

TSG-RAN Meeting #24
Seoul, Korea, 02-04 June 2004

RP-040210

Title: CRs to 25.331 (1) (Rel-5 and associated Rel-6)

Source: TSG-RAN WG2

Agenda item: 7.3.5

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Workitem	Doc-2nd-Level
25.331	2317	-	Rel-5	Unnecessary MAC-d flow identity in the IE "DL-TrCH-Type-r5"	F	5.8.0	5.9.0	HSDPA-L23	R2-041137
25.331	2318	-	Rel-6	Unnecessary MAC-d flow identity in the IE "DL-TrCH-Type-r5"	A	6.1.0	6.2.0	HSDPA-L23	R2-041138
25.331	2341	-	Rel-5	Naming correction in the HS-DSCH IE Measurement Feedback Information	F	5.8.0	5.9.0	HSDPA-L23	R2-041176
25.331	2342	-	Rel-6	Naming correction in the HS-DSCH IE Measurement Feedback Information	A	6.1.0	6.2.0	HSDPA-L23	R2-041177
25.331	2312	-	Rel-5	Closing the REL-5 extensions in the ASN.1	F	5.8.0	5.9.0	TEI5	R2-041132
25.331	2313	-	Rel-6	Closing the REL-5 extensions in the ASN.1	A	6.1.0	6.2.0	TEI5	R2-041133
25.331	2324	-	Rel-5	Tabular correction for RADIO BEARER RELEASE message	F	5.8.0	5.9.0	TEI5	R2-041144
25.331	2325	-	Rel-6	Tabular correction for RADIO BEARER RELEASE message	F	6.1.0	6.2.0	TEI5	R2-041145
25.331	2326	-	Rel-5	Misalignments between R'99 and Rel-5 procedures	F	5.8.0	5.9.0	TEI5	R2-041157
25.331	2327	-	Rel-6	Misalignments between R'99 and Rel-5 procedures	A	6.1.0	6.2.0	TEI5	R2-041158
25.331	2328	-	Rel-5	Erroneous setting of Re-establish Indicator in case of SRNS relocation	F	5.8.0	5.9.0	TEI5	R2-041159
25.331	2329	-	Rel-6	Erroneous setting of Re-establish Indicator in case of SRNS relocation	A	6.1.0	6.2.0	TEI5	R2-041160
25.331	2333	-	Rel-5	Correction Concerning UE Positioning Measurement	F	5.8.0	5.9.0	TEI5	R2-041164
25.331	2334	-	Rel-6	Correction Concerning UE Positioning Measurement	A	6.1.0	6.2.0	TEI5	R2-041165
25.331	2335	-	Rel-5	Pending compressed mode reconfigurations	F	5.8.0	5.9.0	TEI5	R2-041166
25.331	2338	-	Rel-6	Active compressed mode patterns with same measurement purpose	A	6.1.0	6.2.0	TEI5	R2-041169

CHANGE REQUEST

⌘ **25.331 CR 2312** ⌘ rev **-** ⌘ Current version: **5.8.0** ⌘

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

Title:	⌘ Closing the REL-5 extensions in the ASN.1		
Source:	⌘ RAN WG2		
Work item code:	⌘ TEI5	Date:	⌘ 12/05/2004
Category:	⌘ F	Release:	⌘ REL-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	⌘ As long as a certain release of the protocol is kept open, new information may be added to the REL-5 non-critical extensions of the RRC messages. During this process, the "v5xy" prefix/suffix is usually used in many of the various ASN.1 entities that are not yet closed for modifications. When the protocol stabilises, those ASN.1 entities should be renamed such that the "v5xy" is replaced by an explicit reference to the version number of the specification where it is supposed to be closed for further non-backward compatible extension, e.g., "v590".
Summary of change:	⌘ The "v5xy" prefixes/suffixes are replaced by "v590", which is the next version of the REL-5 RRC specification. -- In one case (IE "CellSelectReselectInfo-v5xyExt"), the entire suffix "v5xyExt" is replaced by "v590ext", in order to harmonise the use of this suffix throughout the specification.
Consequences if not approved:	⌘ There is no visible indication of the fact that the REL-5 version of the protocol is supposed to be closed for non-backward compatible extensions. Isolated impact analysis There is no impact on the transport syntax. The correction may be implemented independently by the UE and the UTRAN.

Clauses affected:	⌘ 11.2, 11.3, 11.5								
Other specs affected:	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table>	Y	N		X		X	Other core specifications	⌘
Y	N								
	X								
	X								
		Test specifications	⌘						

O&M Specifications

Other comments: ⌘

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

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

11.0 General

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

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

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

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

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

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

11.1 General message structure

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

```
BEGIN
```

```
IMPORTS
```

```

ActiveSetUpdate,
ActiveSetUpdateComplete,
ActiveSetUpdateFailure,
AssistanceDataDelivery,
CellChangeOrderFromUTRAN,
CellChangeOrderFromUTRANFailure,
CellUpdate,
CellUpdateConfirm-CCCH,
CellUpdateConfirm,
CounterCheck,
CounterCheckResponse,
DownlinkDirectTransfer,
HandoverToUTRANComplete,
InitialDirectTransfer,
HandoverFromUTRANCommand-GERANIu,
HandoverFromUTRANCommand-GSM,
HandoverFromUTRANCommand-CDMA2000,
HandoverFromUTRANFailure,
MeasurementControl,
MeasurementControlFailure,
MeasurementReport,
PagingType1,
PagingType2,
PhysicalChannelReconfiguration,
PhysicalChannelReconfigurationComplete,
```

```

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

-- User Equipment IEs :
    IntegrityCheckInfo
FROM InformationElements;

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

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

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

```

```

securityModeCommand          SecurityModeCommand,
signallingConnectionRelease  SignallingConnectionRelease,
transportChannelReconfiguration TransportChannelReconfiguration,
transportFormatCombinationControl TransportFormatCombinationControl,
ueCapabilityEnquiry          UECapabilityEnquiry,
ueCapabilityInformationConfirm UECapabilityInformationConfirm,
uplinkPhysicalChannelControl UplinkPhysicalChannelControl,
uraUpdateConfirm             URAUpdateConfirm,
utranMobilityInformation      UTRANMobilityInformation,
handoverFromUTRANCommand-GERANIu HandoverFromUTRANCommand-GERANIu,
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 :
    CellIdentity,
    CellIdentity-PerRL-List,
    URA-Identity,
-- User Equipment IEs :
    AccessStratumReleaseIndicator,
    ActivationTime,
    C-RNTI,
    CapabilityUpdateRequirement,
    CapabilityUpdateRequirement-r4,
    CapabilityUpdateRequirement-r4-ext,
    CellUpdateCause,
    CipheringAlgorithm,
    CipheringModeInfo,
    DSCH-RNTI,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    GroupReleaseInformation,

```



```

H-RNTI,
UESpecificBehaviourInformationIdle,
UESpecificBehaviourInformationInterRAT,
InitialUE-Identity,
IntegrityProtActivationInfo,
IntegrityProtectionModeInfo,
N-308,
PagingCause,
PagingRecordList,
PagingRecord2List-r5,
ProtocolErrorIndicator,
ProtocolErrorIndicatorWithMoreInfo,
RadioFrequencyBandTDDList,
Rb-timer-indicator,
RedirectionInfo,
RejectionCause,
ReleaseCause,
RF-CapabilityComp,
RRC-StateIndicator,
RRC-TransactionIdentifier,
SecurityCapability,
START-Value,
STARTList,
U-RNTI,
U-RNTI-Short,
UE-RadioAccessCapability,
UE-RadioAccessCapability-v370ext,
UE-RadioAccessCapability-v380ext,
UE-RadioAccessCapability-v3a0ext,
UE-RadioAccessCapability-v3g0ext,
UE-RadioAccessCapability-v4b0ext,
UE-RadioAccessCapability-v5xyv590ext,
UE-RadioAccessCapabilityComp,
DL-PhysChCapabilityFDD-v380ext,
UE-ConnTimersAndConstants,
UE-ConnTimersAndConstants-v3a0ext,
UE-ConnTimersAndConstants-r5,
UE-SecurityInformation,
URA-UpdateCause,
UTRAN-DRX-CycleLengthCoefficient,
WaitTime,
-- Radio Bearer IEs :
DefaultConfigIdentity,
DefaultConfigIdentity-r4,
DefaultConfigIdentity-r5,
DefaultConfigMode,
DL-CounterSynchronisationInfo,
DL-CounterSynchronisationInfo-r5,
PredefinedConfigIdentity,
PredefinedConfigStatusList,
PredefinedConfigStatusListComp,
PredefinedConfigSetWithDifferentValueTag,
RAB-Info,
RAB-Info-Post,
RAB-InformationList,
RAB-InformationReconfigList,
RAB-InformationSetupList,
RAB-InformationSetupList-r4,
RAB-InformationSetupList-r5,
RB-ActivationTimeInfoList,
RB-COUNT-C-InformationList,
RB-COUNT-C-MSB-InformationList,
RB-IdentityList,
RB-InformationAffectedList,
RB-InformationAffectedList-r5,
RB-InformationReconfigList,
RB-InformationReconfigList-r4,
RB-InformationReconfigList-r5,
RB-InformationReleaseList,
RB-PDCPContextRelocationList,
SRB-InformationSetupList,
SRB-InformationSetupList-r5,
SRB-InformationSetupList2,
UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
CPCH-SetID,
DL-AddReconfTransChInfo2List,
DL-AddReconfTransChInfoList,

```

```

DL-AddReconfTransChInfoList-r4,
DL-AddReconfTransChInfoList-r5,
DL-CommonTransChInfo,
DL-CommonTransChInfo-r4,
DL-DeletedTransChInfoList,
DL-DeletedTransChInfoList-r5,
DRAC-StaticInformationList,
TFC-Subset,
TFCS-Identity,
UL-AddReconfTransChInfoList,
UL-CommonTransChInfo,
UL-CommonTransChInfo-r4,
UL-DeletedTransChInfoList,
-- Physical Channel IEs :
Alpha,
CCTrCH-PowerControlInfo,
CCTrCH-PowerControlInfo-r4,
CCTrCH-PowerControlInfo-r5,
ConstantValue,
ConstantValueTdd,
CPCH-SetInfo,
DL-CommonInformation,
DL-CommonInformation-r4,
DL-CommonInformation-r5,
DL-CommonInformationPost,
DL-HSPDSCH-Information,
DL-InformationPerRL-List,
DL-InformationPerRL-List-r4,
DL-InformationPerRL-List-r5,
DL-InformationPerRL-List-r5bis,
DL-InformationPerRL-ListPostFDD,
DL-InformationPerRL-ListPostTDD,
DL-InformationPerRL-ListPostTDD-LCR-r4,
DL-PDSCH-Information,
DL-TPC-PowerOffsetPerRL-List,
DPC-Mode,
DPCH-CompressedModeStatusInfo,
FrequencyInfo,
FrequencyInfoFDD,
FrequencyInfoTDD,
HS-SICH-Power-Control-Info-TDD384,
MaxAllowedUL-TX-Power,
OpenLoopPowerControl-IPDL-TDD-r4,
PDSCH-CapacityAllocationInfo,
PDSCH-CapacityAllocationInfo-r4,
PDSCH-Identity,
PrimaryCPICH-Info,
PrimaryCCPCH-TX-Power,
PUSCH-CapacityAllocationInfo,
PUSCH-CapacityAllocationInfo-r4,
PUSCH-Identity,
PUSCH-SysInfoList-HCR-r5,
PDSCH-SysInfoList-HCR-r5,
RL-AdditionInformationList,
RL-RemovalInformationList,
SpecialBurstScheduling,
SSDT-Information,
TFC-ControlDuration,
SSDT-UL,
TimeslotList,
TimeslotList-r4,
TX-DiversityMode,
UL-ChannelRequirement,
UL-ChannelRequirement-r4,
UL-ChannelRequirement-r5,
UL-ChannelRequirementWithCPCH-SetID,
UL-ChannelRequirementWithCPCH-SetID-r4,
UL-ChannelRequirementWithCPCH-SetID-r5,
UL-DPCH-Info,
UL-DPCH-Info-r4,
UL-DPCH-Info-r5,
UL-DPCH-InfoPostFDD,
UL-DPCH-InfoPostTDD,
UL-DPCH-InfoPostTDD-LCR-r4,
UL-SynchronisationParameters-r4,
UL-TimingAdvance,
UL-TimingAdvanceControl,
UL-TimingAdvanceControl-r4,

```

```

-- Measurement IEs :
  AdditionalMeasurementID-List,
  DeltaRSCP,
  Frequency-Band,
  EventResults,
  Inter-FreqEventCriteriaList-v5xyv590ext,
  Intra-FreqEventCriteriaList-v5xyv590ext,
  IntraFreqReportingCriteria-lb-r5,
  IntraFreqEvent-lb-r5,
  InterFreqEventResults-LCR-r4-ext,
  InterRAT-TargetCellDescription,
  MeasuredResults,
  MeasuredResults-v390ext,
  MeasuredResults-v5xyv590ext,
  MeasuredResultsList,
  MeasuredResultsList-LCR-r4-ext,
  MeasuredResultsOnRACH,
  MeasurementCommand,
  MeasurementCommand-r4,
  MeasurementIdentity,
  MeasurementReportingMode,
  PrimaryCCPCH-RSCP,
  SFN-Offset-Validity,
  TimeslotListWithISCP,
  TrafficVolumeMeasuredResultsList,
  UE-Positioning-GPS-AssistanceData,
  UE-Positioning-Measurement-v390ext,
  UE-Positioning-OTDOA-AssistanceData,
  UE-Positioning-OTDOA-AssistanceData-r4ext,
  UE-Positioning-OTDOA-AssistanceData-UEB,
-- Other IEs :
  BCCH-ModificationInfo,
  CDMA2000-MessageList,
  GERANIu-MessageList,
  GERAN-SystemInformation,
  GSM-MessageList,
  InterRAT-ChangeFailureCause,
  InterRAT-HO-FailureCause,
  InterRAT-UE-RadioAccessCapabilityList,
  InterRAT-UE-RadioAccessCapability-v5xyv590ext,
  InterRAT-UE-SecurityCapList,
  IntraDomainNasNodeSelector,
  ProtocolErrorMoreInformation,
  Rplmn-Information,
  Rplmn-Information-r4,
  SegCount,
  SegmentIndex,
  SFN-Prime,
  SIB-Data-fixed,
  SIB-Data-variable,
  SIB-Type
FROM InformationElements

  maxSIBperMsg,
  maxURNTI-Group
FROM Constant-definitions;

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

ActiveSetUpdate ::= CHOICE {
  r3
    SEQUENCE {
      activeSetUpdate-r3
      laterNonCriticalExtensions
      -- Container for additional R99 extensions
      activeSetUpdate-r3-add-ext BIT STRING OPTIONAL,
      v4b0NonCriticalExtensions SEQUENCE {
        activeSetUpdate-v4b0ext ActiveSetUpdate-v4b0ext-IEs,
        v5xyv590NonCriticalExtensions SEQUENCE {
          activeSetUpdate-v5xyv590ext ActiveSetUpdate-v5xyv590ext-IEs,
          nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  later-than-r3 SEQUENCE {

```

```

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

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

ActiveSetUpdate-v4b0ext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- ssdt-UL extends SSDT-Information. FDD only.
ssdt-UL-r4                     SSDT-UL                  OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE RL-AdditionInformationList included in this message
cell-id-PerRL-List             CellIdentity-PerRL-List  OPTIONAL
}

ActiveSetUpdate-v5xyv590ext-IEs ::= SEQUENCE {
-- Physical channel IEs
dpc-Mode                       DPC-Mode,
dl-TPC-PowerOffsetPerRL-List   DL-TPC-PowerOffsetPerRL-List  OPTIONAL
}

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

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

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

ActiveSetUpdateFailure ::= SEQUENCE {
-- User equipment IEs
rrc-TransactionIdentifier      RRC-TransactionIdentifier,
failureCause                   FailureCauseWithProtErr,
laterNonCriticalExtensions     SEQUENCE {

