OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity URA-Identity OPTIONAL,
  -- Core network IEs
  cn-CommonGSM-MAP-NAS-SysInfo NAS-SystemInformationGSM-MAP,
  cn-DomainInformationList CN-DomainInformationList OPTIONAL,
  -- Measurement IEs
  ongoingMeasRepList OngoingMeasRepList OPTIONAL,
  -- Radio bearer IEs
  predefinedConfigStatusList PredefinedConfigStatusList,
  srb-InformationList SRB-InformationSetupList,
  rab-InformationList RAB-InformationSetupList OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
  ul-TransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      cpch-SetID CPCH-SetID OPTIONAL,
      transChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd NULL
  },
  dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,
  dl-TransChInfoList DL-AddReconfTransChInfoList OPTIONAL,
  -- Measurement report
  measurementReport MeasurementReport OPTIONAL
}

```

```

SRNC-RelocationInfo-v380ext-IEs ::= SEQUENCE {
  -- Ciphering related information IEs
  cn-DomainIdentity          CN-DomainIdentity,
  cipheringStatusList        CipheringStatusList
}

SRNC-RelocationInfo-v390ext-IEs ::= SEQUENCE {
  cn-DomainInformationList-v390ext  CN-DomainInformationList-v390ext  OPTIONAL,
  ue-RadioAccessCapability-v370ext  UE-RadioAccessCapability-v370ext  OPTIONAL,
  ue-RadioAccessCapability-v380ext  UE-RadioAccessCapability-v380ext  OPTIONAL,
  dl-PhysChCapabilityFDD-v380ext    DL-PhysChCapabilityFDD-v380ext,
  failureCauseWithProtErr          FailureCauseWithProtErr          OPTIONAL
}

SRNC-RelocationInfo-v3a0ext-IEs ::= SEQUENCE {
  cipheringInfoForSRB1-v3a0ext      CipheringInfoPerRB-List-v3a0ext,
  ue-RadioAccessCapability-v3a0ext  UE-RadioAccessCapability-v3a0ext  OPTIONAL,
  -- cn-domain identity for IE startValueForCiphering-v3a0ext is specified
  -- in subsequent extension (SRNC-RelocationInfo-v3b0ext-IEs)
  startValueForCiphering-v3a0ext    START-Value
}

SRNC-RelocationInfo-v3b0ext-IEs ::= SEQUENCE {
  -- cn-domain identity for IE startValueForCiphering-v3a0ext included in previous extension
  cn-DomainIdentity          CN-DomainIdentity,
  -- the remaining start values are contained in 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
}

STARTList2 ::= SEQUENCE (SIZE (2..maxCNdomains)) OF
  STARTSingle

CipheringInfoPerRB-List-v3a0ext ::= SEQUENCE {
  dl-UM-SN          BIT STRING (SIZE (7))
}

CipheringStatusList ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
  CipheringStatusCNdomain

CipheringStatusCNdomain ::= SEQUENCE {
  cn-DomainIdentity  CN-DomainIdentity,
  cipheringStatus    CipheringStatus
}

-- IE definitions

CalculationTimeForCiphering ::= SEQUENCE {
  cell-Id      CellIdentity,
  sfn          INTEGER (0..4095)
}

CipheringInfoPerRB ::= SEQUENCE {
  dl-HFN      BIT STRING (SIZE (20..25)),
  ul-HFN      BIT STRING (SIZE (20..25))
}

-- TABULAR: CipheringInfoPerRB-List, multiplicity value numberOfRadioBearers
-- has been replaced with maxRB.
CipheringInfoPerRB-List ::= SEQUENCE (SIZE (1..maxRB)) OF
  CipheringInfoPerRB

CipheringStatus ::= ENUMERATED {
  started, notStarted }

CN-DomainInformation-v390ext ::= SEQUENCE {
  cn-DRX-CycleLengthCoeff  CN-DRX-CycleLengthCoefficient
}

CN-DomainInformationList-v390ext ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
  CN-DomainInformation-v390ext

```

```

COUNT-C-List ::=                               SEQUENCE (SIZE (1..maxCNdomains)) OF
                                                COUNT-CSingle

COUNT-CSingle ::=
  cn-DomainIdentity                             SEQUENCE {
  count-C                                        CN-DomainIdentity,
                                                BIT STRING (SIZE (32))
  }

ImplementationSpecificParams ::=               BIT STRING (SIZE (1..512))

IntegrityProtectionStatus ::=                 ENUMERATED {
                                                started, notStarted }

MeasurementCommandWithType ::=               CHOICE {
  setup                                          MeasurementType,
  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
  }

OngoingMeasRepList ::=                       SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                                OngoingMeasRep

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-LastKnownPos ::=             SEQUENCE {
  sfn                                           INTEGER (0..4095),
  cell-id                                       CellIdentity,
  positionEstimate                             PositionEstimate
  }

END

```

CR-Form-v7

## CHANGE REQUEST

⌘ **25.331 CR 1733** ⌘ rev **2** ⌘ Current version: **4.7.0** ⌘

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

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

<b>Title:</b>	⌘ Introduction of backwards compatible correction mechanism		
<b>Source:</b>	⌘ Nokia		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 05/Dec/2002
<b>Category:</b>	⌘ <b>A</b>	<b>Release:</b>	⌘ Rel-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

<b>Reason for change:</b>	⌘ Currently once backwards compatibility is started for Rel-4 there will be now mechanism to allow corrections to be made to R99 ASN.1 messages definitions.		
<b>Summary of change:</b>	⌘ Extension Containers principle introduced.		
	<b>Impact Analysis:</b> No Impact There is no impact as this does not actually make any changes to the protocol specification, but introduces the mechanism so that the changes can be made.		
<b>Consequences if not approved:</b>	⌘ Once Backwards Compatibility is started for Rel-4 it will be impossible to make certain corrections to ASN.1.		

<b>Clauses affected:</b>	⌘ 9.8, 10.1.1, 11.0, 11.2, 11.5										
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
Y	N										
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
		Test specifications									
		O&M Specifications									
<b>Other comments:</b>	⌘										

### 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.

## 9.8 Unexpected non-critical message extension

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, containing an undefined non-critical message extension, the UE shall:

- 1> [If the non critical extension is included in the “Variable Length Extension Container”:](#)
  - 2> [ignore the content of the extension and the contents of this container after the not comprehended extension, and continue decoding the rest of the message](#)
- 1> [otherwise](#)
  - 2> ignore the content of the extension and the message contents after the extension, but treat the parts of the message up to the extension normally.

If the UE receives a system information block on the BCCH containing an undefined non-critical message extension, the UE shall:

- 1> ignore the content of the extension and the system information block contents after the extension, but treat the parts of the system information block up to the extension normally.

If the UE receives an RRC message on the BCCH or PCCH, containing an undefined non-critical message extension, the UE shall:

- 1> ignore the content of the extension and the message contents after the extension, but treat the parts of the message up to the extension normally.

## 10.1.1 Protocol extensions

RRC messages may be extended in future versions of this protocol, either by adding values for choices, enumerated and size constrained types or by adding information elements. An important aspect concerns the behaviour of a UE, conforming to this revision of the standard, upon receiving a not comprehended future extension. The details of this error handling behaviour are provided in clause 9.

NOTE 1: By avoiding the need for partial decoding (skipping uncomprehended IEs to continue decoding the remainder of the message), the RRC protocol extension mechanism also avoids the overhead of length determinants for extensions. [“Variable length extension containers” \(i.e. non critical extension containers that have their abstract syntax defined using the ASN.1 type “BIT STRING”\) have been defined to support the introduction of extensions to a release after the subsequent release is frozen \(and UEs based on that subsequent may appear\). For this container a length determinant is used, which facilitates partial decoding of the container as well as the decoding of the extensions included after the container.](#)

Two kinds of protocol extensions are distinguished: non-critical and critical extensions. In general, a receiver shall process a message including not comprehended non-critical extensions as if the extensions were absent. However, a receiver shall entirely reject a message including not comprehended critical extensions (there is no partial rejection) and notify the sender, as specified in clause 9.

The general mechanism for adding critical extensions is by defining a new version of the message, which is indicated at the beginning of the message.

The UE shall always comprehend the complete transfer syntax specified for the protocol version it supports; if the UE comprehends the transfer syntax defined within protocol version A for message 1, it shall also comprehend the transfer syntax defined within protocol version A for message 2.

The following table shows for which messages only non-critical extensions may be added while for others both critical and non-critical extensions may be added.

NOTE 2: Critical extensions can only be added to certain downlink messages.

Extensions	Message
Critical and non-critical extensions	ACTIVE SET UPDATE 10.2.1 ASSISTANCE DATA DELIVERY 10.2.4 CELL CHANGE ORDER FROM UTRAN 10.2.5 CELL UPDATE CONFIRM 10.2.8 COUNTER CHECK 10.2.9 DOWNLINK DIRECT TRANSFER 10.2.11 HANDOVER TO UTRAN COMMAND 10.2.16a HANDOVER FROM UTRAN COMMAND 10.2.15 MEASUREMENT CONTROL 10.2.17 PHYSICAL CHANNEL RECONFIGURATION 10.2.22 PHYSICAL SHARED CHANNEL ALLOCATION 10.2.25 RADIO BEARER RECONFIGURATION 10.2.27 RADIO BEARER RELEASE 10.2.30 RADIO BEARER SETUP 10.2.33 RRC CONNECTION REJECT 10.2.36 RRC CONNECTION RELEASE 10.2.37 RRC CONNECTION SETUP 10.2.40 SECURITY MODE COMMAND 10.2.43 SIGNALLING CONNECTION RELEASE 10.2.46 TRANSPORT CHANNEL RECONFIGURATION 10.2.50 UE CAPABILITY ENQUIRY 10.2.55 UE CAPABILITY INFORMATION CONFIRM 10.2.57 UPLINK PHYSICAL CHANNEL CONTROL 10.2.59 URA UPDATE CONFIRM 10.2.61 UTRAN MOBILITY INFORMATION 10.2.62
Non-critical extensions only	ACTIVE SET UPDATE COMPLETE 10.2.2 ACTIVE SET UPDATE FAILURE 10.2.3 CELL CHANGE ORDER FROM UTRAN FAILURE 10.2.6 CELL UPDATE 10.2.7 COUNTER CHECK RESPONSE 10.2.10 HANDOVER TO UTRAN COMPLETE 10.2.16b INITIAL DIRECT TRANSFER 10.2.16c HANDOVER FROM UTRAN FAILURE 10.2.16

Extensions	Message
	MEASUREMENT CONTROL FAILURE 10.2.18 MEASUREMENT REPORT 10.2.19 PAGING TYPE 1 10.2.20 PAGING TYPE 2 10.2.21 PHYSICAL CHANNEL RECONFIGURATION COMPLETE 10.2.23 PHYSICAL CHANNEL RECONFIGURATION FAILURE 10.2.24 PUSCH CAPACITY REQUEST 10.2.26 RADIO BEARER RECONFIGURATION COMPLETE 10.2.28 RADIO BEARER RECONFIGURATION FAILURE 10.2.29 RADIO BEARER RELEASE COMPLETE 10.2.31 RADIO BEARER RELEASE FAILURE 10.2.32 RADIO BEARER SETUP COMPLETE 10.2.34 RADIO BEARER SETUP FAILURE 10.2.35 RRC CONNECTION RELEASE COMPLETE 10.2.38 RRC CONNECTION REQUEST 10.2.39 RRC CONNECTION SETUP COMPLETE 10.2.41 RRC STATUS 10.2.42 SECURITY MODE COMPLETE 10.2.44 SECURITY MODE FAILURE 10.2.45 SIGNALLING CONNECTION RELEASE INDICATION 10.2.47 Master Information Block 10.2.48.8.1 System Information Block type 1 to System Information Block type 17 10.2.48.8.2 to 10.2.48.8.19 SYSTEM INFORMATION CHANGE INDICATION 10.2.49 TRANSPORT CHANNEL RECONFIGURATION COMPLETE 10.2.51 TRANSPORT CHANNEL RECONFIGURATION FAILURE 10.2.52 TRANSPORT FORMAT COMBINATION CONTROL 10.2.53 TRANSPORT FORMAT COMBINATION CONTROL FAILURE 10.2.54 UE CAPABILITY INFORMATION 10.2.56 UPLINK DIRECT TRANSFER 10.2.58 URA UPDATE 10.2.60 UTRAN MOBILITY INFORMATION CONFIRM 10.2.63 UTRAN MOBILITY INFORMATION FAILURE 10.2.64
No extensions	SYSTEM INFORMATION 10.2.48 First Segment 10.2.48.1 Subsequent or last Segment 10.2.48.3 Complete SIB 10.2.48.5 SIB content 10.2.48.8.1

NOTE 3: For the SYSTEM INFORMATION message protocol extensions are only possible at the level of system information blocks.

### 10.1.1.1 Non-critical extensions

#### 10.1.1.1.1 Extension of an information element with additional values or choices

In future versions of this protocol, non-critical values may be added to choices, enumerated and size constrained types.

For choices, enumerated and size constrained types it is possible to indicate how many non-critical spare values need to be reserved for future extension. In this case, the tabular format should indicate the number of spare values that are needed. The value range defined in ASN.1 for the extensible IE should include the number of spares that are needed, since a value outside the range defined for this IE will result in a general ASN.1 violation error.

For downlink messages, spare values may be defined for non-critical information elements for which the need is specified to be MD or OP (or CV case leading to MD or OP). In this case, a receiver not comprehending the received spare value shall consider the information element to have the default value or consider it to be absent respectively.

For uplink messages spare values may be defined for all information elements, including those for which the need is specified to be MP (or CV case leading to MP).

In all cases at most one spare should be defined for choices. In this case, information elements applicable to the spare choices shall be added to the end of the message.

#### 10.1.1.1.2 Extension of a message with additional information elements

In future versions of this protocol, non-critical information elements may be added to RRC messages. These additional information elements shall be normally appended at the end of the message; the transfer syntax specified in this revision of the standard facilitates this. A receiver conformant to this revision of the standard shall accept such extension, and proceed as if it was not included. Extensions to a release that are introduced after the subsequent release is frozen may however be inserted prior to the end of the message. To facilitate this, "variable length extension containers" have been introduced in most messages.

#### 10.1.1.2 Critical extensions

##### 10.1.1.2.1 Extension of an information element with additional values or choices

In versions of this protocol, choices, enumerated and size constrained types may be extended with critical values. For extension with critical values the general critical extension mechanism is used, i.e. for this no spare values are reserved since backward compatibility is not required.

##### 10.1.1.2.2 Extension of a message with additional information elements

In future versions of this protocol, RRC messages may be extended with new information elements. Since messages including critical extensions are rejected by receivers not comprehending them, these messages may be modified completely, e.g. IEs may be inserted at any place and IEs may be removed or redefined.

# 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-GSM,
HandoverFromUTRANCommand-CDMA2000,
HandoverFromUTRANFailure,
MeasurementControl,
MeasurementControlFailure,
MeasurementReport,
PagingType1,
PagingType2,
PhysicalChannelReconfiguration,
PhysicalChannelReconfigurationComplete,
PhysicalChannelReconfigurationFailure,
PhysicalSharedChannelAllocation,
PUSCHCapacityRequest,
```

```

RadioBearerReconfiguration,
RadioBearerReconfigurationComplete,
RadioBearerReconfigurationFailure,
RadioBearerRelease,
RadioBearerReleaseComplete,
RadioBearerReleaseFailure,
RadioBearerSetup,
RadioBearerSetupComplete,
RadioBearerSetupFailure,
RRCConnectionReject,
RRCConnectionRelease,
RRCConnectionRelease-CCCH,
RRCConnectionReleaseComplete,
RRCConnectionRequest,
RRCConnectionSetup,
RRCConnectionSetupComplete,
RRCStatus,
SecurityModeCommand,
SecurityModeComplete,
SecurityModeFailure,
SignallingConnectionRelease,
SignallingConnectionReleaseIndication,
SystemInformation-BCH,
SystemInformation-FACH,
SystemInformationChangeIndication,
TransportChannelReconfiguration,
TransportChannelReconfigurationComplete,
TransportChannelReconfigurationFailure,
TransportFormatCombinationControl,
TransportFormatCombinationControlFailure,
UECapabilityEnquiry,
UECapabilityInformation,
UECapabilityInformationConfirm,
UplinkDirectTransfer,
UplinkPhysicalChannelControl,
URAUpdate,
URAUpdateConfirm,
URAUpdateConfirm-CCCH,
UTRANMobilityInformation,
UTRANMobilityInformationConfirm,
UTRANMobilityInformationFailure
FROM PDU-definitions

-- User Equipment IEs :
  IntegrityCheckInfo
FROM InformationElements;

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

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

DL-DCCH-MessageType ::= CHOICE {
  activeSetUpdate                ActiveSetUpdate,
  assistanceDataDelivery         AssistanceDataDelivery,
  cellChangeOrderFromUTRAN      CellChangeOrderFromUTRAN,
  cellUpdateConfirm             CellUpdateConfirm,
  counterCheck                  CounterCheck,
  downlinkDirectTransfer        DownlinkDirectTransfer,
  handoverFromUTRANCommand-GSM  HandoverFromUTRANCommand-GSM,
  handoverFromUTRANCommand-CDMA2000 HandoverFromUTRANCommand-CDMA2000,
  measurementControl            MeasurementControl,
  pagingType2                   PagingType2,
  physicalChannelReconfiguration PhysicalChannelReconfiguration,
  physicalSharedChannelAllocation PhysicalSharedChannelAllocation,
  radioBearerReconfiguration     RadioBearerReconfiguration,
  radioBearerRelease            RadioBearerRelease,
  radioBearerSetup              RadioBearerSetup,
  rrcConnectionRelease          RRCConnectionRelease,
  securityModeCommand           SecurityModeCommand,
  signallingConnectionRelease   SignallingConnectionRelease,
  transportChannelReconfiguration TransportChannelReconfiguration,

