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CR-Form-v7

CHANGE REQUEST

25.331	CR	1732	rev	3	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 ☐

Title:	Introduction of backwards compatible correction mechanism
Source:	Nokia
Work item code:	TEI
Date:	05/Dec/2002
Category:	**F**
Release:	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	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.
Summary of change:	Extension Containers principle introduced. **Impact Analysis:** 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.
Consequences if not approved:	Once Backwards Compatibility is started for Rel-4 it will be impossible to make certain corrections to ASN.1.

Clauses affected:	9.8, 10.1.1, 11.0, 11.2, 11.5

Other specs Affected:	Y	N	
		X	Other core specifications
		X	Test specifications
		X	O&M Specifications

Other comments:

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

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

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,
    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,
        laterNonCriticalExtensions      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,
    -- Extension mechanism for non -release99 information
        laterNonCriticalExtensions          SEQUENCE {} OPTIONAL
            -- Container for additional R99 extensions
            activeSetUpdateComplete-r3-add-ext  BIT STRING      OPTIONAL,
            nonCriticalExtensions               SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

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

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

AssistanceDataDelivery ::= CHOICE {
    r3                              SEQUENCE {
        assistanceDataDelivery-r3       AssistanceDataDelivery-r3-IEs,
        v3a0NonCriticalExtensions       SEQUENCE {
            assistanceDataDelivery-v3a0ext  AssistanceDataDelivery-v3a0ext,
            laterNonCriticalExtensions          SEQUENCE{
                -- Container for additional R99 extensions
```

```
                assistanceDataDelivery-r3-add-ext   BIT STRING   OPTIONAL,
                nonCriticalExtensions               SEQUENCE {} OPTIONAL
            }SEQUENCE{}                 OPTIONAL
        }   OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              SEQUENCE {}
    }
}

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

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

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

CellChangeOrderFromUTRAN ::= CHOICE {
    r3                              SEQUENCE {
        cellChangeOrderFromUTRAN-IEs        CellChangeOrderFromUTRAN-r3-IEs,
        laternNonCriticalExtensions         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,
        laternNonCriticalExtensions         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,
    -- Extension mechanism for non-release99 information
        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,
            later-than-rN-NonCriticalExtensions     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,
        later-than-rN-NonCriticalExtensions     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             DL-InformationPerRL-PostTDD,
                        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,
            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,
            Extension mechanism for non-release99 information
            laterNonCriticalExtensions          SEQUENCE {}     OPTIONAL
                -- Container for additional R99 extensions
                initialDirectTransfer-r3-add-ext    BIT STRING      OPTIONAL,
                nonCriticalExtensions               SEQUENCE {}     OPTIONAL
            }   OPTIONAL
        }   OPTIONAL
}

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

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

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

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

```
            --    comprises a full number of octets
            single-GSM-Message              SEQUENCE {},
            gsm-MessageList                 SEQUENCE {
                gsm-Messages                    GSM-MessageList
            }
        }
}

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

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

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

HandoverFromUTRANFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Other IEs
        interRAT-HO-FailureCause        InterRAT-HO-FailureCause            OPTIONAL,
        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
        }   OPTIONAL
}

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

InterRATHandoverInfo ::= SEQUENCE {
    -- This structure is defined for historical reasons, backward compatibility with 04.18
    predefinedConfigStatusList      CHOICE {
        absent                          NULL,
        present                         PredefinedConfigStatusList
    },
    uE-SecurityInformation          CHOICE {
        absent                          NULL,
        present                         UE-SecurityInformation
    },
```

```
    ue-CapabilityContainer          CHOICE {
        absent                          NULL,
        -- present is an octet aligned string containing IE UE-RadioAccessCapabilityInfo
        present                         OCTET STRING (SIZE (0..63))
    },
    -- Non critical extensions
    v390NonCriticalExtensions       CHOICE {
        absent                          NULL,
        present                         SEQUENCE {
            interRATHandoverInfo-v390ext    InterRATHandoverInfo-v390ext-IEs,
            -- Reserved for future non critical extension
            v3a0NonCriticalExtensions           SEQUENCE {
                interRATHandoverInfo-v3a0ext    InterRATHandoverInfo-v3a0ext-IEs,
                -- Reserved for future non critical extension
                laternNonCriticalExtensions         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,
                laternNonCriticalExtensions             SEQUENCE{}                  OPTIONAL
                    -- Container for additional R99 extensions
                    measurementControl-r3-add-ext           BIT STRING      OPTIONAL,
                    nonCriticalExtensions                   SEQUENCE {}     OPTIONAL
                }   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
        laternNonCriticalExtensions         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
            laternNonCriticalExtensions         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
        laternNonCriticalExtensions         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
                                        PhysicalChannelReconfiguration-r3-IEs,
        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
        }   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
        laterNonCriticalExtensions          SEQUENCE {}     OPTIONAL
            -- Container for additional R99 extensions
            physicalChannelReconfigurationComplete-r3-add-ext
                                            BIT STRING      OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

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

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

PhysicalSharedChannelAllocation ::= CHOICE {
    r3                              SEQUENCE {
        physicalSharedChannelAllocation-r3
                                        PhysicalSharedChannelAllocation-r3-IEs,
        laterNonCriticalExtensions          SEQUENCE {} OPTIONAL
            -- Container for additional R99 extensions
            physicalSharedChannelAllocation-r3-add-ext  BIT STRING      OPTIONAL,
            nonCriticalExtensions                       SEQUENCE {}     OPTIONAL
        }   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,
            puschConfirmation               PUSCH-Identity
        }                                                                   OPTIONAL,
        protocolErrorIndicator          ProtocolErrorIndicatorWithMoreInfo,
    -- Extension mechanism for non -release99 information
        laterNonCriticalExtensions          SEQUENCE {} OPTIONAL
            -- Container for additional R99 extensions
            puschCapacityRequest-r3-add-ext BIT STRING      OPTIONAL,
            nonCriticalExtensions               SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

RadioBearerReconfiguration ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerReconfiguration-r3   RadioBearerReconfiguration-r3-IEs,
        v3aoNonCriticalExtensions       SEQUENCE {
            radioBearerReconfiguration-v3a0ext      RadioBearerReconfiguration-v3a0ext,
            laterNonCriticalExtensions                  SEQUENCE {}                         OPTIONAL
                -- Container for additional R99 extensions
                radioBearerReconfiguration-r3-add-ext       BIT STRING      OPTIONAL,
                nonCriticalExtensions                       SEQUENCE {}     OPTIONAL
            }   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
        }                                                                       OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo                    OPTIONAL,
        dl-DeletedTransChInfoList       DL-DeletedTransChInfoList               OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfo2List            OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                           OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power                   OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement                   OPTIONAL,
        modeSpecificPhysChInfo          CHOICE {
            fdd                             SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information        OPTIONAL
            },
            tdd                             NULL
        },
        dl-CommonInformation            DL-CommonInformation                    OPTIONAL,
        -- NOTE: IE dl-InformationPerRL-List should be optional in later versions
        -- of this message
        dl-InformationPerRL-List        DL-InformationPerRL-List
}

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

-- **************************************************
--
-- 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
        }   OPTIONAL
}

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

RadioBearerReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Radio bearer IEs
        potentiallySuccesfulBearerList  RB-IdentityList                     OPTIONAL,
    -- Extension mechanism for non -release99 information
        laterNonCriticalExtensions          SEQUENCE {} OPTIONAL
            -- Container for additional R99 extensions
            radioBearerReconfigurationFailure-r3-add-ext    BIT STRING      OPTIONAL,
            nonCriticalExtensions                           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

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

RadioBearerRelease ::= CHOICE {
    r3                              SEQUENCE {
        radioBearerRelease-r3           RadioBearerRelease-r3-IEs,
        v3a0NonCriticalExtensions       SEQUENCE {
            radioBearerRelease-v3a0ext      RadioBearerRelease-v3a0ext,
            laterNonCriticalExtensions          SEQUENCE {}                     OPTIONAL
                -- Container for additional R99 extensions
                radioBearerRelease-r3-add-ext       BIT STRING      OPTIONAL,
                nonCriticalExtensions               SEQUENCE {}     OPTIONAL
            }   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,
        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
        }   OPTIONAL
}

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

RadioBearerReleaseFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Radio bearer IEs
        potentiallySuccesfulBearerList  RB-IdentityList                     OPTIONAL,
    -- Extension mechanism for non-release99 information
        laterNonCriticalExtensions          SEQUENCE {}     OPTIONAL
            -- 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 {}                     OPTIONAL
                -- Container for additional R99 extensions
                radioBearerSetup-r3-add-ext     BIT STRING      OPTIONAL,
                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
            }   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
        }                                                                   OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo                OPTIONAL,
        dl-DeletedTransChInfoList       DL-DeletedTransChInfoList           OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList         OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                       OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power               OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement               OPTIONAL,
        modeSpecificPhysChInfo          CHOICE {
            fdd                             SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information        OPTIONAL
            },
            tdd                             NULL
        },
        dl-CommonInformation            DL-CommonInformation                OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List            OPTIONAL
}

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

-- **************************************************
--
-- 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
        potentiallySuccesfulBearerList  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,
        laternNonCriticalExtensions         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,
        laternNonCriticalExtensions         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,
        laternNonCriticalExtensions         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
        laternNonCriticalExtensions         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,
        laternNonCriticalExtensions         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,
        new-c-RNTI                      C-RNTI                              OPTIONAL,
        rrc-StateIndicator              RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient,
        -- TABULAR: If capabilityUpdateRequirement is not present, the default value
        -- defined in 10.3.3.2 shall be used.
        capabilityUpdateRequirement     CapabilityUpdateRequirement         OPTIONAL,
    -- Radio bearer IEs
        srb-InformationSetupList        SRB-InformationSetupList2,
    -- Transport channel IEs
        ul-CommonTransChInfo            UL-CommonTransChInfo                OPTIONAL,
        -- NOTE: ul-AddReconfTransChInfoList should be optional in later versions
        -- of this message
        ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList,
        dl-CommonTransChInfo            DL-CommonTransChInfo                OPTIONAL,
        -- NOTE: dl-AddReconfTransChInfoList should be optional in later versions
        -- of this message
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                       OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power               OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement               OPTIONAL,
        dl-CommonInformation            DL-CommonInformation                OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List            OPTIONAL
}

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

RRCConnectionSetupComplete ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        startList                       STARTList,
        ue-RadioAccessCapability        UE-RadioAccessCapability            OPTIONAL,
    --  Other IEs
        ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList   OPTIONAL,
    -- Non critical extensions
        v370NonCriticalExtensions           SEQUENCE {
            rrcConnectionSetupComplete-v370ext  RRCConnectionSetupComplete-v370ext,
            v380NonCriticalExtensions           SEQUENCE {
                rrcConnectionSetupComplete-v380ext  RRCConnectionSetupComplete-v380ext-IEs,
                -- Reserved for future non critical extension
                v3a0NonCriticalExtensions           SEQUENCE {
                    rrcConnectionSetupComplete-v3a0ext  RRCConnectionSetupComplete-v3a0ext-IEs,
                    laterNonCriticalExtensions          SEQUENCE {}                 OPTIONAL
                        -- Container for additional R99 extensions
                        rrcConnectionSetupComplete-r3-add-ext       BIT STRING          OPTIONAL,
                        nonCriticalExtensions                       SEQUENCE {}         OPTIONAL
                    }       OPTIONAL
                }       OPTIONAL
            }       OPTIONAL
        }       OPTIONAL
}

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

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

RRCConnectionSetupComplete-v3a0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        ue-RadioAccessCapability-v3a0ext    UE-RadioAccessCapability-v3a0ext    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,
    Extension mechanism for non -release99 information
        laterNonCriticalExtensions          SEQUENCE {}     OPTIONAL
            -- Container for additional R99 extensions
            rrcStatus-r3-add-ext                BIT STRING      OPTIONAL,
            nonCriticalExtensions               SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

SecurityModeCommand ::= CHOICE {
    r3                              SEQUENCE {
        securityModeCommand-r3          SecurityModeCommand-r3-IEs,
        laterNonCriticalExtensions          SEQUENCE {}     OPTIONAL
            -- 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,
    -- Extension mechanism for non-release99 information
        laterNonCriticalExtensions          SEQUENCE {}     OPTIONAL
            -- Container for additional R99 extensions
            securityModeComplete-r3-add-ext     BIT STRING      OPTIONAL,
            nonCriticalExtensions               SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

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

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

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

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

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

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

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

```
            spare2                          NULL,
            spare1                          NULL
        }
}

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

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

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

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

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

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

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

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

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

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

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

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

```
        -- for sib-Data-fixed, in case the SIB data is less than 226 bits, padding
        -- shall be used. The same padding bits shall be used as defined in clause 12.1
        sib-Data-fixed                  BIT STRING (SIZE (226))
}

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

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

SystemInformationChangeIndication ::=   SEQUENCE {
    -- Other IEs
        bcch-ModificationInfo               BCCH-ModificationInfo,
        -- Extension mechanism for non -release99 information
        laternNonCriticalExtensions         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,
            laternNonCriticalExtensions         SEQUENCE {}                     OPTIONAL
                -- Container for additional R99 extensions
                transportChannelReconfiguration-r3-add-ext  BIT STRING      OPTIONAL,
                nonCriticalExtensions                       SEQUENCE {}     OPTIONAL
            }   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
        }                                                           OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo        OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo               OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power       OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement       OPTIONAL,
        modeSpecificPhysChInfo          CHOICE {
            fdd                             SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information    OPTIONAL
            },
            tdd                         NULL
        },
        dl-CommonInformation            DL-CommonInformation        OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List    OPTIONAL
}

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

-- **************************************************
--
-- 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
        }   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
        }   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
    laternNonCriticalExtensions         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
        laternNonCriticalExtensions         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,
        laternNonCriticalExtensions         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
        }       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,
        laternNonCriticalExtensions         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
        laternNonCriticalExtensions         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
--
-- **************************************************

URAUpdateConfirm-CCCH ::= CHOICE {
    r3                                  SEQUENCE {
        uraUpdateConfirm-CCCH-r3            URAUpdateConfirm-CCCH-r3-IEs,
        laternNonCriticalExtensions             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 {}
    }
}

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,
            laternNonCriticalExtensions             SEQUENCE {} OPTIONAL
                -- 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,
    -- 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
        }   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,
    maxPage1,
    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-DomainIdentity,
    cn-DomainSpecificNAS-Info           NAS-SystemInformationGSM-MAP
}

CN-DomainInformationFull ::=        SEQUENCE {
    cn-DomainIdentity                   CN-DomainIdentity,
    cn-DomainSpecificNAS-Info           NAS-SystemInformationGSM-MAP,
    cn-DRX-CycleLengthCoeff             CN-DRX-CycleLengthCoefficient
}

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

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