```

```

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

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

AssistanceDataDelivery ::= CHOICE {
  r3                                     SEQUENCE {
    assistanceDataDelivery-r3           AssistanceDataDelivery-r3-IEs,
    v3a0NonCriticalExtensions           SEQUENCE {
      assistanceDataDelivery-v3a0ext    AssistanceDataDelivery-v3a0ext,
      laterNonCriticalExtensions        SEQUENCE {
        -- Container for additional R99 extensions
        assistanceDataDelivery-r3-add-ext BIT STRING      OPTIONAL,
        v4b0NonCriticalExtensions       SEQUENCE {
          assistanceDataDelivery-v4b0ext
            AssistanceDataDelivery-v4b0ext-IEs,
            SEQUENCE {} OPTIONAL
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  later-than-r3                         SEQUENCE {
    rrc-TransactionIdentifier           RRC-TransactionIdentifier,
    criticalExtensions                  SEQUENCE {}
  }
}

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

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

AssistanceDataDelivery-v4b0ext-IEs ::= SEQUENCE {
  ue-Positioning-OTDOA-AssistanceData-r4ext UE-Positioning-OTDOA-AssistanceData-r4ext  OPTIONAL
}

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

CellChangeOrderFromUTRAN ::= CHOICE {
  r3                                     SEQUENCE {
    cellChangeOrderFromUTRAN-IEs       CellChangeOrderFromUTRAN-r3-IEs,
    laterNonCriticalExtensions          SEQUENCE {
      -- Container for additional R99 extensions
      cellChangeOrderFromUTRAN-r3-add-ext BIT STRING      OPTIONAL,
      v5xyv590NonCriticalExtensions      SEQUENCE {
        cellChangeOrderFromUTRAN-v5xyv590ext CellChangeOrderFromUTRAN-v5xyv590ext-IEs,
        nonCriticalExtensions            SEQUENCE {} OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  later-than-r3                         SEQUENCE {
    rrc-TransactionIdentifier           RRC-TransactionIdentifier,
    criticalExtensions                  SEQUENCE {}
  }
}

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

```

```

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

CellChangeOrderFromUTRAN-v5xyv590ext-IEs ::= SEQUENCE {
    geran-SystemInfoType        CHOICE {
        sI                      GERAN-SystemInformation,
        pSI                     GERAN-SystemInformation
    } OPTIONAL
}

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

CellChangeOrderFromUTRANFailure ::= CHOICE {
    r3                          SEQUENCE {
        cellChangeOrderFromUTRANFailure-r3
                                CellChangeOrderFromUTRANFailure-r3-IEs,
        laterNonCriticalExtensions SEQUENCE {
            -- Container for additional R99 extensions
            cellChangeOrderFromUTRANFailure-r3-add-ext BIT STRING OPTIONAL,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    -- dummy is not used in this version of the specification and it
    -- should be ignored.
    dummy                        SEQUENCE {
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
        criticalExtensions        SEQUENCE {}
    }
}

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

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

CellUpdate ::= SEQUENCE {
    -- User equipment IES
    u-RNTI                      U-RNTI,
    startList                    STARTList,
    am-RLC-ErrorIndicationRb2-3or4 BOOLEAN,
    am-RLC-ErrorIndicationRb5orAbove BOOLEAN,
    cellUpdateCause              CellUpdateCause,
    -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
    failureCause                 FailureCauseWithProtErrTrId    OPTIONAL,
    rb-timer-indicator           Rb-timer-indicator,
    -- Measurement IES
    measuredResultsOnRACH        MeasuredResultsOnRACH          OPTIONAL,
    laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions
        cellUpdate-r3-add-ext BIT STRING OPTIONAL,
        v5xyv590NonCriticalExtensions SEQUENCE {
            cellUpdate-v5xyv590ext CellUpdate-v5xyv590ext,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
    } OPTIONAL
}

```

```

}
CellUpdate-v5xyv590ext ::= SEQUENCE {
    establishmentCause      EstablishmentCause  OPTIONAL
}
-- *****
--
-- CELL UPDATE CONFIRM
--
-- *****

CellUpdateConfirm ::= CHOICE {
    r3
        SEQUENCE {
            cellUpdateConfirm-r3      CellUpdateConfirm-r3-IEs,
            v3a0NonCriticalExtensions SEQUENCE {
                cellUpdateConfirm-v3a0ext      CellUpdateConfirm-v3a0ext,
                laterNonCriticalExtensions     SEQUENCE {
                    -- Container for additional R99 extensions
                    cellUpdateConfirm-r3-add-ext      BIT STRING  OPTIONAL,
                    v4b0NonCriticalExtensions         SEQUENCE {
                        cellUpdateConfirm-v4b0ext      CellUpdateConfirm-v4b0ext-IEs,
                        v5xyv590NonCriticalExtensions SEQUENCE {
                            cellUpdateConfirm-v5xyv590ext      CellUpdateConfirm-v5xyv590ext-IEs,
                            nonCriticalExtensions             SEQUENCE {} OPTIONAL
                        } OPTIONAL
                    } OPTIONAL
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3
        SEQUENCE {
            rrc-TransactionIdentifier RRC-TransactionIdentifier,
            criticalExtensions        CHOICE {
                r4
                    SEQUENCE {
                        cellUpdateConfirm-r4      CellUpdateConfirm-r4-IEs,
                        v4d0NonCriticalExtensions SEQUENCE {
                            -- Container for adding non critical extensions after freezing REL-5
                            cellUpdateConfirm-r4-add-ext      BIT STRING  OPTIONAL,
                            v5xyv590NonCriticalExtensions     SEQUENCE {
                                cellUpdateConfirm-v5xyv590ext      CellUpdateConfirm-v5xyv590ext-IEs,
                                nonCriticalExtensions             SEQUENCE {} OPTIONAL
                            } OPTIONAL
                        } OPTIONAL
                    } OPTIONAL
                },
                criticalExtensions        CHOICE {
                    r5
                        SEQUENCE {
                            cellUpdateConfirm-r5      CellUpdateConfirm-r5-IEs,
                            -- Container for adding non critical extensions after freezing REL-6
                            cellUpdateConfirm-r5-add-ext      BIT STRING  OPTIONAL,
                            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-v4b0ext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- ssdt-UL extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
    ssdt-UL-r4                    SSdT-UL                         OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List            CellIdentity-PerRL-List        OPTIONAL
}

CellUpdateConfirm-v5xyv590ext-IEs ::= SEQUENCE {
-- Physical channel IEs
    dl-TPC-PowerOffsetPerRL-List  DL-TPC-PowerOffsetPerRL-List  OPTIONAL
}

CellUpdateConfirm-r4-IEs ::= SEQUENCE {
-- User equipment IEs
    integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo              CipheringModeInfo              OPTIONAL,
    activationTime                  ActivationTime                   OPTIONAL,
    new-U-RNTI                     U-RNTI                        OPTIONAL,
    new-C-RNTI                     C-RNTI                        OPTIONAL,
    new-DSCH-RNTI                  DSCH-RNTI                     OPTIONAL,
    rrc-StateIndicator              RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
    rlc-Re-establishIndicatorRb2-3or4 BOOLEAN,
    rlc-Re-establishIndicatorRb5orAbove BOOLEAN,
-- CN information elements
    cn-InformationInfo              CN-InformationInfo             OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                    URA-Identity                   OPTIONAL,
-- Radio bearer IEs
    rb-InformationReleaseList        RB-InformationReleaseList       OPTIONAL,
    rb-InformationReconfigList       RB-InformationReconfigList-r4   OPTIONAL,
    rb-InformationAffectedList       RB-InformationAffectedList      OPTIONAL,
    dl-CounterSynchronisationInfo    DL-CounterSynchronisationInfo  OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo-r4         UL-CommonTransChInfo-r4        OPTIONAL,
    ul-deletedTransChInfoList-r4     UL-DeletedTransChInfoList-r4    OPTIONAL,
    ul-AddReconfTransChInfoList-r4   UL-AddReconfTransChInfoList-r4  OPTIONAL,
    modeSpecificTransChInfo-r4       CHOICE {
        fdd                        SEQUENCE {
            cpch-SetID              CPCH-SetID              OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
        },
        tdd                        NULL
    },
}

```



```

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

```

```

CellUpdateConfirm-r5-IEs ::= SEQUENCE {
-- User equipment IEs
integrityProtectionModeInfo    IntegrityProtectionModeInfo        OPTIONAL,
cipheringModeInfo              CipheringModeInfo                   OPTIONAL,
activationTime                  ActivationTime                       OPTIONAL,
new-U-RNTI                      U-RNTI                              OPTIONAL,
new-C-RNTI                      C-RNTI                              OPTIONAL,
new-DSCH-RNTI                  DSCH-RNTI                          OPTIONAL,
new-H-RNTI                      H-RNTI                              OPTIONAL,
rrc-StateIndicator             RRC-StateIndicator,
utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient   OPTIONAL,
rlc-Re-establishIndicatorRb2-3or4  BOOLEAN,
rlc-Re-establishIndicatorRb5orAbove  BOOLEAN,
-- CN information elements
cn-InformationInfo              CN-InformationInfo                 OPTIONAL,
-- UTRAN mobility IEs
ura-Identity                    URA-Identity                       OPTIONAL,
-- Radio bearer IEs
rb-InformationReleaseList       RB-InformationReleaseList           OPTIONAL,
rb-InformationReconfigList      RB-InformationReconfigList-r5       OPTIONAL,
rb-InformationAffectedList      RB-InformationAffectedList-r5       OPTIONAL,
dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo-r5   OPTIONAL,
-- Transport channel IEs
ul-CommonTransChInfo           UL-CommonTransChInfo-r4            OPTIONAL,
ul-deletedTransChInfoList       UL-DeletedTransChInfoList           OPTIONAL,
ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList        OPTIONAL,
modeSpecificTransChInfo        CHOICE {
    fdd                          SEQUENCE {
        cpch-SetID                CPCH-SetID                       OPTIONAL,
        addReconfTransChDRAC-Info  DRAC-StaticInformationList        OPTIONAL
    },
    tdd                          NULL
},
dl-CommonTransChInfo           DL-CommonTransChInfo-r4            OPTIONAL,
dl-DeletedTransChInfoList       DL-DeletedTransChInfoList-r5       OPTIONAL,
dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r5     OPTIONAL,
-- Physical channel IEs
frequencyInfo                  FrequencyInfo                       OPTIONAL,
maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power             OPTIONAL,
ul-ChannelRequirement          UL-ChannelRequirement-r5          OPTIONAL,
modeSpecificPhysChInfo        CHOICE {
    fdd                          SEQUENCE {
        dl-PDSCH-Information     DL-PDSCH-Information             OPTIONAL
    },
    tdd                          NULL
},
dl-HSPDSCH-Information         DL-HSPDSCH-Information             OPTIONAL,
dl-CommonInformation           DL-CommonInformation-r5            OPTIONAL,
dl-InformationPerRL-List       DL-InformationPerRL-List-r5        OPTIONAL
}

```

```

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

```

```

CellUpdateConfirm-CCCH ::= CHOICE {
    r3                          SEQUENCE {
        -- User equipment IEs
        u-RNTI                  U-RNTI,

```

```

-- The rest of the message is identical to the one sent on DCCH.
cellUpdateConfirm-r3          CellUpdateConfirm-r3-IEs,
laterNonCriticalExtensions    SEQUENCE {
  -- Container for additional R99 extensions
  cellUpdateConfirm-CCCH-r3-add-ext    BIT STRING OPTIONAL,
v4b0NonCriticalExtensions     SEQUENCE {
  cellUpdateConfirm-v4b0ext          CellUpdateConfirm-v4b0ext-IEs,
v5xyv590NonCriticalExtensions    SEQUENCE {
  cellUpdateConfirm-v5xyv590ext      CellUpdateConfirm-v5xyv590ext-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,
v4d0NonCriticalExtensions     SEQUENCE {
      -- Container for adding non critical extensions after freezing REL-5
      cellUpdateConfirm-CCCH-r4-add-ext    BIT STRING OPTIONAL,
v5xyv590NonCriticalExtensions    SEQUENCE {
      cellUpdateConfirm-v5xyv590ext      CellUpdateConfirm-v5xyv590ext-IEs,
      nonCriticalExtensions              SEQUENCE {} OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  criticalExtensions              CHOICE {
    r5                              SEQUENCE {
      cellUpdateConfirm-r5          CellUpdateConfirm-r5-IEs,
      nonCriticalExtensions          SEQUENCE {} OPTIONAL
    },
  },
  criticalExtensions              SEQUENCE {}
  }
}
}
}
}

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

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

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

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

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

```

```

-- Radio bearer IEs
rb-COUNT-C-InformationList      RB-COUNT-C-InformationList      OPTIONAL,
laterNonCriticalExtensions      SEQUENCE {
  -- Container for additional R99 extensions
  counterCheckResponse-r3-add-ext  BIT STRING  OPTIONAL,
  nonCriticalExtensions            SEQUENCE {}  OPTIONAL
}
}

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

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

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

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

HandoverToUTRANCommand ::= CHOICE {
  r3
    SEQUENCE {
      handoverToUTRANCommand-r3      HandoverToUTRANCommand-r3-IEs,
      nonCriticalExtensions            SEQUENCE {}  OPTIONAL
    },
  criticalExtensions
    CHOICE {
      r4
        SEQUENCE {
          handoverToUTRANCommand-r4      HandoverToUTRANCommand-r4-IEs,
          v4d0NonCriticalExtensions      SEQUENCE {
            -- Container for adding non critical extensions after freezing REL-5
            handoverToUTRANCommand-r4-add-ext  BIT STRING  OPTIONAL,
            nonCriticalExtensions            SEQUENCE {}  OPTIONAL
          }
        } OPTIONAL,
      r5
        SEQUENCE {
          handoverToUTRANCommand-r5      HandoverToUTRANCommand-r5-IEs,
          -- Container for adding non critical extensions after freezing REL-6
          handoverToUTRANCommand-r5-add-ext  BIT STRING  OPTIONAL,
          nonCriticalExtensions            SEQUENCE {}  OPTIONAL
        },
      criticalExtensions
        SEQUENCE {}
    }
}

HandoverToUTRANCommand-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  new-U-RNTI                          U-RNTI-Short,
  -- dummy is not used in this version of specification, it should
  -- not be sent and if received it should be ignored.
  dummy                                 ActivationTime      OPTIONAL,
  cipheringAlgorithm                    CipheringAlgorithm  OPTIONAL,
}

```

```

-- Radio bearer IEs
-- Specification mode information
specificationMode CHOICE {
  complete SEQUENCE {
    srb-InformationSetupList SRB-InformationSetupList,
    rab-InformationSetupList RAB-InformationSetupList OPTIONAL,
    ul-CommonTransChInfo UL-CommonTransChInfo,
    ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
    dl-CommonTransChInfo DL-CommonTransChInfo,
    dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList,
    ul-DPCH-Info UL-DPCH-Info,
    modeSpecificInfo CHOICE {
      fdd SEQUENCE {
        dl-PDSCH-Information DL-PDSCH-Information OPTIONAL,
        cpch-SetInfo CPCH-SetInfo OPTIONAL
      },
      tdd NULL
    },
    dl-CommonInformation DL-CommonInformation,
    dl-InformationPerRL-List DL-InformationPerRL-List,
    frequencyInfo FrequencyInfo
  },
  preconfiguration SEQUENCE {
    predefinedConfigIdentity PredefinedConfigIdentity,
    defaultConfig SEQUENCE {
      defaultConfigMode DefaultConfigMode,
      defaultConfigIdentity DefaultConfigIdentity
    }
  },
  rab-Info RAB-Info-Post OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      ul-DPCH-Info UL-DPCH-InfoPostFDD,
      dl-CommonInformationPost DL-CommonInformationPost,
      dl-InformationPerRL-List DL-InformationPerRL-ListPostFDD,
      frequencyInfo FrequencyInfoFDD
    },
    tdd SEQUENCE {
      ul-DPCH-Info UL-DPCH-InfoPostTDD,
      dl-CommonInformationPost DL-CommonInformationPost,
      dl-InformationPerRL DL-InformationPerRL-PostTDD,
      frequencyInfo FrequencyInfoTDD,
      primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power
    }
  }
},
-- Physical channel IEs
maxAllowedUL-TX-Power MaxAllowedUL-TX-Power
}

HandoverToUTRANCommand-r4-IEs ::= SEQUENCE {
  -- User equipment IEs
  new-U-RNTI U-RNTI-Short,
  cipheringAlgorithm CipheringAlgorithm OPTIONAL,
  -- Radio bearer IEs
  -- Specification mode information
  specificationMode CHOICE {
    complete SEQUENCE {
      srb-InformationSetupList SRB-InformationSetupList,
      rab-InformationSetupList RAB-InformationSetupList-r4 OPTIONAL,
      ul-CommonTransChInfo UL-CommonTransChInfo-r4,
      ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
      dl-CommonTransChInfo DL-CommonTransChInfo-r4,
      dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r4,
      ul-DPCH-Info UL-DPCH-Info-r4,
      modeSpecificInfo CHOICE {
        fdd SEQUENCE {
          dl-PDSCH-Information DL-PDSCH-Information OPTIONAL,
          cpch-SetInfo CPCH-SetInfo OPTIONAL
        },
        tdd NULL
      },
    },
  },
}