```

```

transportFormatCombinationControl TransportFormatCombinationControl,
ueCapabilityEnquiry UECapabilityEnquiry,
ueCapabilityInformationConfirm UECapabilityInformationConfirm,
uplinkPhysicalChannelControl UplinkPhysicalChannelControl,
uraUpdateConfirm URAUpdateConfirm,
utranMobilityInformation UTRANMobilityInformation,
spare7 NULL,
spare6 NULL,
spare5 NULL,
spare4 NULL,
spare3 NULL,
spare2 NULL,
spare1 NULL
}

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

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

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

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

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

```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

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

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

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

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

END

```

## 11.2 PDU definitions

```

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

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS

-- Core Network IEs :
    CN-DomainIdentity,
    CN-InformationInfo,
    CN-InformationInfoFull,
    NAS-Message,
    PagingRecordTypeID,
-- UTRAN Mobility IEs :
    CellIdentity,
    CellIdentity-PerRL-List,
    URA-Identity,
-- User Equipment IEs :
    ActivationTime,
    C-RNTI,
    CapabilityUpdateRequirement,
    CapabilityUpdateRequirement-r4,
    CapabilityUpdateRequirement-r4-ext,
    CellUpdateCause,
    CipheringAlgorithm,
    CipheringModeInfo,
    DSCH-RNTI,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    InitialUE-Identity,
    IntegrityProtActivationInfo,
    IntegrityProtectionModeInfo,
    N-308,
    PagingCause,

```

```
PagingRecordList,
ProtocolErrorIndicator,
ProtocolErrorIndicatorWithMoreInfo,
Rb-timer-indicator,
RedirectionInfo,
RejectionCause,
ReleaseCause,
RRC-StateIndicator,
RRC-TransactionIdentifier,
SecurityCapability,
START-Value,
STARTList,
U-RNTI,
U-RNTI-Short,
UE-RadioAccessCapability,
UE-RadioAccessCapability-r4-ext,
UE-RadioAccessCapability-v370ext,
UE-RadioAccessCapability-v380ext,
UE-RadioAccessCapability-v3a0ext,
UE-RadioAccessCapability-v4xyext,
DL-PhysChCapabilityFDD-v380ext,
UE-ConnTimersAndConstants,
UE-ConnTimersAndConstants-v3a0ext,
UE-SecurityInformation,
URA-UpdateCause,
UTRAN-DRX-CycleLengthCoefficient,
WaitTime,
-- Radio Bearer IEs :
  DefaultConfigIdentity,
  DefaultConfigIdentity-r4,
  DefaultConfigMode,
  DL-CounterSynchronisationInfo,
  PredefinedConfigIdentity,
  PredefinedConfigStatusList,
  RAB-Info,
  RAB-Info-Post,
  RAB-InformationList,
  RAB-InformationReconfigList,
  RAB-InformationSetupList,
  RAB-InformationSetupList-r4,
  RB-ActivationTimeInfoList,
  RB-COUNT-C-InformationList,
  RB-COUNT-C-MSB-InformationList,
  RB-IdentityList,
  RB-InformationAffectedList,
  RB-InformationReconfigList,
  RB-InformationReconfigList-r4,
  RB-InformationReleaseList,
  SRB-InformationSetupList,
  SRB-InformationSetupList2,
  UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
  CPCH-SetID,
  DL-AddReconfTransChInfo2List,
  DL-AddReconfTransChInfoList,
  DL-AddReconfTransChInfoList-r4,
  DL-CommonTransChInfo,
  DL-CommonTransChInfo-r4,
  DL-DeletedTransChInfoList,
  DRAC-StaticInformationList,
  TFC-Subset,
  TFCS-Identity,
  UL-AddReconfTransChInfoList,
  UL-CommonTransChInfo,
  UL-CommonTransChInfo-r4,
  UL-DeletedTransChInfoList,
-- Physical Channel IEs :
  Alpha,
  CCTrCH-PowerControlInfo,
  CCTrCH-PowerControlInfo-r4,
  ConstantValue,
  ConstantValueTdd,
  CPCH-SetInfo,
  DL-CommonInformation,
  DL-CommonInformation-r4,
  DL-CommonInformationPost,
  DL-InformationPerRL,
  DL-InformationPerRL-List,
```

```
DL-InformationPerRL-List-r4,
DL-InformationPerRL-ListPostFDD,
DL-InformationPerRL-PostTDD,
DL-InformationPerRL-PostTDD-LCR-r4,
DL-PDSCH-Information,
DPCH-CompressedModeStatusInfo,
FrequencyInfo,
FrequencyInfoFDD,
FrequencyInfoTDD,
MaxAllowedUL-TX-Power,
OpenLoopPowerControl-IPDL-TDD-r4,
PDSCH-CapacityAllocationInfo,
PDSCH-CapacityAllocationInfo-r4,
PDSCH-Identity,
PrimaryCCPCH-TX-Power,
PUSCH-CapacityAllocationInfo,
PUSCH-CapacityAllocationInfo-r4,
PUSCH-Identity,
RL-AdditionInformationList,
RL-RemovalInformationList,
SpecialBurstScheduling,
SSDT-Information,
TFC-ControlDuration,
SSDT-UL-r4,
TimeslotList,
TimeslotList-r4,
TX-DiversityMode,
UL-ChannelRequirement,
UL-ChannelRequirement-r4,
UL-ChannelRequirementWithCPCH-SetID,
UL-ChannelRequirementWithCPCH-SetID-r4,
UL-DPCH-Info,
UL-DPCH-Info-r4,
UL-DPCH-InfoPostFDD,
UL-DPCH-InfoPostTDD,
UL-DPCH-InfoPostTDD-LCR-r4,
UL-SynchronisationParameters-r4,
UL-TimingAdvance,
UL-TimingAdvanceControl,
UL-TimingAdvanceControl-r4,
-- Measurement IEs :
AdditionalMeasurementID-List,
Frequency-Band,
EventResults,
InterFreqEventResults-LCR-r4-ext,
InterRAT-TargetCellDescription,
MeasuredResults,
MeasuredResults-v390ext,
MeasuredResultsList,
MeasuredResultsList-LCR-r4-ext,
MeasuredResultsOnRACH,
MeasurementCommand,
MeasurementCommand-r4,
MeasurementIdentity,
MeasurementReportingMode,
PrimaryCCPCH-RSCP,
SFN-Offset-Validity,
TimeslotListWithISCP,
TrafficVolumeMeasuredResultsList,
UE-Positioning-GPS-AssistanceData,
UE-Positioning-Measurement-v390ext,
UE-Positioning-OTDOA-AssistanceData,
UE-Positioning-OTDOA-AssistanceData-r4ext,
UE-Positioning-OTDOA-AssistanceData-UEB,
UE-Positioning-IPDL-Parameters-TDD-r4-ext,
-- Other IEs :
BCCH-ModificationInfo,
CDMA2000-MessageList,
GSM-MessageList,
InterRAT-ChangeFailureCause,
InterRAT-HO-FailureCause,
InterRAT-UE-RadioAccessCapabilityList,
InterRAT-UE-SecurityCapList,
IntraDomainNasNodeSelector,
ProtocolErrorMoreInformation,
Rplmn-Information,
Rplmn-Information-r4,
SegCount,
SegmentIndex,
```

```

    SFN-Prime,
    SIB-Data-fixed,
    SIB-Data-variable,
    SIB-Type
FROM InformationElements

    maxSIBperMsg
FROM Constant-definitions;

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

ActiveSetUpdate ::= CHOICE {
    r3                               SEQUENCE {
        activeSetUpdate-r3           ActiveSetUpdate-r3-IEs,
        laterNonCriticalExtensions   SEQUENCE {
            -- Container for additional R99 extensions
            activeSetUpdate-r3-add-ext BIT STRING OPTIONAL,
            v4xyNonCriticalExtensions SEQUENCE {
                activeSetUpdate-v4xyext ActiveSetUpdate-v4xyext-IEs,
                nonCriticalExtensions SEQUENCE {} 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
}

-- *****
--
-- 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,
    Extension mechanism for non-release99 information
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  }
}

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

ActiveSetUpdateFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  failureCause FailureCauseWithProtErr,
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    activeSetUpdateFailure-r3-add-ext BIT STRING OPTIONAL,
    Extension mechanism for non-release99 information
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  } OPTIONAL
}

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

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

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

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

AssistanceDataDelivery-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,
      nonCriticalExtensions           SEQUENCE {} 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
}

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

CellChangeOrderFromUTRANFailure ::= CHOICE {
  r3                               SEQUENCE {
    cellChangeOrderFromUTRANFailure-r3
      CellChangeOrderFromUTRANFailure-r3-IEs,
      laterNonCriticalExtensions      SEQUENCE {
        -- Container for additional R99 extensions
        cellChangeOrderFromUTRANFailure-r3-add-ext BIT STRING OPTIONAL,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
      } OPTIONAL
  },
  -- dummy is not used in this version of the specification and it
  -- should be ignored.
  dummy                             SEQUENCE {
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    criticalExtensions              SEQUENCE {}
  }
}

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

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

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

```

```

am-RLC-ErrorIndicationRb5orAbove    BOOLEAN,
cellUpdateCause                      CellUpdateCause,
-- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
failureCause                         FailureCauseWithProtErrTrId    OPTIONAL,
rb-timer-indicator                   Rb-timer-indicator,
-- Measurement IEs
measuredResultsOnRACH                MeasuredResultsOnRACH        OPTIONAL,
laterNonCriticalExtensions            SEQUENCE {
-- Container for additional R99 extensions
cellUpdate-r3-add-ext                BIT STRING OPTIONAL,
-- Extension mechanism for non-release99 information
nonCriticalExtensions                SEQUENCE {} OPTIONAL
} 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
} OPTIONAL
},
  later-than-r3                       SEQUENCE {
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    criticalExtensions                CHOICE {
      r4                               SEQUENCE {
        cellUpdateConfirm-r4          CellUpdateConfirm-r4-IEs,
        nonCriticalExtensions         SEQUENCE {} OPTIONAL
      },
      criticalExtensions              SEQUENCE {}
    }
  }
}

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

```

```

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

CellUpdateConfirm-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
    }

```

```

-- *****
--
-- 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,
  -- Extension mechanism for non-release99 information
  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 SEQUENCE {}
  }
}

HandoverToUTRANCommand-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  new-U-RNTI U-RNTI-Short,
  -- dummy is not used in this version of specification, it should
  -- not be sent and if received it should be ignored.
  dummy ActivationTime OPTIONAL,
  cipheringAlgorithm CipheringAlgorithm OPTIONAL,
  -- Radio bearer IEs
  -- Specification mode information
  specificationMode CHOICE {
    complete SEQUENCE {
      srb-InformationSetupList SRB-InformationSetupList,
      rab-InformationSetupList RAB-InformationSetupList OPTIONAL,
      ul-CommonTransChInfo UL-CommonTransChInfo,
      ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
      dl-CommonTransChInfo DL-CommonTransChInfo,
      dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList,

```

```

        ul-DPCH-Info                UL-DPCH-Info,
        modeSpecificInfo            CHOICE {
            fdd                      SEQUENCE {
                dl-PDSCH-Information  DL-PDSCH-Information OPTIONAL,
                cpch-SetInfo          CPCH-SetInfo          OPTIONAL
            },
            tdd                      NULL
        },
        dl-CommonInformation         DL-CommonInformation,
        dl-InformationPerRL-List     DL-InformationPerRL-List,
        frequencyInfo               FrequencyInfo
    },
    preconfiguration                SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
        preConfigMode              CHOICE {
            predefinedConfigIdentity  PredefinedConfigIdentity,
            defaultConfig             SEQUENCE {
                defaultConfigMode     DefaultConfigMode,
                defaultConfigIdentity  DefaultConfigIdentity
            }
        },
        rab-Info                    RAB-Info-Post          OPTIONAL,
        modeSpecificInfo            CHOICE {
            fdd                      SEQUENCE {
                ul-DPCH-Info          UL-DPCH-InfoPostFDD,
                dl-CommonInformationPost  DL-CommonInformationPost,
                dl-InformationPerRL-List  DL-InformationPerRL-ListPostFDD,
                frequencyInfo          FrequencyInfoFDD
            },
            tdd                      SEQUENCE {
                ul-DPCH-Info          UL-DPCH-InfoPostTDD,
                dl-CommonInformationPost  DL-CommonInformationPost,
                dl-InformationPerRL      DL-InformationPerRL-PostTDD,
                frequencyInfo          FrequencyInfoTDD,
                primaryCCPCH-TX-Power    PrimaryCCPCH-TX-Power
            }
        }
    },
}