```
                                        CN-DomainInformationFull

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

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

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

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

Digit ::=                           INTEGER (0..9)

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

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

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

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

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

```
}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

AccessClassBarred ::=               ENUMERATED {
                                        barred, notBarred }

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

```
                                    AccessClassBarred

AllowedIndicator ::=                ENUMERATED {
                                    allowed, notAllowed }

CellAccessRestriction ::=           SEQUENCE {
    cellBarred                      CellBarred,
    cellReservedForOperatorUse      ReservedIndicator,
    cellReservationExtension        ReservedIndicator,
    -- 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-l-S                      Q-Hyst-S,
    t-Reselection-S                 T-Reselection-S,
    hcs-ServingCellInformation      HCS-ServingCellInformation      OPTIONAL,
    maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power
}

MapParameter ::=                    INTEGER (0..99)

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

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 {
                                            utra-FDD,
                                            utra-TDD,
                                            gsm,
                                            cdma2000 }

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

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

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

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

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

ReservedIndicator ::=                   ENUMERATED {
                                            reserved,
                                            notReserved }

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

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

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

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

-- 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                        CipheringAlgorithm,
    dummy                       NULL
}

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

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

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

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

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 {
                                        uia1 }


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

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

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

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


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

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

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

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

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

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

MaxNoSCCPCH-RL ::=                  ENUMERATED {
                                        rl1 }

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

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

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

MaxPhysChPerFrame ::=               INTEGER (1..224)

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                              P-TMSI-GSM-MAP,
    rai                                 RAI
}

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

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

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

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

PhysicalChannelCapability ::=       SEQUENCE {
        fddPhysChCapability                 SEQUENCE {
            downlinkPhysChCapability            DL-PhysChCapabilityFDD,
            uplinkPhysChCapability              UL-PhysChCapabilityFDD
```

```
        }                                           OPTIONAL,
        tddPhysChCapability                 SEQUENCE {
            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),
                                        uia1(14),
                                        spare0(15)
                                        }   (SIZE (16))
}

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

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


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

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

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

SystemSpecificCapUpdateReq ::=      ENUMERATED {
                                        gsm }

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


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

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

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

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

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

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

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

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

T-310 ::=                           ENUMERATED {
                                        ms40, ms80, ms120, ms160,
```

```
                                    ms200, ms240, ms280, ms320 }

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

UE-ConnTimersAndConstants ::=       SEQUENCE {
-- Optional is used also for parameters for which the default value is the last one read in SIB1
-- t-301 and n-301 should not be used by the UE in this version of the specification
    t-301                           T-301                           DEFAULT ms2000,
    n-301                           N-301                           DEFAULT 2,
    t-302                           T-302                           DEFAULT ms4000,
    n-302                           N-302                           DEFAULT 3,
    t-304                           T-304                           DEFAULT ms2000,
    n-304                           N-304                           DEFAULT 2,
    t-305                           T-305                           DEFAULT m30,
```

```
    t-307                               T-307                               DEFAULT s30,
    t-308                               T-308                               DEFAULT ms160,
    t-309                               T-309                               DEFAULT 5,
    t-310                               T-310                               DEFAULT ms160,
    n-310                               N-310                               DEFAULT 4,
    t-311                               T-311                               DEFAULT ms2000,
    t-312                               T-312                               DEFAULT 1,
    -- n-312 shall be ignored if n-312 in UE-ConnTimersAndConstants-v3a0ext is present, and the
    -- value of that element shall be used instead.
    n-312                               N-312                               DEFAULT s1,
    t-313                               T-313                               DEFAULT 3,
    n-313                               N-313                               DEFAULT s20,
    t-314                               T-314                               DEFAULT s12,
    t-315                               T-315                               DEFAULT s180,
    -- n-315 shall be ignored if n-315 in UE-ConnTimersAndConstants-v3a0ext is present, and the
    -- value of that element shall be used instead.
    n-315                               N-315                               DEFAULT s1,
    t-316                               T-316                               DEFAULT s30,
    t-317                               T-317                               DEFAULT s180
}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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 {
    storedWithValueTagSameAsPrevius     NULL,
    other                               CHOICE {
        notStored                           NULL,
        storedWithDifferentValueTag         PredefinedConfigValueTag
    }
}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

TimerPollProhibit ::=               ENUMERATED {
                                        tpp10, tpp20, tpp30, tpp40, tpp50,
                                        tpp60, tpp70, tpp80, tpp90, tpp100,
                                        tpp110, tpp120, tpp130, tpp140, tpp150,
                                        tpp160, tpp170, tpp180, tpp190, tpp200,
                                        tpp210, tpp220, tpp230, tpp240, tpp250,
                                        tpp260, tpp270, tpp280, tpp290, tpp300,
                                        tpp310, tpp320, tpp330, tpp340, tpp350,
```

```
                                    tpp360, tpp370, tpp380, tpp390, tpp400,
                                    tpp410, tpp420, tpp430, tpp440, tpp450,
                                    tpp460, tpp470, tpp480, tpp490, tpp500,
                                    tpp510, tpp520, tpp530, tpp540, tpp550,
                                    tpp600, tpp650, tpp700, tpp750, tpp800,
                                    tpp850, tpp900, tpp950, tpp1000 }

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

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

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

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

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

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

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

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

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

UL-LogicalChannelMappings ::=       CHOICE {
    oneLogicalChannel                   UL-LogicalChannelMapping,
```

```
    twoLogicalChannels                  UL-LogicalChannelMappingList
}

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

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

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

}

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

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

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

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

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

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

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

CodingRate ::=                      ENUMERATED {
                                        half,
                                        third }

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

```
        tdd                                 SEQUENCE {
            commonTDD-Choice                    CHOICE {
                bitModeRLC-SizeInfo                 BitModeRLC-SizeInfo,
                octetModeRLC-SizeInfoType1          OctetModeRLC-SizeInfoType1
            }
        }
    },
    numberOfTbSizeList              SEQUENCE (SIZE (1..maxTF)) OF
                                            NumberOfTransportBlocks,
    logicalChannelList              LogicalChannelList
}

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

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

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

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

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

```
    }
}

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

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

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

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

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

RateMatchingAttribute ::=           INTEGER (1..hiRM)


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

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

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

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

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

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

SplitType ::=                       ENUMERATED {
                                        hardSplit, logicalSplit }

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

```
    fullTFCS                            NULL
}

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

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

TFCI-Range ::=                          SEQUENCE {
    maxTFCIField2Value                      INTEGER (1..1023),
    tfcs-InfoForDSCH                        TFCS-InfoForDSCH
}

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

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

TFCS-Identity ::=                       SEQUENCE {
    tfcs-ID                                 TFCS-IdentityPlain                      DEFAULT 1,
    sharedChannelIndicator                  BOOLEAN
}

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

TFCS-InfoForDSCH ::=                    CHOICE {
    ctfc2bit                                INTEGER (0..3),
    ctfc4bit                                INTEGER (0..15),
    ctfc6bit                                INTEGER (0..63),
    ctfc8bit                                INTEGER (0..255),
    ctfc12bit                               INTEGER (0..4095),
    ctfc16bit                               INTEGER (0..65535),
    ctfc24bit                               INTEGER (0..16777215)
}

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

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

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

```
                                    TFCS-Removal

TimeDurationBeforeRetry ::=         INTEGER (1..256)

TM-SignallingInfo   ::=             SEQUENCE {
    messType                            MessType,
    tm-SignallingMode                   CHOICE {
        mode1                               NULL,
        mode2                               SEQUENCE {
            -- In ul-controlledTrChList, TrCH-Type is always DCH
            ul-controlledTrChList               UL-ControlledTrChList
        }
    }
}

TransmissionTimeInterval ::=        ENUMERATED {
                                    tti10, tti20, tti40, tti80 }

TransmissionTimeValidity ::=        INTEGER (1..256)

TransportChannelIdentity ::=        INTEGER (1..32)

TransportChannelIdentityDCHandDSCH  ::= SEQUENCE {
    dch-transport-ch-id             TransportChannelIdentity,
    dsch-transport-ch-id            TransportChannelIdentity
}

TransportFormatSet ::=              CHOICE {
    dedicatedTransChTFS                 DedicatedTransChTFS,
    commonTransChTFS                    CommonTransChTFS
}

-- 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                         TFCS
        },
        tdd                                 SEQUENCE {

            individualUL-CCTrCH-InfoList        IndividualUL-CCTrCH-InfoList
                                                                            OPTIONAL
        }
    }                                                                       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 bitsring '10'
            subchannels                         ENUMERATED  { subch0, subch1 }  OPTIONAL
        },
        size4                               SEQUENCE {
            subchannels                         BIT STRING  {
                                                    subCh3(0),
                                                    subCh2(1),
                                                    subCh1(2),
                                                    subCh0(3)
                                                    } (SIZE(4))     OPTIONAL
        },
        size8                               SEQUENCE {
            subchannels                         BIT STRING  {
                                                    subCh7(0),
                                                    subCh6(1),
                                                    subCh5(2),
                                                    subCh4(3),
                                                    subCh3(4),
                                                    subCh2(5),
                                                    subCh1(6),
                                                    subCh0(7)
                                                    } (SIZE(8))     OPTIONAL
        }
    }
}

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

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

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

AllocationPeriodInfo ::=            SEQUENCE {
    allocationActivationTime            INTEGER (0..255),
    allocationDuration                  INTEGER (1..256)
}
-- Actual value Alpha = IE value * 0.125
Alpha ::=                           INTEGER (0..8)

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

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

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

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

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

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

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

AvailableAP-Signature-VCAMList ::=  SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
                                        AP-Signature-VCAM

AvailableAP-SignatureList ::=       SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
                                        AP-Signature

AvailableAP-SubchannelList ::=      SEQUENCE (SIZE (1..maxPCPCH-APsubCh)) OF
                                        AP-Subchannel

AvailableMinimumSF-ListVCAM ::=     SEQUENCE (SIZE (1..maxPCPCH-SF)) OF
                                        AvailableMinimumSF-VCAM

AvailableMinimumSF-VCAM ::=         SEQUENCE {
    minimumSpreadingFactor              MinimumSpreadingFactor,
    nf-Max                              NF-Max,
    maxAvailablePCPCH-Number            MaxAvailablePCPCH-Number,
    availableAP-Signature-VCAMList      AvailableAP-Signature-VCAMList
}

AvailableSignatures ::=         BIT STRING {
                                    signature15(0),
                                    signature14(1),
                                    signature13(2),
                                    signature12(3),
                                    signature11(4),
                                    signature10(5),
                                    signature9(6),
                                    signature8(7),
                                    signature7(8),
                                    signature6(9),
                                    signature5(10),
                                    signature4(11),
                                    signature3(12),
                                    signature2(13),
                                    signature1(14),
                                    signature0(15)
                                    }   (SIZE(16))

AvailableSubChannelNumbers ::=      BIT STRING {
                                        subCh11(0),
                                        subCh10(1),
                                        subCh9(2),
                                        subCh8(3),
                                        subCh7(4),
                                        subCh6(5),
                                        subCh5(6),
                                        subCh4(7),
                                        subCh3(8),
                                        subCh2(9),
                                        subCh1(10),
                                        subCh0(11)
                                        }   (SIZE(12))
```

```
BurstType ::=                       ENUMERATED {
                                        type1, type2 }

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)

Cfntargetsfnframeoffset ::=             INTEGER(0..255)

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

ChannelisationCode256 ::=           INTEGER (0..255)

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

ClosedLoopTimingAdjMode ::=         ENUMERATED {
                                        slot1, slot2 }

CodeNumberDSCH ::=                  INTEGER (0..255)

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

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


CommonTimeslotInfo ::=              SEQUENCE {
    -- TABULAR: secondInterleavingMode is MD, but since it can be encoded in a single
    -- bit it is not defined as OPTIONAL.
    secondInterleavingMode              SecondInterleavingMode,
    tfci-Coding                         TFCI-Coding                         OPTIONAL,
    puncturingLimit                     PuncturingLimit,
    repetitionPeriodAndLength           RepetitionPeriodAndLength           OPTIONAL
}

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

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

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

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

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

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

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

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

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,
    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,
        dl-CCTrChListToRemove               DL-CCTrChListToRemove           OPTIONAL
    }
}

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

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

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

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

DL-InformationPerRL ::=             SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info,
            pdsch-SHO-DCH-Info                  PDSCH-SHO-DCH-Info          OPTIONAL,
            pdsch-CodeMapping                   PDSCH-CodeMapping           OPTIONAL
        },
        tdd                                 PrimaryCCPCH-Info
    },
    dl-DPCH-InfoPerRL                   DL-DPCH-InfoPerRL                   OPTIONAL,
    sccpch-InfoforFACH                  SCCPCH-InfoForFACH                  OPTIONAL
}

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

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

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

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

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

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

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

DL-TS-ChannelisationCodesShort ::=  SEQUENCE {
    codesRepresentation                 CHOICE {
        consecutive                         SEQUENCE {
            firstChannelisationCode             DL-TS-ChannelisationCode,
```

```
            lastChannelisationCode              DL-TS-ChannelisationCode
        },
        bitmap                                  BIT STRING {
                                                    chCode16-SF16(0),
                                                    chCode15-SF16(1),
                                                    chCode14-SF16(2),
                                                    chCode13-SF16(3),
                                                    chCode12-SF16(4),
                                                    chCode11-SF16(5),
                                                    chCode10-SF16(6),
                                                    chCode9-SF16(7),
                                                    chCode8-SF16(8),
                                                    chCode7-SF16(9),
                                                    chCode6-SF16(10),
                                                    chCode5-SF16(11),
                                                    chCode4-SF16(12),
                                                    chCode3-SF16(13),
                                                    chCode2-SF16(14),
                                                    chCode1-SF16(15)
                                                    }   (SIZE (16))
    }
}

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

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 {
            midambleConfigurationBurstType1and3 MidambleConfigurationBurstType1and3,
            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-CCTrChTPCList                    UL-CCTrChTPCList                    OPTIONAL
}