```

```

        dl-CommonInformation          DL-CommonInformation-r4,
        dl-InformationPerRL-List     DL-InformationPerRL-List-r4,
        frequencyInfo                FrequencyInfo
    },
    preconfiguration                  SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
        preConfigMode                CHOICE {
            predefinedConfigIdentity  PredefinedConfigIdentity,
            defaultConfig              SEQUENCE {
                defaultConfigMode     DefaultConfigMode,
                defaultConfigIdentity  DefaultConfigIdentity-r4
            }
        },
        rab-Info                      RAB-Info-Post        OPTIONAL,
        modeSpecificInfo              CHOICE {
            fdd                        SEQUENCE {
                ul-DPCH-Info           UL-DPCH-InfoPostFDD,
                dl-CommonInformationPost DL-CommonInformationPost,
                dl-InformationPerRL-List DL-InformationPerRL-ListPostFDD,
                frequencyInfo          FrequencyInfoFDD
            },
            tdd                        CHOICE {
                tdd384                 SEQUENCE {
                    ul-DPCH-Info       UL-DPCH-InfoPostTDD,
                    dl-InformationPerRL DL-InformationPerRL-PostTDD,
                    frequencyInfo       FrequencyInfoTDD,
                    primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power
                },
                tdd128                 SEQUENCE {
                    ul-DPCH-Info       UL-DPCH-InfoPostTDD-LCR-r4,
                    dl-InformationPerRL DL-InformationPerRL-PostTDD-LCR-r4,
                    frequencyInfo       FrequencyInfoTDD,
                    primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power
                }
            }
        }
    },
}
-- Physical channel IEs
maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power
}

HandoverToUTRANCommand-r5-IEs ::= SEQUENCE {
-- User equipment IEs
    new-U-RNTI                    U-RNTI-Short,
    cipheringAlgorithm              CipheringAlgorithm                OPTIONAL,
-- Radio bearer IEs
-- Specification mode information
    specificationMode              CHOICE {
        complete                    SEQUENCE {
            srb-InformationSetupList SRB-InformationSetupList-r5,
            rab-InformationSetupList RAB-InformationSetupList-r5        OPTIONAL,
            ul-CommonTransChInfo     UL-CommonTransChInfo-r4,
            ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
            dl-CommonTransChInfo     DL-CommonTransChInfo-r4,
            dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r5,
            ul-DPCH-Info             UL-DPCH-Info-r5,
            modeSpecificInfo          CHOICE {
                fdd                  SEQUENCE {
                    dl-PDSCH-Information DL-PDSCH-Information OPTIONAL,
                    cpch-SetInfo       CPCH-SetInfo        OPTIONAL
                },
                tdd                  NULL
            },
            dl-CommonInformation      DL-CommonInformation-r4,
            dl-InformationPerRL-List  DL-InformationPerRL-List-r5,
            frequencyInfo              FrequencyInfo
        },
    },
    preconfiguration                SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
        preConfigMode                CHOICE {
            predefinedConfigIdentity  PredefinedConfigIdentity,
            defaultConfig              SEQUENCE {
                defaultConfigMode     DefaultConfigMode,

```

```

        defaultConfigIdentity          DefaultConfigIdentity-r5
    },
    rab-Info                            RAB-Info-Post          OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                             SEQUENCE {
            ul-DPCH-Info                UL-DPCH-InfoPostFDD,
            dl-CommonInformationPost     DL-CommonInformationPost,
            dl-InformationPerRL-List     DL-InformationPerRL-ListPostFDD,
            frequencyInfo                FrequencyInfoFDD
        },
        tdd                             CHOICE {
            tdd384                      SEQUENCE {
                ul-DPCH-Info            UL-DPCH-InfoPostTDD,
                dl-InformationPerRL     DL-InformationPerRL-PostTDD,
                frequencyInfo           FrequencyInfoTDD,
                primaryCCPCH-TX-Power   PrimaryCCPCH-TX-Power
            },
            tdd128                      SEQUENCE {
                ul-DPCH-Info            UL-DPCH-InfoPostTDD-LCR-r4,
                dl-InformationPerRL     DL-InformationPerRL-PostTDD-LCR-r4,
                frequencyInfo           FrequencyInfoTDD,
                primaryCCPCH-TX-Power   PrimaryCCPCH-TX-Power
            }
        }
    }
},
-- Physical channel IEs
maxAllowedUL-TX-Power                MaxAllowedUL-TX-Power
}

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

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

-- *****
--
-- 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,
v5xyv590NonCriticalExtensions       SEQUENCE {
initialDirectTransfer-v5xyv590ext   InitialDirectTransfer-v5xyv590ext,
nonCriticalExtensions               SEQUENCE {}                            OPTIONAL
}
}
}
}
}
}

```

```

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

InitialDirectTransfer-v5xyv590ext ::= SEQUENCE {
  establishmentCause  EstablishmentCause  OPTIONAL
}

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

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

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

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

```

```

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

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

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

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

HandoverFromUTRANFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  -- Other IEs
  interRAT-HO-FailureCause InterRAT-HO-FailureCause OPTIONAL,
  -- In case the interRATMessage to be transferred is for GERAN Iu mode, the
  -- message should be placed in the HandoverFromUtranFailure-v5xyv590ext-IEs
  -- non-critical extension container.
  interRATMessage CHOICE {
    gsm SEQUENCE {
      gsm-MessageList GSM-MessageList
    },
    cdma2000 SEQUENCE {
      cdma2000-MessageList CDMA2000-MessageList
    }
  } OPTIONAL,
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    handoverFromUTRANFailure-r3-add-ext BIT STRING OPTIONAL,
    v5xyv590NonCriticalExtensions SEQUENCE {
      handoverFromUTRANFailure-v5xyv590ext HandoverFromUtranFailure-v5xyv590ext-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
  }
}

```



```

    } OPTIONAL
  } OPTIONAL
}

HandoverFromUtranFailure-v5xyv590ext-IEs ::= SEQUENCE {
  geranIu-MessageList          GERANIu-MessageList          OPTIONAL
}

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

InterRATHandoverInfo ::= SEQUENCE {
  -- This structure is defined for historical reasons, backward compatibility with 04.18
  predefinedConfigStatusList    CHOICE {
    absent                       NULL,
    present                      PredefinedConfigStatusList
  },
  uE-SecurityInformation        CHOICE {
    absent                       NULL,
    present                      UE-SecurityInformation
  },
  ue-CapabilityContainer        CHOICE {
    absent                       NULL,
    present                      -- present is an octet aligned string containing IE UE-RadioAccessCapabilityInfo
                                OCTET STRING (SIZE (0..63))
  },
  -- Non critical extensions
  v390NonCriticalExtensions      CHOICE {
    absent                       NULL,
    present                      SEQUENCE {
      interRATHandoverInfo-v390ext  InterRATHandoverInfo-v390ext-IEs,
      v3a0NonCriticalExtensions      SEQUENCE {
        interRATHandoverInfo-v3a0ext  InterRATHandoverInfo-v3a0ext-IEs,
        laterNonCriticalExtensions    SEQUENCE {
          interRATHandoverInfo-v3d0ext  InterRATHandoverInfo-v3d0ext-IEs,
          -- Container for additional R99 extensions
          interRATHandoverInfo-r3-add-ext  BIT STRING OPTIONAL,
          v3g0NonCriticalExtensions    SEQUENCE {
            interRATHandoverInfo-v3g0ext  InterRATHandoverInfo-v3g0ext-IEs,
            v4b0NonCriticalExtensions    SEQUENCE {
              interRATHandoverInfo-v4b0ext  InterRATHandoverInfo-v4b0ext-IEs,
              v4d0NonCriticalExtensions    SEQUENCE {
                interRATHandoverInfo-v4d0ext  InterRATHandoverInfo-v4d0ext-IEs,
                -- Reserved for future non critical extension
                v5xyv590NonCriticalExtensions  SEQUENCE {
                  interRATHandoverInfo-v5xyv590ext
                }
              }
            }
          }
        }
      }
    }
  }
  IEs,
  nonCriticalExtensions          SEQUENCE {} OPTIONAL
} OPTIONAL
} OPTIONAL
} OPTIONAL
} OPTIONAL
} OPTIONAL
}

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

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

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

```

```

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

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

InterRATHandoverInfo-v5xyv590ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  predefinedConfigStatusListComp      PredefinedConfigStatusListComp    OPTIONAL,
  ue-RadioAccessCapabilityComp        UE-RadioAccessCapabilityComp        OPTIONAL
}

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

MeasurementControl ::= CHOICE {
  r3
    measurementControl-r3              SEQUENCE {
      measurementControl-r3            MeasurementControl-r3-IEs,
      v390nonCriticalExtensions         SEQUENCE {
        measurementControl-v390ext     MeasurementControl-v390ext,
        v3a0NonCriticalExtensions      SEQUENCE {
          measurementControl-v3a0ext    MeasurementControl-v3a0ext,
          laterNonCriticalExtensions    SEQUENCE {
            -- Container for additional R99 extensions
            measurementControl-r3-add-ext BIT STRING OPTIONAL,
            v4b0NonCriticalExtensions    SEQUENCE {
              measurementControl-v4b0ext MeasurementControl-v4b0ext-IEs,
              v5xyv590NonCriticalExtensions SEQUENCE {
                measurementControl-v5xyv590ext MeasurementControl-v5xyv590ext-IEs,
                nonCriticalExtensions    SEQUENCE {} OPTIONAL
              } OPTIONAL
            } OPTIONAL
          } OPTIONAL
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  ,
  later-than-r3
    rrc-TransactionIdentifier          RRC-TransactionIdentifier,
    criticalExtensions                CHOICE {
      r4
        measurementControl-r4          MeasurementControl-r4-IEs,
        v4d0NonCriticalExtensions      SEQUENCE {
          -- Container for adding non critical extensions after freezing REL-5
          measurementControl-r4-add-ext BIT STRING OPTIONAL,
          v5xyv590NonCriticalExtensions SEQUENCE {
            measurementControl-v5xyv590ext MeasurementControl-v5xyv590ext-IEs,
            nonCriticalExtensions      SEQUENCE {} OPTIONAL
          } OPTIONAL
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  ,
  criticalExtensions                SEQUENCE {}
}

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

```

```

    dpch-CompressedModeStatusInfo    DPCH-CompressedModeStatusInfo    OPTIONAL
}

MeasurementControl-v4b0ext-IEs ::= SEQUENCE {
    ue-Positioning-OTDOA-AssistanceData-r4ext    UE-Positioning-OTDOA-AssistanceData-r4ext    OPTIONAL
}

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

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

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

MeasurementControl-v5xyv590ext-IEs ::= SEQUENCE {
    measurementCommand-v5xyv590ext    CHOICE {
        -- the choice "intra-frequency" shall be used for the case of intra-frequency measurement,
        -- as well as when intra-frequency events are configured for inter-frequency measurement
        intra-frequency    Intra-FreqEventCriteriaList-v5xyv590ext,
        inter-frequency    Inter-FreqEventCriteriaList-v5xyv590ext
    }    OPTIONAL,
    intraFreqReportingCriteria-lb-r5    IntraFreqReportingCriteria-lb-r5    OPTIONAL,
    intraFreqEvent-lb-r5    IntraFreqEvent-lb-r5    OPTIONAL,
    -- most significant part of "RRC transaction identifier" (MSP),
    -- "RRC transaction identifier" = rrc-TransactionIdentifier-MSP-v5xyv590ext * 4 +
    -- rrc-TransactionIdentifier
    rrc-TransactionIdentifier-MSP-v5xyv590ext    RRC-TransactionIdentifier

}

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

MeasurementControlFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    failureCause    FailureCauseWithProtErr,
    laterNonCriticalExtensions    SEQUENCE {
        -- Container for additional R99 extensions
        measurementControlFailure-r3-add-ext    BIT STRING    OPTIONAL,
        v5xyv590NonCriticalExtensions    SEQUENCE {
            measurementControlFailure-v5xyv590ext    MeasurementControlFailure-v5xyv590ext-
IEs,
            nonCriticalExtensions    SEQUENCE {}    OPTIONAL
        }    OPTIONAL
    }    OPTIONAL
}

MeasurementControlFailure-v5xyv590ext-IEs ::= SEQUENCE {
    -- most significant part of "RRC transaction identifier" (MSP),
    -- "RRC transaction identifier" = rrc-TransactionIdentifier-MSP-v5xyv590ext * 4 +
    -- rrc-TransactionIdentifier
    -- If the rrc-TransactionIdentifier-MSP-v5xyv590ext was not received in the MEASUREMENT CONTROL
    -- message, then the rrc-TransactionIdentifier-MSP-v5xyv590ext shall be set to zero
    rrc-TransactionIdentifier-MSP-v5xyv590ext    RRC-TransactionIdentifier
}

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

MeasurementReport ::= SEQUENCE {
    -- Measurement IEs

```

```

measurementIdentity      MeasurementIdentity,
measuredResults          MeasuredResults          OPTIONAL,
measuredResultsOnRACH    MeasuredResultsOnRACH    OPTIONAL,
additionalMeasuredResults MeasuredResultsList    OPTIONAL,
eventResults             EventResults            OPTIONAL,
-- Non-critical extensions
v390nonCriticalExtensions SEQUENCE {
  measurementReport-v390ext MeasurementReport-v390ext,
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    measurementReport-r3-add-ext BIT STRING OPTIONAL,
    v4b0NonCriticalExtensions SEQUENCE {
      measurementReport-v4b0ext MeasurementReport-v4b0ext-IEs,
      -- Extension mechanism for non-Rel4 information
      v5xyv590NonCriticalExtensions SEQUENCE {
        measurementReport-v5xyv590ext MeasurementReport-v5xyv590ext-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
      }
    } OPTIONAL
  } OPTIONAL
} OPTIONAL
}

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

MeasurementReport-v4b0ext-IEs ::= SEQUENCE {
  interFreqEventResults-LCR InterFreqEventResults-LCR-r4-ext OPTIONAL,
  additionalMeasuredResults-LCR MeasuredResultsList-LCR-r4-ext OPTIONAL,
  gsmOTDreferenceCell PrimaryCPICH-Info OPTIONAL
}

MeasurementReport-v5xyv590ext-IEs ::= SEQUENCE {
  measuredResults-v5xyv590ext MeasuredResults-v5xyv590ext 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,
    v5xyv590NonCriticalExtensions SEQUENCE {
      pagingType1-v5xyv590ext PagingType1-v5xyv590ext-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
  } OPTIONAL
}

PagingType1-v5xyv590ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  pagingRecord2List PagingRecord2List-r5 OPTIONAL
}

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

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