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

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

HandoverToUTRANCommand-r4-IEs ::= SEQUENCE {
-- User equipment IEs
    new-U-RNTI                    U-RNTI-Short,
    cipheringAlgorithm             CipheringAlgorithm          OPTIONAL,
-- Radio bearer IEs
    rab-Info                      RAB-Info-Post,
-- Specification mode information
    specificationMode             CHOICE {
        complete                  SEQUENCE {
            srb-InformationSetupList  SRB-InformationSetupList,
            rab-InformationSetupList  RAB-InformationSetupList-r4    OPTIONAL,
            ul-CommonTransChInfo     UL-CommonTransChInfo,
            ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList,
            dl-CommonTransChInfo     DL-CommonTransChInfo,
            dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList,
            ul-DPCH-Info             UL-DPCH-Info-r4,
            modeSpecificInfo         CHOICE {
                fdd                  SEQUENCE {
                    dl-PDSCH-Information  DL-PDSCH-Information OPTIONAL,
                    cpch-SetInfo          CPCH-SetInfo          OPTIONAL
                },
                tdd                  NULL
            },
            dl-CommonInformation     DL-CommonInformation-r4,

```

```

        dl-InformationPerRL-List      DL-InformationPerRL-List-r4,
        frequencyInfo                FrequencyInfo
    },
    preconfiguration                SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
        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
}

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

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

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

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

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

```

```

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

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

HandoverFromUTRANFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- Other IEs
  interRAT-HO-FailureCause       InterRAT-HO-FailureCause      OPTIONAL,
  interRATMessage                 CHOICE {
    gsm                             SEQUENCE {
      gsm-MessageList                GSM-MessageList
    },
    cdma2000                          SEQUENCE {
      cdma2000-MessageList            CDMA2000-MessageList
    }
  }
  } OPTIONAL,
  laterNonCriticalExtensions      SEQUENCE {
    -- Container for additional R99 extensions
    handoverFromUTRANFailure-r3-add-ext BIT STRING OPTIONAL,
    Extension mechanism for non-release99 information
    nonCriticalExtensions           SEQUENCE {} OPTIONAL
  } OPTIONAL
}

-- *****
--
-- INTER RAT HANOVER INFO
--
-- *****

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

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

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

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

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

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

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

```

```

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

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

MeasurementControlFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  failureCause              FailureCauseWithProtErr,
  -- Extension mechanism for non-release99 information
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    measurementControlFailure-r3-add-ext BIT STRING OPTIONAL,
    nonCriticalExtensions                 SEQUENCE {}  OPTIONAL
  } OPTIONAL
}

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

MeasurementReport ::= SEQUENCE {
  -- Measurement IEs
  measurementIdentity      MeasurementIdentity,
  measuredResults          MeasuredResults          OPTIONAL,
  measuredResultsOnRACH    MeasuredResultsOnRACH    OPTIONAL,
  additionalMeasuredResults MeasuredResultsList     OPTIONAL,
  eventResults             EventResults             OPTIONAL,
  -- Non-critical extensions
  v390nonCriticalExtensions SEQUENCE {
    measurementReport-v390ext MeasurementReport-v390ext,
    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
        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
}

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

PagingType1 ::= SEQUENCE {
  -- User equipment IEs
  pagingRecordList          PagingRecordList          OPTIONAL,
  -- Other IEs
  bcch-ModificationInfo    BCCH-ModificationInfo      OPTIONAL,
}

```

```

Extension mechanism for non-release99 information
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    pagingType1-r3-add-ext BIT STRING OPTIONAL,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  } OPTIONAL
}

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

PagingType2 ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  pagingCause PagingCause,
  -- Core network IEs
  cn-DomainIdentity CN-DomainIdentity,
  pagingRecordTypeID PagingRecordTypeID,
Extension mechanism for non-release99 information
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    pagingType2-r3-add-ext BIT STRING OPTIONAL,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  } OPTIONAL
}

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

PhysicalChannelReconfiguration ::= CHOICE {
  r3 SEQUENCE {
    physicalChannelReconfiguration-r3 PhysicalChannelReconfiguration-r3-IEs,
    v3a0NonCriticalExtensions SEQUENCE {
      physicalChannelReconfiguration-v3a0ext PhysicalChannelReconfiguration-v3a0ext,
Extension mechanism for non-release99 information
      laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions
        physicalChannelReconfiguration-r3-add-ext BIT STRING OPTIONAL,
        v4xyNonCriticalExtensions SEQUENCE {
          physicalChannelReconfiguration-v4xyext PhysicalChannelReconfiguration-v4xyext-IEs,
          nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
      } OPTIONAL
    }
  },
  later-than-r3 SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions CHOICE {
      r4 SEQUENCE {
        physicalChannelReconfiguration-r4 PhysicalChannelReconfiguration-r4-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
      },
      criticalExtensions 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
}

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

PhysicalChannelReconfigurationComplete ::= SEQUENCE {
-- User equipment IEs
  rrc-TransactionIdentifier     RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo     IntegrityProtActivationInfo    OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance              UL-TimingAdvance              OPTIONAL,
-- Radio bearer IEs

```

```

count-C-ActivationTime      ActivationTime      OPTIONAL,
rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList  OPTIONAL,
ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo  OPTIONAL,
laterNonCriticalExtensions  SEQUENCE {
  -- Container for additional R99 extensions
  physicalChannelReconfigurationComplete-r3-add-ext  BIT STRING  OPTIONAL,
  -- Extension mechanism for non-release99 information
  nonCriticalExtensions  SEQUENCE {}  OPTIONAL
}
}

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

PhysicalChannelReconfigurationFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier      OPTIONAL,
  failureCause                  FailureCauseWithProtErr,
  laterNonCriticalExtensions  SEQUENCE {
    -- Container for additional R99 extensions
    physicalChannelReconfigurationFailure-r3-add-ext  BIT STRING  OPTIONAL,
    Extension mechanism for non-release99 information
    nonCriticalExtensions  SEQUENCE {}  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
    }
  },
  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 {

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```

-- 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,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions SEQUENCE {} OPTIONAL
  } 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
      RadioBearerReconfiguration-v4xyext-IEs,
      nonCriticalExtensions       SEQUENCE {} OPTIONAL
      } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  later-than-r3                SEQUENCE {
    rrc-TransactionIdentifier     RRC-TransactionIdentifier,
    criticalExtensions            CHOICE {
      r4                          SEQUENCE {
        radioBearerReconfiguration-r4 RadioBearerReconfiguration-r4-IEs,
        nonCriticalExtensions       SEQUENCE {} OPTIONAL
      },
      criticalExtensions           SEQUENCE {}
    }
  }
}

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

```

```

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

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

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

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

```

```

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

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

RadioBearerReconfigurationComplete ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo       IntegrityProtActivationInfo     OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance                 UL-TimingAdvance               OPTIONAL,
-- Radio bearer IEs
    count-C-ActivationTime           ActivationTime                  OPTIONAL,
    rb-UL-CiphActivationTimeInfo     RB-ActivationTimeInfoList      OPTIONAL,
    ul-CounterSynchronisationInfo    UL-CounterSynchronisationInfo  OPTIONAL,
    laterNonCriticalExtensions       SEQUENCE {
-- Container for additional R99 extensions
        radioBearerReconfigurationComplete-r3-add-ext BIT STRING OPTIONAL,
-- Extension mechanism for non-release99 information
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    } 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,
-- Extension mechanism for non-release99 information
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
}

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

RadioBearerRelease ::= CHOICE {

```

```

r3
  radioBearerRelease-r3          SEQUENCE {
    v3a0NonCriticalExtensions     RadioBearerRelease-r3-IEs,
    radioBearerRelease-v3a0ext    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          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
  } OPTIONAL,
  dl-CommonTransChInfo         DL-CommonTransChInfo          OPTIONAL,
  dl-DeletedTransChInfoList     DL-DeletedTransChInfoList     OPTIONAL,
  dl-AddReconfTransChInfoList  DL-AddReconfTransChInfo2List  OPTIONAL,
  -- Physical channel IEs
  frequencyInfo                FrequencyInfo                    OPTIONAL,
  maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power        OPTIONAL,
  ul-ChannelRequirement         UL-ChannelRequirement        OPTIONAL,
  modeSpecificPhysChInfo       CHOICE {
    fdd                          SEQUENCE {
      dl-PDSCH-Information       DL-PDSCH-Information          OPTIONAL
    },
    tdd                          NULL
  },
  dl-CommonInformation         DL-CommonInformation          OPTIONAL,
  dl-InformationPerRL-List     DL-InformationPerRL-List     OPTIONAL
}

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

```

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

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

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

```
RadioBearerReleaseComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier    RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo    IntegrityProtActivationInfo    OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance             UL-TimingAdvance             OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime       ActivationTime                 OPTIONAL,
  rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList     OPTIONAL,
  ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo  OPTIONAL,
  laterNonCriticalExtensions    SEQUENCE {
    -- Container for additional R99 extensions
    radioBearerReleaseComplete-r3-add-ext BIT STRING OPTIONAL,
    Extension mechanism for non-release99 information
  }
}
```

```

    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,
  Extension mechanism for non-release99 information
  laterNonCriticalExtensions     SEQUENCE {
    -- Container for additional R99 extensions
    radioBearerReleaseFailure-r3-add-ext BIT STRING        OPTIONAL,
    nonCriticalExtensions         SEQUENCE {}              OPTIONAL
  } OPTIONAL
}

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

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

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

```

```

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

```

```

        fdd          SEQUENCE {
            dl-PDSCH-Information      DL-PDSCH-Information      OPTIONAL
        },
        tdd          NULL
    },
    dl-CommonInformation      DL-CommonInformation-r4      OPTIONAL,
    dl-InformationPerRL-List  DL-InformationPerRL-List-r4    OPTIONAL
}

```

```

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

```

```

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

```

```

RadioBearerSetupFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    failureCause                  FailureCauseWithProtErr,
    -- Radio bearer IEs
    potentiallySuccessfulBearerList RB-IdentityList              OPTIONAL,
    laterNonCriticalExtensions     SEQUENCE {
        -- Container for additional R99 extensions
        radioBearerSetupFailure-r3-add-ext BIT STRING OPTIONAL,
        -- Extension mechanism for non-release99 information
        nonCriticalExtensions          SEQUENCE {}            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
        }
    },
    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
}

```

```

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

```

```

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

```

```

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

```

```

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

```

```

}

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

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

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

RRCConnectionReleaseComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier  RRC-TransactionIdentifier,
  errorIndication            FailureCauseWithProtErr          OPTIONAL,
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    rrcConnectionReleaseComplete-r3-add-ext BIT STRING OPTIONAL,
    -- Extension mechanism for non-release99 information
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  } OPTIONAL
}

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

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

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

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

RRCConnectionSetup ::= CHOICE {
  r3 SEQUENCE {
    rrcConnectionSetup-r3 RRCConnectionSetup-r3-IEs,
    laterNonCriticalExtensions SEQUENCE {
      -- Container for additional R99 extensions
      rrcConnectionSetup-r3-add-ext BIT STRING OPTIONAL,
      v4xyNonCriticalExtensions SEQUENCE {
        rrcConnectionSetup-v4xyext RRCConnectionSetup-v4xyext-IEs,
        -- Extension mechanism for non-release99 information
        nonCriticalExtensions SEQUENCE {} OPTIONAL
      } OPTIONAL
    } OPTIONAL
  }
}

```

```

    },
    later-than-r3
        initialUE-Identity          InitialUE-Identity,
        rrc-TransactionIdentifier    RRC-TransactionIdentifier,
        criticalExtensions
            CHOICE {
                r4
                    rrcConnectionSetup-r4      RRCConnectionSetup-r4-IEs,
                    nonCriticalExtensions      SEQUENCE {} OPTIONAL
            },
        criticalExtensions          SEQUENCE {}
    }
}

```

```

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

```

```

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

```

```

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

```

```

        dl-CommonInformation          DL-CommonInformation-r4          OPTIONAL,
        dl-InformationPerRL-List      DL-InformationPerRL-List-r4      OPTIONAL
    }
-- *****
--
-- RRC CONNECTION SETUP COMPLETE
--
-- *****

RRCConnectionSetupComplete ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        startList                      STARTList,
        ue-RadioAccessCapability        UE-RadioAccessCapability          OPTIONAL,
    -- Other IEs
        ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
    -- Non critical extensions
        v370NonCriticalExtensions       SEQUENCE {
            rrcConnectionSetupComplete-v370ext  RRCConnectionSetupComplete-v370ext,
            v380NonCriticalExtensions          SEQUENCE {
                rrcConnectionSetupComplete-v380ext  RRCConnectionSetupComplete-v380ext-IEs,
                -- Reserved for future non critical extension
                v3a0NonCriticalExtensions          SEQUENCE {
                    rrcConnectionSetupComplete-v3a0ext  RRCConnectionSetupComplete-v3a0ext,
                    laterNonCriticalExtensions          SEQUENCE {
                    -- Container for additional R99 extensions
                    rrcConnectionSetupComplete-r3-add-ext          BIT STRING          OPTIONAL,
                    v4xyNonCriticalExtensions          SEQUENCE {
                    rrcConnectionSetupComplete-v4xyext          RRCConnectionSetupComplete-v4xyext-IEs,
                    nonCriticalExtensions          SEQUENCE {}          OPTIONAL
                    }          OPTIONAL
                    }          OPTIONAL
                }
            }
        }
    }
}

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

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

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

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

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

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

```

```

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

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

RRCStatus ::= SEQUENCE {
  -- Other IEs
  -- TABULAR: Identification of received message is nested in
  -- ProtocolErrorMoreInformation
  protocolErrorInformation          ProtocolErrorMoreInformation,
  laterNonCriticalExtensions        SEQUENCE {
    -- Container for additional R99 extensions
    rrcStatus-r3-add-ext            BIT STRING OPTIONAL,
    Extension mechanism for non-release99 information
    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,
    Extension mechanism for non-release99 information
    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,
        -- Extension mechanism for non-release99 information
        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,
        -- Extension mechanism for non-release99 information
        nonCriticalExtensions       SEQUENCE {} OPTIONAL
    }
}

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

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

FirstSegment ::= SEQUENCE {

```

```

-- Other information elements
  sib-Type          SIB-Type,
  seg-Count         SegCount,
  sib-Data-fixed    SIB-Data-fixed
}

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

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

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

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

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

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

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

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

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

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

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

-- *****

```

```

--
-- SYSTEM INFORMATION CHANGE INDICATION
--
-- *****
SystemInformationChangeIndication ::= SEQUENCE {
  -- Other IEs
  bcch-ModificationInfo          BCCH-ModificationInfo,
  laterNonCriticalExtensions      SEQUENCE {
    -- Container for additional R99 extensions
    systemInformationChangeIndication-r3-add-ext          BIT STRING OPTIONAL,
    Extension mechanism for non-release99 information
    nonCriticalExtensions      SEQUENCE {} OPTIONAL
  } OPTIONAL
}

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

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

```

```

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

TransportChannelReconfiguration-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,
  modeSpecificPhysChInfo          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
}

-- *****
--
-- 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,
    Extension mechanism for non-release99 information
    nonCriticalExtensions       SEQUENCE {}      OPTIONAL
  } OPTIONAL
}

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

TransportChannelReconfigurationFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
  laterNonCriticalExtensions    SEQUENCE {
    -- Container for additional R99 extensions
    transportChannelReconfigurationFailure-r3-add-ext BIT STRING OPTIONAL,
    Extension mechanism for non-release99 information
    nonCriticalExtensions       SEQUENCE {}      OPTIONAL
  } 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,
    Extension mechanism for non-release99 information
    nonCriticalExtensions       SEQUENCE {}      OPTIONAL
  } OPTIONAL
}

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

TransportFormatCombinationControlFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
  laterNonCriticalExtensions    SEQUENCE {
    -- Container for additional R99 extensions
    transportFormatCombinationControlFailure-r3-add-ext BIT STRING OPTIONAL,
    Extension mechanism for non-release99 information
    nonCriticalExtensions       SEQUENCE {}      OPTIONAL
  } OPTIONAL
}

```