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

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

```
}

PDSCH-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
            }
        }                                                               OPTIONAL,
        cellParametersID                    CellParametersID            OPTIONAL,
        sctd-Indicator                      BOOLEAN
    }
}

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 {
    primaryScramblingCode               PrimaryScramblingCode
}

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

PrimaryScramblingCode ::=           INTEGER (0..511)

PuncturingLimit ::=                 ENUMERATED {
                                        pl0-40, pl0-44, pl0-48, pl0-52, pl0-56,
                                        pl0-60, pl0-64, pl0-68, pl0-72, pl0-76,
                                        pl0-80, pl0-84, pl0-88, pl0-92, pl0-96, pl1 }

PUSCH-CapacityAllocationInfo ::=    SEQUENCE {
    pusch-Allocation                    CHOICE {
        pusch-AllocationPending             NULL,
        pusch-AllocationAssignment          SEQUENCE {
            pusch-AllocationPeriodInfo          AllocationPeriodInfo,
            pusch-PowerControlInfo              UL-TargetSIR                OPTIONAL,
            configuration                       CHOICE {
                old-Configuration                   SEQUENCE {
                    tfcs-ID                             TFCS-IdentityPlain          DEFAULT 1,
                    pusch-Identity                      PUSCH-Identity
                },
                new-Configuration                   SEQUENCE {
                    pusch-Info                          PUSCH-Info,
                    pusch-Identity                      PUSCH-Identity      OPTIONAL
                }
            }
        }
    }
}

PUSCH-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                            OPTIONAL,
    fach-PCH-InformationList            FACH-PCH-InformationList        OPTIONAL,
    pich-Info                           PICH-Info                       OPTIONAL
}

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

ScramblingCodeChange ::=            ENUMERATED {
                                    codeChange, noCodeChange }

ScramblingCodeType ::=              ENUMERATED {
                                    shortSC,
                                    longSC }

SecondaryCCPCH-Info ::=             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 {
    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,
                                        closedLoopMode1,
                                        closedLoopMode2 }

UARFCN ::=                      INTEGER (0..16383)

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

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

UL-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                                  UL-CompressedModeMethod,
    dl                                  DL-CompressedModeMethod,
    ul-and-dl                           SEQUENCE {
        ul                                  UL-CompressedModeMethod,
        dl                                  DL-CompressedModeMethod
    }
}

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

UL-DPCH-Info ::=                    SEQUENCE {
    ul-DPCH-PowerControlInfo            UL-DPCH-PowerControlInfo            OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            scramblingCodeType                  ScramblingCodeType,
            scramblingCode                      UL-ScramblingCode,
            numberOfDPDCH                       NumberOfDPDCH               DEFAULT 1,
            spreadingFactor                     SpreadingFactor,
            tfci-Existence                      BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits                    NumberOfFBI-Bits            OPTIONAL,
            puncturingLimit                     PuncturingLimit
        },
        tdd                                 SEQUENCE {
            ul-TimingAdvance                    UL-TimingAdvanceControl     OPTIONAL,
            ul-CCTrCHList                       UL-CCTrCHList               OPTIONAL,
            ul-CCTrCHListToRemove               UL-CCTrCHListToRemove       OPTIONAL
        }
    }
}

UL-DPCH-InfoPostFDD ::=             SEQUENCE {
    ul-DPCH-PowerControlInfo            UL-DPCH-PowerControlInfoPostFDD,
            scramblingCodeType                  ScramblingCodeType,
            reducedScramblingCodeNumber         ReducedScramblingCodeNumber,
            spreadingFactor                     SpreadingFactor

}

UL-DPCH-InfoPostTDD ::=             SEQUENCE {
    ul-DPCH-PowerControlInfo            UL-DPCH-PowerControlInfoPostTDD,
    ul-TimingAdvance                    UL-TimingAdvanceControl                 OPTIONAL,
    ul-CCTrCH-TimeslotsCodes            UplinkTimeslotsCodes
}

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

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

```
                primaryCCPCH-TX-Power               PrimaryCCPCH-TX-Power
            }
        }                                                                   OPTIONAL
    }
}

UL-DPCH-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 {
                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,
    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-ECN0 ::=                 SEQUENCE {
    cellIndividualOffset                CellIndividualOffset                DEFAULT 0,
    referenceTimeDifferenceToCell       ReferenceTimeDifferenceToCell       OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
```

```
            primaryCPICH-Info                   PrimaryCPICH-Info           OPTIONAL,
            primaryCPICH-TX-Power               PrimaryCPICH-TX-Power       OPTIONAL,
            readSFN-Indicator                   BOOLEAN,
            tx-DiversityIndicator               BOOLEAN
        },
        tdd                                 SEQUENCE {
            primaryCCPCH-Info                   PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power               PrimaryCCPCH-TX-Power       OPTIONAL,
            timeslotInfoList                    TimeslotInfoList            OPTIONAL,
            readSFN-Indicator                   BOOLEAN
        }
    },
    cellSelectionReselectionInfo        CellSelectReselectInfoSIB-11-12-ECN0    OPTIONAL
}

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

CellInfoSI-HCS-ECN0 ::=             SEQUENCE {
    cellIndividualOffset                CellIndividualOffset                DEFAULT 0,
    referenceTimeDifferenceToCell       ReferenceTimeDifferenceToCell       OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info           OPTIONAL,
            primaryCPICH-TX-Power               PrimaryCPICH-TX-Power       OPTIONAL,
            readSFN-Indicator                   BOOLEAN,
            tx-DiversityIndicator               BOOLEAN
        },
        tdd                                 SEQUENCE {
            primaryCCPCH-Info                   PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power               PrimaryCCPCH-TX-Power       OPTIONAL,
            timeslotInfoList                    TimeslotInfoList            OPTIONAL,
            readSFN-Indicator                   BOOLEAN
        }
    },
    cellSelectionReselectionInfo        CellSelectReselectInfoSIB-11-12-HCS-ECN0    OPTIONAL
}

CellMeasuredResults ::=             SEQUENCE {
    cellIdentity                        CellIdentity                        OPTIONAL,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy           SFN-SFN-ObsTimeDifference           OPTIONAL,
    cellSynchronisationInfo         CellSynchronisationInfo         OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info,
            cpich-Ec-N0                         CPICH-Ec-N0                 OPTIONAL,
            cpich-RSCP                          CPICH-RSCP                  OPTIONAL,
            pathloss                            Pathloss                    OPTIONAL
        },
        tdd                                 SEQUENCE {
            cellParametersID                    CellParametersID,
            proposedTGSN                        TGSN                        OPTIONAL,
            primaryCCPCH-RSCP                   PrimaryCCPCH-RSCP           OPTIONAL,
            pathloss                            Pathloss                    OPTIONAL,
            timeslotISCP-List                   TimeslotISCP-List           OPTIONAL
        }
    }
}
```

```
CellMeasurementEventResults ::=     CHOICE {
    fdd                                 SEQUENCE (SIZE (1..maxCellMeas)) OF
                                            PrimaryCPICH-Info,
    tdd                                 SEQUENCE (SIZE (1..maxCellMeas)) OF
                                            PrimaryCCPCH-Info
}

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-ECN0 ::=    SEQUENCE {
    q-Offset1S-N                        Q-OffsetS-N                     DEFAULT 0,
    q-Offset2S-N                        Q-OffsetS-N                     DEFAULT 0,
    maxAllowedUL-TX-Power               MaxAllowedUL-TX-Power               OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            q-QualMin                           Q-QualMin                   OPTIONAL,
            q-RxlevMin                          Q-RxlevMin                  OPTIONAL
        },
        tdd                                 SEQUENCE {
            q-RxlevMin                          Q-RxlevMin                  OPTIONAL
        },
        gsm                                 SEQUENCE {
```

```
            q-RxlevMin                          Q-RxlevMin                  OPTIONAL
        }
    }
}

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

CellSelectReselectInfoSIB-11-12-HCS-ECN0 ::=    SEQUENCE {
    q-Offset1S-N                        Q-OffsetS-N                     DEFAULT 0,
    q-Offset2S-N                        Q-OffsetS-N                     DEFAULT 0,
    maxAllowedUL-TX-Power               MaxAllowedUL-TX-Power               OPTIONAL,
    hcs-NeighbouringCellInformation-ECN0        HCS-NeighbouringCellInformation-ECN0
    OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            q-QualMin                           Q-QualMin                   OPTIONAL,
            q-RxlevMin                          Q-RxlevMin                  OPTIONAL
        },
        tdd                                 SEQUENCE {
            q-RxlevMin                          Q-RxlevMin                  OPTIONAL
        },
        gsm                                 SEQUENCE {
            q-RxlevMin                          Q-RxlevMin                  OPTIONAL
        }
    }
}

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

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

CellToReport ::=                    SEQUENCE {
    bsicReported                        BSICReported
}

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

CodePhaseSearchWindow ::=           ENUMERATED {
                                        w1023, w1, w2, w3, w4, w6, w8,
                                        w12, w16, w24, w32, w48, w64,
                                        w96, w128, w192 }

CountC-SFN-Frame-difference ::= SEQUENCE {
    -- Actual value countC-SFN-High = IE value * 256
    countC-SFN-High                 INTEGER(0..15),
```

```
    off                             INTEGER(0..255)
}

-- SPARE: CPICH-Ec-No, Max = 49
-- Values above Max are spare
CPICH-Ec-N0 ::=                     INTEGER (0..63)

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


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

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

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

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

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

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

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

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


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


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


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

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


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

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

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

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

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

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

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

}

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

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

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

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

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

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

ExtraDopplerInfo ::=                SEQUENCE {
    -- Actual value doppler1stOrder = IE value * 0.023
```

```
    doppler1stOrder                     INTEGER (-42..21),
    dopplerUncertainty                  DopplerUncertainty
}

FACH-MeasurementOccasionInfo ::=    SEQUENCE {
    fACH-meas-occasion-coeff            INTEGER (1..12)                     OPTIONAL,
    inter-freq-FDD-meas-ind             BOOLEAN,
    inter-freq-TDD-meas-ind             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 FineSFN-SFN = IE value * 0.0625
FineSFN-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,
    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
}

HCS-CellReselectInformation-ECN0 ::=        SEQUENCE {
    -- TABULAR: The default value for penaltyTime is "notUsed"
    -- Temporary offset is nested inside PenaltyTime
    penaltyTime                         PenaltyTime-ECN0
}

HCS-NeighbouringCellInformation-RSCP ::= SEQUENCE {
    hcs-PRIO                            HCS-PRIO                            DEFAULT 0,
    q-HCS                               Q-HCS                               DEFAULT 0,
    hcs-CellReselectInformation         HCS-CellReselectInformation-RSCP
}

HCS-NeighbouringCellInformation-ECN0 ::= SEQUENCE {
    hcs-PRIO                            HCS-PRIO                            DEFAULT 0,
    q-HCS                               Q-HCS                               DEFAULT 0,
    hcs-CellReselectInformation         HCS-CellReselectInformation-ECN0
}

HCS-PRIO ::=                        INTEGER (0..7)

HCS-ServingCellInformation ::=      SEQUENCE {
    hcs-PRIO                            HCS-PRIO                            DEFAULT 0,
    q-HCS                               Q-HCS                               DEFAULT 0,
    t-CR-Max                            T-CRMax                             OPTIONAL
}

-- Actual value Hysteresis = IE value * 0.5
Hysteresis ::=                      INTEGER (0..15)

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

InterFreqCell ::=                   SEQUENCE {
    frequencyInfo                       FrequencyInfo,
    nonFreqRelatedEventResults          CellMeasurementEventResults
}

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

InterFreqCellInfoList ::=           SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellList                OPTIONAL,
    cellsForInterFreqMeasList           CellsForInterFreqMeasList           OPTIONAL
}

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

InterFreqCellInfoSI-List-ECN0 ::=       SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-ECN0        OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP ::=       SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-HCS-RSCP    OPTIONAL
}
InterFreqCellInfoSI-List-HCS-ECN0 ::=       SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-HCS-ECN0    OPTIONAL
}

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,
    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,
    utra-CarrierRSSI                    UTRA-CarrierRSSI                    OPTIONAL,
    interFreqCellMeasuredResultsList    InterFreqCellMeasuredResultsList    OPTIONAL
}

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


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

InterFreqMeasurementSysInfo-ECN0 ::=        SEQUENCE {
    interFreqCellInfoSI-List            InterFreqCellInfoSI-List-ECN0       OPTIONAL
}

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

InterFreqMeasurementSysInfo-HCS-ECN0 ::=        SEQUENCE {
    interFreqCellInfoSI-List            InterFreqCellInfoSI-List-HCS-ECN0   OPTIONAL
}

InterFreqReportCriteria ::=         CHOICE {
    intraFreqReportingCriteria          IntraFreqReportingCriteria,
    interFreqReportingCriteria          InterFreqReportingCriteria,
    periodicalReportingCriteria         PeriodicalWithReportingCellStatus,
    noReporting                         ReportingCellStatusOpt
}

InterFreqReportingCriteria ::=      SEQUENCE {
    interFreqEventList                  InterFreqEventList                  OPTIONAL
}

InterFreqReportingQuantity ::=      SEQUENCE {
    utra-Carrier-RSSI                   BOOLEAN,
    frequencyQualityEstimate            BOOLEAN,
    nonFreqRelatedQuantities            CellReportingQuantities
}

InterFrequencyMeasurement ::=       SEQUENCE {
```

```
    interFreqCellInfoList               InterFreqCellInfoList,
    interFreqMeasQuantity               InterFreqMeasQuantity               OPTIONAL,
    interFreqReportingQuantity          InterFreqReportingQuantity          OPTIONAL,
    measurementValidity                 MeasurementValidity                 OPTIONAL,
    interFreqSetUpdate                  UE-AutonomousUpdateMode             OPTIONAL,
    reportCriteria                      InterFreqReportCriteria
}

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-ECN0 ::=       SEQUENCE {
    removedIntraFreqCellList            RemovedIntraFreqCellList            OPTIONAL,
    newIntraFreqCellList                NewIntraFreqCellSI-List-ECN0
}

IntraFreqCellInfoSI-List-HCS-RSCP ::=       SEQUENCE {
    removedIntraFreqCellList            RemovedIntraFreqCellList            OPTIONAL,
    newIntraFreqCellList                NewIntraFreqCellSI-List-HCS-RSCP
}

IntraFreqCellInfoSI-List-HCS-ECN0 ::=       SEQUENCE {
    removedIntraFreqCellList            RemovedIntraFreqCellList            OPTIONAL,
    newIntraFreqCellList                NewIntraFreqCellSI-List-HCS-ECN0
}

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

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 {
                                        ipl5, ipl10 }

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
    OPTIONAL,
                    interFreqMeasurementSysInfo         InterFreqMeasurementSysInfo-RSCP    OPTIONAL
                },
                cpich-Ec-N0             SEQUENCE    {
                    intraFreqMeasurementSysInfo         IntraFreqMeasurementSysInfo-ECN0
    OPTIONAL,
```