```

```

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

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

PhysicalChannelReconfiguration ::= CHOICE {
    r3          SEQUENCE {
        physicalChannelReconfiguration-r3
        PhysicalChannelReconfiguration-r3-IEs,
        v3a0NonCriticalExtensions          SEQUENCE {
            physicalChannelReconfiguration-v3a0ext          PhysicalChannelReconfiguration-v3a0ext,
            laterNonCriticalExtensions          SEQUENCE {
                -- Container for additional R99 extensions
                pagingType2-r3-add-ext          BIT STRING          OPTIONAL,
                v4b0NonCriticalExtensions          SEQUENCE {
                    physicalChannelReconfiguration-v4b0ext
                    PhysicalChannelReconfiguration-v4b0ext-IEs,
                    v5xyv590NonCriticalExtensions          SEQUENCE {
                        physicalChannelReconfiguration-v5xyv590ext
                        PhysicalChannelReconfiguration-v5xyv590ext-IEs,
                        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
                    }          OPTIONAL
                }          OPTIONAL
            }          OPTIONAL
        }          OPTIONAL
    },
    later-than-r3          SEQUENCE {
        rrc-TransactionIdentifier          RRC-TransactionIdentifier,
        criticalExtensions          CHOICE {
            r4          SEQUENCE {
                physicalChannelReconfiguration-r4
                PhysicalChannelReconfiguration-r4-IEs,
                v4d0NonCriticalExtensions          SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    pagingType2-r3-add-ext          BIT STRING          OPTIONAL,
                    v5xyv590NonCriticalExtensions          SEQUENCE {
                        physicalChannelReconfiguration-v5xyv590ext
                        PhysicalChannelReconfiguration-v5xyv590ext-IEs,
                        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
                    }          OPTIONAL
                }          OPTIONAL
            },
            criticalExtensions          CHOICE {
                r5          SEQUENCE {
                    physicalChannelReconfiguration-r5
                    PhysicalChannelReconfiguration-r5-IEs,
                    -- Container for adding non critical extensions after freezing REL-6
                    pagingType2-r3-add-ext          BIT STRING          OPTIONAL,
                    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-v4b0ext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- ssdt-UL extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
ssdt-UL-r4             SSdT-UL             OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
cell-id-PerRL-List     CellIdentity-PerRL-List  OPTIONAL
}

PhysicalChannelReconfiguration-v5xyv590ext-IEs ::= SEQUENCE {
-- Physical channel IEs
dl-TPC-PowerOffsetPerRL-List  DL-TPC-PowerOffsetPerRL-List  OPTIONAL
}

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

PhysicalChannelReconfiguration-r5-IEs ::= SEQUENCE {
-- User equipment IEs
integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
cipheringModeInfo              CipheringModeInfo              OPTIONAL,
activationTime                 ActivationTime                 OPTIONAL,
new-U-RNTI                     U-RNTI                       OPTIONAL,
new-C-RNTI                     C-RNTI                       OPTIONAL,
new-DSCH-RNTI                  DSCH-RNTI                    OPTIONAL,
new-H-RNTI                     H-RNTI                       OPTIONAL,
rrc-StateIndicator             RRC-StateIndicator,
utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,

```

```

-- Core network IEs
  cn-InformationInfo          CN-InformationInfo          OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                URA-Identity              OPTIONAL,
-- Radio bearer IEs
  dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5  OPTIONAL,
-- Physical channel IEs
  frequencyInfo               FrequencyInfo          OPTIONAL,
  maxAllowedUL-TX-Power       MaxAllowedUL-TX-Power      OPTIONAL,
  -- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r5 contains the choice
  -- between UL DPCH info, CPCH SET info and CPCH set ID.
  ul-ChannelRequirement       UL-ChannelRequirementWithCPCH-SetID-r5  OPTIONAL,
  modeSpecificInfo            CHOICE {
    fdd                        SEQUENCE {
      dl-PDSCH-Information     DL-PDSCH-Information      OPTIONAL
    },
    tdd                        NULL
  },
  dl-HSPDSCH-Information       DL-HSPDSCH-Information      OPTIONAL,
  dl-CommonInformation         DL-CommonInformation-r5     OPTIONAL,
  dl-InformationPerRL-List     DL-InformationPerRL-List-r5 OPTIONAL
}

-- *****
--
-- 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,
    nonCriticalExtensions      SEQUENCE {}  OPTIONAL
  }
}

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

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

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

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

```

```

    },
    later-than-r3
        SEQUENCE {
            dsch-RNTI
                DSCH-RNTI
                OPTIONAL,
            rrc-TransactionIdentifier
                RRC-TransactionIdentifier,
            criticalExtensions
                CHOICE {
                    r4
                        SEQUENCE {
                            physicalSharedChannelAllocation-r4
                                PhysicalSharedChannelAllocation-r4-IEs,
                            v4d0NonCriticalExtensions
                                SEQUENCE {
                                    -- Container for adding non critical extensions after freezing REL-5
                                    physicalSharedChannelAllocation-r4-add-ext
                                        BIT STRING
                                        OPTIONAL,
                                    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 confirmRequest is not present, the default value "No Confirm"
        -- shall be used as specified in 10.2.25.
        confirmRequest
            ENUMERATED {
                confirmPDSCH, confirmPUSCH }
            OPTIONAL,
        trafficVolumeReportRequest
            INTEGER (0..255)
            OPTIONAL,
        iscpTimeslotList
            TimeslotList
            OPTIONAL,
        requestPCCPCHRSCP
            BOOLEAN
    }

```

```

PhysicalSharedChannelAllocation-r4-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- Physical channel IEs
        ul-TimingAdvance
            UL-TimingAdvanceControl-r4
            OPTIONAL,
        pusch-CapacityAllocationInfo
            PUSCH-CapacityAllocationInfo-r4
            OPTIONAL,
        pdsch-CapacityAllocationInfo
            PDSCH-CapacityAllocationInfo-r4
            OPTIONAL,
        -- TABULAR: If confirmRequest is not present, the default value "No Confirm"
        -- shall be used as specified in 10.2.25.
        confirmRequest
            ENUMERATED {
                confirmPDSCH, confirmPUSCH }
            OPTIONAL,
        trafficVolumeReportRequest
            INTEGER (0..255)
            OPTIONAL,
        iscpTimeslotList
            TimeslotList-r4
            OPTIONAL,
        requestPCCPCHRSCP
            BOOLEAN
    }

```

```

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

```

```

PUSCHCapacityRequest ::= SEQUENCE {
    -- User equipment IEs
        dsch-RNTI
            DSCH-RNTI
            OPTIONAL,
    -- Measurement IEs
        trafficVolume
            TrafficVolumeMeasuredResultsList
            OPTIONAL,
        timeslotListWithISCP
            TimeslotListWithISCP
            OPTIONAL,
        primaryCCPCH-RSCP
            PrimaryCCPCH-RSCP
            OPTIONAL,
        allocationConfirmation
            CHOICE {
                pdschConfirmation
                    PDSCH-Identity,
                puschConfirmation
                    PUSCH-Identity
            }
            OPTIONAL,
        protocolErrorIndicator
            ProtocolErrorIndicatorWithMoreInfo,
        laterNonCriticalExtensions
            SEQUENCE {
                -- Container for additional R99 extensions
                puschCapacityRequest-r3-add-ext
                    BIT STRING
                    OPTIONAL,
                v5xyv590NonCriticalExtensions
                    SEQUENCE {
                        puschCapacityRequest-v5xyv590ext
                            PUSCHCapacityRequest-v5xyv590ext,
                        nonCriticalExtensions
                            SEQUENCE {}
                            OPTIONAL
                    }
                }
            }
        }
    }
}

```



```

}
PUSCHCapacityRequest-v5xyv590ext ::= SEQUENCE {
    primaryCCPCH-RSCP-delta          DeltaRSCP          OPTIONAL
}
-- *****
--
-- RADIO BEARER RECONFIGURATION
--
-- *****

RadioBearerReconfiguration ::= CHOICE {
    r3                               SEQUENCE {
        radioBearerReconfiguration-r3 RadioBearerReconfiguration-r3-IEs,
        -- Prefix "v3ao" is used (in one instance) to keep alignment with R99
        v3aoNonCriticalExtensions      SEQUENCE {
            radioBearerReconfiguration-v3aoext RadioBearerReconfiguration-v3aoext,
            laterNonCriticalExtensions      SEQUENCE {
                -- Container for additional R99 extensions
                radioBearerReconfiguration-r3-add-ext BIT STRING OPTIONAL,
                v4b0NonCriticalExtensions      SEQUENCE {
                    radioBearerReconfiguration-v4b0ext
                    RadioBearerReconfiguration-v4b0ext-IEs,
                    v5xyv590NonCriticalExtensions SEQUENCE {
                        radioBearerReconfiguration-v5xyv590ext
                        RadioBearerReconfiguration-v5xyv590ext-IEs,
                        nonCriticalExtensions SEQUENCE {} OPTIONAL
                    } OPTIONAL
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3                     SEQUENCE {
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions              CHOICE {
            r4                          SEQUENCE {
                radioBearerReconfiguration-r4 RadioBearerReconfiguration-r4-IEs,
                v4d0NonCriticalExtensions SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    radioBearerReconfiguration-r4-add-ext BIT STRING OPTIONAL,
                    v5xyv590NonCriticalExtensions SEQUENCE {
                        radioBearerReconfiguration-v5xyv590ext
                        RadioBearerReconfiguration-v5xyv590ext-IEs,
                        nonCriticalExtensions SEQUENCE {} OPTIONAL
                    } OPTIONAL
                } OPTIONAL
            },
            criticalExtensions          CHOICE {
                r5                      SEQUENCE {
                    radioBearerReconfiguration-r5 RadioBearerReconfiguration-r5-IEs,
                    -- Container for adding non critical extensions after freezing REL-6
                    radioBearerReconfiguration-r5-add-ext BIT STRING OPTIONAL,
                    nonCriticalExtensions SEQUENCE {} OPTIONAL
                },
                criticalExtensions      SEQUENCE {}
            }
        }
    }
}

RadioBearerReconfiguration-r3-IEs ::= SEQUENCE {
    -- User equipment IES
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo              CipheringModeInfo              OPTIONAL,
    activationTime                  ActivationTime                  OPTIONAL,
    new-U-RNTI                      U-RNTI                      OPTIONAL,
    new-C-RNTI                      C-RNTI                      OPTIONAL,
    rrc-StateIndicator              RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
    -- Core network IES
    cn-InformationInfo              CN-InformationInfo              OPTIONAL,
    -- UTRAN mobility IES
    ura-Identity                    URA-Identity                    OPTIONAL,
    -- Radio bearer IES
    rab-InformationReconfigList     RAB-InformationReconfigList     OPTIONAL,
    -- NOTE: IE rb-InformationReconfigList should be optional in later versions
    -- of this message
}

```

```

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

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

RadioBearerReconfiguration-v4b0ext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- ssdt-UL extends SSDT-Information, which is included in
-- DL-CommonInformation. FDD only.
    ssdt-UL-r4                     SSDT-UL                          OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List             CellIdentity-PerRL-List         OPTIONAL
}

RadioBearerReconfiguration-v5xyv590ext-IEs ::= SEQUENCE {
-- Physical channel IEs
    dl-TPC-PowerOffsetPerRL-List    DL-TPC-PowerOffsetPerRL-List    OPTIONAL
}

RadioBearerReconfiguration-r4-IEs ::= SEQUENCE {
-- User equipment IEs
    integrityProtectionModeInfo     IntegrityProtectionModeInfo      OPTIONAL,
    cipheringModeInfo               CipheringModeInfo                 OPTIONAL,
    activationTime                   ActivationTime                     OPTIONAL,
    new-U-RNTI                       U-RNTI                           OPTIONAL,
    new-C-RNTI                       C-RNTI                           OPTIONAL,
    new-DSCH-RNTI                   DSCH-RNTI                        OPTIONAL,
    rrc-StateIndicator              RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- Core network IEs
    cn-InformationInfo              CN-InformationInfo               OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                    URA-Identity                     OPTIONAL,
-- Radio bearer IEs
    rab-InformationReconfigList      RAB-InformationReconfigList      OPTIONAL,
    rb-InformationReconfigList-r4    RB-InformationReconfigList-r4    OPTIONAL,
    rb-InformationAffectedList       RB-InformationAffectedList       OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo-r4         UL-CommonTransChInfo-r4         OPTIONAL,
    ul-deletedTransChInfoList       UL-DeletedTransChInfoList       OPTIONAL,
    ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList     OPTIONAL,
    modeSpecificTransChInfo        CHOICE {
        fdd                        SEQUENCE {
            cpch-SetID             CPCH-SetID             OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
        },
    },

```

```

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

RadioBearerReconfiguration-r5-IEs ::= SEQUENCE {
-- User equipment IEs
    integrityProtectionModeInfo IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo        CipheringModeInfo                OPTIONAL,
    activationTime           ActivationTime                    OPTIONAL,
    new-U-RNTI               U-RNTI                        OPTIONAL,
    new-C-RNTI               C-RNTI                        OPTIONAL,
    new-DSCH-RNTI           DSCH-RNTI                    OPTIONAL,
    new-H-RNTI               H-RNTI                        OPTIONAL,
    rrc-StateIndicator       RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
-- Core network IEs
    cn-InformationInfo       CN-InformationInfo                OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity             URA-Identity                    OPTIONAL,
-- Specification mode information
    specificationMode        CHOICE {
        complete            SEQUENCE {
-- Radio bearer IEs
            rab-InformationReconfigList    RAB-InformationReconfigList    OPTIONAL,
            rb-InformationReconfigList     RB-InformationReconfigList-r5    OPTIONAL,
            rb-InformationAffectedList     RB-InformationAffectedList-r5    OPTIONAL,
            rb-PDCPContextRelocationList  RB-PDCPContextRelocationList    OPTIONAL,
-- Transport channel IEs
            ul-CommonTransChInfo          UL-CommonTransChInfo-r4        OPTIONAL,
            ul-deletedTransChInfoList     UL-DeletedTransChInfoList      OPTIONAL,
            ul-AddReconfTransChInfoList   UL-AddReconfTransChInfoList    OPTIONAL,
            modeSpecificTransChInfo       CHOICE {
                fdd                SEQUENCE {
                    cpch-SetID        CPCH-SetID                OPTIONAL,
                    addReconfTransChDRAC-Info    DRAC-StaticInformationList    OPTIONAL
                },
                tdd                NULL
            }
            dl-CommonTransChInfo          DL-CommonTransChInfo-r4        OPTIONAL,
            dl-DeletedTransChInfoList     DL-DeletedTransChInfoList-r5    OPTIONAL,
            dl-AddReconfTransChInfoList   DL-AddReconfTransChInfoList-r5    OPTIONAL
        },
        preconfiguration                SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
            preConfigMode                CHOICE {
                predefinedConfigIdentity    PredefinedConfigIdentity,
                defaultConfig              SEQUENCE {
                    defaultConfigMode        DefaultConfigMode,
                    defaultConfigIdentity    DefaultConfigIdentity-r5
                }
            }
        }
    },
-- Physical channel IEs
    frequencyInfo          FrequencyInfo                OPTIONAL,
    maxAllowedUL-TX-Power   MaxAllowedUL-TX-Power        OPTIONAL,
    ul-ChannelRequirement   UL-ChannelRequirement-r5     OPTIONAL,
    modeSpecificPhysChInfo  CHOICE {
        fdd                SEQUENCE {
            dl-PDSCH-Information    DL-PDSCH-Information    OPTIONAL
        },

```

```

        tdd                                NULL
    },
    dl-HSPDSCH-Information                 DL-HSPDSCH-Information             OPTIONAL,
    dl-CommonInformation                   DL-CommonInformation-r5             OPTIONAL,
    dl-InformationPerRL-List               DL-InformationPerRL-List-r5        OPTIONAL
}

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

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

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

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

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

RadioBearerRelease ::= CHOICE {
    r3                                     SEQUENCE {
        radioBearerRelease-r3             RadioBearerRelease-r3-IEs,
        v3a0NonCriticalExtensions          SEQUENCE {
            radioBearerRelease-v3a0ext     RadioBearerRelease-v3a0ext,
            laterNonCriticalExtensions      SEQUENCE {
                -- Container for additional R99 extensions
                radioBearerRelease-r3-add-ext    BIT STRING    OPTIONAL,
                v4b0NonCriticalExtensions      SEQUENCE {
                    radioBearerRelease-v4b0ext     RadioBearerRelease-v4b0ext-IEs,
                    v5xyv590NonCriticalExtensions SEQUENCE {
                        radioBearerRelease-v5xyv590ext     RadioBearerRelease-v5xyv590ext-IEs,
                        nonCriticalExtensions      SEQUENCE {} OPTIONAL
                    }
                } OPTIONAL
            } OPTIONAL
        }
    } OPTIONAL
},
    later-than-r3                          SEQUENCE {
        rrc-TransactionIdentifier          RRC-TransactionIdentifier,
        criticalExtensions                 CHOICE {
            r4                             SEQUENCE {
                radioBearerRelease-r4       RadioBearerRelease-r4-IEs,

```

```

v4d0NonCriticalExtensions          SEQUENCE {
  -- Container for adding non critical extensions after freezing REL-5
  radioBearerRelease-r4-add-ext    BIT STRING      OPTIONAL,
  v5xyv590NonCriticalExtensions    SEQUENCE {
    radioBearerRelease-v5xyv590ext RadioBearerRelease-v5xyv590ext-IEs,
    nonCriticalExtensions          SEQUENCE {}      OPTIONAL
  } OPTIONAL
} OPTIONAL
},
criticalExtensions                 CHOICE {
  r5                                SEQUENCE {
    radioBearerRelease-r5          RadioBearerRelease-r5-IEs,
    -- Container for adding non critical extensions after freezing REL-6
    radioBearerRelease-r5-add-ext  BIT STRING      OPTIONAL,
    nonCriticalExtensions          SEQUENCE {}      OPTIONAL
  },
  criticalExtensions               SEQUENCE {}
}
}
}
}

```

```

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

```

```

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

```

```

RadioBearerRelease-v4b0ext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- IE ssdt-UL extends SSDT-Information, which is included in
  -- DL-CommonInformation. FDD only.