```

} } OPTIONAL
}

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

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

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

UECapabilityEnquiry-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,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
          } OPTIONAL
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  } OPTIONAL
}

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

UECapabilityInformation-v380ext-IEs ::= SEQUENCE {
  -- User equipment IEs

```

```

        ue-RadioAccessCapability-v380ext      UE-RadioAccessCapability-v380ext
OPTIONAL,
        dl-PhysChCapabilityFDD-v380ext      DL-PhysChCapabilityFDD-v380ext
    }

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

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

-- *****
--
-- 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,
        Extension mechanism for non-release99 information
        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
  }
}
},
later-than-r3                    SEQUENCE {
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  criticalExtensions             CHOICE {
    r4                          SEQUENCE {
      uplinkPhysicalChannelControl-r4 UplinkPhysicalChannelControl-r4-IEs,
      nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
    criticalExtensions             SEQUENCE {}
  }
}
}
}

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

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

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

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

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,
    Extension mechanism for non release99 information
    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           SEQUENCE {}
}
}

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

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

URAUpdateConfirm-CCCH ::= CHOICE {
  r3          SEQUENCE {
    uraUpdateConfirm-CCCH-r3          URAUpdateConfirm-CCCH-r3-IEs,
    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
      } OPTIONAL
    } OPTIONAL
  },
  later-than-r3          SEQUENCE {

```

```

        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
}

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

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

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

UTRANMobilityInformationConfirm ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo         IntegrityProtActivationInfo    OPTIONAL,
    -- Radio bearer IEs
    count-C-ActivationTime            ActivationTime                 OPTIONAL,
    rb-UL-CiphActivationTimeInfo       RB-ActivationTimeInfoList     OPTIONAL,
    ul-CounterSynchronisationInfo      UL-CounterSynchronisationInfo OPTIONAL,
    laterNonCriticalExtensions       SEQUENCE {}
    -- Container for additional R99 extensions
    utranNMobilityInformationConfirm-r3-add-ext BIT STRING OPTIONAL,
    Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {} OPTIONAL
    } OPTIONAL
}

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

UTRANMobilityInformationFailure ::= SEQUENCE {
    -- UE information elements
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    failureCause                      FailureCauseWithProtErr,
    laterNonCriticalExtensions       SEQUENCE {}
    -- Container for additional R99 extensions
    utranNMobilityInformationFailure-r3-add-ext BIT STRING OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {} OPTIONAL
    } OPTIONAL
}

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-v4xyext,
    UL-PhysChCapabilityFDD,
    UL-PhysChCapabilityTDD,
    UL-PhysChCapabilityTDD-LCR-r4,
-- Radio Bearer IEs :
    PredefinedConfigStatusList,
    PredefinedConfigValueTag,
    RAB-InformationSetupList,
    RAB-InformationSetupList-r4,
    RAB-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,
    UE-Positioning-IPDL-Parameters-TDD-r4-ext,
-- Other IEs :
    InterRAT-UE-RadioAccessCapabilityList

FROM InformationElements

    maxCNdomains,
    maxNoOfMeas,

    maxRB,
    maxSRBsetup
FROM Constant-definitions
;

-- Part 1: Class definitions similar to what has been defined in 11.1 for RRC messages
-- Information that is tranferred in the same direction and across the same path is grouped
-- *****
--
-- RRC information, to target RNC
--
-- *****
-- RRC Information to target RNC sent either from source RNC or from another RAT

ToTargetRNC-Container ::= CHOICE {
    interRATHandoverInfo          InterRATHandoverInfoWithInterRATCapabilities-r3,
    srncRelocation                SRNC-RelocationInfo-r3,
    extension                     NULL
}

-- *****
--
-- RRC information, target RNC to source RNC
--
-- *****

Target-RNC-ToSourceRNC-Container ::= CHOICE {
    radioBearerSetup              RadioBearerSetup,
    radioBearerReconfiguration    RadioBearerReconfiguration,
    radioBearerRelease            RadioBearerRelease,
    transportChannelReconfiguration TransportChannelReconfiguration,
    physicalChannelReconfiguration PhysicalChannelReconfiguration,
    rrc-FailureInfo              RRC-FailureInfo-r3-IEs,
    -- IE dl-DCCHmessage consists of an octet string that includes
    -- the IE DL-DCCH-Message
    dl-DCCHmessage                OCTET STRING,
    extension                     NULL
}

-- Part 2: Container definitions, similar to the PDU definitions in 11.2 for RRC messages
-- In alphabetical order

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

InterRATHandoverInfoWithInterRATCapabilities-r3 ::= CHOICE {
    r3                             SEQUENCE {
        -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also
        -- includes non critical extensions
        interRATHandoverInfo-r3    InterRATHandoverInfoWithInterRATCapabilities-r3-IEs,
        v390NonCriticalExtensions  SEQUENCE {

```

```

        interRATHandoverInfoWithInterRATCapabilities-v390ext
InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs,
    -- Reserved for future non critical extension
    nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
criticalExtensions                SEQUENCE {}
}

InterRATHandoverInfoWithInterRATCapabilities-r3-IEs ::= SEQUENCE {
    -- The order of the IEs may not reflect the tabular format
    -- but has been chosen to simplify the handling of the information in the BSC
    -- Other IEs
    ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
    -- interRATHandoverInfo, Octet string is used to obtain 8 bit length field prior to
    -- actual information. This makes it possible for BSS to transparently handle information
    -- received via GSM air interface even when it includes non critical extensions.
    -- The octet string shall include the InterRATHandoverInfo information
    -- The BSS can re-use the 04.18 length field received from the MS
    interRATHandoverInfo           OCTET STRING (SIZE (0..255))
}

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

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

SRNC-RelocationInfo-r3 ::= CHOICE {
    r3
        SEQUENCE {
            SRNC-RelocationInfo-r3-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 {
                                -- Container for additional R99 extensions
                                SRNC-RelocationInfo-r3-add-ext BIT STRING OPTIONAL,
                                v4xyNonCriticalExtensions SEQUENCE {
                                SRNC-RelocationInfo-v4xyext SRNC-RelocationInfo-v4xyext-IEs,
                                -- Reserved for future non critical extension
                                nonCriticalExtensions SEQUENCE {} OPTIONAL
                                }
                                OPTIONAL
                            }
                        }
                    }
                }
            }
        }
    }
    OPTIONAL
}
}
OPTIONAL
}
OPTIONAL
}
OPTIONAL
},
later-than-r3
    CHOICE {
        r4
            SEQUENCE {
                SRNC-RelocationInfo-r4-IEs,
                SRNC-RelocationInfo-r4-IEs,
                nonCriticalExtensions SEQUENCE {} 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 the IE "Signalling RB information list" and in the
-- IE "RAB information list". 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,
    srb-SpecificIntegrityProtInfo    SRB-SpecificIntegrityProtInfoList,
    implementationSpecificParams     ImplementationSpecificParams     OPTIONAL,
-- User equipment IES
    u-RNTI                           U-RNTI,
    c-RNTI                           C-RNTI                           OPTIONAL,
    ue-RadioAccessCapability        UE-RadioAccessCapability,
    ue-Positioning-LastKnownPos     UE-Positioning-LastKnownPos     OPTIONAL,
-- Other IES
    ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
-- UTRAN mobility IES
    ura-Identity                     URA-Identity                     OPTIONAL,
-- Core network IES
    cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP,
    cn-DomainInformationList        CN-DomainInformationList        OPTIONAL,
-- Measurement IES
    ongoingMeasRepList              OngoingMeasRepList              OPTIONAL,
-- Radio bearer IES
    predefinedConfigStatusList      PredefinedConfigStatusList,
    srb-InformationList             SRB-InformationSetupList,
    rab-InformationList             RAB-InformationSetupList        OPTIONAL,
-- Transport channel IES
    ul-CommonTransChInfo           UL-CommonTransChInfo           OPTIONAL,
    ul-TransChInfoList             UL-AddReconfTransChInfoList    OPTIONAL,
    modeSpecificInfo               CHOICE {
        fdd                         SEQUENCE {
            cpch-SetID              CPCH-SetID                      OPTIONAL,
            transChDRAC-Info        DRAC-StaticInformationList     OPTIONAL
        },
        tdd                         NULL
    },
    dl-CommonTransChInfo           DL-CommonTransChInfo           OPTIONAL,
    dl-TransChInfoList             DL-AddReconfTransChInfoList    OPTIONAL,
-- Measurement report
    measurementReport               MeasurementReport                OPTIONAL,
    nonCriticalExtensions           SEQUENCE {
        -- In case of TDD only up-Ipdl-Parameters-TDD is present, otherwise
        -- this IE is absent
        up-Ipdl-Parameters-TDD     UE-Positioning-IPDL-Parameters-TDD-r4-ext  OPTIONAL,
        -- Extension mechanism for non- release4 information
        nonCriticalExtensions       SEQUENCE {}                       OPTIONAL
    }
}

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 remaining start values are contained in 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
}

STARTList2 ::=
    SEQUENCE (SIZE (2..maxCNdomains)) OF
    STARTSingle

SRNC-RelocationInfo-v4xyext-IEs ::= SEQUENCE {
    ue-RadioAccessCapability-v4xyext  UE-RadioAccessCapability-v4xyext
}

CipheringInfoForSRB1-v3a0ext ::= SEQUENCE {
    dl-UM-SN                          BIT STRING (SIZE (7))
}

CipheringStatusList ::=
    SEQUENCE (SIZE (1..maxCNdomains)) OF
    CipheringStatusCNDomain

CipheringStatusCNDomain ::=
    SEQUENCE {
        cn-DomainIdentity              CN-DomainIdentity,
        cipheringStatus                CipheringStatus
    }

SRNC-RelocationInfo-r4-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,
        -- 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
}

```

```

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-r4      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
}

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-LastKnownPos ::= SEQUENCE {
    sfn INTEGER (0..4095),
    cell-id CellIdentity,
    positionEstimate PositionEstimate
}

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-RadioAccessCapability-r4 ::= SEQUENCE {
    accessStratumReleaseIndicator AccessStratumReleaseIndicator,
    pdcp-Capability PDCP-Capability-r4,
    rlc-Capability RLC-Capability,
    transportChannelCapability TransportChannelCapability,
    rf-Capability RF-Capability-r4,
    physicalChannelCapability PhysicalChannelCapability-r4,
    ue-MultiModeRAT-Capability UE-MultiModeRAT-Capability,
    securityCapability SecurityCapability,
    ue-positioning-Capability UE-Positioning-Capability-r4,
    measurementCapability MeasurementCapability-r4 OPTIONAL
}