```
                    interFreqMeasurementSysInfo         InterFreqMeasurementSysInfo-ECN0    OPTIONAL
                }
            },
            interRATMeasurementSysInfo      InterRATMeasurementSysInfo-B        OPTIONAL
        },
        hcs-used                        SEQUENCE    {
            cellSelectQualityMeasure    CHOICE  {
                cpich-RSCP              SEQUENCE    {
                    intraFreqMeasurementSysInfo         IntraFreqMeasurementSysInfo-HCS-RSCP
    OPTIONAL,
                    interFreqMeasurementSysInfo         InterFreqMeasurementSysInfo-HCS-RSCP
    OPTIONAL
                },
                cpich-Ec-N0             SEQUENCE    {
                    intraFreqMeasurementSysInfo         IntraFreqMeasurementSysInfo-HCS-ECN0
    OPTIONAL,
                    interFreqMeasurementSysInfo         InterFreqMeasurementSysInfo-HCS-ECN0
    OPTIONAL                }
            },
            interRATMeasurementSysInfo      InterRATMeasurementSysInfo      OPTIONAL
        }
    },

    trafficVolumeMeasSysInfo            TrafficVolumeMeasSysInfo            OPTIONAL,
    -- dummy is not used in this version of specification and it shall be ignored by the UE.
    dummy                               UE-InternalMeasurementSysInfo       OPTIONAL
}

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,
```

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                                    low,
                                    medium,
                                    high }

N-CR-T-CRMaxHyst ::=            SEQUENCE {
    n-CR                            INTEGER (1..16)                 DEFAULT 8,
    t-CRMaxHyst                     T-CRMaxHyst
}

NavigationModelSatInfo ::=      SEQUENCE {
    satID                           SatID,
    satelliteStatus                 SatelliteStatus,
    ephemerisParameter              EphemerisParameter      OPTIONAL
}

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

EphemerisParameter ::=          SEQUENCE {
    codeOnL2                        BIT STRING (SIZE (2)),
    uraIndex                        BIT STRING (SIZE (4)),
    satHealth                       BIT STRING (SIZE (6)),
    iodc                            BIT STRING (SIZE (10)),
    l2Pflag                         BIT STRING (SIZE (1)),
    sf1Revd                         SubFrame1Reserved,
    t-GD                            BIT STRING (SIZE (8)),
    t-oc                            BIT STRING (SIZE (16)),
    af2                             BIT STRING (SIZE (8)),
    af1                             BIT STRING (SIZE (16)),
    af0                             BIT STRING (SIZE (22)),
    c-rs                            BIT STRING (SIZE (16)),
    delta-n                         BIT STRING (SIZE (16)),
    m0                              BIT STRING (SIZE (32)),
    c-uc                            BIT STRING (SIZE (16)),
    e                               BIT STRING (SIZE (32)),
    c-us                            BIT STRING (SIZE (16)),
    a-Sqrt                          BIT STRING (SIZE (32)),
    t-oe                            BIT STRING (SIZE (16)),
    fitInterval                     BIT STRING (SIZE (1)),
    aodo                            BIT STRING (SIZE (5)),
    c-ic                            BIT STRING (SIZE (16)),
    omega0                          BIT STRING (SIZE (32)),
    c-is                            BIT STRING (SIZE (16)),
    i0                              BIT STRING (SIZE (32)),
    c-rc                            BIT STRING (SIZE (16)),
    omega                           BIT STRING (SIZE (32)),
    omegaDot                        BIT STRING (SIZE (24)),
    iDot                            BIT STRING (SIZE (14))
}
NC-Mode::=                      BIT STRING (SIZE (3))

Neighbour ::=                   SEQUENCE {
    modeSpecificInfo            CHOICE {
        fdd                         SEQUENCE {
            neighbourIdentity               PrimaryCPICH-Info                   OPTIONAL,
            uE-RX-TX-TimeDifferenceType2Info    UE-RX-TX-TimeDifferenceType2Info    OPTIONAL
        },
        tdd                         SEQUENCE {
            neighbourAndChannelIdentity     CellAndChannelIdentity              OPTIONAL
        }
    },
    neighbourQuality                NeighbourQuality,
    sfn-SFN-ObsTimeDifference2      SFN-SFN-ObsTimeDifference2
}

Neighbour-v390ext ::=                   SEQUENCE {
    modeSpecificInfo            CHOICE {
        fdd                         SEQUENCE {
            frequencyInfo                   FrequencyInfo
        },
        tdd                         NULL
    }
}

NeighbourList ::=               SEQUENCE (SIZE (1..maxCellMeas)) OF
                                    Neighbour

-- The order of the cells in IE NeighbourList-v390ext shall be the
```

```
-- same as the order in IE NeighbourList
NeighbourList-v390ext ::=           SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        Neighbour-v390ext

NeighbourQuality ::=                SEQUENCE {
    uE-Positioning-OTDOA-Quality        UE-Positioning-OTDOA-Quality
}

NewInterFreqCell ::=                SEQUENCE {
    interFreqCellID                     InterFreqCellID                     OPTIONAL,
    frequencyInfo                       FrequencyInfo                       OPTIONAL,
    cellInfo                            CellInfo
}

NewInterFreqCellList ::=            SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        NewInterFreqCell

NewInterFreqCellSI-RSCP ::=             SEQUENCE {
    interFreqCellID                     InterFreqCellID                     OPTIONAL,
    frequencyInfo                       FrequencyInfo                       OPTIONAL,
    cellInfo                            CellInfoSI-RSCP
}

NewInterFreqCellSI-ECN0 ::=             SEQUENCE {
    interFreqCellID                     InterFreqCellID                     OPTIONAL,
    frequencyInfo                       FrequencyInfo                       OPTIONAL,
    cellInfo                            CellInfoSI-ECN0
}

NewInterFreqCellSI-HCS-RSCP ::=             SEQUENCE {
    interFreqCellID                     InterFreqCellID                     OPTIONAL,
    frequencyInfo                       FrequencyInfo                       OPTIONAL,
    cellInfo                            CellInfoSI-HCS-RSCP
}

NewInterFreqCellSI-HCS-ECN0 ::=             SEQUENCE {
    interFreqCellID                     InterFreqCellID                     OPTIONAL,
    frequencyInfo                       FrequencyInfo                       OPTIONAL,
    cellInfo                            CellInfoSI-HCS-ECN0
}

NewInterFreqCellSI-List-ECN0 ::=            SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        NewInterFreqCellSI-ECN0

NewInterFreqCellSI-List-HCS-RSCP ::=            SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        NewInterFreqCellSI-HCS-RSCP

NewInterFreqCellSI-List-HCS-ECN0 ::=            SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        NewInterFreqCellSI-HCS-ECN0

NewInterFreqCellSI-List-RSCP ::=        SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        NewInterFreqCellSI-RSCP

NewInterRATCell ::=             SEQUENCE {
    interRATCellID                      InterRATCellID          OPTIONAL,
    technologySpecificInfo              CHOICE {
        gsm                                 SEQUENCE {
            cellSelectionReselectionInfo        CellSelectReselectInfoSIB-11-12     OPTIONAL,
            interRATCellIndividualOffset        InterRATCellIndividualOffset,
            bsic                                BSIC,
            frequency-band                      Frequency-Band,
            bcch-ARFCN                          BCCH-ARFCN,
            -- dummy is not used in this version of the specification, it should
            -- not be sent and if received it should be ignored.
            dummy                               NULL                OPTIONAL
        },
        is-2000                             SEQUENCE {
            is-2000SpecificMeasInfo             IS-2000SpecificMeasInfo
        },
        -- ASN.1 inconsistency: NewInterRATCellList should be optional within
        -- InterRATCellInfoList. The UE shall consider IE NewInterRATCell with
        -- technologySpecificInfo set to "absent" as valid and handle the message
        -- as if IE NewInterRATCell was absent
        absent                              NULL,
        spare1                              NULL
    }
}
```

```
NewInterRATCell-B ::=               SEQUENCE {
    interRATCellID                      InterRATCellID              OPTIONAL,
    technologySpecificInfo              CHOICE {
        gsm                                 SEQUENCE {
            cellSelectionReselectionInfo        CellSelectReselectInfoSIB-11-12     OPTIONAL,
            interRATCellIndividualOffset        InterRATCellIndividualOffset,
            bsic                                BSIC,
            frequency-band                      Frequency-Band,
            bcch-ARFCN                          BCCH-ARFCN,
            -- dummy is not used in this version of the specification, it should
            -- not be sent and if received it should be ignored.
            dummy                               NULL                OPTIONAL
        },
        is-2000                             SEQUENCE {
            is-2000SpecificMeasInfo             IS-2000SpecificMeasInfo
        },
        -- ASN.1 inconsistency: NewInterRATCellList-B should be optional within
        -- InterRATCellInfoList-B. 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
}

NonUsedFreqParameterList ::=        SEQUENCE (SIZE (1..maxFreq)) OF
                                        NonUsedFreqParameter

ObservedTimeDifferenceToGSM ::=     INTEGER (0..4095)

OTDOA-SearchWindowSize ::=          ENUMERATED {
                                        c20, c40, c80, c160, c320,
                                        c640, c1280, moreThan1280 }

-- SPARE: Pathloss, Max = 158
-- Values above Max are spare
Pathloss ::=                        INTEGER (46..173)

PenaltyTime-RSCP ::=                CHOICE {
    notUsed                             NULL,
    pt10                                TemporaryOffset1,
    pt20                                TemporaryOffset1,
    pt30                                TemporaryOffset1,
    pt40                                TemporaryOffset1,
    pt50                                TemporaryOffset1,
    pt60                                TemporaryOffset1
}

PenaltyTime-ECN0 ::=                CHOICE {
    notUsed                             NULL,
    pt10                                TemporaryOffsetList,
    pt20                                TemporaryOffsetList,
    pt30                                TemporaryOffsetList,
    pt40                                TemporaryOffsetList,
    pt50                                TemporaryOffsetList,
    pt60                                TemporaryOffsetList
}

PendingTimeAfterTrigger ::=         ENUMERATED {
                                        ptat0-25, ptat0-5, ptat1,
                                        ptat2, ptat4, ptat8, ptat16 }

PeriodicalOrEventTrigger ::=        ENUMERATED {
                                        periodical,
                                        eventTrigger }

PeriodicalReportingCriteria ::=     SEQUENCE {
    reportingAmount                     ReportingAmount                 DEFAULT ra-Infinity,
    reportingInterval                   ReportingIntervalLong
}

PeriodicalWithReportingCellStatus ::= SEQUENCE {
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    reportingCellStatus                 ReportingCellStatus                 OPTIONAL
}

PLMNIdentitiesOfNeighbourCells ::=  SEQUENCE {
        plmnsOfIntraFreqCellsList       PLMNsOfIntraFreqCellsList           OPTIONAL,
        plmnsOfInterFreqCellsList       PLMNsOfInterFreqCellsList           OPTIONAL,
        plmnsOfInterRATCellsList        PLMNsOfInterRATCellsList            OPTIONAL
}

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

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

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

PositionEstimate ::=                CHOICE {
    ellipsoidPoint                      EllipsoidPoint,
    ellipsoidPointUncertCircle          EllipsoidPointUncertCircle,
```

```
    ellipsoidPointUncertEllipse         EllipsoidPointUncertEllipse,
    ellipsoidPointAltitude              EllipsoidPointAltitude,
    ellipsoidPointAltitudeEllipse       EllipsoidPointAltitudeEllipsoide
}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ReportingCellStatusOpt ::=          SEQUENCE {
    reportingCellStatus                 ReportingCellStatus                 OPTIONAL
}


ReportingInfoForCellDCH ::=         SEQUENCE {
```

```
    intraFreqReportingQuantity          IntraFreqReportingQuantity,
    measurementReportingMode            MeasurementReportingMode,
    reportCriteria                      CellDCH-ReportCriteria
}

ReportingInterval ::=               ENUMERATED {
                                        noPeriodicalreporting, ri0-25,
                                        ri0-5, ri1, ri2, ri4, ri8, ri16 }

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

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

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

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

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

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

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

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

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

SatID ::=                           INTEGER (0..63)

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

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

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

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

```
SFN-SFN-OTD-Type ::=                ENUMERATED {
                                        noReport,
                                        type1,
                                        type2 }

SFN-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 {
                                        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
```

```
}

TrafficVolumeMeasuredResults ::=    SEQUENCE {
    rb-Identity                         RB-Identity,
    rlc-BuffersPayload                  RLC-BuffersPayload                  OPTIONAL,
    averageRLC-BufferPayload            AverageRLC-BufferPayload            OPTIONAL,
    varianceOfRLC-BufferPayload         VarianceOfRLC-BufferPayload         OPTIONAL
}

TrafficVolumeMeasuredResultsList ::= SEQUENCE (SIZE (1..maxRB)) OF
                                    TrafficVolumeMeasuredResults

TrafficVolumeMeasurement ::=        SEQUENCE {
    trafficVolumeMeasurementObjectList  TrafficVolumeMeasurementObjectList  OPTIONAL,
    trafficVolumeMeasQuantity           TrafficVolumeMeasQuantity           OPTIONAL,
    trafficVolumeReportingQuantity      TrafficVolumeReportingQuantity      OPTIONAL,
    measurementValidity                 MeasurementValidity                 OPTIONAL,
    reportCriteria                      TrafficVolumeReportCriteria
}

TrafficVolumeMeasurementObjectList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
                                        UL-TrCH-Identity

TrafficVolumeReportCriteria ::=     CHOICE {
    trafficVolumeReportingCriteria      TrafficVolumeReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    noReporting                         NULL
}

TrafficVolumeReportCriteriaSysInfo ::=  CHOICE {
    trafficVolumeReportingCriteria      TrafficVolumeReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria
}

TrafficVolumeReportingCriteria ::= SEQUENCE {
    -- NOTE: transChCriteriaList should be mandatory in later versions of this message
    transChCriteriaList                 TransChCriteriaList                 OPTIONAL
}

TrafficVolumeReportingQuantity ::= SEQUENCE {
    rlc-RB-BufferPayload                BOOLEAN,
    rlc-RB-BufferPayloadAverage         BOOLEAN,
    rlc-RB-BufferPayloadVariance        BOOLEAN
}

TrafficVolumeThreshold ::=          ENUMERATED {
                                        th8, th16, th32, th64, th128,
                                        th256, th512, th1024, th2k, th3k,
                                        th4k, th6k, th8k, th12k, th16k,
                                        th24k, th32k, th48k, th64k, th96k,
                                        th128k, th192k, th256k, th384k,
                                        th512k, th768k }