```

```

        ssdt-UL-r4                SSDT-UL                OPTIONAL,
        -- The order of the RLs in IE cell-id-PerRL-List is the same as
        -- in IE DL-InformationPerRL-List included in this message
        cell-id-PerRL-List        CellIdentity-PerRL-List    OPTIONAL
    }
}
RadioBearerRelease-v5xyv590ext-IEs ::= SEQUENCE {
    -- Physical channel IES
    dl-TPC-PowerOffsetPerRL-List    DL-TPC-PowerOffsetPerRL-List    OPTIONAL
}

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

RadioBearerRelease-r5-IEs ::= SEQUENCE {
    -- User equipment IES
    integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
    cipheringModeInfo              CipheringModeInfo                OPTIONAL,
    activationTime                  ActivationTime                    OPTIONAL,
    new-U-RNTI                      U-RNTI                          OPTIONAL,
    new-C-RNTI                      C-RNTI                          OPTIONAL,
    new-DSCH-RNTI                  DSCH-RNTI                       OPTIONAL,
    new-H-RNTI                      H-RNTI                          OPTIONAL,
    rrc-StateIndicator              RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
    -- Core network IES
    cn-InformationInfo              CN-InformationInfo              OPTIONAL,
    signallingConnectionRelIndication    CN-DomainIdentity              OPTIONAL,
    -- UTRAN mobility IES
    ura-Identity                    URA-Identity                    OPTIONAL,
    -- Radio bearer IES
    rab-InformationReconfigList      RAB-InformationReconfigList      OPTIONAL,
    rb-InformationReleaseList         RB-InformationReleaseList,
}

```

```

    rb-InformationAffectedList      RB-InformationAffectedList-r5      OPTIONAL,
    dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo-r5  OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo           UL-CommonTransChInfo-r4           OPTIONAL,
    ul-deletedTransChInfoList      UL-DeletedTransChInfoList         OPTIONAL,
    ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList       OPTIONAL,
    modeSpecificTransChInfo        CHOICE {
        fdd                          SEQUENCE {
            cpch-SetID               CPCH-SetID                        OPTIONAL,
            addReconfTransChDRAC-Info DRAC-StaticInformationList     OPTIONAL
        },
        tdd                          NULL
    }
    dl-CommonTransChInfo           DL-CommonTransChInfo-r4           OPTIONAL,
    dl-DeletedTransChInfoList      DL-DeletedTransChInfoList-r5     OPTIONAL,
    dl-AddReconfTransChInfoList    DL-AddReconfTransChInfoList-r5   OPTIONAL,
-- Physical channel IEs
    frequencyInfo                  FrequencyInfo                       OPTIONAL,
    maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power             OPTIONAL,
    ul-ChannelRequirement          UL-ChannelRequirement-r5         OPTIONAL,
    modeSpecificPhysChInfo        CHOICE {
        fdd                          SEQUENCE {
            dl-PDSCH-Information      DL-PDSCH-Information             OPTIONAL
        },
        tdd                          NULL
    },
    dl-HSPDSCH-Information         DL-HSPDSCH-Information            OPTIONAL,
    dl-CommonInformation           DL-CommonInformation-r5           OPTIONAL,
    dl-InformationPerRL-List       DL-InformationPerRL-List-r5      OPTIONAL
}

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

-- *****
RadioBearerSetup ::= CHOICE {
  r3
    SEQUENCE {
      radioBearerSetup-r3
      v3a0NonCriticalExtensions
      radioBearerSetup-v3a0ext
      laterNonCriticalExtensions
      -- Container for additional R99 extensions
      radioBearerSetup-r3-add-ext
      v4b0NonCriticalExtensions
      radioBearerSetup-v4b0ext
      v5xyv590NonCriticalExtensions
      radioBearerSetup-v5xyv590ext
      nonCriticalExtensions
    } OPTIONAL
  },
  later-than-r3
    SEQUENCE {
      rrc-TransactionIdentifier
      criticalExtensions
      r4
        SEQUENCE {
          radioBearerSetup-r4
          v4d0NonCriticalExtensions
          -- Container for adding non critical extensions after freezing REL-5
          radioBearerSetup-r4-add-ext
          v5xyv590NonCriticalExtensions
          radioBearerSetup-v5xyv590ext
          nonCriticalExtensions
        } OPTIONAL
      },
      criticalExtensions
      r5
        SEQUENCE {
          radioBearerSetup-r5
          -- Container for adding non critical extensions after freezing REL-6
          radioBearerSetup-r5-add-ext
          nonCriticalExtensions
        },
      criticalExtensions
    }
}

RadioBearerSetup-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier
  integrityProtectionModeInfo
  cipheringModeInfo
  activationTime
  new-U-RNTI
  new-C-RNTI
  rrc-StateIndicator
  utran-DRX-CycleLengthCoeff
  -- UTRAN mobility IEs
  ura-Identity
  -- Core network IEs
  cn-InformationInfo
  -- Radio bearer IEs
  srb-InformationSetupList
  rab-InformationSetupList
  rb-InformationAffectedList
  dl-CounterSynchronisationInfo
  -- Transport channel IEs
  ul-CommonTransChInfo
  ul-deletedTransChInfoList
  ul-AddReconfTransChInfoList
  modeSpecificTransChInfo
  fdd
    SEQUENCE {
      cpch-SetID
      addReconfTransChDRAC-Info
    },
  tdd
    NULL
  },
  dl-CommonTransChInfo
}

```



```

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

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

RadioBearerSetup-v4b0ext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- ssdt-UL extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
    ssdt-UL-r4                      SSdT-UL                          OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List              CellIdentity-PerRL-List         OPTIONAL
}

RadioBearerSetup-v5xyv590ext-IEs ::= SEQUENCE {
-- Physical channel IEs
    dl-TPC-PowerOffsetPerRL-List    DL-TPC-PowerOffsetPerRL-List    OPTIONAL
}

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

```

```

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

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

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

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

-- *****

```

```

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

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

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

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

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

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

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

```

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

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

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

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

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

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

```

}

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

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

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

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

RRCConnectionRequest ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  initialUE-Identity             InitialUE-Identity,
  establishmentCause             EstablishmentCause,
  -- protocolErrorIndicator is MD, but for compactness reasons no default value
  -- has been assigned to it.
  protocolErrorIndicator         ProtocolErrorIndicator,
  -- Measurement IEs
  measuredResultsOnRACH          MeasuredResultsOnRACH           OPTIONAL,
  -- Non critical Extensions
  v3d0NonCriticalExtensions     SEQUENCE {
    rrcConnectionRequest-v3d0ext  RRCConnectionRequest-v3d0ext-IEs,
    -- Reserved for future non critical extension
    v4b0NonCriticalExtensions     SEQUENCE {
      rrcConnectionRequest-v4b0ext  RRCConnectionRequest-v4b0ext-IEs,
      v5xyv590NonCriticalExtensions SEQUENCE {
        rrcConnectionRequest-v5xyv590ext  RRCConnectionRequest-v5xyv590ext-IEs,
        -- Reserved for future non critical extension
        nonCriticalExtensions           SEQUENCE {}           OPTIONAL
      } OPTIONAL
    } OPTIONAL
  } OPTIONAL
}

RRCConnectionRequest-v3d0ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  uESpecificBehaviourInformationIdle  UESpecificBehaviourInformationIdle  OPTIONAL
}

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

RRCConnectionRequest-v5xyv590ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  predefinedConfigStatusInfo         BOOLEAN
}

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

RRCConnectionSetup ::= CHOICE {
  r3                                 SEQUENCE {
    rrcConnectionSetup-r3           RRCConnectionSetup-r3-IEs,
    laterNonCriticalExtensions       SEQUENCE {

```

```

-- Container for additional R99 extensions
rrcConnectionSetup-r3-add-ext      BIT STRING      OPTIONAL,
v4b0NonCriticalExtensions          SEQUENCE {
  rrcConnectionSetup-v4b0ext      RRCConnectionSetup-v4b0ext-IEs,
  v5xyv590NonCriticalExtensions    SEQUENCE {
    rrcConnectionSetup-v5xyv590ext RRCConnectionSetup-v5xyv590ext-IEs,
    nonCriticalExtensions          SEQUENCE {}      OPTIONAL
  }      OPTIONAL
}      OPTIONAL
},
later-than-r3                      SEQUENCE {
  initialUE-Identity              InitialUE-Identity,
  rrc-TransactionIdentifier        RRC-TransactionIdentifier,
  criticalExtensions              CHOICE {
    r4                            SEQUENCE {
      rrcConnectionSetup-r4      RRCConnectionSetup-r4-IEs,
      v4d0NonCriticalExtensions  SEQUENCE {
        -- Container for adding non critical extensions after freezing REL-5
        rrcConnectionSetup-r4-add-ext BIT STRING      OPTIONAL,
        v5xyv590NonCriticalExtensions SEQUENCE {
          rrcConnectionSetup-v5xyv590ext RRCConnectionSetup-v5xyv590ext-IEs,
          nonCriticalExtensions          SEQUENCE {}      OPTIONAL
        }      OPTIONAL
      }      OPTIONAL
    },
    criticalExtensions            CHOICE {
      r5                          SEQUENCE {
        rrcConnectionSetup-r5      RRCConnectionSetup-r5-IEs,
        -- Container for adding non critical extensions after freezing REL-6
        rrcConnectionSetup-r5-add-ext BIT STRING      OPTIONAL,
        nonCriticalExtensions        SEQUENCE {}      OPTIONAL
      },
      criticalExtensions          SEQUENCE {}
    }
  }
}
}
}

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

RRCConnectionSetup-v4b0ext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4-ext CapabilityUpdateRequirement-r4-ext OPTIONAL,
  -- Physical channel IEs
  -- ssdt-UL extends SSDD-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL-r4                  SSDD-UL              OPTIONAL,
  -- The order of the RLs in IE cell-id-PerRL-List is the same as

```

```

-- in IE DL-InformationPerRL-List included in this message
cell-id-PerRL-List          CellIdentity-PerRL-List          OPTIONAL
}

RRCCConnectionSetup-v5xyv590ext-IEs ::= SEQUENCE {
-- Physical channel IEs
dl-TPC-PowerOffsetPerRL-List  DL-TPC-PowerOffsetPerRL-List          OPTIONAL
}

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

RRCCConnectionSetup-r5-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall not be performed on this message.
activationTime                ActivationTime                OPTIONAL,
new-U-RNTI                    U-RNTI,
new-c-RNTI                    C-RNTI                    OPTIONAL,
rrc-StateIndicator            RRC-StateIndicator,
utran-DRX-CycleLengthCoeff    UTRAN-DRX-CycleLengthCoefficient,
-- TABULAR: If capabilityUpdateRequirement is not present, the default value
-- defined in 10.3.3.2 shall be used.
capabilityUpdateRequirement    CapabilityUpdateRequirement-r4    OPTIONAL,
-- Specification mode information
specificationMode             CHOICE {
complete                      SEQUENCE {
-- Radio bearer IEs
srb-InformationSetupList      SRB-InformationSetupList2,
-- Transport channel IEs
ul-CommonTransChInfo         UL-CommonTransChInfo-r4         OPTIONAL,
ul-AddReconfTransChInfoList  UL-AddReconfTransChInfoList    OPTIONAL,
dl-CommonTransChInfo         DL-CommonTransChInfo-r4        OPTIONAL,
dl-AddReconfTransChInfoList  DL-AddReconfTransChInfoList-r4  OPTIONAL
},
preconfiguration              SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
preConfigMode                 CHOICE {
predefinedConfigIdentity      PredefinedConfigIdentity,
defaultConfig                 SEQUENCE {
defaultConfigMode            DefaultConfigMode,
defaultConfigIdentity        DefaultConfigIdentity-r5
}
}
},
},
-- Physical channel IEs
frequencyInfo                 FrequencyInfo                 OPTIONAL,
maxAllowedUL-TX-Power         MaxAllowedUL-TX-Power         OPTIONAL,
ul-ChannelRequirement        UL-ChannelRequirement-r4      OPTIONAL,
dl-CommonInformation         DL-CommonInformation-r4      OPTIONAL,
dl-InformationPerRL-List     DL-InformationPerRL-List-r5bis  OPTIONAL
}

-- *****
--

```

```

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

RRCConnectionSetupComplete ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  startList                      STARTList,
  ue-RadioAccessCapability      UE-RadioAccessCapability          OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability      InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
  -- Non critical extensions
  v370NonCriticalExtensions      SEQUENCE {
    rrcConnectionSetupComplete-v370ext  RRCConnectionSetupComplete-v370ext,
    v380NonCriticalExtensions          SEQUENCE {
      rrcConnectionSetupComplete-v380ext  RRCConnectionSetupComplete-v380ext-IEs,
      -- Reserved for future non critical extension
      v3a0NonCriticalExtensions          SEQUENCE {
        rrcConnectionSetupComplete-v3a0ext  RRCConnectionSetupComplete-v3a0ext-IEs,
        laterNonCriticalExtensions        SEQUENCE {
          -- Container for additional R99 extensions
          rrcConnectionSetupComplete-r3-add-ext  BIT STRING          OPTIONAL,
          v3g0NonCriticalExtensions          SEQUENCE {
            rrcConnectionSetupComplete-v3g0ext  RRCConnectionSetupComplete-v3g0ext-IEs,
            v4b0NonCriticalExtensions          SEQUENCE {
              rrcConnectionSetupComplete-v4b0ext
              RRCConnectionSetupComplete-v4b0ext-IEs,
              v5xyv590NonCriticalExtensions  SEQUENCE {
                rrcConnectionSetupComplete-v5xyv590ext
                RRCConnectionSetupComplete-v5xyv590ext-
IEs,
              }
              nonCriticalExtensions          SEQUENCE { }          OPTIONAL
            }
          }
          OPTIONAL
        }
      }
      OPTIONAL
    }
  }
  OPTIONAL
}

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

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

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

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

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

RRCConnectionSetupComplete-v5xyv590ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ue-RadioAccessCapability-v5xyv590ext  UE-RadioAccessCapability-v5xyv590ext,
  -- Other IEs
  ue-RATSpecificCapability-v5xyv590ext  InterRAT-UE-RadioAccessCapability-v5xyv590ext
  OPTIONAL
}
}

-- *****
--

```



```

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

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

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

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

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

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

-- *****

```

```

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

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

```

```

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

```

```

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

```

```

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

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

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

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

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

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

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

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

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

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

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

CompleteSIB ::=
    SEQUENCE {
        -- Other information elements
        sib-Type           SIB-Type,
        -- For sib-Data-fixed, in case the SIB data is less than 226 bits, padding

```

```

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

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

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

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

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

TransportChannelReconfiguration ::= CHOICE {
  r3 SEQUENCE {
    transportChannelReconfiguration-r3
      TransportChannelReconfiguration-r3-IEs,
    v3a0NonCriticalExtensions SEQUENCE {
      transportChannelReconfiguration-v3a0ext
        TransportChannelReconfiguration-v3a0ext,
      laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions
        transportChannelReconfiguration-r3-add-ext BIT STRING OPTIONAL,
        v4b0NonCriticalExtensions SEQUENCE {
          transportChannelReconfiguration-v4b0ext
            TransportChannelReconfiguration-v4b0ext-IEs,
            v5xyv590NonCriticalExtensions SEQUENCE {
              transportChannelReconfiguration-v5xyv590ext
                TransportChannelReconfiguration-v5xyv590ext-
                IEs,
              nonCriticalExtensions SEQUENCE {} OPTIONAL
            } OPTIONAL
          } OPTIONAL
        } OPTIONAL
      },
      later-than-r3 SEQUENCE {
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
        criticalExtensions CHOICE {
          r4 SEQUENCE {
            transportChannelReconfiguration-r4
              TransportChannelReconfiguration-r4-IEs,
            v4d0NonCriticalExtensions SEQUENCE {
              -- Container for adding non critical extensions after freezing REL-5
              transportChannelReconfiguration-r4-add-ext BIT STRING OPTIONAL,
              v5xyv590NonCriticalExtensions SEQUENCE {
                transportChannelReconfiguration-v5xyv590ext
                  TransportChannelReconfiguration-v5xyv590ext-IEs,
                  nonCriticalExtensions SEQUENCE {} OPTIONAL
                } OPTIONAL
              } OPTIONAL
            },
            criticalExtensions CHOICE {
              r5 SEQUENCE {
                transportChannelReconfiguration-r5
                  TransportChannelReconfiguration-r5-IEs,
                -- Container for adding non critical extensions after freezing REL-6
                transportChannelReconfiguration-r5-add-ext BIT STRING OPTIONAL,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
              }
            }
          }
        }
      }
    }
  }