END

```



## CHANGE REQUEST

⌘ **25.331 CR 1734** ⌘ rev **2** ⌘ Current version: **5.2.0** ⌘

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

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

<b>Title:</b>	⌘ Introduction of backwards compatible correction mechanism		
<b>Source:</b>	⌘ Nokia		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 05/Dec/2002
<b>Category:</b>	⌘ <b>A</b>	<b>Release:</b>	⌘ 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 <a href="#">TR 21.900</a> .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

<b>Reason for change:</b>	⌘ Currently once backwards compatibility is started for Rel-4 there will be now mechanism to allow corrections to be made to R99 ASN.1 messages definitions.		
<b>Summary of change:</b>	⌘ Extension Containers principle introduced.		
	<b>Impact Analysis:</b> No Impact There is no impact as this does not actually make any changes to the protocol specification, but introduces the mechanism so that the changes can be made.		
<b>Consequences if not approved:</b>	⌘ Once Backwards Compatibility is started for Rel-4 it will be impossible to make certain corrections to ASN.1.		

<b>Clauses affected:</b>	⌘ 9.8, 10.1.1, 11.0, 11.2, 11.5										
<b>Other specs Affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
Y	N										
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
		Test specifications									
		O&M Specifications									
<b>Other comments:</b>	⌘										

### 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.

## 9.8 Unexpected non-critical message extension

If the UE receives an RRC message on the DCCH, or addressed to the UE on the CCCH or on the SHCCH, or sent via a radio access technology other than UTRAN, containing an undefined non-critical message extension, the UE shall:

- 1> [If the non critical extension is included in the “Variable Length Extension Container”:](#)
  - 2> [ignore the content of the extension and the contents of this container after the not comprehended extension, and continue decoding the rest of the message](#)
- 1> [otherwise](#)
  - 2> ignore the content of the extension and the message contents after the extension, but treat the parts of the message up to the extension normally.

If the UE receives a system information block on the BCCH containing an undefined non-critical message extension, the UE shall:

- 1> ignore the content of the extension and the system information block contents after the extension, but treat the parts of the system information block up to the extension normally.

If the UE receives an RRC message on the BCCH or PCCH, containing an undefined non-critical message extension, the UE shall:

- 1> ignore the content of the extension and the message contents after the extension, but treat the parts of the message up to the extension normally.

## 10.1.1 Protocol extensions

RRC messages may be extended in future versions of this protocol, either by adding values for choices, enumerated and size constrained types or by adding information elements. An important aspect concerns the behaviour of a UE, conforming to this revision of the standard, upon receiving a not comprehended future extension. The details of this error handling behaviour are provided in clause 9.

NOTE 1: By avoiding the need for partial decoding (skipping uncomprehended IEs to continue decoding the remainder of the message), the RRC protocol extension mechanism also avoids the overhead of length determinants for extensions. [“Variable length extension containers” \(i.e. non critical extension containers that have their abstract syntax defined using the ASN.1 type “BIT STRING”\) have been defined to support the introduction of extensions to a release after the subsequent release is frozen \(and UEs based on that subsequent may appear\). For this container a length determinant is used, which facilitates partial decoding of the container as well as the decoding of the extensions included after the container.](#)

Two kinds of protocol extensions are distinguished: non-critical and critical extensions. In general, a receiver shall process a message including not comprehended non-critical extensions as if the extensions were absent. However, a receiver shall entirely reject a message including not comprehended critical extensions (there is no partial rejection) and notify the sender, as specified in clause 9.

The general mechanism for adding critical extensions is by defining a new version of the message, which is indicated at the beginning of the message.

The UE shall always comprehend the complete transfer syntax specified for the protocol version it supports; if the UE comprehends the transfer syntax defined within protocol version A for message 1, it shall also comprehend the transfer syntax defined within protocol version A for message 2.

The following table shows for which messages only non-critical extensions may be added while for others both critical and non-critical extensions may be added.

NOTE 2: Critical extensions can only be added to certain downlink messages.

Extensions	Message
Critical and non-critical extensions	ACTIVE SET UPDATE 10.2.1 ASSISTANCE DATA DELIVERY 10.2.4 CELL CHANGE ORDER FROM UTRAN 10.2.5 CELL UPDATE CONFIRM 10.2.8 COUNTER CHECK 10.2.9 DOWNLINK DIRECT TRANSFER 10.2.11 HANDOVER TO UTRAN COMMAND 10.2.16a HANDOVER FROM UTRAN COMMAND 10.2.15 MEASUREMENT CONTROL 10.2.17 PHYSICAL CHANNEL RECONFIGURATION 10.2.22 PHYSICAL SHARED CHANNEL ALLOCATION 10.2.25 RADIO BEARER RECONFIGURATION 10.2.27 RADIO BEARER RELEASE 10.2.30 RADIO BEARER SETUP 10.2.33 RRC CONNECTION REJECT 10.2.36 RRC CONNECTION RELEASE 10.2.37 RRC CONNECTION SETUP 10.2.40 SECURITY MODE COMMAND 10.2.43 SIGNALLING CONNECTION RELEASE 10.2.46 TRANSPORT CHANNEL RECONFIGURATION 10.2.50 UE CAPABILITY ENQUIRY 10.2.55 UE CAPABILITY INFORMATION CONFIRM 10.2.57 UPLINK PHYSICAL CHANNEL CONTROL 10.2.59 URA UPDATE CONFIRM 10.2.61 UTRAN MOBILITY INFORMATION 10.2.62
Non-critical extensions only	ACTIVE SET UPDATE COMPLETE 10.2.2 ACTIVE SET UPDATE FAILURE 10.2.3 CELL CHANGE ORDER FROM UTRAN FAILURE 10.2.6 CELL UPDATE 10.2.7 COUNTER CHECK RESPONSE 10.2.10 HANDOVER TO UTRAN COMPLETE 10.2.16b INITIAL DIRECT TRANSFER 10.2.16c HANDOVER FROM UTRAN FAILURE 10.2.16

Extensions	Message
	MEASUREMENT CONTROL FAILURE 10.2.18 MEASUREMENT REPORT 10.2.19 PAGING TYPE 1 10.2.20 PAGING TYPE 2 10.2.21 PHYSICAL CHANNEL RECONFIGURATION COMPLETE 10.2.23 PHYSICAL CHANNEL RECONFIGURATION FAILURE 10.2.24 PUSCH CAPACITY REQUEST 10.2.26 RADIO BEARER RECONFIGURATION COMPLETE 10.2.28 RADIO BEARER RECONFIGURATION FAILURE 10.2.29 RADIO BEARER RELEASE COMPLETE 10.2.31 RADIO BEARER RELEASE FAILURE 10.2.32 RADIO BEARER SETUP COMPLETE 10.2.34 RADIO BEARER SETUP FAILURE 10.2.35 RRC CONNECTION RELEASE COMPLETE 10.2.38 RRC CONNECTION REQUEST 10.2.39 RRC CONNECTION SETUP COMPLETE 10.2.41 RRC STATUS 10.2.42 SECURITY MODE COMPLETE 10.2.44 SECURITY MODE FAILURE 10.2.45 SIGNALLING CONNECTION RELEASE INDICATION 10.2.47 Master Information Block 10.2.48.8.1 System Information Block type 1 to System Information Block type 17 10.2.48.8.2 to 10.2.48.8.19 SYSTEM INFORMATION CHANGE INDICATION 10.2.49 TRANSPORT CHANNEL RECONFIGURATION COMPLETE 10.2.51 TRANSPORT CHANNEL RECONFIGURATION FAILURE 10.2.52 TRANSPORT FORMAT COMBINATION CONTROL 10.2.53 TRANSPORT FORMAT COMBINATION CONTROL FAILURE 10.2.54 UE CAPABILITY INFORMATION 10.2.56 UPLINK DIRECT TRANSFER 10.2.58 URA UPDATE 10.2.60 UTRAN MOBILITY INFORMATION CONFIRM 10.2.63 UTRAN MOBILITY INFORMATION FAILURE 10.2.64
No extensions	SYSTEM INFORMATION 10.2.48 First Segment 10.2.48.1 Subsequent or last Segment 10.2.48.3 Complete SIB 10.2.48.5 SIB content 10.2.48.8.1

NOTE 3: For the SYSTEM INFORMATION message protocol extensions are only possible at the level of system information blocks.

### 10.1.1.1 Non-critical extensions

#### 10.1.1.1.1 Extension of an information element with additional values or choices

In future versions of this protocol, non-critical values may be added to choices, enumerated and size constrained types.

For choices, enumerated and size constrained types it is possible to indicate how many non-critical spare values need to be reserved for future extension. In this case, the tabular format should indicate the number of spare values that are needed. The value range defined in ASN.1 for the extensible IE should include the number of spares that are needed, since a value outside the range defined for this IE will result in a general ASN.1 violation error.

For downlink messages, spare values may be defined for non-critical information elements for which the need is specified to be MD or OP (or CV case leading to MD or OP). In this case, a receiver not comprehending the received spare value shall consider the information element to have the default value or consider it to be absent respectively.

For uplink messages spare values may be defined for all information elements, including those for which the need is specified to be MP (or CV case leading to MP).

In all cases at most one spare should be defined for choices. In this case, information elements applicable to the spare choices shall be added to the end of the message.

#### 10.1.1.1.2 Extension of a message with additional information elements

In future versions of this protocol, non-critical information elements may be added to RRC messages. These additional information elements shall be [normally](#) appended at the end of the message; the transfer syntax specified in this revision of the standard facilitates this. A receiver conformant to this revision of the standard shall accept such extension, and proceed as if it was not included. [Extensions to a release that are introduced after the subsequent release is frozen may however be inserted prior to the end of the message. To facilitate this, "variable length extension containers" have been introduced in most messages.](#)

#### 10.1.1.2 Critical extensions

##### 10.1.1.2.1 Extension of an information element with additional values or choices

In versions of this protocol, choices, enumerated and size constrained types may be extended with critical values. For extension with critical values the general critical extension mechanism is used, i.e. for this no spare values are reserved since backward compatibility is not required.

##### 10.1.1.2.2 Extension of a message with additional information elements

In future versions of this protocol, RRC messages may be extended with new information elements. Since messages including critical extensions are rejected by receivers not comprehending them, these messages may be modified completely, e.g. IEs may be inserted at any place and IEs may be removed or redefined.

# 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-GSM,
HandoverFromUTRANCommand-CDMA2000,
HandoverFromUTRANFailure,
MeasurementControl,
MeasurementControlFailure,
MeasurementReport,
PagingType1,
PagingType2,
PhysicalChannelReconfiguration,
PhysicalChannelReconfigurationComplete,
PhysicalChannelReconfigurationFailure,
PhysicalSharedChannelAllocation,
PUSCHCapacityRequest,
```

```

RadioBearerReconfiguration,
RadioBearerReconfigurationComplete,
RadioBearerReconfigurationFailure,
RadioBearerRelease,
RadioBearerReleaseComplete,
RadioBearerReleaseFailure,
RadioBearerSetup,
RadioBearerSetupComplete,
RadioBearerSetupFailure,
RRCConnectionReject,
RRCConnectionRelease,
RRCConnectionRelease-CCCH,
RRCConnectionReleaseComplete,
RRCConnectionRequest,
RRCConnectionSetup,
RRCConnectionSetupComplete,
RRCStatus,
SecurityModeCommand,
SecurityModeComplete,
SecurityModeFailure,
SignallingConnectionRelease,
SignallingConnectionReleaseIndication,
SystemInformation-BCH,
SystemInformation-FACH,
SystemInformationChangeIndication,
TransportChannelReconfiguration,
TransportChannelReconfigurationComplete,
TransportChannelReconfigurationFailure,
TransportFormatCombinationControl,
TransportFormatCombinationControlFailure,
UECapabilityEnquiry,
UECapabilityInformation,
UECapabilityInformationConfirm,
UplinkDirectTransfer,
UplinkPhysicalChannelControl,
URAUpdate,
URAUpdateConfirm,
URAUpdateConfirm-CCCH,
UTRANMobilityInformation,
UTRANMobilityInformationConfirm,
UTRANMobilityInformationFailure
FROM PDU-definitions

-- User Equipment IEs :
  IntegrityCheckInfo
FROM InformationElements;

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

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

DL-DCCH-MessageType ::= CHOICE {
    activeSetUpdate          ActiveSetUpdate,
    assistanceDataDelivery  AssistanceDataDelivery,
    cellChangeOrderFromUTRAN CellChangeOrderFromUTRAN,
    cellUpdateConfirm       CellUpdateConfirm,
    counterCheck            CounterCheck,
    downlinkDirectTransfer  DownlinkDirectTransfer,
    handoverFromUTRANCommand-GSM HandoverFromUTRANCommand-GSM,
    handoverFromUTRANCommand-CDMA2000 HandoverFromUTRANCommand-CDMA2000,
    measurementControl      MeasurementControl,
    pagingType2            PagingType2,
    physicalChannelReconfiguration PhysicalChannelReconfiguration,
    physicalSharedChannelAllocation PhysicalSharedChannelAllocation,
    radioBearerReconfiguration RadioBearerReconfiguration,
    radioBearerRelease      RadioBearerRelease,
    radioBearerSetup        RadioBearerSetup,
    rrcConnectionRelease    RRCConnectionRelease,
    securityModeCommand     SecurityModeCommand,
    signallingConnectionRelease SignallingConnectionRelease,
    transportChannelReconfiguration TransportChannelReconfiguration,

```

```

transportFormatCombinationControl TransportFormatCombinationControl,
ueCapabilityEnquiry UECapabilityEnquiry,
ueCapabilityInformationConfirm UECapabilityInformationConfirm,
uplinkPhysicalChannelControl UplinkPhysicalChannelControl,
uraUpdateConfirm URAUpdateConfirm,
utranMobilityInformation UTRANMobilityInformation,
spare7 NULL,
spare6 NULL,
spare5 NULL,
spare4 NULL,
spare3 NULL,
spare2 NULL,
spare1 NULL
}

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

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

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

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

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

```

```

DL-CCCH-MessageType ::= CHOICE {
    cellUpdateConfirm          CellUpdateConfirm-CCCH,
    rrcConnectionReject       RRCCConnectionReject,
    rrcConnectionRelease      RRCCConnectionRelease-CCCH,
    rrcConnectionSetup        RRCCConnectionSetup,
    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     RRCCConnectionRequest,
    uraUpdate                 URAUpdate,
    spare1                   NULL
}

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

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

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

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

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

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

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

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

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

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

```

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

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

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

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

END
```

## 11.2 PDU definitions

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

PDU-definitions DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS

-- Core Network IEs :
    CN-DomainIdentity,
    CN-InformationInfo,
    CN-InformationInfoFull,
    NAS-Message,
    PagingRecordTypeID,
-- UTRAN Mobility IEs :
    CellIdentity,
    CellIdentity-PerRL-List,
    URA-Identity,
-- User Equipment IEs :
    ActivationTime,
    C-RNTI,
    CapabilityUpdateRequirement,
    CapabilityUpdateRequirement-r4,
    CapabilityUpdateRequirement-r4-ext,
    CellUpdateCause,
    CipheringAlgorithm,
    CipheringModeInfo,
    DSCH-RNTI,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    H-RNTI,
    InitialUE-Identity,
    IntegrityProtActivationInfo,
    IntegrityProtectionModeInfo,
    N-308,
```

```

PagingCause,
PagingRecordList,
ProtocolErrorIndicator,
ProtocolErrorIndicatorWithMoreInfo,
Rb-timer-indicator,
RedirectionInfo,
RejectionCause,
ReleaseCause,
RRC-StateIndicator,
RRC-TransactionIdentifier,
SecurityCapability,
START-Value,
STARTList,
U-RNTI,
U-RNTI-Short,
UE-RadioAccessCapability,
UE-RadioAccessCapability-r4-ext,
UE-RadioAccessCapability-r5-ext,
UE-RadioAccessCapability-v370ext,
UE-RadioAccessCapability-v380ext,
UE-RadioAccessCapability-v3a0ext,
UE-RadioAccessCapability-v4xyext,
DL-PhysChCapabilityFDD-v380ext,
UE-ConnTimersAndConstants,
UE-ConnTimersAndConstants-v3a0ext,
UE-ConnTimersAndConstants-r5,
UE-SecurityInformation,
URA-UpdateCause,
UTRAN-DRX-CycleLengthCoefficient,
WaitTime,
-- Radio Bearer IEs :
DefaultConfigIdentity,
DefaultConfigIdentity-r4,
DefaultConfigMode,
DL-CounterSynchronisationInfo,
DL-CounterSynchronisationInfo-r5,
PredefinedConfigIdentity,
PredefinedConfigStatusList,
RAB-Info,
RAB-Info-Post,
RAB-InformationList,
RAB-InformationReconfigList,
RAB-InformationSetupList,
RAB-InformationSetupList-r4,
RB-ActivationTimeInfoList,
RB-COUNT-C-InformationList,
RB-COUNT-C-MSB-InformationList,
RB-IdentityList,
RB-InformationAffectedList,
RB-InformationAffectedList-r5,
RB-InformationReconfigList,
RB-InformationReconfigList-r4,
RB-InformationReconfigList-r5,
RB-InformationReleaseList,
RB-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-CommonInformationPost,
DL-HSPDSCH-Information,
DL-InformationPerRL,
DL-InformationPerRL-List,
DL-InformationPerRL-List-r4,
DL-InformationPerRL-List-r5,
DL-InformationPerRL-ListPostFDD,
DL-InformationPerRL-PostTDD,
DL-InformationPerRL-PostTDD-LCR-r4,
DL-PDSCH-Information,
DPCH-CompressedModeStatusInfo,
FrequencyInfo,
FrequencyInfoFDD,
FrequencyInfoTDD,
MaxAllowedUL-TX-Power,
OpenLoopPowerControl-IPDL-TDD-r4,
PDSCH-CapacityAllocationInfo,
PDSCH-CapacityAllocationInfo-r4,
PDSCH-Identity,
PrimaryCCPCH-TX-Power,
PUSCH-CapacityAllocationInfo,
PUSCH-CapacityAllocationInfo-r4,
PUSCH-Identity,
RL-AdditionInformationList,
RL-RemovalInformationList,
SpecialBurstScheduling,
SSDT-Information,
TFC-ControlDuration,
SSDT-UL-r4,
TimeslotList,
TimeslotList-r4,
TX-DiversityMode,
UL-ChannelRequirement,
UL-ChannelRequirement-r4,
UL-ChannelRequirement-r5,
UL-ChannelRequirementWithCPCH-SetID,
UL-ChannelRequirementWithCPCH-SetID-r4,
UL-ChannelRequirementWithCPCH-SetID-r5,
UL-DPCH-Info,
UL-DPCH-Info-r4,
UL-DPCH-InfoPostFDD,
UL-DPCH-InfoPostTDD,
UL-DPCH-InfoPostTDD-LCR-r4,
UL-SynchronisationParameters-r4,
UL-TimingAdvance,
UL-TimingAdvanceControl,
UL-TimingAdvanceControl-r4,
-- Measurement IEs :
AdditionalMeasurementID-List,
Frequency-Band,
EventResults,
InterFreqEventResults-LCR-r4-ext,
InterRAT-TargetCellDescription,
MeasuredResults,
MeasuredResults-v390ext,
MeasuredResultsList,
MeasuredResultsList-LCR-r4-ext,
MeasuredResultsOnRACH,
MeasurementCommand,
MeasurementCommand-r4,
MeasurementIdentity,
MeasurementReportingMode,
PrimaryCCPCH-RSCP,
SFN-Offset-Validity,
TimeslotListWithISCP,
TrafficVolumeMeasuredResultsList,
UE-Positioning-GPS-AssistanceData,
UE-Positioning-Measurement-v390ext,
UE-Positioning-OTDOA-AssistanceData,
UE-Positioning-OTDOA-AssistanceData-r4ext,
UE-Positioning-OTDOA-AssistanceData-UEB,
UE-Positioning-IPDL-Parameters-TDD-r4-ext,
-- Other IEs :