TransChCriteria ::=                 SEQUENCE {
    ul-transportChannelID               UL-TrCH-Identity                    OPTIONAL,
    eventSpecificParameters             SEQUENCE (SIZE (1..maxMeasParEvent)) OF
                                            TrafficVolumeEventParam         OPTIONAL
}

TransChCriteriaList ::=         SEQUENCE (SIZE (1..maxTrCH)) OF
                                        TransChCriteria

TransferMode ::=                    ENUMERATED {
                                        acknowledgedModeRLC,
                                        unacknowledgedModeRLC }

TransmittedPowerThreshold ::=       INTEGER (-50..33)

TriggeringCondition1 ::=            ENUMERATED {
                                        activeSetCellsOnly,
                                        monitoredSetCellsOnly,
                                        activeSetAndMonitoredSetCells }

TriggeringCondition2 ::=            ENUMERATED {
                                        activeSetCellsOnly,
                                        monitoredSetCellsOnly,
                                        activeSetAndMonitoredSetCells,
```

```
                                    detectedSetCellsOnly,
                                    detectedSetAndMonitoredSetCells }

TX-InterruptionAfterTrigger ::=     ENUMERATED {
                                    txiat0-25, txiat0-5, txiat1,
                                    txiat2, txiat4, txiat8, txiat16 }

UDRE ::=                            ENUMERATED {
                                    lessThan1,
                                    between1-and-4,
                                    between4-and-8,
                                    over8 }

UE-6AB-Event ::=                    SEQUENCE {
    timeToTrigger                       TimeToTrigger,
    transmittedPowerThreshold           TransmittedPowerThreshold
}

UE-6FG-Event ::=                    SEQUENCE {
    timeToTrigger                       TimeToTrigger,
    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
}

UE-InternalReportCriteria ::=       CHOICE {
    ue-InternalReportingCriteria        UE-InternalReportingCriteria,
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    noReporting                         NULL
}

UE-InternalReportingCriteria ::=    SEQUENCE {
    ue-InternalEventParamList           UE-InternalEventParamList           OPTIONAL
}

UE-InternalReportingQuantity ::=    SEQUENCE {
    ue-TransmittedPower                 BOOLEAN,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            ue-RX-TX-TimeDifference             BOOLEAN
        },
        tdd                                 SEQUENCE {
            appliedTA                           BOOLEAN
        }
    }
}

-- TABULAR: UE-MeasurementQuantity, for TDD only the values
-- ue-TransmittedPower and utra-Carrier-RSSI are used.
UE-MeasurementQuantity ::=          ENUMERATED {
                                        ue-TransmittedPower,
                                        utra-Carrier-RSSI,
                                        ue-RX-TX-TimeDifference }

UE-RX-TX-ReportEntry ::=            SEQUENCE {
    primaryCPICH-Info                   PrimaryCPICH-Info,
    ue-RX-TX-TimeDifferenceType1        UE-RX-TX-TimeDifferenceType1
}

UE-RX-TX-ReportEntryList ::=        SEQUENCE (SIZE (1..maxRL)) OF
                                        UE-RX-TX-ReportEntry

-- SPARE: UE-RX-TX-TimeDifferenceType1, Max = 1280
-- Values above Max are spare
UE-RX-TX-TimeDifferenceType1 ::=            INTEGER (768..1791)

-- Actual value UE-RX-TX-TimeDifferenceType2 = IE value * 0.0625 + 768
UE-RX-TX-TimeDifferenceType2 ::=    INTEGER (0..8191)

UE-RX-TX-TimeDifferenceType2Info ::=    SEQUENCE {
    ue-RX-TX-TimeDifferenceType2            UE-RX-TX-TimeDifferenceType2,
    neighbourQuality                        NeighbourQuality
}

UE-RX-TX-TimeDifferenceThreshold ::= INTEGER (768..1280)

UE-TransmittedPower ::=             INTEGER (0..104)

UE-TransmittedPowerTDD-List ::=     SEQUENCE (SIZE (1..maxTS)) OF
                                        UE-TransmittedPower

UL-TrCH-Identity ::=                    CHOICE{
    dch                                 TransportChannelIdentity,
    -- Default transport channel in the UL is either RACH or CPCH, but not both.
    rachorcpch                          NULL,
    usch                                TransportChannelIdentity
}

UE-Positioning-Accuracy ::=                 BIT STRING (SIZE (7))


UE-Positioning-CipherParameters ::=         SEQUENCE {
    cipheringKeyFlag                    BIT STRING (SIZE (1)),
    cipheringSerialNumber               INTEGER (0..65535)
}

UE-Positioning-Error ::=                        SEQUENCE {
    errorReason                         UE-Positioning-ErrorCause,
```

```
    ue-positioning-GPS-additionalAssistanceDataRequest          UE-Positioning-GPS-
AdditionalAssistanceDataRequest OPTIONAL
}

UE-Positioning-ErrorCause ::=                ENUMERATED {
                                        notEnoughOTDOA-Cells,
                                        notEnoughGPS-Satellites,
                                        assistanceDataMissing,
                                        methodNotSupported,
                                        undefinedError,
                                        requestDeniedByUser,
                                        notProcessedAndTimeout,
                                        referenceCellNotServingCell }

UE-Positioning-EventParam ::=                SEQUENCE {
    reportingAmount                     ReportingAmount,
    reportFirstFix                      BOOLEAN,
    measurementInterval                 UE-Positioning-MeasurementInterval,
    eventSpecificInfo                   UE-Positioning-EventSpecificInfo
}

UE-Positioning-EventParamList ::=            SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                        UE-Positioning-EventParam

UE-Positioning-EventSpecificInfo ::=         CHOICE {
    e7a                                 ThresholdPositionChange,
    e7b                                 ThresholdSFN-SFN-Change,
    e7c                                 ThresholdSFN-GPS-TOW
}

UE-Positioning-GPS-AcquisitionAssistance ::=    SEQUENCE {
    gps-ReferenceTime               INTEGER (0..604799999),
    utran-GPSReferenceTime              UTRAN-GPSReferenceTime          OPTIONAL,
    satelliteInformationList            AcquisitionSatInfoList
}

UE-Positioning-GPS-AdditionalAssistanceDataRequest ::=      SEQUENCE {
    almanacRequest                      BOOLEAN,
    utcModelRequest                     BOOLEAN,
    ionosphericModelRequest             BOOLEAN,
    navigationModelRequest              BOOLEAN,
    dgpsCorrectionsRequest              BOOLEAN,
    referenceLocationRequest            BOOLEAN,
    referenceTimeRequest                BOOLEAN,
    aquisitionAssistanceRequest         BOOLEAN,
    realTimeIntegrityRequest            BOOLEAN,
    navModelAddDataRequest              UE-Positioning-GPS-NavModelAddDataReq       OPTIONAL
}

UE-Positioning-GPS-Almanac ::=               SEQUENCE {
    wn-a                                BIT STRING (SIZE (8)),
    almanacSatInfoList                  AlmanacSatInfoList,
    sv-GlobalHealth                     BIT STRING (SIZE (364))             OPTIONAL
}

UE-Positioning-GPS-AssistanceData ::=           SEQUENCE {
    ue-positioning-GPS-ReferenceTime                UE-Positioning-GPS-ReferenceTime
    OPTIONAL,
    ue-positioning-GPS-ReferenceLocation            ReferenceLocation               OPTIONAL,
    ue-positioning-GPS-DGPS-Corrections             UE-Positioning-GPS-DGPS-Corrections
    OPTIONAL,
    ue-positioning-GPS-NavigationModel              UE-Positioning-GPS-NavigationModel
    OPTIONAL,
    ue-positioning-GPS-IonosphericModel             UE-Positioning-GPS-IonosphericModel
    OPTIONAL,
    ue-positioning-GPS-UTC-Model                    UE-Positioning-GPS-UTC-Model
    OPTIONAL,
    ue-positioning-GPS-Almanac                      UE-Positioning-GPS-Almanac
    OPTIONAL,
    ue-positioning-GPS-AcquisitionAssistance        UE-Positioning-GPS-AcquisitionAssistance
    OPTIONAL,
    ue-positioning-GPS-Real-timeIntegrity           BadSatList                          OPTIONAL,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy           UE-Positioning-GPS-ReferenceCellInfo        OPTIONAL
}

UE-Positioning-GPS-DGPS-Corrections ::=     SEQUENCE {
```

```
    gps-TOW                             INTEGER (0..604799),
    statusHealth                        DiffCorrectionStatus,
    dgps-CorrectionSatInfoList          DGPS-CorrectionSatInfoList
}

UE-Positioning-GPS-IonosphericModel ::=     SEQUENCE {
    alfa0                               BIT STRING (SIZE (8)),
    alfa1                               BIT STRING (SIZE (8)),
    alfa2                               BIT STRING (SIZE (8)),
    alfa3                               BIT STRING (SIZE (8)),
    beta0                               BIT STRING (SIZE (8)),
    beta1                               BIT STRING (SIZE (8)),
    beta2                               BIT STRING (SIZE (8)),
    beta3                               BIT STRING (SIZE (8))
}

UE-Positioning-GPS-MeasurementResults ::=               SEQUENCE {
    referenceTime                       CHOICE {
        utran-GPSReferenceTimeResult        UTRAN-GPSReferenceTimeResult,
        gps-ReferenceTimeOnly               INTEGER (0..604799999)
    },
    gps-MeasurementParamList            GPS-MeasurementParamList
}

UE-Positioning-GPS-NavigationModel ::=          SEQUENCE {
    navigationModelSatInfoList          NavigationModelSatInfoList
}

UE-Positioning-GPS-NavModelAddDataReq ::=       SEQUENCE {
    gps-Week                            INTEGER (0..1023),
    -- SPARE: gps-Toe, Max = 167
    -- Values above Max are spare
    gps-Toe                             INTEGER (0..255),
    -- SPARE: tToeLimit, Max = 10
    -- Values above Max are spare
    tToeLimit                           INTEGER (0..15),
    satDataList                         SatDataList
}

UE-Positioning-GPS-ReferenceCellInfo ::=        SEQUENCE{
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            referenceIdentity               PrimaryCPICH-Info
        },
        tdd                             SEQUENCE {
            referenceIdentity               CellParametersID
        }
    }
}

UE-Positioning-GPS-ReferenceTime ::=            SEQUENCE {
    gps-Week                            INTEGER (0..1023),
    gps-tow-1msec                       GPS-TOW-1msec,
    utran-GPSReferenceTime              UTRAN-GPSReferenceTime              OPTIONAL,
    sfn-tow-Uncertainty                 SFN-TOW-Uncertainty                 OPTIONAL,
    utran-GPS-DriftRate                 UTRAN-GPS-DriftRate                 OPTIONAL,
    gps-TOW-AssistList                  GPS-TOW-AssistList                  OPTIONAL
}

UE-Positioning-GPS-UTC-Model ::=                SEQUENCE {
    a1                                  BIT STRING (SIZE (24)),
    a0                                  BIT STRING (SIZE (32)),
    t-ot                                BIT STRING (SIZE (8)),
    wn-t                                BIT STRING (SIZE (8)),
    delta-t-LS                          BIT STRING (SIZE (8)),
    wn-lsf                              BIT STRING (SIZE (8)),
    dn                                  BIT STRING (SIZE (8)),
    delta-t-LSF                         BIT STRING (SIZE (8))
}