```

```

        },
        criticalExtensions          SEQUENCE {}
    }
}

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

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

TransportChannelReconfiguration-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- ssdt-UL extends SSdT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL-r4                      SSdT-UL                           OPTIONAL,
    -- The order of the RLs in IE cell-id-PerRL-List is the same as
    -- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List              CellIdentity-PerRL-List           OPTIONAL
}

TransportChannelReconfiguration-v5xyv590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    dl-TPC-PowerOffsetPerRL-List    DL-TPC-PowerOffsetPerRL-List     OPTIONAL
}

TransportChannelReconfiguration-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo      IntegrityProtectionModeInfo        OPTIONAL,
    cipheringModeInfo                 CipheringModeInfo                  OPTIONAL,
    activationTime                     ActivationTime                       OPTIONAL,
    new-U-RNTI                         U-RNTI                             OPTIONAL,
    new-C-RNTI                         C-RNTI                             OPTIONAL,
    new-DSCH-RNTI                     DSCH-RNTI                          OPTIONAL,
    rrc-StateIndicator                 RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff         UTRAN-DRX-CycleLengthCoefficient   OPTIONAL,
}

```

```

-- Core network IEs
  cn-InformationInfo          CN-InformationInfo          OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                URA-Identity                OPTIONAL,
-- Radio bearer IEs
  dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo  OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo        UL-CommonTransChInfo-r4        OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList    OPTIONAL,
  modeSpecificTransChInfo     CHOICE {
    fdd                        SEQUENCE {
      cpch-SetID              CPCH-SetID              OPTIONAL,
      addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd                        NULL
  }
  dl-CommonTransChInfo        DL-CommonTransChInfo-r4        OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r4  OPTIONAL,
-- Physical channel IEs
  frequencyInfo               FrequencyInfo                 OPTIONAL,
  maxAllowedUL-TX-Power       MaxAllowedUL-TX-Power        OPTIONAL,
  ul-ChannelRequirement        UL-ChannelRequirement-r4     OPTIONAL,
  modeSpecificPhysChInfo      CHOICE {
    fdd                        SEQUENCE {
      dl-PDSCH-Information    DL-PDSCH-Information    OPTIONAL
    },
    tdd                        NULL
  },
  dl-CommonInformation         DL-CommonInformation-r4      OPTIONAL,
  dl-InformationPerRL-List     DL-InformationPerRL-List-r4  OPTIONAL
}

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

-- *****
--

```

```

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

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

-- *****
--
-- TRANSPORT FORMAT COMBINATION CONTROL in AM or UM RLC mode
--
-- *****
TransportFormatCombinationControl ::= SEQUENCE {
  -- rrc-TransactionIdentifier is always included in this version of the specification
  rrc-TransactionIdentifier      RRC-TransactionIdentifier      OPTIONAL,
  modeSpecificInfo              CHOICE {
    fdd                          NULL,
    tdd                          SEQUENCE {
      tfcs-ID                    TFCS-Identity    OPTIONAL
    }
  },
  dpch-TFCS-InUplink            TFC-Subset,
  activationTimeForTFCSsubset   ActivationTime                OPTIONAL,
  tfc-ControlDuration           TFC-ControlDuration          OPTIONAL,
  laterNonCriticalExtensions    SEQUENCE {
    -- Container for additional R99 extensions
    transportFormatCombinationControl-r3-add-ext BIT STRING  OPTIONAL,
    nonCriticalExtensions      SEQUENCE {}      OPTIONAL
  }
  OPTIONAL
}

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

```



```

}

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

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

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

UECapabilityEnquiry-v4b0ext-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-IEs,
        laterNonCriticalExtensions     SEQUENCE {
          -- Container for additional R99 extensions
          ueCapabilityInformation-r3-add-ext BIT STRING          OPTIONAL,
          -- Reserved for future non critical extension
          v4b0NonCriticalExtensions     SEQUENCE {
            ueCapabilityInformation-v4b0ext UECapabilityInformation-v4b0ext,
            v5xyv590NonCriticalExtensions SEQUENCE {
              ueCapabilityInformation-v5xyv590ext UECapabilityInformation-
v5xyv590ext,
              nonCriticalExtensions      SEQUENCE {}          OPTIONAL
            }
          }
        }
      }
    }
  }
}

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

```

```

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

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

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

| UECapabilityInformation-v5xyv590ext ::= SEQUENCE {
|   -- User equipment IEs
|   ue-RadioAccessCapability-v5xyv590ext      UE-RadioAccessCapability-v5xyv590ext
|   OPTIONAL,
|   -- Other IEs
|   ue-RATSpecificCapability-v5xyv590ext      InterRAT-UE-RadioAccessCapability-v5xyv590ext
|   OPTIONAL
|
}

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

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

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

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

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

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

```

```

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

```

```

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

```

```

UplinkPhysicalChannelControl-v4b0ext-IEs ::= SEQUENCE {
  -- In case of TDD, openLoopPowerControl-IPDL-TDD is included instead of IE
  -- up-IPDL-Parameters in up-OTDOA-AssistanceData
  openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4 OPTIONAL
}

```

```

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

```

```

UplinkPhysicalChannelControl-r5-IEs ::= SEQUENCE {
  -- Physical channel IEs
  ccTrCH-PowerControlInfo CTrCH-PowerControlInfo-r5 OPTIONAL,
  specialBurstScheduling SpecialBurstScheduling OPTIONAL,
}

```

```

tddOption CHOICE {
  tdd384 SEQUENCE {
    timingAdvance UL-TimingAdvanceControl-r4 OPTIONAL,
    alpha Alpha OPTIONAL,
    prach-ConstantValue ConstantValueTdd OPTIONAL,
    pusch-ConstantValue ConstantValueTdd OPTIONAL,
    openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4 OPTIONAL,
    hs-SICH-PowerControl HS-SICH-Power-Control-Info-TDD384 OPTIONAL
  },
  tdd128 SEQUENCE {
    ul-SynchronisationParameters UL-SynchronisationParameters-r4 OPTIONAL
  }
}

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

URAUUpdate ::= SEQUENCE {
  -- User equipment IES
  u-RNTI U-RNTI,
  ura-UpdateCause URA-UpdateCause,
  protocolErrorIndicator ProtocolErrorIndicatorWithMoreInfo,
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    uraUpdate-r3-add-ext BIT STRING OPTIONAL,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  }
}

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

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

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

URAUUpdateConfirm-r5-IEs ::= SEQUENCE {

```

```

-- User equipment IEs
  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
--
-- *****

URAUUpdateConfirm-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
    }
  },
  later-than-r3                     SEQUENCE {
    u-RNTI                           U-RNTI,
    rrc-TransactionIdentifier         RRC-TransactionIdentifier,
    criticalExtensions                SEQUENCE {}
  }
}

URAUUpdateConfirm-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
        uranMobilityInformation-r3-add-ext  BIT STRING      OPTIONAL,
        nonCriticalExtensions              SEQUENCE {}      OPTIONAL
      }
    }
  },
  later-than-r3                     SEQUENCE {
    rrc-TransactionIdentifier         RRC-TransactionIdentifier,
    criticalExtensions                CHOICE {
      r5                               SEQUENCE {
        uranMobilityInformation-r5      UTRANMobilityInformation-r5-IEs,
        nonCriticalExtensions            SEQUENCE {}      OPTIONAL
      },
      criticalExtensions                SEQUENCE {}
    }
  }
}

UTRANMobilityInformation-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier           RRC-TransactionIdentifier,
  integrityProtectionModeInfo         IntegrityProtectionModeInfo      OPTIONAL,

```

```

        cipheringModeInfo          CipheringModeInfo          OPTIONAL,
        new-U-RNTI                  U-RNTI                OPTIONAL,
        new-C-RNTI                  C-RNTI                OPTIONAL,
        ue-ConnTimersAndConstants    UE-ConnTimersAndConstants OPTIONAL,
-- CN information elements
        cn-InformationInfo          CN-InformationInfoFull OPTIONAL,
-- UTRAN mobility IES
        ura-Identity                URA-Identity          OPTIONAL,
-- Radio bearer IES
        dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo OPTIONAL,
-- Extension mechanism for non- release99 information
        nonCriticalExtensions        SEQUENCE {}           OPTIONAL
    }
}

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

UTRANMobilityInformation-r5-IEs ::= SEQUENCE {
-- User equipment IES
    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
        uranMobilityInformationConfirm-r3-add-ext    BIT STRING    OPTIONAL,
        nonCriticalExtensions                        SEQUENCE {}   OPTIONAL
    }
}

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

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

END

```

11.3 Information element definitions

InformationElements DEFINITIONS AUTOMATIC TAGS ::=

```

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

```

BEGIN

IMPORTS

```

hipDSCHidentities,
hiPUSCHidentities,
hiRM,
maxAC,
maxAdditionalMeas,
maxASC,
maxASCmap,
maxASCpersist,
maxCCTrCH,
maxCellMeas,
maxCellMeas-1,
maxCNdomains,
maxCPCHsets,
maxDPCH-DLchan,
maxDPDCH-UL,
maxDRACclasses,
maxFACHPCH,
maxFreq,
maxFreqBandsFDD,
maxFreqBandsTDD,
maxFreqBandsGSM,
maxGERAN-SI,
maxHProcesses,
maxHSDSCHTBIndex,
maxHSDSCHTBIndex-tdd384,
maxHSSCCHs,
maxInterSysMessages,
maxLoCHperRLC,
maxMAC-d-PDUsizes,
maxMeasEvent,
maxMeasIntervals,
maxMeasParEvent,
maxNumCDMA2000Freqs,
maxNumFDDFreqs,
maxNumGSMFreqRanges,
maxNumTDDFreqs,
maxOtherRAT,
maxOtherRAT-16,
maxPage1,
maxPCPCH-Apsig,
maxPCPCH-ApsubCh,
maxPCPCH-CDsig,
maxPCPCH-CDsubCh,
maxPCPCH-SF,
maxPCPCHs,
maxPDCPAlgoType,
maxPDSCH,
maxPDSCH-TFCIgroups,
maxPRACH,
maxPRACH-FPACH,
maxPredefConfig,
maxPUSCH,
maxQueueIDs,
maxRABsetup,
maxRAT,
maxRB,
maxRBallRABs,
maxRBMuxOptions,
maxRBperRAB,
maxReportedGSMCells,
maxSRBsetup,
maxRL,
maxRL-1,
maxROHC-PacketSizes-r4,
maxROHC-Profile-r4,
maxSCCPCH,
maxSat,
maxSIB,
maxSIB-FACH,

```

```

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

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

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

CN-DomainInformation ::=                       SEQUENCE {
  cn-DomainIdentity                            CN-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
        routingparameter
    },
    IMSIcauseUEinitiatedEvent
        routingparameter
    },
    IMEI
        routingparameter
    },
    spare2
        routingparameter
    },
    spare1
        routingparameter
    }
},
-- dummy is not used in this version of the specification and
-- it should be ignored by the receiver.
dummy                                BOOLEAN
}

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

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

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

IntraDomainNasNodeSelector ::=        SEQUENCE {
    version                             CHOICE {
        release99                       SEQUENCE {
            cn-Type                      CHOICE {
                gsm-Map-IDNNS,
                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 ::=
  gsm-MAP-RAB-Identity
  ansi-41-RAB-Identity
}

RAI ::=
  lai
  rac
}

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

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

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

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

CellSelectReselectInfoSIB-3-4 ::=
  SEQUENCE {
    mappingInfo
    MappingInfo
  } OPTIONAL,
  cellSelectQualityMeasure
  CHOICE {
    cpich-Ec-NO
    SEQUENCE {
      -- Default value for q-HYST-2-S is q-HYST-1-S
      q-HYST-2-S
      Q-Hyst-S
    }
    -- Default value for q-HYST-2-S is q-HYST-1-S
  } OPTIONAL,
  cpich-RSCP
  NULL
  },
  modeSpecificInfo
  CHOICE {

```

```

    fdd
        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
        s-Intrasearch         S-SearchRXLEV          OPTIONAL,
        s-Intersearch         S-SearchRXLEV          OPTIONAL,
        s-SearchHCS           S-SearchRXLEV          OPTIONAL,
        rat-List              RAT-TDD-InfoList        OPTIONAL,
        q-RxlevMin           Q-RxlevMin
    }
},
q-Hyst-l-S                 Q-Hyst-S,
t-Reselection-S           T-Reselection-S,
hcs-ServingCellInformation HCS-ServingCellInformation OPTIONAL,
maxAllowedUL-TX-Power     MaxAllowedUL-TX-Power
}

MapParameter ::=          INTEGER (0..99)

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

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

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

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

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

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

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

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

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

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

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

RAT-TDD-Info ::=       SEQUENCE {

```

```

    rat-Identifier          RAT-Identifier,
    s-SearchRAT            S-SearchRXLEV,
    s-HCS-RAT              S-SearchRXLEV          OPTIONAL,
    s-Limit-SearchRAT      S-SearchRXLEV
}

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

ReservedIndicator ::=     ENUMERATED {
                           reserved,
                           notReserved }

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

```

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

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

CipheringAlgorithm ::=
    ENUMERATED {
        uea0, uea1 }

CipheringModeCommand ::=
    CHOICE {
        startRestart
        dummy
    }
    NULL

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

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

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

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

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

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

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

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

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

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

CompressedModeMeasCapabGSM ::=
    SEQUENCE {

```

```

    radioFrequencyBandGSM                RadioFrequencyBandGSM,
    dl-MeasurementsGSM                   BOOLEAN,
    ul-MeasurementsGSM                   BOOLEAN
}

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

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

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

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

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

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

SupportOfDedicatedPilotsForChEstimation ::= ENUMERATED { true }

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

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

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

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

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

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

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

EstablishmentCause ::=                  ENUMERATED {
    originatingConversationalCall,

```

```

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

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

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

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

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

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

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

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

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

```

```

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

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

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

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

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

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

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

IntegrityProtectionAlgorithm ::= ENUMERATED {
    uial
}

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

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

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

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

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

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

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

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

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

MaxNoDPDCH-BitsTransmitted ::= ENUMERATED {

```



```

        b600, b1200, b2400, b4800,
        b9600, b19200, b28800, b38400,
        b48000, b57600 }

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

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

MaxNoSCCPCH-RL ::= ENUMERATED {
        r11 }

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

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

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

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

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

MaxPhysChPerTimeslot ::= ENUMERATED {
        ts1, ts2 }

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

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

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

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

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

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

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

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

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

MeasurementCapabilityExt ::= SEQUENCE{
        compressedModeMeasCapabFDDList  CompressedModeMeasCapabFDDList,
        compressedModeMeasCapabTDDList  CompressedModeMeasCapabTDDList  OPTIONAL,
        compressedModeMeasCapabGSMLList CompressedModeMeasCapabGSMLList  OPTIONAL,
        compressedModeMeasCapabMC       CompressedModeMeasCapabMC       OPTIONAL
}