```

```

BCCH-ModificationInfo,
CDMA2000-MessageList,
GSM-MessageList,
InterRAT-ChangeFailureCause,
InterRAT-HO-FailureCause,
InterRAT-UE-RadioAccessCapabilityList,
InterRAT-UE-SecurityCapList,
IntraDomainNasNodeSelector,
ProtocolErrorMoreInformation,
Rplmn-Information,
Rplmn-Information-r4,
SegCount,
SegmentIndex,
SFN-Prime,
SIB-Data-fixed,
SIB-Data-variable,
SIB-Type
FROM InformationElements

maxSIBperMsg
FROM Constant-definitions;

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

ActiveSetUpdate ::= CHOICE {
  r3
    activeSetUpdate-r3 SEQUENCE {
      activeSetUpdate-r3-IEs,
      laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions
        activeSetUpdate-r3-add-ext BIT STRING OPTIONAL,
        v4xyNonCriticalExtensions SEQUENCE {
          activeSetUpdate-v4xyext ActiveSetUpdate-v4xyext-IEs,
          nonCriticalExtensions SEQUENCE {} 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
}

```

```

-- *****
--
-- 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,
        Extension mechanism for non-release99 information
        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,
        Extension mechanism for non-release99 information
        nonCriticalExtensions        SEQUENCE {} OPTIONAL
    } OPTIONAL
}

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

AssistanceDataDelivery ::= CHOICE {
    r3                            SEQUENCE {
        assistanceDataDelivery-r3    AssistanceDataDelivery-r3-IEs,
        v3aoNonCriticalExetensions  SEQUENCE {
            assistanceDataDelivery-v3a0ext AssistanceDataDelivery-v3a0ext,
            laterNonCriticalExtensions SEQUENCE {
                -- Container for additional R99 extensions
                assistanceDataDelivery-r3-add-ext    BIT STRING    OPTIONAL,
                v4xyNonCriticalExtensions SEQUENCE {
                    assistanceDataDelivery-v4xyext
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3                SEQUENCE {
        rrc-TransactionIdentifier    RRC-TransactionIdentifier,
        criticalExtensions          SEQUENCE {}
    }
}

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

```

```

    ue-positioning-OTDOA-AssistanceData-UEB      UE-Positioning-OTDOA-AssistanceData-UEB
    OPTIONAL
}

AssistanceDataDelivery-v3a0ext ::= SEQUENCE {
    sfm-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,
            nonCriticalExtensions                SEQUENCE {} 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
}

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

CellChangeOrderFromUTRANFailure ::= CHOICE {
    r3                      SEQUENCE {
        cellChangeOrderFromUTRANFailure-r3
        CellChangeOrderFromUTRANFailure-r3-IEs,
        laterNonCriticalExtensions           SEQUENCE {
            -- Container for additional R99 extensions
            cellChangeOrderFromUTRANFailure-r3-add-ext    BIT STRING    OPTIONAL,
            nonCriticalExtensions                SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    -- dummy is not used in this version of the specification and it
    -- should be ignored.
    dummy                      SEQUENCE {
        rrc-TransactionIdentifier              RRC-TransactionIdentifier,
        criticalExtensions                     SEQUENCE {}
    }
}

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

```

```

}

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

CellUpdate ::= SEQUENCE {
  -- User equipment IEs
  u-RNTI                U-RNTI,
  startList             STARTList,
  am-RLC-ErrorIndicationRb2-3or4    BOOLEAN,
  am-RLC-ErrorIndicationRb5orAbove  BOOLEAN,
  cellUpdateCause      CellUpdateCause,
  -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
  failureCause         FailureCauseWithProtErrTrId    OPTIONAL,
  rb-timer-indicator   Rb-timer-indicator,
  -- Measurement IEs
  measuredResultsOnRACH    MeasuredResultsOnRACH      OPTIONAL,
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    cellUpdate-r3-add-ext   BIT STRING OPTIONAL,
    Extension mechanism for non-release99 information
    nonCriticalExtensions  SEQUENCE {} OPTIONAL
  } OPTIONAL
}

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

CellUpdateConfirm ::= CHOICE {
  r3                SEQUENCE {
    cellUpdateConfirm-r3      CellUpdateConfirm-r3-IEs,
    v3a0NonCriticalExtensions SEQUENCE {
      cellUpdateConfirm-r3a0ext CellUpdateConfirm-r3a0ext,
      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
    } OPTIONAL
  },
  later-than-r3     SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions       CHOICE {
      r4                SEQUENCE {
        cellUpdateConfirm-r4      CellUpdateConfirm-r4-IEs,
        nonCriticalExtensions     SEQUENCE {} OPTIONAL
      },
      criticalExtensions CHOICE {
        r5                SEQUENCE {
          cellUpdateConfirm-r5      CellUpdateConfirm-r5-IEs,
          nonCriticalExtensions     SEQUENCE {} OPTIONAL
        },
        criticalExtensions SEQUENCE {}
      }
    }
  }
}

CellUpdateConfirm-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo        CipheringModeInfo                OPTIONAL,
  activationTime           ActivationTime                    OPTIONAL,
  new-U-RNTI               U-RNTI                          OPTIONAL,
  new-C-RNTI               C-RNTI                          OPTIONAL,
  rrc-StateIndicator       RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  rlc-Re-establishIndicatorRb2-3or4    BOOLEAN,

```

```

    rlc-Re-establishIndicatorRb5orAbove    BOOLEAN,
-- CN information elements
    cn-InformationInfo                     CN-InformationInfo           OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                           URA-Identity                 OPTIONAL,
-- Radio bearer IEs
    rb-InformationReleaseList              RB-InformationReleaseList     OPTIONAL,
    rb-InformationReconfigList             RB-InformationReconfigList    OPTIONAL,
    rb-InformationAffectedList             RB-InformationAffectedList    OPTIONAL,
    dl-CounterSynchronisationInfo         DL-CounterSynchronisationInfo OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo                  UL-CommonTransChInfo         OPTIONAL,
    ul-deletedTransChInfoList             UL-DeletedTransChInfoList    OPTIONAL,
    ul-AddReconfTransChInfoList           UL-AddReconfTransChInfoList  OPTIONAL,
    modeSpecificTransChInfo                CHOICE {
        fdd                                SEQUENCE {
            cpch-SetID                     CPCH-SetID                   OPTIONAL,
            addReconfTransChDRAC-Info       DRAC-StaticInformationList   OPTIONAL
        },
        tdd                                NULL
    },
    dl-CommonTransChInfo                   DL-CommonTransChInfo         OPTIONAL,
    dl-DeletedTransChInfoList             DL-DeletedTransChInfoList    OPTIONAL,
    dl-AddReconfTransChInfoList           DL-AddReconfTransChInfoList  OPTIONAL,
-- Physical channel IEs
    frequencyInfo                          FrequencyInfo                  OPTIONAL,
    maxAllowedUL-TX-Power                  MaxAllowedUL-TX-Power        OPTIONAL,
    ul-ChannelRequirement                  UL-ChannelRequirement        OPTIONAL,
    modeSpecificPhysChInfo                 CHOICE {
        fdd                                SEQUENCE {
            dl-PDSCH-Information            DL-PDSCH-Information         OPTIONAL
        },
        tdd                                NULL
    },
    dl-CommonInformation                   DL-CommonInformation         OPTIONAL,
    dl-InformationPerRL-List               DL-InformationPerRL-List     OPTIONAL
}

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

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

CellUpdateConfirm-r4-IEs ::= SEQUENCE {
-- User equipment IEs
    integrityProtectionModeInfo            IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo                      CipheringModeInfo              OPTIONAL,
    activationTime                         ActivationTime                   OPTIONAL,
    new-U-RNTI                             U-RNTI                         OPTIONAL,
    new-C-RNTI                             C-RNTI                         OPTIONAL,
    new-DSCH-RNTI                          DSCH-RNTI                      OPTIONAL,
    rrc-StateIndicator                     RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff             UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    rlc-ResetIndicatorC-Plane               BOOLEAN,
    rlc-ResetIndicatorU-Plane              BOOLEAN,
-- CN information elements
    cn-InformationInfo                     CN-InformationInfo           OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                           URA-Identity                 OPTIONAL,
-- Radio bearer IEs
    rb-InformationReleaseList              RB-InformationReleaseList     OPTIONAL,
    rb-InformationReconfigList             RB-InformationReconfigList-r4 OPTIONAL,
    rb-InformationAffectedList             RB-InformationAffectedList    OPTIONAL,
    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                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-r4          OPTIONAL,
  dl-InformationPerRL-List            DL-InformationPerRL-List-r5     OPTIONAL
}

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

```

```
-- *****
CellUpdateConfirm-CCCH ::= CHOICE {
  r3                               SEQUENCE {
    -- User equipment IES
    u-RNTI                          U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
    cellUpdateConfirm-r3            CellUpdateConfirm-r3-IEs,
    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,
    Extension mechanism for non release99 information
    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 SEQUENCE {}
    }
}

HandoverToUTRANCommand-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    new-U-RNTI U-RNTI-Short,
    -- dummy is not used in this version of specification, it should
    -- not be sent and if received it should be ignored.
    dummy ActivationTime OPTIONAL,
    cipheringAlgorithm CipheringAlgorithm OPTIONAL,
    -- Radio bearer IEs
    -- Specification mode information
    specificationMode CHOICE {
        complete SEQUENCE {
            srb-InformationSetupList SRB-InformationSetupList,
            rab-InformationSetupList RAB-InformationSetupList OPTIONAL,
            ul-CommonTransChInfo UL-CommonTransChInfo,
            ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
            dl-CommonTransChInfo DL-CommonTransChInfo,
            dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList,
            ul-DPCH-Info UL-DPCH-Info,
            modeSpecificInfo CHOICE {
                fdd SEQUENCE {
                    dl-PDSCH-Information DL-PDSCH-Information OPTIONAL,
                    cpch-SetInfo CPCH-SetInfo OPTIONAL
                },
                tdd NULL
            }
        },
    }
}

```

```

        dl-CommonInformation          DL-CommonInformation,
        dl-InformationPerRL-List      DL-InformationPerRL-List,
        frequencyInfo                 FrequencyInfo
    },
    preconfiguration                   SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
        preConfigMode                 CHOICE {
            predefinedConfigIdentity   PredefinedConfigIdentity,
            defaultConfig              SEQUENCE {
                defaultConfigMode      DefaultConfigMode,
                defaultConfigIdentity   DefaultConfigIdentity
            }
        },
        rab-Info                       RAB-Info-Post          OPTIONAL,
        modeSpecificInfo               CHOICE {
            fdd                         SEQUENCE {
                ul-DPCH-Info            UL-DPCH-InfoPostFDD,
                dl-CommonInformationPost DL-CommonInformationPost,
                dl-InformationPerRL-List DL-InformationPerRL-ListPostFDD,
                frequencyInfo           FrequencyInfoFDD
            },
            tdd                         SEQUENCE {
                ul-DPCH-Info            UL-DPCH-InfoPostTDD,
                dl-CommonInformationPost DL-CommonInformationPost,
                dl-InformationPerRL-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
    rab-Info                              RAB-Info-Post,
-- Specification mode information
    specificationMode                    CHOICE {
        complete                          SEQUENCE {
            srb-InformationSetupList      SRB-InformationSetupList,
            rab-InformationSetupList      RAB-InformationSetupList-r4    OPTIONAL,
            ul-CommonTransChInfo         UL-CommonTransChInfo,
            ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList,
            dl-CommonTransChInfo         DL-CommonTransChInfo,
            dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList,
            ul-DPCH-Info                  UL-DPCH-Info-r4,
            modeSpecificInfo              CHOICE {
                fdd                       SEQUENCE {
                    dl-PDSCH-Information  DL-PDSCH-Information OPTIONAL,
                    cpch-SetInfo          CPCH-SetInfo          OPTIONAL
                },
                tdd                       NULL
            },
            dl-CommonInformation          DL-CommonInformation-r4,
            dl-InformationPerRL-List      DL-InformationPerRL-List-r4,
            frequencyInfo                 FrequencyInfo
        },
        preconfiguration                   SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
            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
}

```

```

-- *****
--
-- 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,
        Extension mechanism for non-release99 information
        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,
            Extension mechanism for non-release99 information
            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
}

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

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

```

```

        cdma2000-MessageList          CDMA2000-MessageList
    }
-- *****
--
-- HANOVER FROM UTRAN FAILURE
--
-- *****

HandoverFromUTRANFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    -- Other IEs
    interRAT-HO-FailureCause          InterRAT-HO-FailureCause          OPTIONAL,
    interRATMessage                    CHOICE {
        gsm                             SEQUENCE {
            gsm-MessageList              GSM-MessageList
        },
        cdma2000                         SEQUENCE {
            cdma2000-MessageList         CDMA2000-MessageList
        }
    } OPTIONAL,
    laterNonCriticalExtensions         SEQUENCE {
        -- Container for additional R99 extensions
        handoverFromUTRANFailure-r3-add-ext BIT STRING OPTIONAL,
        Extension mechanism for non-release99 information
        nonCriticalExtensions           SEQUENCE {}          OPTIONAL
    } OPTIONAL
}

-- *****
--
-- INTER RAT HANOVER 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 {
                    -- Container for additional R99 extensions
                    interRATHandoverInfo-r3-add-ext BIT STRING OPTIONAL,
                    v4xyNonCriticalExtensions SEQUENCE {
                        interRATHandoverInfo-v4xyext InterRATHandoverInfo-v4xyext-IEs,
                        -- Reserved for future non critical extension
                        nonCriticalExtensions SEQUENCE {} 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-v4xyext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v4xyext    UE-RadioAccessCapability-v4xyext
}

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

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

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

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

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

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

MeasurementControl-r4-IEs ::= SEQUENCE {
  -- Measurement IEs
  measurementIdentity             MeasurementIdentity,
  -- TABULAR: The measurement type is included in measurementCommand.
  measurementCommand              MeasurementCommand-r4,
  measurementReportingMode        MeasurementReportingMode    OPTIONAL,
  additionalMeasurementList       AdditionalMeasurementID-List    OPTIONAL,
}

```

```

-- Physical channel IEs
  dpch-CompressedModeStatusInfo    DPCH-CompressedModeStatusInfo    OPTIONAL
}

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

MeasurementControlFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier          RRC-TransactionIdentifier,
  failureCause                       FailureCauseWithProtErr,
  laterNonCriticalExtensions         SEQUENCE {
    -- Container for additional R99 extensions
    measurementControlFailure-r3-add-ext    BIT STRING OPTIONAL,
    Extension mechanism for non-release99 information
    nonCriticalExtensions                 SEQUENCE {}    OPTIONAL
  } OPTIONAL
}

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

MeasurementReport ::= SEQUENCE {
  -- Measurement IEs
  measurementIdentity      MeasurementIdentity,
  measuredResults          MeasuredResults          OPTIONAL,
  measuredResultsOnRACH   MeasuredResultsOnRACH    OPTIONAL,
  additionalMeasuredResults MeasuredResultsList    OPTIONAL,
  eventResults            EventResults              OPTIONAL,
  -- Non-critical extensions
  v390nonCriticalExtensions SEQUENCE {
    measurementReport-v390ext    MeasurementReport-v390ext,
    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
        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
}

-- *****
--
-- 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,
    Extension mechanism for non-release99 information
    nonCriticalExtensions SEQUENCE {}    OPTIONAL
  } 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,
    Extension mechanism for non-release99 information
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  } OPTIONAL
}

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

PhysicalChannelReconfiguration ::= CHOICE {
  r3 SEQUENCE {
    physicalChannelReconfiguration-r3
    PhysicalChannelReconfiguration-r3-IEs,
    v3a0NonCriticalExtensions SEQUENCE {
      physicalChannelReconfiguration-v3a0ext PhysicalChannelReconfiguration-v3a0ext,
      laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions
        physicalChannelReconfiguration-r3-add-ext BIT STRING OPTIONAL,
        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-r4          OPTIONAL,
  dl-InformationPerRL-List DL-InformationPerRL-List-r5          OPTIONAL
}

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

PhysicalChannelReconfigurationComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo IntegrityProtActivationInfo          OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance         UL-TimingAdvance          OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime   ActivationTime          OPTIONAL,
  rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfoList          OPTIONAL,
  ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo          OPTIONAL,
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    physicalChannelReconfigurationComplete-r3-add-ext BIT STRING          OPTIONAL,
    -- Extension mechanism for non-release99 information
    nonCriticalExtensions SEQUENCE {}          OPTIONAL
  }
}

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

PhysicalChannelReconfigurationFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier          OPTIONAL,
  failureCause             FailureCauseWithProtErr,
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    physicalChannelReconfigurationFailure-r3-add-ext BIT STRING          OPTIONAL,
    -- Extension mechanism for non-release99 information
    nonCriticalExtensions SEQUENCE {}          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
    }
  }
},