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

```
UE-Positioning-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 {
    modeSpecificInfo    CHOICE  {
        fdd                             SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info
        },
        tdd                             SEQUENCE{
            cellAndChannelIdentity              CellAndChannelIdentity
        }
    },
    frequencyInfo                       FrequencyInfo                       OPTIONAL,
    ue-positioning-IPDL-Paremeters                  UE-Positioning-IPDL-Parameters
    OPTIONAL,
    sfn-SFN-RelTimeDifference           SFN-SFN-RelTimeDifference1,
    sfn-SFN-Drift                       SFN-SFN-Drift       OPTIONAL,
    searchWindowSize                    OTDOA-SearchWindowSize,
    positioningMode CHOICE{
        ueBased                             SEQUENCE {},
        ueAssisted                          SEQUENCE {}
    }
}

UE-Positioning-OTDOA-NeighbourCellInfo-UEB  ::= SEQUENCE {
    modeSpecificInfo    CHOICE  {
        fdd                             SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info
        },
        tdd                             SEQUENCE{
            cellAndChannelIdentity              CellAndChannelIdentity
        }
    },
    frequencyInfo                       FrequencyInfo                       OPTIONAL,
    ue-positioning-IPDL-Paremeters      UE-Positioning-IPDL-Parameters      OPTIONAL,
    sfn-SFN-RelTimeDifference           SFN-SFN-RelTimeDifference1,
    sfn-SFN-Drift                       SFN-SFN-Drift                       OPTIONAL,
    searchWindowSize                    OTDOA-SearchWindowSize,
    relativeNorth                       INTEGER (-20000..20000)             OPTIONAL,
    relativeEast                        INTEGER (-20000..20000)             OPTIONAL,
    relativeAltitude                    INTEGER (-4000..4000)               OPTIONAL,
    fineSFN-SFN                         FineSFN-SFN,
    -- Actual value roundTripTime = (IE value * 0.0625) + 876
    roundTripTime                       INTEGER (0.. 32766)                 OPTIONAL
}

UE-Positioning-OTDOA-NeighbourCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        UE-Positioning-OTDOA-NeighbourCellInfo

UE-Positioning-OTDOA-NeighbourCellList-UEB ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        UE-Positioning-OTDOA-NeighbourCellInfo-UEB

UE-Positioning-OTDOA-Quality ::=            SEQUENCE {
    stdResolution                       BIT STRING (SIZE (2)),
    numberOfOTDOA-Measurements          BIT STRING (SIZE (3)),
    stdOfOTDOA-Measurements             BIT STRING (SIZE (5))
}

UE-Positioning-OTDOA-ReferenceCellInfo ::=          SEQUENCE {
    sfn                                 INTEGER (0..4095)
    OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                                 SEQUENCE {
            primaryCPICH-Info               PrimaryCPICH-Info
        },
        tdd                                 SEQUENCE{
            cellAndChannelIdentity          CellAndChannelIdentity
        }
    },
    frequencyInfo                       FrequencyInfo                       OPTIONAL,
    positioningMode CHOICE {
        ueBased                             SEQUENCE {},
        ueAssisted                          SEQUENCE {}
    },
    ue-positioning-IPDL-Paremeters          UE-Positioning-IPDL-Parameters  OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-UEB ::=      SEQUENCE {
```

```
    sfn                                 INTEGER (0..4095)
    OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                                     SEQUENCE {
            primaryCPICH-Info                   PrimaryCPICH-Info
        },
        tdd                                     SEQUENCE{
            cellAndChannelIdentity              CellAndChannelIdentity
        }
    },
    frequencyInfo                       FrequencyInfo                       OPTIONAL,
    cellPosition                        ReferenceCellPosition               OPTIONAL,
    -- Actual value roundTripTime = (IE value * 0.0625) + 876
    roundTripTime                       INTEGER (0..32766)                  OPTIONAL,
    ue-positioning-IPDL-Paremeters      UE-Positioning-IPDL-Parameters      OPTIONAL
}

UE-Positioning-PositionEstimateInfo ::=                 SEQUENCE {
    referenceTime                       CHOICE {
        utran-GPSReferenceTimeResult        UTRAN-GPSReferenceTimeResult,
        gps-ReferenceTimeOnly               INTEGER (0..604799999),
        cell-Timing                         SEQUENCE {
            sfn                                 INTEGER (0..4095),
            modeSpecificInfo CHOICE {
                fdd                                     SEQUENCE {
                    primaryCPICH-Info                   PrimaryCPICH-Info
                },
                tdd                                     SEQUENCE{
                    cellAndChannelIdentity              CellAndChannelIdentity
                }
            }
        }
    },
    positionEstimate                    PositionEstimate
}

UE-Positioning-ReportCriteria ::=               CHOICE {
    ue-positioning-ReportingCriteria                UE-Positioning-EventParamList,
    periodicalReportingCriteria         PeriodicalReportingCriteria,
    noReporting                         NULL
}

UE-Positioning-ReportingQuantity ::=            SEQUENCE {
    methodType                          UE-Positioning-MethodType,
    positioningMethod                   PositioningMethod,
    -- dummy1 is not used in this version of specification and it should
    -- be ignored.
    dummy1                              UE-Positioning-ResponseTime,
    horizontal-Accuracy                 UE-Positioning-Accuracy             OPTIONAL,
    gps-TimingOfCellWanted              BOOLEAN,
    -- dummy2 is not used in this version of specification and it should
    -- be ignored.
    dummy2                              BOOLEAN,
    additionalAssistanceDataRequest     BOOLEAN,
    environmentCharacterisation         EnvironmentCharacterisation         OPTIONAL
}

UE-Positioning-ReportingQuantity-v390ext ::=        SEQUENCE {
    vertical-Accuracy                   UE-Positioning-Accuracy
}

UE-Positioning-ResponseTime ::=             ENUMERATED {
                                            s1, s2, s4, s8, s16,
                                            s32, s64, s128 }

-- SPARE: UTRA-CarrierRSSI, Max = 76
-- Values above Max are spare
UTRA-CarrierRSSI ::=                INTEGER (0..127)

UTRAN-GPS-DriftRate ::=             ENUMERATED {
                                    utran-GPSDrift0, utran-GPSDrift1, utran-GPSDrift2,
                                    utran-GPSDrift5, utran-GPSDrift10, utran-GPSDrift15,
                                    utran-GPSDrift25, utran-GPSDrift50, utran-GPSDrift-1,
                                    utran-GPSDrift-2, utran-GPSDrift-5, utran-GPSDrift-10,
                                    utran-GPSDrift-15, utran-GPSDrift-25, utran-GPSDrift-50}

UTRAN-GPSReferenceTime ::=          SEQUENCE {
    -- For utran-GPSTimingOfCell values above 2322431999999 are not
```

```
    -- used in this version of the specification
    -- Actual value utran-GPSTimingOfCell = (ms-part * 4294967296) + ls-part
    utran-GPSTimingOfCell           SEQUENCE {
        ms-part                         INTEGER (0..1023),
        ls-part                         INTEGER (0..4294967295)
    },
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            referenceIdentity               PrimaryCPICH-Info
        },
        tdd                             SEQUENCE {
            referenceIdentity               CellParametersID
        }
    }           OPTIONAL,
    sfn                                 INTEGER (0..4095)
}

UTRAN-GPSReferenceTimeResult ::=    SEQUENCE {
    -- For ue-GPSTimingOfCell values above 37158911999999 are not
    -- used in this version of the specification
    -- Actual value ue-GPSTimingOfCell = (ms-part * 4294967296) + ls-part
    ue-GPSTimingOfCell          SEQUENCE {
        ms-part                         INTEGER (0..16383),
        ls-part                         INTEGER (0..4294967295)
    },
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            referenceIdentity               PrimaryCPICH-Info
        },
        tdd                             SEQUENCE {
            referenceIdentity               CellParametersID
        }
    },
    sfn                         INTEGER (0..4095)
}

VarianceOfRLC-BufferPayload ::=     ENUMERATED {
                                        plv0, plv4, plv8, plv16, plv32, plv64,
                                        plv128, plv256, plv512, plv1024,
                                        plv2k, plv4k, plv8k, plv16k, spare2, spare1 }

-- Actual value W = IE value * 0.1
W ::=                               INTEGER (0..20)

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

BCC ::=                             INTEGER (0..7)

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

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

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

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

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

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

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

CellValueTag ::=                        INTEGER (1..4)

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

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

FrequencyInfoCDMA2000           ::=     SEQUENCE {
                                            band-Class      BIT STRING (SIZE (5)),
                                            cdma-Freq       BIT STRING (SIZE(11))
}

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

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

GSM-Classmark2::=                   OCTET STRING (SIZE (5))

GSM-Classmark3::=                   OCTET STRING (SIZE (1..32))

GSM-MessageList ::=                 SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                                        BIT STRING (SIZE (1..512))

GsmSecurityCapability ::=           BIT STRING {
                                        a5-7(0),
                                        a5-6(1),
                                        a5-5(2),
                                        a5-4(3),
                                        a5-3(4),
                                        a5-2(5),
                                        a5-1(6)
                                        }   (SIZE (7))

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

InterRAT-ChangeFailureCause ::=     CHOICE {
    configurationUnacceptable           NULL,
    physicalChannelFailure              NULL,
    protocolError                       ProtocolErrorInformation,
    unspecified                         NULL,
    spare4                              NULL,
    spare3                              NULL,
    spare2                              NULL,
    spare1                              NULL
}

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

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

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

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

```
InterRAT-HO-FailureCause ::=        CHOICE {
    configurationUnacceptable           NULL,
    physicalChannelFailure              NULL,
    protocolError                       ProtocolErrorInformation,
    interRAT-ProtocolError              NULL,
    unspecified                         NULL,
    spare11                             NULL,
    spare10                             NULL,
    spare9                              NULL,
    spare8                              NULL,
    spare7                              NULL,
    spare6                              NULL,
    spare5                              NULL,
    spare4                              NULL,
    spare3                              NULL,
    spare2                              NULL,
    spare1                              NULL
}

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

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

NCC ::=                             INTEGER (0..7)

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


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

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

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

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

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

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

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

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

SegCount ::=                        INTEGER (1..16)

SegmentIndex ::=                    INTEGER (1..15)

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


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


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

SIBOccurIdentity ::=            INTEGER (0..15)

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

SIBOccurValueTag ::=            INTEGER (0..15)

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

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

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

SIB-Type ::=                        ENUMERATED {
                                        masterInformationBlock,
```

```
                                        systemInformationBlockType1,
                                        systemInformationBlockType2,
                                        systemInformationBlockType3,
                                        systemInformationBlockType4,
                                        systemInformationBlockType5,
                                        systemInformationBlockType6,
                                        systemInformationBlockType7,
                                        systemInformationBlockType8,
                                        systemInformationBlockType9,
                                        systemInformationBlockType10,
                                        systemInformationBlockType11,
                                        systemInformationBlockType12,
                                        systemInformationBlockType13,
                                        systemInformationBlockType13-1,
                                        systemInformationBlockType13-2,
                                        systemInformationBlockType13-3,
                                        systemInformationBlockType13-4,
                                        systemInformationBlockType14,
                                        systemInformationBlockType15,
                                        systemInformationBlockType15-1,
                                        systemInformationBlockType15-2,
                                        systemInformationBlockType15-3,
                                        systemInformationBlockType16,
                                        systemInformationBlockType17,
                                        systemInformationBlockType15-4,
                                        systemInformationBlockType18,
                                        schedulingBlock1,
                                        schedulingBlock2,
                                        systemInformationBlockType15-5,
                                        spare1, spare2 }

SIB-TypeAndTag ::=                  CHOICE {
    sysInfoType1                        PLMN-ValueTag,
    sysInfoType2                        CellValueTag,
    sysInfoType3                        CellValueTag,
    sysInfoType4                        CellValueTag,
    sysInfoType5                        CellValueTag,
    sysInfoType6                        CellValueTag,
    sysInfoType7                        NULL,
    sysInfoType8                        CellValueTag,
    sysInfoType9                        NULL,
    sysInfoType10                       NULL,
    sysInfoType11                       CellValueTag,
    sysInfoType12                       CellValueTag,
    sysInfoType13                       CellValueTag,
    sysInfoType13-1                     CellValueTag,
    sysInfoType13-2                     CellValueTag,
    sysInfoType13-3                     CellValueTag,
    sysInfoType13-4                     CellValueTag,
    sysInfoType14                       NULL,
    sysInfoType15                       CellValueTag,
    sysInfoType16                       PredefinedConfigIdentityAndValueTag,
    sysInfoType17                       NULL,
    sysInfoType15-1                     CellValueTag,
    sysInfoType15-2                     SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-3                     SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-4                     CellValueTag,
    sysInfoType18                       CellValueTag,
    sysInfoType15-5                     CellValueTag,
    spare5                              NULL,
    spare4                              NULL,
    spare3                              NULL,
    spare2                              NULL,
    spare1                              NULL
}

SIBSb-TypeAndTag ::=                    CHOICE {
    sysInfoType1                        PLMN-ValueTag,
    sysInfoType2                        CellValueTag,
    sysInfoType3                        CellValueTag,
    sysInfoType4                        CellValueTag,
    sysInfoType5                        CellValueTag,
    sysInfoType6                        CellValueTag,
    sysInfoType7                        NULL,
    sysInfoType8                        CellValueTag,
    sysInfoType9                        NULL,
    sysInfoType10                       NULL,
    sysInfoType11                       CellValueTag,
```

```
    sysInfoType12                       CellValueTag,
    sysInfoType13                       CellValueTag,
    sysInfoType13-1                     CellValueTag,
    sysInfoType13-2                     CellValueTag,
    sysInfoType13-3                     CellValueTag,
    sysInfoType13-4                     CellValueTag,
    sysInfoType14                       NULL,
    sysInfoType15                       CellValueTag,
    sysInfoType16                       PredefinedConfigIdentityAndValueTag,
    sysInfoType17                       NULL,
    sysInfoTypeSB1                      CellValueTag,
    sysInfoTypeSB2                      CellValueTag,
    sysInfoType15-1                     CellValueTag,
    sysInfoType15-2                     SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-3                     SIBOccurrenceIdentityAndValueTag,
    sysInfoType15-4                     CellValueTag,
    sysInfoType18                       CellValueTag,
    sysInfoType15-5                     CellValueTag,
    spare3                              NULL,
    spare2                              NULL,
    spare1                              NULL
}

SibOFF ::=                          ENUMERATED {
                                        so2, so4, so6, so8, so10,
                                        so12, so14, so16, so18,
                                        so20, so22, so24, so26,
                                        so28, so30, so32 }

SibOFF-List ::=                     SEQUENCE (SIZE (1..15)) OF
                                        SibOFF

SysInfoType1 ::=                    SEQUENCE {
    -- Core network IEs
        cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP,
        cn-DomainSysInfoList            CN-DomainSysInfoList,
    -- User equipment IEs
        ue-ConnTimersAndConstants       UE-ConnTimersAndConstants           OPTIONAL,
        ue-IdleTimersAndConstants       UE-IdleTimersAndConstants           OPTIONAL,
    -- Extension mechanism for non- release99 information
        v3a0NonCriticalExtensions       SEQUENCE {
            sysInfoType1-v3a0ext            SysInfoType1-v3a0ext-IEs,
            nonCriticalExtensions           SEQUENCE {} OPTIONAL
        }   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
        }   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 ::=                       SEQUENCE {
        idleModePLMNIdentities          PLMNIdentitiesOfNeighbourCells      OPTIONAL,
        connectedModePLMNIdentities PLMNIdentitiesOfNeighbourCells      OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}     OPTIONAL
}

SysInfoTypeSB1 ::=                  SEQUENCE {
    -- Other IEs
        sib-ReferenceList               SIB-ReferenceList,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                         OPTIONAL
}

SysInfoTypeSB2 ::=                  SEQUENCE {
    -- Other IEs
        sib-ReferenceList               SIB-ReferenceList,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}                         OPTIONAL
}
TDD-UMTS-Frequency-List ::=         SEQUENCE (SIZE (1..maxNumTDDFreqs)) OF
                                            FrequencyInfoTDD

-- **************************************************
--
--     ANSI-41 INFORMATION ELEMENTS (10.3.9)
--
-- **************************************************

ANSI-41-GlobalServiceRedirectInfo ::=   ANSI-41-NAS-Parameter
ANSI-41-PrivateNeighbourListInfo ::=    ANSI-41-NAS-Parameter
ANSI-41-RAND-Information ::=            ANSI-41-NAS-Parameter
ANSI-41-UserZoneID-Information ::=      ANSI-41-NAS-Parameter
ANSI-41-NAS-Parameter ::=               BIT STRING (SIZE (1..2048))

Min-P-REV ::=                           BIT STRING (SIZE (8))

NAS-SystemInformationANSI-41 ::=        ANSI-41-NAS-Parameter
NID ::=                                 BIT STRING (SIZE (16))

P-REV ::=                               BIT STRING (SIZE (8))

SID ::=                                 BIT STRING (SIZE (15))