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

```

```

}
MessageAuthenticationCode ::=          BIT STRING (SIZE (32))
MinimumSF-DL ::=                       ENUMERATED {
                                        sf1, sf16 }
MinimumSF-UL ::=                       ENUMERATED {
                                        sf1, sf2, sf4, sf8, dummy }
MultiModeCapability ::=                ENUMERATED {
                                        tdd, fdd, fdd-tdd }
MultiRAT-Capability ::=                SEQUENCE {
    supportOfGSM                        BOOLEAN,
    supportOfMulticarrier                BOOLEAN
}
MultiModeRAT-Capability-v5xyv590ext ::= SEQUENCE {
    supportOfUTRAN-ToGERAN-NACC          BOOLEAN
}
N-300 ::=                              INTEGER (0..7)
N-301 ::=                              INTEGER (0..7)
N-302 ::=                              INTEGER (0..7)
N-304 ::=                              INTEGER (0..7)
N-308 ::=                              INTEGER (1..8)
N-310 ::=                              INTEGER (0..7)
N-312 ::=                              ENUMERATED {
                                        s1, s50, s100, s200, s400,
                                        s600, s800, s1000 }
N-312ext ::=                           ENUMERATED {
                                        s2, s4, s10, s20 }
N-312-r5 ::=                           ENUMERATED {
                                        s1, s2, s4, s10, s20,
                                        s50, s100, s200, s400,
                                        s600, s800, s1000 }
N-313 ::=                              ENUMERATED {
                                        s1, s2, s4, s10, s20,
                                        s50, s100, s200 }
N-315 ::=                              ENUMERATED {
                                        s1, s50, s100, s200, s400,
                                        s600, s800, s1000 }
N-315ext ::=                           ENUMERATED {
                                        s2, s4, s10, s20 }
N-315-r5 ::=                           ENUMERATED {
                                        s1, s2, s4, s10, s20,
                                        s50, s100, s200, s400,
                                        s600, s800, s1000 }
N-AccessFails ::=                     INTEGER (1..64)
N-AP-RetransMax ::=                   INTEGER (1..64)
NetworkAssistedGPS-Supported ::=      ENUMERATED {
    networkBased,
    ue-Based,
    bothNetworkAndUE-Based,
    noNetworkAssistedGPS }
NF-BO-AllBusy ::=                     INTEGER (0..31)
NF-BO-NoAICH ::=                      INTEGER (0..31)
NF-BO-Mismatch ::=                   INTEGER (0..127)

```

```

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

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

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

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

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

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

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

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

PDCP-Capability ::= SEQUENCE {
    losslessSRNS-RelocationSupport BOOLEAN,
    -- If present, the "maxHcContextSpace" in the IE "PDCP-Capability-r5-ext" overrides the
    -- "supported" value in this IE. The value in this IE may be used by a pre-REL-5 UTRAN.
    supportForRfc2507 CHOICE {
        notSupported
        supported
    }
}

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

PDCP-Capability-r5-ext ::= SEQUENCE {

```

```

supportForRfc3095ContextRelocation      BOOLEAN,
maxHcContextSpace                       MaxHcContextSpace-r5-ext  OPTIONAL
}

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

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

-- PhysicalChannelCapability-hspdsch-r5 describes the HS-PDSCH physical channel capability
PhysicalChannelCapability-hspdsch-r5 ::= SEQUENCE {
    fdd-hspdsch                         CHOICE {
        supported                       SEQUENCE {
            hsdSCH-physical-layer-category    HSDSCH-physical-layer-category,
            supportOfDedicatedPilotsForChannelEstimationOfHSDSCH  BOOLEAN,
            -- simultaneousSCCPCH-DPCH-HSDSCH-Reception shall be true only if the
            -- IE SimultaneousSCCPCH-DPCH-Reception indicates support of simultaneous
            -- reception of S-CCPCH and DPCH
            simultaneousSCCPCH-DPCH-HSDSCH-Reception  BOOLEAN
        },
        unsupported                       NULL
    },
    tdd384-hspdsch                      CHOICE {
        supported                       HSDSCH-physical-layer-category,
        unsupported                       NULL
    },
    tdd128-hspdsch                      CHOICE {
        supported                       HSDSCH-physical-layer-category,
        unsupported                       NULL
    }
}

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

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

ProtocolErrorIndicator ::=            ENUMERATED {
    noError, errorOccurred }

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

ProtocolErrorMoreInformation ::=      SEQUENCE {
    diagnosticsType                     CHOICE {
        type1                             CHOICE {

```

```

asn1-ViolationOrEncodingError      NULL,
messageTypeNonexistent              NULL,
messageNotCompatibleWithReceiverState
                                     IdentificationOfReceivedMessage,
ie-ValueNotComprehended             IdentificationOfReceivedMessage,
conditionalInformationElementError   IdentificationOfReceivedMessage,
messageExtensionNotComprehended     IdentificationOfReceivedMessage,
spare1                               NULL,
spare2                               NULL
},
spare                                NULL
}
}

RadioFrequencyBandFDD ::=          ENUMERATED {
    -- fdd2100, fdd1900, fdd1800 correspond to Band I, Band II and Band III respectively
    fdd2100,
    fdd1900,
    fdd1800, spare5, spare4, spare3, spare2, spare1 }

RadioFrequencyBandFDD Spare ::=    ENUMERATED {spare8, spare7, 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
}

```

```

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

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

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

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

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

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

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

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

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

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

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

```

```

        uia1(14),
        spare0(15)
    } (SIZE (16))
}

SimultaneousSCCPCH-DPCH-Reception ::= CHOICE {
    notSupported          NULL,
    supported             SEQUENCE {
        maxNoSCCPCH-RL   MaxNoSCCPCH-RL,
        -- simultaneousSCCPCH-DPCH-DPDCH-Reception is applicable only if
        -- the IE Support of PDSCH = TRUE
        -- Note: the reference to DPDCH in the element name below is incorrect (see tabular). The
        -- name is not changed, to keep it aligned with R99.
        simultaneousSCCPCH-DPCH-DPDCH-Reception    BOOLEAN
    }
}

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

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

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

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

SystemSpecificCapUpdateReq ::=    ENUMERATED {
    gsm }

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

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

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

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

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

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

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

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

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

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

T-311 ::=                ENUMERATED {
    ms250, ms500, ms750, ms1000,

```

```

ms1250, ms1500, ms1750, ms2000 }

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

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

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

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

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

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

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

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

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

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

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

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

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

TurboSupport ::=
    CHOICE {
        notSupported
        supported
    }

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

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

U-RNTI-Group ::=
    CHOICE {
-- TABULAR: not following the tabular strictly, but this will most likely save bits
    all
    u-RNTI-BitMaskIndex-b1
    u-RNTI-BitMaskIndex-b2
    u-RNTI-BitMaskIndex-b3
    u-RNTI-BitMaskIndex-b4
    u-RNTI-BitMaskIndex-b5
    u-RNTI-BitMaskIndex-b6
    u-RNTI-BitMaskIndex-b7
    u-RNTI-BitMaskIndex-b8
    u-RNTI-BitMaskIndex-b9
    u-RNTI-BitMaskIndex-b10
    u-RNTI-BitMaskIndex-b11
    u-RNTI-BitMaskIndex-b12
    NULL,
    BIT STRING (SIZE (31)),
    BIT STRING (SIZE (30)),
    BIT STRING (SIZE (29)),
    BIT STRING (SIZE (28)),
    BIT STRING (SIZE (27)),
    BIT STRING (SIZE (26)),
    BIT STRING (SIZE (25)),
    BIT STRING (SIZE (24)),
    BIT STRING (SIZE (23)),
    BIT STRING (SIZE (22)),
    BIT STRING (SIZE (21)),
    BIT STRING (SIZE (20)),

```



```

u-RNTI-BitMaskIndex-b13          BIT STRING (SIZE (19)),
u-RNTI-BitMaskIndex-b14          BIT STRING (SIZE (18)),
u-RNTI-BitMaskIndex-b15          BIT STRING (SIZE (17)),
u-RNTI-BitMaskIndex-b16          BIT STRING (SIZE (16)),
u-RNTI-BitMaskIndex-b17          BIT STRING (SIZE (15)),
u-RNTI-BitMaskIndex-b18          BIT STRING (SIZE (14)),
u-RNTI-BitMaskIndex-b19          BIT STRING (SIZE (13)),
u-RNTI-BitMaskIndex-b20          BIT STRING (SIZE (12)),
u-RNTI-BitMaskIndex-b21          BIT STRING (SIZE (11)),
u-RNTI-BitMaskIndex-b22          BIT STRING (SIZE (10)),
u-RNTI-BitMaskIndex-b23          BIT STRING (SIZE (9)),
u-RNTI-BitMaskIndex-b24          BIT STRING (SIZE (8)),
u-RNTI-BitMaskIndex-b25          BIT STRING (SIZE (7)),
u-RNTI-BitMaskIndex-b26          BIT STRING (SIZE (6)),
u-RNTI-BitMaskIndex-b27          BIT STRING (SIZE (5)),
u-RNTI-BitMaskIndex-b28          BIT STRING (SIZE (4)),
u-RNTI-BitMaskIndex-b29          BIT STRING (SIZE (3)),
u-RNTI-BitMaskIndex-b30          BIT STRING (SIZE (2)),
u-RNTI-BitMaskIndex-b31          BIT STRING (SIZE (1))
}

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

UE-ConnTimersAndConstants ::=    SEQUENCE {
-- Optional is used also for parameters for which the default value is the last one read in SIB1
-- t-301 and n-301 should not be used by the UE in this version of the specification
    t-301                          T-301                          DEFAULT ms2000,
    n-301                          N-301                          DEFAULT 2,
    t-302                          T-302                          DEFAULT ms4000,
    n-302                          N-302                          DEFAULT 3,
    t-304                          T-304                          DEFAULT ms2000,
    n-304                          N-304                          DEFAULT 2,
    t-305                          T-305                          DEFAULT m30,
    t-307                          T-307                          DEFAULT s30,
    t-308                          T-308                          DEFAULT ms160,
    t-309                          T-309                          DEFAULT 5,
    t-310                          T-310                          DEFAULT ms160,
    n-310                          N-310                          DEFAULT 4,
    t-311                          T-311                          DEFAULT ms2000,
    t-312                          T-312                          DEFAULT 1,
-- n-312 shall be ignored if n-312 in UE-ConnTimersAndConstants-v3a0ext is present, and the
-- value of that element shall be used instead.
    n-312                          N-312                          DEFAULT s1,
    t-313                          T-313                          DEFAULT 3,
    n-313                          N-313                          DEFAULT s20,
    t-314                          T-314                          DEFAULT s12,
    t-315                          T-315                          DEFAULT s180,
-- n-315 shall be ignored if n-315 in UE-ConnTimersAndConstants-v3a0ext is present, and the
-- value of that element shall be used instead.
    n-315                          N-315                          DEFAULT s1,
    t-316                          T-316                          DEFAULT s30,
    t-317                          T-317                          DEFAULT infinity4
}

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

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

```

```

t-312          T-312          DEFAULT 1,
n-312          N-312-r5      DEFAULT s1,
t-313          T-313          DEFAULT 3,
n-313          N-313          DEFAULT s20,
t-314          T-314          DEFAULT s12,
t-315          T-315          DEFAULT s180,
n-315          N-315-r5      DEFAULT s1,
t-316          T-316          DEFAULT s30,
t-317          T-317          DEFAULT infinity4
}

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

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

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

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

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

UE-RadioAccessCapability ::= SEQUENCE {
  -- UE-RadioAccessCapability is compatible with R99, although accessStratumReleaseIndicator
  -- is removed from this IE, since its encoding did not does in bits. The
  -- accessStratumReleaseIndicator is provided in the relevant REL-4 extension IEs.
  pdcp-Capability          PDCP-Capability,
  rlc-Capability           RLC-Capability,
  transportChannelCapability TransportChannelCapability,
  rf-Capability            RF-Capability,
  physicalChannelCapability PhysicalChannelCapability,
  ue-MultiModeRAT-Capability UE-MultiModeRAT-Capability,
  securityCapability       SecurityCapability,
  ue-positioning-Capability UE-Positioning-Capability,
  measurementCapability    MeasurementCapability      OPTIONAL
}

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

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

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

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

UE-RadioAccessCapability-v3g0ext ::= SEQUENCE {
  ue-PositioningCapabilityExt-v3g0 UE-PositioningCapabilityExt-v3g0
}

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

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

```

```

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

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

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

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

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

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

RF-CapabBandFDDComp ::= ENUMERATED { notSupported, mhz190,
    mhz174-8-205-2, mhz134-8-245-2 }

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

| UE-RadioAccessCapability-v5xyv590ext ::= SEQUENCE {
    dl-CapabilityWithSimultaneousHS-DSCHConfig DL-CapabilityWithSimultaneousHS-DSCHConfig
    OPTIONAL,
    pdcp-Capability-r5-ext                    PDCP-Capability-r5-ext,
    rlc-Capability-r5-ext                     RLC-Capability-r5-ext,
    physicalChannelCapability                 PhysicalChannelCapability-hspdsch-r5,
    multiModerAT-Capability-v5xyv590ext     MultiModeRAT-Capability-v5xyv590ext
}

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

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

UL-PhysChCapabilityTDD-LCR-r4 ::= SEQUENCE {
    maxTS-PerSubFrame          MaxTS-PerSubFrame-r4,

```

```

    maxPhysChPerTimeslot          MaxPhysChPerTimeslot,
    minimumSF                     MinimumSF-UL,
    supportOfPUSCH                BOOLEAN,
    supportOf8PSK                 BOOLEAN
}

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

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

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

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

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

WaitTime ::=                     INTEGER (0..15)

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

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

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

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

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

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

DefaultConfigIdentity ::=        INTEGER (0..10)

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

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

DefaultConfigMode ::=            ENUMERATED {
    fdd,
    tdd }

```

```

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

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

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

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

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

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

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

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

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

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

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

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

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

ExpectReordering ::=
    reorderingNotExpected,
    reorderingExpected
}
ENUMERATED {
    reorderingNotExpected,
    reorderingExpected
}

```

```

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

HeaderCompressionInfo ::=
    algorithmSpecificInfo
}
SEQUENCE {
    AlgorithmSpecificInfo
}

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

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

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

LogicalChannelIdentity ::=
INTEGER (1..15)

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

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

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

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

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

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

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

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

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

PDCP-Info ::=
    losslessSRNS-RelocSupport
    -- 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
    headerCompressionInfoList
}
SEQUENCE {
    LosslessSRNS-RelocSupport OPTIONAL,
    PDCP-PDU-Header,
    HeaderCompressionInfoList OPTIONAL
}

PDCP-Info-r4 ::=
    losslessSRNS-RelocSupport
    -- 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
    headerCompressionInfoList
}
SEQUENCE {
    LosslessSRNS-RelocSupport OPTIONAL,
    PDCP-PDU-Header,
    HeaderCompressionInfoList-r4 OPTIONAL
}

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

```

```

    dummy                INTEGER (0..65535)
}

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

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

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

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

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

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

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

PredefinedConfigIdentity ::= INTEGER (0..15)

PredefinedConfigValueTag ::= INTEGER (0..15)

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

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

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

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```



```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

```

RB-InformationSetup-r5 ::=          SEQUENCE {
    rb-Identity                    RB-Identity,
    pdcp-Info                      PDCP-Info-r4                OPTIONAL,
    rlc-InfoChoice                 RLC-InfoChoice,
    rb-MappingInfo                 RB-MappingInfo-r5
}

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

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

RB-InformationSetupList-r5 ::=     SEQUENCE (SIZE (1..maxRBperRAB)) OF
    RB-InformationSetup-r5

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

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

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

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

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

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

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

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

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

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

SRB-InformationSetup-r5 ::=
    -- The default value for rb-Identity is the smallest value not used yet.
    rb-Identity
    rlc-InfoChoice
    rb-MappingInfo
}
SEQUENCE {
    RB-Identity OPTIONAL,
    RLC-InfoChoice,
    RB-MappingInfo-r5
}

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

SRB-InformationSetupList-r5 ::=
    SEQUENCE (SIZE (1..maxSRBsetup)) OF
        SRB-InformationSetup-r5

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

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

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

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

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

```

```

        tp850, tp900, tp950, tp1000 }

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

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

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

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

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

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

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

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

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

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

```

```

    },
    mac-LogicalChannelPriority          MAC-LogicalChannelPriority
}

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

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

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

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

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

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

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

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

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

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

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

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

```

```

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

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

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

CodingRate ::=             ENUMERATED {
    half,
    third }

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

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

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

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

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

CommonTransChTFS-LCR ::=  SEQUENCE {
    tti                    CHOICE {
        tti15              CommonDynamicTF-InfoList,
        tti10              CommonDynamicTF-InfoList,
        tti20              CommonDynamicTF-InfoList,
        tti40              CommonDynamicTF-InfoList,
        tti80              CommonDynamicTF-InfoList,
        dynamic            CommonDynamicTF-InfoList-DynamicTTI
    },
    semistaticTF-Information  SemistaticTF-Information
}