```

```

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

PhysicalSharedChannelAllocation-r3-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  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,
    pusSchConfirmation    PUSCH-Identity
  } OPTIONAL,
  protocolErrorIndicator ProtocolErrorIndicatorWithMoreInfo,
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    pusSchCapacityRequest-r3-add-ext BIT STRING OPTIONAL,
    -- Extension mechanism for non-release99 information
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  } 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
          RadioBearerReconfiguration-v4xyext-IEs,
          nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  later-than-r3 SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions CHOICE {
      r4 SEQUENCE {
        radioBearerReconfiguration-r4 RadioBearerReconfiguration-r4-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
      },
      criticalExtensions CHOICE {
        r5 SEQUENCE {
          radioBearerReconfiguration-r5 RadioBearerReconfiguration-r5-IEs,
          nonCriticalExtensions SEQUENCE {} OPTIONAL
        },
        criticalExtensions SEQUENCE {}
      }
    }
  }
}
```

```
RadioBearerReconfiguration-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
  cipheringModeInfo CipheringModeInfo OPTIONAL,
  activationTime ActivationTime OPTIONAL,
  new-U-RNTI U-RNTI OPTIONAL,
  new-C-RNTI C-RNTI OPTIONAL,
  rrc-StateIndicator RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  -- Core network IEs
  cn-InformationInfo CN-InformationInfo OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity URA-Identity OPTIONAL,
  -- Radio bearer IEs
  rab-InformationReconfigList RAB-InformationReconfigList OPTIONAL,
  -- NOTE: IE rb-InformationReconfigList should be optional in later versions
  -- of this message
  rb-InformationReconfigList RB-InformationReconfigList,
  rb-InformationAffectedList RB-InformationAffectedList OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
  ul-deletedTransChInfoList UL-DeletedTransChInfoList OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
  modeSpecificTransChInfo CHOICE {
    fdd SEQUENCE {
      cpch-SetID CPCH-SetID OPTIONAL,
      addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd NULL
  }
  dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,
  dl-DeletedTransChInfoList DL-DeletedTransChInfoList OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfo2List OPTIONAL,
  -- Physical channel IEs
  frequencyInfo FrequencyInfo OPTIONAL,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
  ul-ChannelRequirement UL-ChannelRequirement OPTIONAL,
  modeSpecificPhysChInfo CHOICE {
    fdd SEQUENCE {
      dl-PDSCH-Information DL-PDSCH-Information OPTIONAL
    },
    tdd NULL
  },
}
```

```

dl-CommonInformation           DL-CommonInformation           OPTIONAL,
-- NOTE: IE dl-InformationPerRL-List should be optional in later versions
-- of this message
dl-InformationPerRL-List       DL-InformationPerRL-List
}

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

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

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

RadioBearerReconfiguration-r5-IEs ::= SEQUENCE {
  -- User equipment IEs
  integrityProtectionModeInfo  IntegrityProtectionModeInfo  OPTIONAL,
  cipheringModeInfo           CipheringModeInfo             OPTIONAL,
  activationTime               ActivationTime                 OPTIONAL,
  new-U-RNTI                   U-RNTI                       OPTIONAL,
  new-C-RNTI                   C-RNTI                       OPTIONAL,
  new-DSCH-RNTI               DSCH-RNTI                   OPTIONAL,
  new-H-RNTI                   H-RNTI                       OPTIONAL,
  rrc-StateIndicator          RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- Core network IEs

```

```

        cn-InformationInfo          CN-InformationInfo          OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                    URA-Identity                    OPTIONAL,
-- Radio bearer IEs
    rab-InformationReconfigList      RAB-InformationReconfigList      OPTIONAL,
    rb-InformationReconfigList        RB-InformationReconfigList-r5     OPTIONAL,
    rb-InformationAffectedList        RB-InformationAffectedList-r5     OPTIONAL,
    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,
-- Physical channel IEs
    frequencyInfo                    FrequencyInfo                      OPTIONAL,
    maxAllowedUL-TX-Power             MaxAllowedUL-TX-Power            OPTIONAL,
    ul-ChannelRequirement             UL-ChannelRequirement-r5         OPTIONAL,
    modeSpecificPhysChInfo           CHOICE {
        fdd                           SEQUENCE {
            dl-PDSCH-Information        DL-PDSCH-Information              OPTIONAL
        },
        tdd                            NULL
    },
    dl-HSPDSCH-Information            DL-HSPDSCH-Information           OPTIONAL,
    dl-CommonInformation              DL-CommonInformation-r4          OPTIONAL,
    dl-InformationPerRL-List          DL-InformationPerRL-List-r5      OPTIONAL
}

```

```

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

```

```

RadioBearerReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo         IntegrityProtActivationInfo        OPTIONAL,
    -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance                  UL-TimingAdvance                  OPTIONAL,
    -- Radio bearer IEs
    count-C-ActivationTime             ActivationTime                      OPTIONAL,
    rb-UL-CiphActivationTimeInfo       RB-ActivationTimeInfoList         OPTIONAL,
    ul-CounterSynchronisationInfo      UL-CounterSynchronisationInfo     OPTIONAL,
    laterNonCriticalExtensions         SEQUENCE {
        -- Container for additional R99 extensions
        radioBearerReconfigurationComplete-r3-add-ext BIT STRING OPTIONAL,
        Extension mechanism for non-release99 information
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    } 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,
        Extension mechanism for non-release99 information
        nonCriticalExtensions          SEQUENCE {} OPTIONAL
    }
}

```

```

} OPTIONAL
}

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

RadioBearerRelease ::= CHOICE {
  r3          SEQUENCE {
    radioBearerRelease-r3          RadioBearerRelease-r3-IEs,
    v3a0NonCriticalExtensions      SEQUENCE {
      radioBearerRelease-v3a0ext   RadioBearerRelease-v3a0ext,
      laterNonCriticalExtensions   SEQUENCE {
        -- Container for additional R99 extensions
        radioBearerRelease-r3-add-ext BIT STRING OPTIONAL,
        v4xyNonCriticalExtensions   SEQUENCE {
          radioBearerRelease-v4xyext RadioBearerRelease-v4xyext-IEs,
          nonCriticalExtensions     SEQUENCE {} OPTIONAL
        } 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
  } OPTIONAL,
  dl-CommonTransChInfo          DL-CommonTransChInfo          OPTIONAL,
  dl-DeletedTransChInfoList     DL-DeletedTransChInfoList     OPTIONAL,
  dl-AddReconfTransChInfoList   DL-AddReconfTransChInfo2List  OPTIONAL,
  -- Physical channel IEs
  frequencyInfo                 FrequencyInfo                    OPTIONAL,
}

```

maxAllowedUL-TX-Power	MaxAllowedUL-TX-Power	OPTIONAL,
ul-ChannelRequirement	UL-ChannelRequirement	OPTIONAL,
modeSpecificPhysChInfo	CHOICE {	
fdd	SEQUENCE {	
dl-PDSCH-Information	DL-PDSCH-Information	OPTIONAL
},		
tdd	NULL	
},		
dl-CommonInformation	DL-CommonInformation	OPTIONAL,
dl-InformationPerRL-List	DL-InformationPerRL-List	OPTIONAL
}		
RadioBearerRelease-v3a0ext ::= SEQUENCE {		
new-DSCH-RNTI	DSCH-RNTI	OPTIONAL
}		
RadioBearerRelease-v4xyext-IEs ::= SEQUENCE {		
-- Physical channel IEs		
-- IE ssdt-UL extends SSdT-Information, which is included in		
-- DL-CommonInformation. FDD only.		
ssdt-UL	SSDT-UL-r4	OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as		
-- in IE DL-InformationPerRL-List included in this message		
cell-id-PerRL-List	CellIdentity-PerRL-List	OPTIONAL
}		
RadioBearerRelease-r4-IEs ::= SEQUENCE {		
-- User equipment IEs		
integrityProtectionModeInfo	IntegrityProtectionModeInfo	OPTIONAL,
cipheringModeInfo	CipheringModeInfo	OPTIONAL,
activationTime	ActivationTime	OPTIONAL,
new-U-RNTI	U-RNTI	OPTIONAL,
new-C-RNTI	C-RNTI	OPTIONAL,
new-DSCH-RNTI	DSCH-RNTI	OPTIONAL,
rrc-StateIndicator	RRC-StateIndicator,	
utran-DRX-CycleLengthCoeff	UTRAN-DRX-CycleLengthCoefficient	OPTIONAL,
-- Core network IEs		
cn-InformationInfo	CN-InformationInfo	OPTIONAL,
signallingConnectionRelIndication	CN-DomainIdentity	OPTIONAL,
-- UTRAN mobility IEs		
ura-Identity	URA-Identity	OPTIONAL,
-- Radio bearer IEs		
rab-InformationReconfigList	RAB-InformationReconfigList	OPTIONAL,
rb-InformationReleaseList	RB-InformationReleaseList,	
rb-InformationAffectedList	RB-InformationAffectedList	OPTIONAL,
dl-CounterSynchronisationInfo	DL-CounterSynchronisationInfo	OPTIONAL,
-- Transport channel IEs		
ul-CommonTransChInfo	UL-CommonTransChInfo-r4	OPTIONAL,
ul-deletedTransChInfoList	UL-DeletedTransChInfoList	OPTIONAL,
ul-AddReconfTransChInfoList	UL-AddReconfTransChInfoList	OPTIONAL,
modeSpecificTransChInfo	CHOICE {	
fdd	SEQUENCE {	
cpch-SetID	CPCH-SetID	OPTIONAL,
addReconfTransChDRAC-Info	DRAC-StaticInformationList	OPTIONAL
},		
tdd	NULL	
}		OPTIONAL,
dl-CommonTransChInfo	DL-CommonTransChInfo-r4	OPTIONAL,
dl-DeletedTransChInfoList	DL-DeletedTransChInfoList	OPTIONAL,
dl-AddReconfTransChInfoList	DL-AddReconfTransChInfo2List	OPTIONAL,
-- Physical channel IEs		
frequencyInfo	FrequencyInfo	OPTIONAL,
maxAllowedUL-TX-Power	MaxAllowedUL-TX-Power	OPTIONAL,
ul-ChannelRequirement	UL-ChannelRequirement-r4	OPTIONAL,
modeSpecificPhysChInfo	CHOICE {	
fdd	SEQUENCE {	
dl-PDSCH-Information	DL-PDSCH-Information	OPTIONAL
},		
tdd	NULL	
},		
dl-CommonInformation	DL-CommonInformation-r4	OPTIONAL,
dl-InformationPerRL-List	DL-InformationPerRL-List-r4	OPTIONAL
}		
RadioBearerRelease-r5-IEs ::= SEQUENCE {		
-- User equipment IEs		
integrityProtectionModeInfo	IntegrityProtectionModeInfo	OPTIONAL,
cipheringModeInfo	CipheringModeInfo	OPTIONAL,

```

activationTime      ActivationTime      OPTIONAL,
new-U-RNTI         U-RNTI              OPTIONAL,
new-C-RNTI         C-RNTI              OPTIONAL,
new-DSCH-RNTI     DSCH-RNTI           OPTIONAL,
new-H-RNTI         H-RNTI              OPTIONAL,
rrc-StateIndicator RRC-StateIndicator,
utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- Core network IEs
  cn-InformationInfo      CN-InformationInfo      OPTIONAL,
  signallingConnectionRelIndication CN-DomainIdentity      OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity            URA-Identity            OPTIONAL,
-- Radio bearer IEs
  rab-InformationReconfigList RAB-InformationReconfigList OPTIONAL,
  rb-InformationReleaseList  RB-InformationReleaseList,
  rb-InformationAffectedList RB-InformationAffectedList-r5 OPTIONAL,
  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-r4     OPTIONAL,
  dl-InformationPerRL-List   DL-InformationPerRL-List-r5 OPTIONAL
}

```

```

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

```

```

RadioBearerReleaseComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo IntegrityProtActivationInfo OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance          UL-TimingAdvance          OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime    ActivationTime            OPTIONAL,
  rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfoList OPTIONAL,
  ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo OPTIONAL,
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    radioBearerReleaseComplete-r3-add-ext BIT STRING OPTIONAL,
    Extension mechanism for non release99 information
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  }
}

```

```

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

```

```

RadioBearerReleaseFailure ::= SEQUENCE {

```

```

-- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
-- Radio bearer IEs
  potentiallySuccessfulBearerList RB-IdentityList                OPTIONAL,
  laterNonCriticalExtensions      SEQUENCE {
    -- Container for additional R99 extensions
    radioBearerReleaseFailure-r3-add-ext BIT STRING            OPTIONAL,
    Extension mechanism for non-release99 information
    nonCriticalExtensions          SEQUENCE {}                  OPTIONAL
  }
}

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

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

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

```

```

        addReconfTransChDRAC-Info          DRAC-StaticInformationList  OPTIONAL
    },
    tdd                                     NULL
}
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-r4       OPTIONAL,
  dl-InformationPerRL-List       DL-InformationPerRL-List-r5   OPTIONAL
}

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

RadioBearerSetupComplete ::= SEQUENCE {
-- User equipment IEs
  rrc-TransactionIdentifier       RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo      IntegrityProtActivationInfo    OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance                UL-TimingAdvance              OPTIONAL,
  start-Value                     START-Value                    OPTIONAL,
-- Radio bearer IEs
  count-C-ActivationTime          ActivationTime                  OPTIONAL,
  rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList     OPTIONAL,
  ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo  OPTIONAL,
  laterNonCriticalExtensions      SEQUENCE {
    -- Container for additional R99 extensions
    radioBearerSetupComplete-r3-add-ext  BIT STRING  OPTIONAL,
    -- Extension mechanism for non-release99 information
    nonCriticalExtensions              SEQUENCE {}  OPTIONAL
  }
}

```

```

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

RadioBearerSetupFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
  -- Radio bearer IEs
  potentiallySuccessfulBearerList RB-IdentityList                OPTIONAL,
  laterNonCriticalExtensions      SEQUENCE {
    -- Container for additional R99 extensions
    radioBearerSetupFailure-r3-add-ext BIT STRING              OPTIONAL,
    Extension mechanism for non-release99 information
    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
}

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

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

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

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

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

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

RRCConnectionReleaseComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier        RRC-TransactionIdentifier,
  errorIndication                  FailureCauseWithProtErr      OPTIONAL,
  laterNonCriticalExtensions    SEQUENCE {
  -- Container for additional R99 extensions
  rrcConnectionReleaseComplete-r3-add-ext BIT STRING OPTIONAL,
  Extension mechanism for non-release99 information
  nonCriticalExtensions          SEQUENCE {} OPTIONAL
  } OPTIONAL
}

-- *****
--