END
```

11.4 Constant definitions

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

BEGIN

hiPDSCHidentities           INTEGER ::= 64
hiPUSCHidentities           INTEGER ::= 64
hiRM                        INTEGER ::= 256
maxAC                       INTEGER ::= 16
maxAdditionalMeas           INTEGER ::= 4
maxASC                      INTEGER ::= 8
maxASCmap                   INTEGER ::= 7
maxASCpersist               INTEGER ::= 6
maxCCTrCH                   INTEGER ::= 8
maxCellMeas             INTEGER ::= 32
maxCellMeas-1               INTEGER ::= 31
maxCNdomains                INTEGER ::= 4
maxCPCHsets                 INTEGER ::= 16
maxDPCH-DLchan              INTEGER ::= 8
```

```
maxDPDCH-UL                 INTEGER ::= 6
maxDRACclasses              INTEGER ::= 8
maxFACHPCH                  INTEGER ::= 8
maxFreq                     INTEGER ::= 8
maxFreqBandsFDD             INTEGER ::= 8
maxFreqBandsTDD             INTEGER ::= 4
maxFreqBandsGSM             INTEGER ::= 16
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                              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,
                                -- Reserved for future non critical extension
                                nonCriticalExtensions           SEQUENCE {} OPTIONAL
                            }       OPTIONAL
                        }       OPTIONAL
                    }       OPTIONAL
                }       OPTIONAL
            }       OPTIONAL
        }       OPTIONAL
    },
    criticalExtensions              SEQUENCE {}
}

SRNC-RelocationInfo-r3-IEs ::=              SEQUENCE {
    -- Non-RRC IEs
        stateOfRRC                      StateOfRRC,
        stateOfRRC-Procedure            StateOfRRC-Procedure,
    -- Ciphering related information IEs
    -- If the extension v380 is included use the extension for the ciphering status per CN domain
        cipheringStatus                 CipheringStatus,
        calculationTimeForCiphering     CalculationTimeForCiphering         OPTIONAL,
        -- 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 ::=                       SEQUENCE {
    cn-DomainIdentity                   CN-DomainIdentity,
    count-C                             BIT STRING (SIZE (32))
}

ImplementationSpecificParams ::=    BIT STRING (SIZE (1..512))


IntegrityProtectionStatus ::=       ENUMERATED {
                                        started, notStarted }

MeasurementCommandWithType ::=      CHOICE {
    setup                               MeasurementType,
    modify                              NULL,
    release                             NULL
}

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
```

3GPP TSG-RAN Meeting #18
New Orleans, USA, 3-6 December 2002

Tdoc RP-020903

CR-Form-v7

CHANGE REQUEST

25.331	CR	1733	rev	3	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 ☐

Title:	Introduction of backwards compatible correction mechanism
Source:	Nokia
Work item code:	TEI
Date:	05/Dec/2002
Category:	**A**
Release:	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	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.
Summary of change:	Extension Containers principle introduced. **Impact Analysis:** 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.
Consequences if not approved:	Once Backwards Compatibility is started for Rel-4 it will be impossible to make certain corrections to ASN.1.
Clauses affected:	9.8, 10.1.1, 11.0, 11.2, 11.5

	Y	N		
Other specs Affected:		X	Other core specifications	
		X	Test specifications	
		X	O&M Specifications	

Other comments:

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

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

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
        }   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
        }   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
}

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

HandoverFromUTRANFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Other IEs
        interRAT-HO-FailureCause        InterRAT-HO-FailureCause            OPTIONAL,
        interRATMessage                 CHOICE {
            gsm                             SEQUENCE {
                gsm-MessageList                     GSM-MessageList
            },
            cdma2000                            SEQUENCE {
                cdma2000-MessageList                CDMA2000-MessageList
            }
        }               OPTIONAL,
        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 HANDOVER INFO
--
-- **************************************************

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

```
    }
}

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
        }                       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,
            laterNonCriticalExtensions      SEQUENCE {
                -- Container for additional R99 extensions
                physicalChannelReconfiguration-r3-add-ext           BIT STRING      OPTIONAL,
                v4xyNonCriticalExtenstions                          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              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
        }   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
        }   OPTIONAL
}

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

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

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

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

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

PUSCHCapacityRequest ::= SEQUENCE {
    -- User equipment IEs
        dsch-RNTI                       DSCH-RNTI                           OPTIONAL,
    -- Measurement IEs
        trafficVolume                   TrafficVolumeMeasuredResultsList,
        timeslotListWithISCP            TimeslotListWithISCP                OPTIONAL,
        primaryCCPCH-RSCP               PrimaryCCPCH-RSCP                   OPTIONAL,
        allocationConfirmation          CHOICE {
            pdschConfirmation               PDSCH-Identity,
            puschConfirmation               PUSCH-Identity
        }                                                                   OPTIONAL,
        protocolErrorIndicator          ProtocolErrorIndicatorWithMoreInfo,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            puschCapacityRequest-r3-add-ext     BIT STRING      OPTIONAL,
        -- 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
        }                                                                   OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo                OPTIONAL,
        dl-DeletedTransChInfoList       DL-DeletedTransChInfoList           OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfo2List        OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                       OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power               OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement               OPTIONAL,
        modeSpecificPhysChInfo          CHOICE {
            fdd                             SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information        OPTIONAL
            },
            tdd                             NULL
        },
        dl-CommonInformation            DL-CommonInformation                OPTIONAL,
        -- NOTE: IE dl-InformationPerRL-List should be optional in later versions
        -- of this message
        dl-InformationPerRL-List        DL-InformationPerRL-List
}

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

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

RadioBearerReconfiguration-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                   OPTIONAL,
        activationTime                  ActivationTime                      OPTIONAL,
        new-U-RNTI                      U-RNTI                              OPTIONAL,
        new-C-RNTI                      C-RNTI                              OPTIONAL,
        new-DSCH-RNTI                   DSCH-RNTI                           OPTIONAL,
        rrc-StateIndicator              RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    -- Core network IEs
        cn-InformationInfo              CN-InformationInfo                  OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Radio bearer IEs
        rab-InformationReconfigList     RAB-InformationReconfigList         OPTIONAL,
        rb-InformationReconfigList      RB-InformationReconfigList-r4       OPTIONAL,
        rb-InformationAffectedList      RB-InformationAffectedList          OPTIONAL,
```

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

-- **************************************************
--
-- 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
        potentiallySuccesfulBearerList  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
    },
    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,
        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
}

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

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

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

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

```
        modeSpecificPhysChInfo          CHOICE {
            fdd                             SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information        OPTIONAL
            },
            tdd                             NULL
        },
        dl-CommonInformation            DL-CommonInformation-r4             OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List-r4         OPTIONAL
}

-- **************************************************
--
-- 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
        }   OPTIONAL
}

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

RadioBearerSetupFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Radio bearer IEs
        potentiallySuccesfulBearerList  RB-IdentityList                     OPTIONAL,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            radioBearerSetupFailure-r3-add-ext      BIT STRING      OPTIONAL,
            -- 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,
        -- protocollErrorIndictator is MD, but for compactness reasons no default value
        -- has been assigned to it.
        protocolErrorIndicator          ProtocolErrorIndicator,
    -- Measurement IEs
        measuredResultsOnRACH           MeasuredResultsOnRACH               OPTIONAL,
        v4xyNonCriticalExtensions           SEQUENCE {
            rrcConnectionRequest-v4xyext        RRCConnectionRequest-v4xyext-IEs,
            -- Reserved for future non critical extension
            nonCriticalExtensions           SEQUENCE {}     OPTIONAL
        }   OPTIONAL
}

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

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

RRCConnectionSetup ::= CHOICE {
    r3                              SEQUENCE {
        rrcConnectionSetup-r3           RRCConnectionSetup-r3-IEs,
        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                   SEQUENCE {
        initialUE-Identity              InitialUE-Identity,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                rrcConnectionSetup-r4           RRCConnectionSetup-r4-IEs,
                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
            },
            criticalExtensions              SEQUENCE {}
        }
    }
}

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

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

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

```
        ul-ChannelRequirement           UL-ChannelRequirement-r4           OPTIONAL,
        dl-CommonInformation            DL-CommonInformation-r4            OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List-r4        OPTIONAL
}

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

RRCConnectionSetupComplete ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        startList                       STARTList,
        ue-RadioAccessCapability        UE-RadioAccessCapability           OPTIONAL,
    --  Other IEs
        ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList   OPTIONAL,
    -- Non critical extensions
        v370NonCriticalExtensions           SEQUENCE {
            rrcConnectionSetupComplete-v370ext  RRCConnectionSetupComplete-v370ext,
            v380NonCriticalExtensions           SEQUENCE {
                rrcConnectionSetupComplete-v380ext  RRCConnectionSetupComplete-v380ext-IEs,
                -- Reserved for future non critical extension
                v3a0NonCriticalExtensions           SEQUENCE {
                    rrcConnectionSetupComplete-v3a0ext  RRCConnectionSetupComplete-v3a0ext,
                    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
            }       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
        }                                                       OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo    OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo           OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power   OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement   OPTIONAL,
        modeSpecificPhysChInfo          CHOICE {
            fdd                             SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information    OPTIONAL
            },
            tdd                         NULL
        },
        dl-CommonInformation            DL-CommonInformation    OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List    OPTIONAL
}

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

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

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

-- **************************************************
--
-- 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,
        activationTimeForTFCSubset          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,
                            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 {
                uplinkPysicalChannelControl-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         CCTrCH-PowerControlInfo             OPTIONAL,
        timingAdvance                   UL-TimingAdvanceControl             OPTIONAL,
        alpha                           Alpha                               OPTIONAL,
        specialBurstScheduling          SpecialBurstScheduling              OPTIONAL,
        prach-ConstantValue             ConstantValueTdd                    OPTIONAL,
        pusch-ConstantValue             ConstantValueTdd                    OPTIONAL
}

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

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

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

URAUpdate ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                          U-RNTI,
        ura-UpdateCause                 URA-UpdateCause,
        protocolErrorIndicator          ProtocolErrorIndicatorWithMoreInfo,
        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
--
-- ********************************************

URAUpdateConfirm ::= CHOICE {
    r3                              SEQUENCE {
```

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

InterRATHandoverInfoWithInterRATCapabilities-r3-IEs::=      SEQUENCE {
        -- The order of the IEs may not reflect the tabular format
        --  but has been chosen to simplify the handling of the information in the BSC
    --  Other IEs
        ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList   OPTIONAL,
        -- interRATHandoverInfo, Octet string is used to obtain 8 bit length field prior to
        -- actual information.  This makes it possible for BSS to transparently handle information
        -- received via GSM air interface even when it includes non critical extensions.
        -- The octet string shall include the InterRATHandoverInfo information
        -- The BSS can re-use the 04.18 length field received from the MS
        interRATHandoverInfo            OCTET STRING (SIZE (0..255))
}

InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs ::= SEQUENCE {
    -- User equipment IEs
        failureCauseWithProtErr             FailureCauseWithProtErr                 OPTIONAL
}

-- ************************************************
--
-- SRNC Relocation information
--
-- ************************************************

SRNC-RelocationInfo-r3 ::= CHOICE {
    r3                                  SEQUENCE {
        sRNC-RelocationInfo-r3          SRNC-RelocationInfo-r3-IEs,
            v380NonCriticalExtensions           SEQUENCE {
                sRNC-RelocationInfo-v380ext SRNC-RelocationInfo-v380ext-IEs,
                -- Reserved for future non critical extension
                v390NonCriticalExtensions           SEQUENCE {
                    sRNC-RelocationInfo-v390ext         SRNC-RelocationInfo-v390ext-IEs,
                    v3a0NonCriticalExtensions           SEQUENCE {
                        sRNC-RelocationInfo-v3a0ext         SRNC-RelocationInfo-v3a0ext-IEs,
                        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
    },
    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
        }                                                                       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
        }                                                                   OPTIONAL,
        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          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
```

3GPP TSG-RAN Meeting #18
New Orleans, USA, 3-6 December 2002

Tdoc RP-020903

CR-Form-v7

CHANGE REQUEST

25.331	CR	1734	rev	3	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 ☐

Title:	Introduction of backwards compatible correction mechanism
Source:	Nokia
Work item code:	TEI
Date:	05/Dec/2002
Category:	**A**
Release:	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	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.
Summary of change:	Extension Containers principle introduced. **Impact Analysis:** 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.
Consequences if not approved:	Once Backwards Compatibility is started for Rel-4 it will be impossible to make certain corrections to ASN.1.
Clauses affected:	9.8, 10.1.1, 11.0, 11.2, 11.5

Other specs Affected:	Y	N	
		X	Other core specifications
		X	Test specifications
		X	O&M Specifications

Other comments:

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

1) Fill out the above form. The symbols above marked contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

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,
    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                          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
        }   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              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            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             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,
        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
}


-- **************************************************
--
-- 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
}

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

HandoverFromUTRANFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
    -- Other IEs
        interRAT-HO-FailureCause        InterRAT-HO-FailureCause            OPTIONAL,
        interRATMessage                 CHOICE {
            gsm                             SEQUENCE {
                gsm-MessageList                     GSM-MessageList
            },
            cdma2000                            SEQUENCE {
                cdma2000-MessageList                CDMA2000-MessageList
            }
        }               OPTIONAL,
        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 HANDOVER INFO
--
-- ************************************************

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

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
        }                           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,
        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,
                v4xyNonCriticalExtenstions          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
        }   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
        }   OPTIONAL
}

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

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

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

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

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

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

PUSCHCapacityRequest ::= SEQUENCE {
    -- User equipment IEs
        dsch-RNTI                       DSCH-RNTI                           OPTIONAL,
    -- Measurement IEs
        trafficVolume                   TrafficVolumeMeasuredResultsList,
        timeslotListWithISCP            TimeslotListWithISCP                OPTIONAL,
        primaryCCPCH-RSCP               PrimaryCCPCH-RSCP                   OPTIONAL,
        allocationConfirmation          CHOICE {
            pdschConfirmation               PDSCH-Identity,
            puschConfirmation               PUSCH-Identity
        }                                                                   OPTIONAL,
        protocolErrorIndicator          ProtocolErrorIndicatorWithMoreInfo,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            puschCapacityRequest-r3-add-ext     BIT STRING      OPTIONAL,
            -- 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
        }                                                                   OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo                OPTIONAL,
        dl-DeletedTransChInfoList       DL-DeletedTransChInfoList           OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfo2List        OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                       OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power               OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement               OPTIONAL,
        modeSpecificPhysChInfo          CHOICE {
            fdd                             SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information        OPTIONAL
            },
```

```
            tdd                             NULL
        },
        dl-CommonInformation            DL-CommonInformation                OPTIONAL,
        -- NOTE: IE dl-InformationPerRL-List should be optional in later versions
        -- of this message
        dl-InformationPerRL-List        DL-InformationPerRL-List
}

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

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

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

RadioBearerReconfiguration-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                   OPTIONAL,
        activationTime                  ActivationTime                      OPTIONAL,
        new-U-RNTI                      U-RNTI                              OPTIONAL,
        new-C-RNTI                      C-RNTI                              OPTIONAL,
        new-DSCH-RNTI                   DSCH-RNTI                           OPTIONAL,
        new-H-RNTI                      H-RNTI                              OPTIONAL,
        rrc-StateIndicator              RRC-StateIndicator,
```

```
        utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    -- Core network IEs
        cn-InformationInfo              CN-InformationInfo                  OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Radio bearer IEs
        rab-InformationReconfigList     RAB-InformationReconfigList         OPTIONAL,
        rb-InformationReconfigList      RB-InformationReconfigList-r5       OPTIONAL,
        rb-InformationAffectedList      RB-InformationAffectedList-r5       OPTIONAL,
        rb-PDCPContextRelocationList    RB-PDCPContextRelocationList        OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo            UL-CommonTransChInfo-r4             OPTIONAL,
        ul-deletedTransChInfoList       UL-DeletedTransChInfoList           OPTIONAL,
        ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList         OPTIONAL,
        modeSpecificTransChInfo         CHOICE {
            fdd                             SEQUENCE {
                cpch-SetID                      CPCH-SetID                  OPTIONAL,
                addReconfTransChDRAC-Info       DRAC-StaticInformationList  OPTIONAL
            },
            tdd                             NULL
        }                                                                   OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo-r4             OPTIONAL,
        dl-DeletedTransChInfoList       DL-DeletedTransChInfoList-r5            OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r5      OPTIONAL,
    -- 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
        potentiallySuccesfulBearerList  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
    },
    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
        }                                                                   OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo-r4             OPTIONAL,
        dl-DeletedTransChInfoList       DL-DeletedTransChInfoList-r5        OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r5      OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                       OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power               OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement-r5            OPTIONAL,
        modeSpecificPhysChInfo          CHOICE {
            fdd                             SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information        OPTIONAL
            },
            tdd                             NULL
        },
        dl-HSPDSCH-Information          DL-HSPDSCH-Information              OPTIONAL,
        dl-CommonInformation            DL-CommonInformation-r4             OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List-r5         OPTIONAL
}


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

RadioBearerReleaseComplete ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfo         OPTIONAL,
        -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
        ul-TimingAdvance                UL-TimingAdvance                    OPTIONAL,
    -- Radio bearer IEs
        count-C-ActivationTime          ActivationTime                      OPTIONAL,
        rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList           OPTIONAL,
        ul-CounterSynchronisationInfo   UL-CounterSynchronisationInfo       OPTIONAL,
        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
        potentiallySuccesfulBearerList  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
        }   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              CHOICE {
                r5                              SEQUENCE {
                    radioBearerSetup-r5             RadioBearerSetup-r5-IEs,
                    nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                },
                criticalExtensions              SEQUENCE {}
            }
        }
    }
}

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

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

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

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

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

```
            tdd                             NULL
        },
        dl-CommonInformation            DL-CommonInformation-r4             OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List-r4         OPTIONAL
}

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

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

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

```
}

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

RadioBearerSetupFailure ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        failureCause                    FailureCauseWithProtErr,
    -- Radio bearer IEs
        potentiallySuccesfulBearerList  RB-IdentityList                     OPTIONAL,
        laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            radioBearerSetupFailure-r3-add-ext      BIT STRING      OPTIONAL,
        -- 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,
        -- protocolErrorIndictator 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                   SEQUENCE {
        initialUE-Identity              InitialUE-Identity,
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                rrcConnectionSetup-r4           RRCConnectionSetup-r4-IEs,
                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
            },
            criticalExtensions              SEQUENCE {}
        }
    }
}

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

```
        -- this message
        ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList,
        dl-CommonTransChInfo            DL-CommonTransChInfo                OPTIONAL,
        -- NOTE: dl-AddReconfTransChInfoList should be optional in later versions
        -- of this message
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                       OPTIONAL,
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power               OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement               OPTIONAL,
        dl-CommonInformation            DL-CommonInformation                OPTIONAL,
        dl-InformationPerRL-List        DL-InformationPerRL-List            OPTIONAL
}

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

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

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

RRCConnectionSetupComplete ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        startList                       STARTList,
        ue-RadioAccessCapability        UE-RadioAccessCapability            OPTIONAL,
    --  Other IEs
        ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList   OPTIONAL,
    -- Non critical extensions
        v370NonCriticalExtensions           SEQUENCE {
            rrcConnectionSetupComplete-v370ext  RRCConnectionSetupComplete-v370ext,
            v380NonCriticalExtensions           SEQUENCE {
                rrcConnectionSetupComplete-v380ext  RRCConnectionSetupComplete-v380ext-IEs,
                -- Reserved for future non critical extension
                v3a0NonCriticalExtensions           SEQUENCE {
                    rrcConnectionSetupComplete-v3a0ext  RRCConnectionSetupComplete-v3a0ext,
                    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
            }       OPTIONAL
        }       OPTIONAL
    },
    later-than-r3                   SEQUENCE {
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                              SEQUENCE {
                transportChannelReconfiguration-r4
                                                TransportChannelReconfiguration-r4-IEs,
                nonCriticalExtensions           SEQUENCE {}     OPTIONAL
            },
            criticalExtensions              CHOICE {
                r5                              SEQUENCE {
                    transportChannelReconfiguration-r5
                                                TransportChannelReconfiguration-r5-IEs,
                    nonCriticalExtensions           SEQUENCE {}     OPTIONAL
                },
                criticalExtensions              SEQUENCE {}
            }
        }
    }
}

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

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

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

```
        -- The order of the RLs in IE cell-id-PerRL-List is the same as
        -- in IE DL-InformationPerRL-List included in this message
        cell-id-PerRL-List                  CellIdentity-PerRL-List             OPTIONAL
}

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

TransportChannelReconfiguration-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                   OPTIONAL,
        activationTime                  ActivationTime                      OPTIONAL,
        new-U-RNTI                      U-RNTI                              OPTIONAL,
        new-C-RNTI                      C-RNTI                              OPTIONAL,
        new-DSCH-RNTI                   DSCH-RNTI                           OPTIONAL,
        new-H-RNTI                      H-RNTI                              OPTIONAL,
        rrc-StateIndicator              RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    -- Core network IEs
        cn-InformationInfo              CN-InformationInfo                  OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo-r5    OPTIONAL,
    -- Transport channel IEs
        ul-CommonTransChInfo            UL-CommonTransChInfo-r4             OPTIONAL,
        ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList         OPTIONAL,
        modeSpecificTransChInfo         CHOICE {
            fdd                             SEQUENCE {
                cpch-SetID                      CPCH-SetID                  OPTIONAL,
                addReconfTransChDRAC-Info       DRAC-StaticInformationList  OPTIONAL
            },
            tdd                             NULL
        }                                                                   OPTIONAL,
        dl-CommonTransChInfo            DL-CommonTransChInfo-r4             OPTIONAL,
        dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r5      OPTIONAL,
    -- Physical channel IEs
        frequencyInfo                   FrequencyInfo                       OPTIONAL,
```

```
        maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power               OPTIONAL,
        ul-ChannelRequirement           UL-ChannelRequirement-r5            OPTIONAL,
        modeSpecificPhysChInfo          CHOICE {
            fdd                             SEQUENCE {
                dl-PDSCH-Information            DL-PDSCH-Information        OPTIONAL
            },
            tdd                             NULL
        },
        dl-HSPDSCH-Information          DL-HSPDSCH-Information              OPTIONAL,
        dl-CommonInformation            DL-CommonInformation-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,
        activationTimeForTFCSubset          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
            }       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
        }   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 {
                uplinkPysicalChannelControl-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         CCTrCH-PowerControlInfo             OPTIONAL,
        timingAdvance                   UL-TimingAdvanceControl             OPTIONAL,
        alpha                           Alpha                               OPTIONAL,
        specialBurstScheduling          SpecialBurstScheduling              OPTIONAL,
        prach-ConstantValue             ConstantValueTdd                    OPTIONAL,
        pusch-ConstantValue             ConstantValueTdd                    OPTIONAL
}

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

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

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

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

URAUpdate ::= SEQUENCE {
    -- User equipment IEs
        u-RNTI                          U-RNTI,
        ura-UpdateCause                 URA-UpdateCause,
        protocolErrorIndicator          ProtocolErrorIndicatorWithMoreInfo,
        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
--
-- **************************************************

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

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

URAUpdateConfirm-r5-IEs ::= SEQUENCE {
    -- User equipment IEs
        rrc-TransactionIdentifier       RRC-TransactionIdentifier,
        integrityProtectionModeInfo     IntegrityProtectionModeInfo         OPTIONAL,
        cipheringModeInfo               CipheringModeInfo                   OPTIONAL,
        new-U-RNTI                      U-RNTI                              OPTIONAL,
        new-C-RNTI                      C-RNTI                              OPTIONAL,
        rrc-StateIndicator              RRC-StateIndicator,
        utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    -- CN information elements
        cn-InformationInfo              CN-InformationInfo                  OPTIONAL,
    -- UTRAN mobility IEs
        ura-Identity                    URA-Identity                        OPTIONAL,
    -- Radio bearer IEs
        dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo-r5    OPTIONAL
}
```

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

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

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

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

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

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

UTRANMobilityInformation-v3a0ext-IEs ::= SEQUENCE {
```

```
    ue-ConnTimersAndConstants-v3a0ext       UE-ConnTimersAndConstants-v3a0ext
}

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

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

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

-- 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          MeasurementCommandWithType-r4,
    measurementReportingMode            MeasurementReportingMode            OPTIONAL,
    additionalMeasurementID-List        AdditionalMeasurementID-List        OPTIONAL
}

OngoingMeasRepList ::=              SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                        OngoingMeasRep

OngoingMeasRepList-r4 ::=           SEQUENCE (SIZE (1..maxNoOfMeas)) OF
                                        OngoingMeasRep-r4

PDCP-Capability-r4 ::=              SEQUENCE {
    losslessSRNS-RelocationSupport      BOOLEAN,
    supportForRfc2507                   CHOICE {
        notSupported                        NULL,
```

```
        supported                           MaxHcContextSpace
    },
    supportForRfc3095                   CHOICE {
        notSupported                        NULL,
        supported                           SEQUENCE {
            maxROHC-ContextSessions             MaxROHC-ContextSessions-r4  DEFAULT s16,
            reverseCompressionDepth             INTEGER (0..65535)          DEFAULT 0
        }
    }
}

PhysicalChannelCapability-r4 ::=        SEQUENCE {
        fddPhysChCapability                 SEQUENCE {
            downlinkPhysChCapability            DL-PhysChCapabilityFDD-r4,
            uplinkPhysChCapability              UL-PhysChCapabilityFDD
        }                                           OPTIONAL,
        tdd384-PhysChCapability             SEQUENCE {
            downlinkPhysChCapability            DL-PhysChCapabilityTDD,
            uplinkPhysChCapability              UL-PhysChCapabilityTDD
        }                                           OPTIONAL,
        tdd128-PhysChCapability             SEQUENCE {
            downlinkPhysChCapability            DL-PhysChCapabilityTDD-LCR-r4,
            uplinkPhysChCapability              UL-PhysChCapabilityTDD-LCR-r4
        }                                           OPTIONAL
}

RF-Capability-r4 ::=                SEQUENCE {
        fddRF-Capability                    SEQUENCE {
            ue-PowerClass                       UE-PowerClass-v370,
            txRxFrequencySeparation             TxRxFrequencySeparation
        }                                                               OPTIONAL,
        tdd384-RF-Capability                SEQUENCE {
            ue-PowerClass                       UE-PowerClass-v370,
            radioFrequencyBandTDDList           RadioFrequencyBandTDDList,
            chipRateCapability                  ChipRateCapability
        }                                                               OPTIONAL,
        tdd128-RF-Capability                SEQUENCE {
            ue-PowerClass                       UE-PowerClass-v370,
            radioFrequencyBandTDDList           RadioFrequencyBandTDDList,
            chipRateCapability                  ChipRateCapability
        }                                                               OPTIONAL
}

RFC3095-ContextInfo ::=             SEQUENCE {
    rb-Identity                         RB-Identity,
    rfc3095-Context-List                RFC3095-Context-List
}

RFC3095-Context-List ::=            SEQUENCE (SIZE (1..maxRFC3095-CID)) OF SEQUENCE {
    dl-RFC3095-Context                  DL-RFC3095-Context      OPTIONAL,
    ul-RFC3095-Context                  UL-RFC3095-Context      OPTIONAL
 }

SRB-SpecificIntegrityProtInfo ::=   SEQUENCE {
    ul-RRC-HFN                          BIT STRING (SIZE (28)),
    dl-RRC-HFN                          BIT STRING (SIZE (28)),
    ul-RRC-SequenceNumber               RRC-MessageSequenceNumber,
    dl-RRC-SequenceNumber               RRC-MessageSequenceNumber
}

SRB-SpecificIntegrityProtInfoList ::= SEQUENCE (SIZE (4..maxSRBsetup)) OF
                                        SRB-SpecificIntegrityProtInfo

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

StateOfRRC-Procedure ::=            ENUMERATED {
                                        awaitNoRRC-Message,
                                        awaitRB-ReleaseComplete,
                                        awaitRB-SetupComplete,
                                        awaitRB-ReconfigurationComplete,
                                        awaitTransportCH-ReconfigurationComplete,
                                        awaitPhysicalCH-ReconfigurationComplete,
                                        awaitActiveSetUpdateComplete,
                                        awaitHandoverComplete,
                                        sendCellUpdateConfirm,
                                        sendUraUpdateConfirm,
```

```
                                        -- dummy is not used in this version of specification
                                        -- It should not be sent
                                        dummy,
                                        otherStates
}

UE-Positioning-Capability-r4 ::=    SEQUENCE {
    standaloneLocMethodsSupported           BOOLEAN,
    ue-BasedOTDOA-Supported                 BOOLEAN,
    networkAssistedGPS-Supported            NetworkAssistedGPS-Supported,
    supportForUE-GPS-TimingOfCellFrames     BOOLEAN,
    supportForIPDL                          BOOLEAN,
    rx-tx-TimeDifferenceType2Capable        BOOLEAN,
    validity-CellPCH-UraPCH                 ENUMERATED { true (0 ) }    OPTIONAL
}

UE-Positioning-LastKnownPos ::=     SEQUENCE {
        sfn                             INTEGER (0..4095),
        cell-id                         CellIdentity,
        positionEstimate                PositionEstimate
}

UE-RadioAccessCapability-r4 ::=     SEQUENCE {
    accessStratumReleaseIndicator       AccessStratumReleaseIndicator,
    pdcp-Capability                     PDCP-Capability-r4,
    rlc-Capability                      RLC-Capability,
    transportChannelCapability          TransportChannelCapability,
    rf-Capability                       RF-Capability-r4,
    physicalChannelCapability           PhysicalChannelCapability-r4,
    ue-MultiModeRAT-Capability          UE-MultiModeRAT-Capability,
    securityCapability                  SecurityCapability,
    ue-positioning-Capability           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
```