```

```

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

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

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

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

RRCConnectionSetup ::= CHOICE {
  r3
  SEQUENCE {
    rrcConnectionSetup-r3          RRCConnectionSetup-r3-IEs,
    laterNonCriticalExtensions    SEQUENCE {
      -- Container for additional R99 extensions
      rrcConnectionSetup-r3-add-ext BIT STRING          OPTIONAL,
      v4xyNonCriticalExtensions    SEQUENCE {
        rrcConnectionSetup-v4xyext RRCConnectionSetup-v4xyext-IEs,
        Extension mechanism for non-release99 information
        nonCriticalExtensions      SEQUENCE {}          OPTIONAL
      }
    } OPTIONAL
  },
  later-than-r3
  SEQUENCE {
    initialUE-Identity             InitialUE-Identity,
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions             CHOICE {
      r4
      SEQUENCE {
        rrcConnectionSetup-r4      RRCConnectionSetup-r4-IEs,
        nonCriticalExtensions      SEQUENCE {}          OPTIONAL
      },
      criticalExtensions           SEQUENCE {}
    }
  }
}

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

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

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

RRCConnectionSetupComplete ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    rrc-TransactionIdentifier           RRC-TransactionIdentifier,
    startList                           STARTList,
    ue-RadioAccessCapability            UE-RadioAccessCapability      OPTIONAL,
-- Other IEs
    ue-RATSpecificCapability            InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
-- Non critical extensions
    v370NonCriticalExtensions           SEQUENCE {
        rrcConnectionSetupComplete-v370ext  RRCConnectionSetupComplete-v370ext,
        v380NonCriticalExtensions           SEQUENCE {
            rrcConnectionSetupComplete-v380ext  RRCConnectionSetupComplete-v380ext-IEs,
            -- Reserved for future non critical extension
            v3a0NonCriticalExtensions         SEQUENCE {
                rrcConnectionSetupComplete-v3a0ext  RRCConnectionSetupComplete-v3a0ext,
                laterNonCriticalExtensions      SEQUENCE {
                    -- Container for additional R99 extensions
                    rrcConnectionSetupComplete-r3-add-ext  BIT STRING  OPTIONAL,
                    v4xyNonCriticalExtensions         SEQUENCE {
                        rrcConnectionSetupComplete-v4xyext  RRCConnectionSetupComplete-v4xyext-IEs,
                        nonCriticalExtensions         SEQUENCE {}  OPTIONAL
                    }  OPTIONAL
                }  OPTIONAL
            }  OPTIONAL
        }  OPTIONAL
    }  OPTIONAL
}

```

```

    }
    }
    }
}

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

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

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

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

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

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

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

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

RRCStatus ::= SEQUENCE {
    -- Other IEs
    -- TABULAR: Identification of received message is nested in
    -- ProtocolErrorMoreInformation
    protocolErrorInformation         ProtocolErrorMoreInformation,
    laterNonCriticalExtensions       SEQUENCE {
        -- Container for additional R99 extensions
        rrcStatus-r3-add-ext         BIT STRING OPTIONAL,
        Extension mechanism for non-release99 information
        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,
-- Extension mechanism for non-release99 information
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,
-- Extension mechanism for non-release99 information
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,
        Extension mechanism for non-release99 information
        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,
        Extension mechanism for non release99 information
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
}

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

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

```

```

    }
    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,
  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-r4    OPTIONAL,
dl-InformationPerRL-List   DL-InformationPerRL-List-r5  OPTIONAL
}

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

TransportChannelReconfigurationComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier    RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo    IntegrityProtActivationInfo    OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance            UL-TimingAdvance    OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime      ActivationTime    OPTIONAL,
  rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList    OPTIONAL,
  ul-CounterSynchronisationInfo  UL-CounterSynchronisationInfo  OPTIONAL,
  laterNonCriticalExtensions    SEQUENCE {
    -- Container for additional R99 extensions
    transportChannelReconfigurationComplete-r3-add-ext    BIT STRING    OPTIONAL,
    -- Extension mechanism for non-release99 information
    nonCriticalExtensions    SEQUENCE {}    OPTIONAL
  }    OPTIONAL
}

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

TransportChannelReconfigurationFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier    RRC-TransactionIdentifier,
  failureCause                 FailureCauseWithProtErr,
  laterNonCriticalExtensions    SEQUENCE {
    -- Container for additional R99 extensions
    transportChannelReconfigurationFailure-r3-add-ext    BIT STRING    OPTIONAL,
    -- Extension mechanism for non-release99 information
    nonCriticalExtensions    SEQUENCE {}    OPTIONAL
  }    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,
    -- Extension mechanism for non-release99 information
    nonCriticalExtensions    SEQUENCE {}    OPTIONAL
  }    OPTIONAL
}

```

```

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

TransportFormatCombinationControlFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
  laterNonCriticalExtensions    SEQUENCE {
    -- Container for additional R99 extensions
    transportFormatCombinationControlFailure-r3-add-ext BIT STRING OPTIONAL,
    Extension mechanism for non-release99 information
    nonCriticalExtensions        SEQUENCE {} OPTIONAL
  } OPTIONAL
}

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

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

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

UECapabilityEnquiry-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
}

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

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

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

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

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

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

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

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

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

UplinkDirectTransfer ::= SEQUENCE {
  -- Core network IEs
  cn-DomainIdentity CN-DomainIdentity,
  nas-Message NAS-Message,
  -- Measurement IEs
  measuredResultsOnRACH MeasuredResultsOnRACH OPTIONAL,

```

```

    laterNonCriticalExtensions SEQUENCE {
      -- Container for additional R99 extensions
      uplinkDirectTransfer-r3-add-ext BIT STRING OPTIONAL,
      Extension mechanism for non-release99 information
      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
      },
      criticalExtensions SEQUENCE {}
    }
  }
}

UplinkPhysicalChannelControl-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  -- Physical channel IEs
  ccTrCH-PowerControlInfo CTrCH-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 CTrCH-PowerControlInfo-r4 OPTIONAL,
  tddOption CHOICE {
    tdd384 SEQUENCE {
      timingAdvance UL-TimingAdvanceControl-r4 OPTIONAL,
      alpha Alpha OPTIONAL,
      prach-ConstantValue ConstantValueTdd OPTIONAL,
      pusch-ConstantValue ConstantValueTdd OPTIONAL,
      openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4 OPTIONAL
    },
    tdd128 SEQUENCE {
      ul-SynchronisationParameters UL-SynchronisationParameters-r4 OPTIONAL
    }
  }
}

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

```

```

-- *****

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

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

URAUUpdateConfirm-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
--
-- *****

URUpdateConfirm-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 {}
  }
}

URUpdateConfirm-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 {
    uranMobilityInformation-r3          UTRANMobilityInformation-r3-IEs,
    v3a0NonCriticalExtensions          SEQUENCE {
      uranMobilityInformation-v3a0ext   UTRANMobilityInformation-v3a0ext-IEs,
      laterNonCriticalExtensions        SEQUENCE {
        -- Container for additional R99 extensions
        uranMobilityInformation-r3-add-ext BIT STRING OPTIONAL,
        nonCriticalExtensions            SEQUENCE {} OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  later-than-r3          SEQUENCE {
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    criticalExtensions            CHOICE {
      r5          SEQUENCE {
        uranMobilityInformation-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,
    Extension mechanism for non release99 information
    nonCriticalExtensions         SEQUENCE {}      OPTIONAL
  } OPTIONAL
}

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

UTRANMobilityInformationFailure ::= SEQUENCE {
  -- UE information elements
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                  FailureCauseWithProtErr,
  laterNonCriticalExtensions     SEQUENCE {
    -- Container for additional R99 extensions
    utranNMobilityInformationFailure-r3-add-ext  BIT STRING  OPTIONAL,
    Extension mechanism for non release99 information
    nonCriticalExtensions         SEQUENCE {}      OPTIONAL
  } OPTIONAL
}

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-v4xyext,
    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,
UE-Positioning-IPDL-Parameters-TDD-r4-ext,
-- Other IEs :
InterRAT-UE-RadioAccessCapabilityList
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 tranferred in the same direction and across the same path is grouped

-- *****
--
-- RRC information, to target RNC
--
-- *****
-- RRC Information to target RNC sent either from source RNC or from another RAT

ToTargetRNC-Container ::= CHOICE {
    interRATHandoverInfo          InterRATHandoverInfoWithInterRATCapabilities-r3,
    srncRelocation                SRNC-RelocationInfo-r3,
    rfc3095-ContextInfo          RFC3095-ContextInfo-r5,
    extension                     NULL
}

-- *****
--
-- RRC information, target RNC to source RNC
--
-- *****

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 {
                                -- Container for additional R99 extensions
                                sRNC-RelocationInfo-r3-add-ext BIT STRING OPTIONAL,
                                v4xyNonCriticalExtensions SEQUENCE {
                                    sRNC-RelocationInfo-v4xyext SRNC-RelocationInfo-
v4xyext-IEs,
                                -- Reserved for future non critical extension
                                nonCriticalExtensions SEQUENCE {} OPTIONAL
                            } OPTIONAL
                        } OPTIONAL
                    } OPTIONAL
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    } OPTIONAL
} OPTIONAL

```

```

    } OPTIONAL
  } OPTIONAL
},
later-than-r3 CHOICE {
  r4 SEQUENCE {
    sRNC-RelocationInfo-r4 SRNC-RelocationInfo-r4-IEs,
    nonCriticalExtensions SEQUENCE {} 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 the IE "Signalling RB information list" and in the
  -- IE "RAB information list". 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,
  srb-SpecificIntegrityProtInfo SRB-SpecificIntegrityProtInfoList,
  implementationSpecificParams ImplementationSpecificParams OPTIONAL,
  -- User equipment IEs
  u-RNTI U-RNTI,
  c-RNTI C-RNTI OPTIONAL,
  ue-RadioAccessCapability UE-RadioAccessCapability,
  ue-Positioning-LastKnownPos UE-Positioning-LastKnownPos OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity URA-Identity OPTIONAL,
  -- Core network IEs
  cn-CommonGSM-MAP-NAS-SysInfo NAS-SystemInformationGSM-MAP,
  cn-DomainInformationList CN-DomainInformationList OPTIONAL,
  -- Measurement IEs
  ongoingMeasRepList OngoingMeasRepList OPTIONAL,
  -- Radio bearer IEs
  predefinedConfigStatusList PredefinedConfigStatusList,
  srb-InformationList SRB-InformationSetupList,
  rab-InformationList RAB-InformationSetupList OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
  ul-TransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      cpch-SetID CPCH-SetID OPTIONAL,
      transChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd NULL
  },
  dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,
  dl-TransChInfoList DL-AddReconfTransChInfoList OPTIONAL,
  -- Measurement report
  measurementReport MeasurementReport OPTIONAL,
  nonCriticalExtensions SEQUENCE {
    -- In case of TDD only up-Ipdl-Parameters-TDD is present, otherwise
    -- this IE is absent
    up-Ipdl-Parameters-TDD UE-Positioning-IPDL-Parameters-TDD-r4-ext OPTIONAL,
    -- Extension mechanism for non- release4 information
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  }
}

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 remaining start values are contained in 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
}

STARTList2 ::=
    SEQUENCE (SIZE (2..maxCNdomains)) OF
    STARTSingle

SRNC-RelocationInfo-v4xyext-IEs ::= SEQUENCE {
    ue-RadioAccessCapability-v4xyext        UE-RadioAccessCapability-v4xyext
}

CipheringInfoForSRB1-v3a0ext ::= SEQUENCE {
    dl-UM-SN                                BIT STRING (SIZE (7))
}

CipheringStatusList ::=
    SEQUENCE (SIZE (1..maxCNdomains)) OF
    CipheringStatusCNdomain

CipheringStatusCNdomain ::=
    SEQUENCE {
        cn-DomainIdentity                   CN-DomainIdentity,
        cipheringStatus                     CipheringStatus
    }

SRNC-RelocationInfo-r4-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,
        -- 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,
    }

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        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

CalculationTimeForCipherring ::= SEQUENCE {
    cell-Id                               CellIdentity,
    sfn                                    INTEGER (0..4095)
}

CipherringInfoPerRB ::= SEQUENCE {
    dl-HFN                                BIT STRING (SIZE (20..25)),
    ul-HFN                                BIT STRING (SIZE (20..25))
}

CipherringInfoPerRB-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: CipherringInfoPerRB-List, multiplicity value numberOfRadioBearers
-- has been replaced with maxRB.
CipherringInfoPerRB-List ::= SEQUENCE (SIZE (1..maxRB)) OF
    CipherringInfoPerRB

CipherringInfoPerRB-List-r4 ::= SEQUENCE (SIZE (1..maxRB)) OF
    CipherringInfoPerRB-r4

CipherringStatus ::= ENUMERATED {
    started, notStarted }

CipherringStatusList-r4 ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CipherringStatusCNdomain-r4

CipherringStatusCNdomain-r4 ::= SEQUENCE {
    cn-DomainIdentity                    CN-DomainIdentity,
    cipherringStatus                     CipherringStatus,
    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,
}

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

COUNT-C-List ::=                   SEQUENCE (SIZE (1..maxCNDomains)) OF
                                     COUNT-C-List

COUNT-C-List ::=                   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
}

-- The structure of DL-RFC3095-Context is FFS
DL-RFC3095-Context ::=              SEQUENCE {
    rfc3095-Context-Identity        INTEGER (0..16383),
    dl-mode                          ENUMERATED {u, o, r}
}

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-r4    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
  },
  supportForRfc3095
  notSupported
  supported
    maxROHC-ContextSessions
    reverseCompressionDepth
  }
}

PhysicalChannelCapability-r4 ::=
  fddPhysChCapability
  downlinkPhysChCapability
  uplinkPhysChCapability
}
  tdd384-PhysChCapability
  downlinkPhysChCapability
  uplinkPhysChCapability
}
  tdd128-PhysChCapability
  downlinkPhysChCapability
  uplinkPhysChCapability
}

RF-Capability-r4 ::=
  fddRF-Capability
  ue-PowerClass
  txRxFrequencySeparation
}
  tdd384-RF-Capability
  ue-PowerClass
  radioFrequencyBandTDDList
  chipRateCapability
}
  tdd128-RF-Capability
  ue-PowerClass
  radioFrequencyBandTDDList
  chipRateCapability
}

RFC3095-ContextInfo ::=
  rb-Identity
  rfc3095-Context-List
}

RFC3095-Context-List ::=
  dl-RFC3095-Context
  ul-RFC3095-Context
}

SRB-SpecificIntegrityProtInfo ::=
  ul-RRC-HFN
  dl-RRC-HFN
  ul-RRC-SequenceNumber
  dl-RRC-SequenceNumber
}

SRB-SpecificIntegrityProtInfoList ::= SEQUENCE (SIZE (4..maxSRBsetup)) OF
  SRB-SpecificIntegrityProtInfo

StateOfRRC ::=
  cell-DCH, cell-FACH,
  cell-PCH, ura-PCH }

StateOfRRC-Procedure ::=
  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         UE-Positioning-Capability-r4,
    measurementCapability             MeasurementCapability-r4    OPTIONAL
}

-- The structure of UL-RFC3095-Context is FFS
UL-RFC3095-Context ::= SEQUENCE {
    rfc3095-Context-Identity          INTEGER ( 0..16383 ),
    ul-mode                            ENUMERATED { u, o, r }
}

END

```