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

CRC-Size ::=            ENUMERATED {

```

```

        crc0, crc8, crc12, crc16, crc24 }

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

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

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

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

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

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

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

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

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

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

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

```

```

}

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

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

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

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

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

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

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

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

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

```



```

DL-TrCH-Type-r5 ::=
    dch
    dsch
    hsdSCH
}
CHOICE {
    TransportChannelIdentity,
    TransportChannelIdentity,
    MAC-d-FlowIdentity
}

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

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

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

ExplicitTFCS-Configuration ::=
    complete
    addition
    removal
    replacement
    tfcsRemoval
    tfcsAdd
}
CHOICE {
    TFCS-ReconfAdd,
    TFCS-ReconfAdd,
    TFCS-RemovalList,
    SEQUENCE {
        TFCS-RemovalList,
        TFCS-ReconfAdd
    }
}

GainFactor ::=
    INTEGER (0..15)

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

HSDSCH-Info ::=
    harqInfo
    addOrReconfMAC-dFlow
}
SEQUENCE {
    HARQ-Info OPTIONAL,
    AddOrReconfMAC-dFlow OPTIONAL
}

HARQ-Info ::=
    numberOfProcesses
    memoryPartitioning
    implicit
    explicit
}
SEQUENCE {
    INTEGER (1..8),
    CHOICE {
        NULL,
        SEQUENCE (SIZE (1..maxHProcesses)) OF
            HARQMemorySize
    }
}

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

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

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

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

```

```

}

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

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

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

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

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

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

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

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

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

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

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

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

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

MessType ::= ENUMERATED {
    transportFormatCombinationControl }

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

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

OctetModeRLC-SizeInfoType1 ::= CHOICE {
    -- Actual size = (8 * sizeType1) + 16
    sizeType1      INTEGER (0..31),
    sizeType2      SEQUENCE {
        -- Actual size = (32 * part1) + 272 + (part2 * 8)
        part1      INTEGER (0..23),

```

```

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

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

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

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

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

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

RateMatchingAttribute ::= INTEGER (1..hiRM)

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

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

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

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

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

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

SplitType ::= ENUMERATED {
  hardSplit, logicalSplit }

```

```

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

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

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

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

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

TFC-SubsetList ::=
    modeSpecificInfo
        fdd
        tdd
        tfcs-ID
    }
    },
    tfc-Subset
    TFC-Subset
}

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

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

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

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

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

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

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

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

TFCS-ReconfAdd ::=
    ctfcSize
    ctfc2Bit
        ctfc2
        powerOffsetInformation
    },
    ctfc4Bit
        ctfc4
        powerOffsetInformation
    },
    SEQUENCE{
        CHOICE{
            SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
                INTEGER (0..3),
                PowerOffsetInformation
            }
            OPTIONAL
        },
        SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            INTEGER (0..15),
            PowerOffsetInformation
        }
            OPTIONAL
    }
}

```

```

ctfc6Bit          SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
  ctfc6           INTEGER (0..63),
  powerOffsetInformation  OPTIONAL
},
ctfc8Bit          SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
  ctfc8           INTEGER (0..255),
  powerOffsetInformation  OPTIONAL
},
ctfc12Bit         SEQUENCE (SIZE(1..maxTFC)) OF SEQUENCE {
  ctfc12          INTEGER (0..4095),
  powerOffsetInformation  OPTIONAL
},
ctfc16Bit         SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
  ctfc16          INTEGER(0..65535),
  powerOffsetInformation  OPTIONAL
},
ctfc24Bit         SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
  ctfc24          INTEGER(0..16777215),
  powerOffsetInformation  OPTIONAL
}
}
}

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

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

TimeDurationBeforeRetry ::= INTEGER (1..256)

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

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

TransmissionTimeValidity ::= INTEGER (1..256)

TransportChannelIdentity ::= INTEGER (1..32)

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

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

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

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

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

UL-CommonTransChInfo ::= SEQUENCE {
  -- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual

```



```

        chCodeIndex7(0),
        chCodeIndex6(1),
        chCodeIndex5(2),
        chCodeIndex4(3),
        chCodeIndex3(4),
        chCodeIndex2(5),
        chCodeIndex1(6),
        chCodeIndex0(7)
    } (SIZE(8)) OPTIONAL,
subchannelSize CHOICE {
    size1 NULL,
    size2 SEQUENCE {
        -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'
        subchannels ENUMERATED { subch0, subch1 } OPTIONAL
    },
    size4 SEQUENCE {
        subchannels BIT STRING {
            subCh3(0),
            subCh2(1),
            subCh1(2),
            subCh0(3)
        } (SIZE(4)) OPTIONAL
    },
    size8 SEQUENCE {
        subchannels BIT STRING {
            subCh7(0),
            subCh6(1),
            subCh5(2),
            subCh4(3),
            subCh3(4),
            subCh2(5),
            subCh1(6),
            subCh0(7)
        } (SIZE(8)) OPTIONAL
    }
}
}

AccessServiceClass-TDD-LCR-r4 ::= SEQUENCE {
    availableSYNC-UlCodesIndics BIT STRING {
        sulCodeIndex7(0),
        sulCodeIndex6(1),
        sulCodeIndex5(2),
        sulCodeIndex4(3),
        sulCodeIndex3(4),
        sulCodeIndex2(5),
        sulCodeIndex1(6),
        sulCodeIndex0(7)
    } (SIZE(8)) OPTIONAL,
subchannelSize CHOICE {
    size1 NULL,
    size2 SEQUENCE {
        -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'.
        subchannels ENUMERATED { subch0, subch1 } OPTIONAL
    },
    size4 SEQUENCE {
        subchannels BIT STRING {
            subCh3(0),
            subCh2(1),
            subCh1(2),
            subCh0(3)
        } (SIZE(4)) OPTIONAL
    },
    size8 SEQUENCE {
        subchannels BIT STRING {
            subCh7(0),
            subCh6(1),
            subCh5(2),
            subCh4(3),
            subCh3(4),
            subCh2(5),
            subCh1(6),
            subCh0(7)
        } (SIZE(8)) OPTIONAL
    }
}
}
}

```

```

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

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

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

AllocationPeriodInfo ::=
    allocationActivationTime
    allocationDuration
}
SEQUENCE {
    INTEGER (0..255),
    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 ::=
    ap-Signature
    availableAP-SubchannelList
}
SEQUENCE {
    AP-Signature,
    AvailableAP-SubchannelList OPTIONAL
}

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

ASCSetting-FDD ::=
    -- 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
}
SEQUENCE {
    AccessServiceClass-FDD OPTIONAL
}

ASCSetting-TDD ::=
    -- 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
}
SEQUENCE {
    AccessServiceClass-TDD OPTIONAL
}

ASCSetting-TDD-LCR-r4 ::=
    -- TABULAR: accessServiceClass-TDD-LCR is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available SYNC_UL codes and
    -- all available sub-channels with subchannelSize=size1.
    accessServiceClass-TDD-LCR
}
SEQUENCE {
    AccessServiceClass-TDD-LCR-r4 OPTIONAL
}

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

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

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

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

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

AvailableSignatures ::=
    BIT STRING {
        signature15(0),
        signature14(1),

```



```

signature13(2),
signature12(3),
signature11(4),
signature10(5),
signature9(6),
signature8(7),
signature7(8),
signature6(9),
signature5(10),
signature4(11),
signature3(12),
signature2(13),
signature1(14),
signature0(15)
} (SIZE(16))

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

BurstType ::= ENUMERATED {
    type1, type2 }

-- Actual value Bler-Target = IE value * 0.05
Bler-Target ::= INTEGER (-63..0)

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

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

CCTrCH-PowerControlInfo-r5 ::= SEQUENCE {
    tfcs-Identity          OPTIONAL,
    ul-DPCH-PowerControlInfo-r5
}

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

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

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

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

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

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

CellAndChannelIdentity ::= SEQUENCE {
    burstType              BurstType,
    midambleShift          MidambleShiftLong,
    timeslot               TimeslotNumber,
    cellParametersID      CellParametersID
}

CellParametersID ::= INTEGER (0..127)

Cfntargetsfnframeoffset ::= INTEGER(0..255)

ChannelAssignmentActive ::= CHOICE {

```

```

    notActive          NULL,
    isActive          AvailableMinimumSF-ListVCAM
}

ChannelisationCode256 ::=          INTEGER (0..255)

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

ClosedLoopTimingAdjMode ::=        ENUMERATED {
    slot1, slot2 }

CodeNumberDSCH ::=                INTEGER (0..255)

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

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

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

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

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

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

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

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

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

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

```

```

CPCH-SetInfo

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

CQI-RepetitionFactor ::=            INTEGER(1..4)

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

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

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

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

DeltaCQI ::=                        INTEGER (0..8)

DeltaNACK ::=                       INTEGER (0..8)

DeltaACK ::=                        INTEGER (0..8)

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

DL-CCTrCh ::=                       SEQUENCE {
    tfcs-ID                          TFCS-IdentityPlain           DEFAULT 1,
    timeInfo                          TimeInfo,
    commonTimeslotInfo                 CommonTimeslotInfo         OPTIONAL,
    dl-CCTrCH-TimeslotsCodes           DownlinkTimeslotsCodes     OPTIONAL,
    ul-CCTrChTPCList                   UL-CCTrChTPCList           OPTIONAL
}

DL-CCTrCh-r4 ::=                   SEQUENCE {
    tfcs-ID                          TFCS-IdentityPlain           DEFAULT 1,
    timeInfo                          TimeInfo,
    commonTimeslotInfo                 CommonTimeslotInfo         OPTIONAL,
    tddOption                          CHOICE {
        tdd384                        SEQUENCE {
            dl-CCTrCH-TimeslotsCodes   DownlinkTimeslotsCodes     OPTIONAL
        },
        tdd128                        SEQUENCE {
            dl-CCTrCH-TimeslotsCodes   DownlinkTimeslotsCodes-LCR-r4  OPTIONAL
        }
    },
    ul-CCTrChTPCList                   UL-CCTrChTPCList           OPTIONAL
}

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

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

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

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

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

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

DL-CommonInformation ::=            SEQUENCE {
    dl-DPCH-InfoCommon                DL-DPCH-InfoCommon         OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                            SEQUENCE {
            defaultDPCH-OffsetValue    DefaultDPCH-OffsetValueFDD  OPTIONAL,
            dpch-CompressedModeInfo     DPCH-CompressedModeInfo    OPTIONAL,
        }
    }
}

```

```

        tx-DiversityMode          TX-DiversityMode          OPTIONAL,
        ssdt-Information          SSDT-Information          OPTIONAL
    },
    tdd
        defaultDPCH-OffsetValue    DefaultDPCH-OffsetValueTDD  OPTIONAL
    }
}

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

DL-CommonInformation-r5 ::=      SEQUENCE {
    dl-DPCH-InfoCommon            DL-DPCH-InfoCommon-r4      OPTIONAL,
    modeSpecificInfo              CHOICE {
        fdd                       SEQUENCE {
            defaultDPCH-OffsetValue    DefaultDPCH-OffsetValueFDD  OPTIONAL,
            dpch-CompressedModeInfo    DPCH-CompressedModeInfo    OPTIONAL,
            tx-DiversityMode           TX-DiversityMode           OPTIONAL,
            ssdt-Information-r4        SSDT-Information-r4       OPTIONAL
        },
        tdd                       SEQUENCE {
            tddOption                 CHOICE {
                tdd384                NULL,
                tdd128                SEQUENCE {
                    tstd-Indicator     BOOLEAN
                }
            },
            defaultDPCH-OffsetValue    DefaultDPCH-OffsetValueTDD  OPTIONAL
        }
    },
    mac-hsResetIndicator          ENUMERATED { true }          OPTIONAL
}

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

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

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

DL-DPCH-InfoCommon ::=          SEQUENCE {
    cfnHandling                   CHOICE {
        maintain                   NULL,
        initialise                  SEQUENCE {
            cfntargetsfnframeoffset    Cfntargetsfnframeoffset    OPTIONAL
        }
    },
    modeSpecificInfo              CHOICE {
        fdd                       SEQUENCE {
            dl-DPCH-PowerControlInfo    DL-DPCH-PowerControlInfo    OPTIONAL,
            powerOffsetPilot-pdpdch     PowerOffsetPilot-pdpdch,
            dl-rate-matching-restriction    Dl-rate-matching-restriction    OPTIONAL,
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot     SF512-AndPilot,

```

```

        positionFixedOrFlexible
        tfci-Existence
    },
    tdd
        dl-DPCH-PowerControlInfo
    }
}

DL-DPCH-InfoCommon-r4 ::=
    cfnHandling
        maintain
        initialise
        cfnTargetsfnframeoffset
    },
    modeSpecificInfo
        fdd
            dl-DPCH-PowerControlInfo
            powerOffsetPilot-pdpdch
            dl-rate-matching-restriction
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot
            positionFixedOrFlexible
            tfci-Existence
        },
        tdd
            dl-DPCH-PowerControlInfo
    },
}

-- The IE mac-d-HFN-initial-value should be absent in the RRCConnectionSetup-r4-IEs or
-- RRCConnectionSetup-r5-IEs or HandoverToUTRANCommand-r4-IEs or HandoverToUTRANCommand-r5-IEs and
-- if the IE is included, the general error handling for conditional IEs applies.
mac-d-HFN-initial-value
    MAC-d-HFN-initial-value
    OPTIONAL
}

DL-DPCH-InfoCommonPost ::=
    dl-DPCH-PowerControlInfo
}

DL-DPCH-InfoCommonPredef ::=
    modeSpecificInfo
        fdd
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot
            positionFixedOrFlexible
            tfci-Existence
        },
        tdd
            commonTimeslotInfo
    }
}

DL-DPCH-InfoPerRL ::=
    fdd
        pCPICH-UsageForChannelEst
        dpch-FrameOffset
        secondaryCPICH-Info
        dl-ChannelisationCodeList
        tpc-CombinationIndex
        ssdt-CellIdentity
        closedLoopTimingAdjMode
    },
    tdd
        dl-CCTrChListToEstablish
        dl-CCTrChListToRemove
    }
}

DL-DPCH-InfoPerRL-r4 ::=
    fdd
        pCPICH-UsageForChannelEst
        dpch-FrameOffset
        secondaryCPICH-Info
        dl-ChannelisationCodeList

```

```

        tpc-CombinationIndex          TPC-CombinationIndex,
        ssdt-CellIdentity              SSdT-CellIdentity
        closedLoopTimingAdjMode       ClosedLoopTimingAdjMode
    },
    tdd                                SEQUENCE {
        dl-CCTrChListToEstablish       DL-CCTrChList-r4
        dl-CCTrChListToRemove         DL-CCTrChListToRemove
    }
}

DL-DPCH-InfoPerRL-r5 ::=
    fdd                                CHOICE {
        pCPICH-UsageForChannelEst     PCPICH-UsageForChannelEst,
        dpch-FrameOffset              DPCH-FrameOffset,
        secondaryCPICH-Info           SecondaryCPICH-Info
        dl-ChannelisationCodeList     DL-ChannelisationCodeList,
        tpc-CombinationIndex          TPC-CombinationIndex,
        powerOffsetTPC-pdpdch         PowerOffsetTPC-pdpdch
        ssdt-CellIdentity              SSdT-CellIdentity
        closedLoopTimingAdjMode       ClosedLoopTimingAdjMode
    },
    tdd                                SEQUENCE {
        dl-CCTrChListToEstablish       DL-CCTrChList-r4
        dl-CCTrChListToRemove         DL-CCTrChListToRemove
    }
}

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

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

DL-DPCH-InfoPerRL-PostTDD-LCR-r4 ::=
    dl-CCTrCH-TimeslotsCodes          DownlinkTimeslotsCodes-LCR-r4
}

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

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

DL-HSPDSCH-Information ::=
    hs-scch-Info                      HS-SCCH-Info
    measurement-feedback-Info         Measurement-Feedback-Info
    modeSpecificInfo                  CHOICE {
        tdd384                         SEQUENCE {
            dl-HSPDSCH-TS-Configuration DL-HSPDSCH-TS-Configuration
        },
        tdd128                         SEQUENCE {
            hs-PDSCH-Midamble-Configuration-tdd128
            HS-PDSCH-Midamble-Configuration-TDD128
        }
    },
    fdd                                NULL
}

-- The IE 'DL-HSPDSCH-TS-Configuration' applies to tdd-384 REL-5 onward
DL-HSPDSCH-TS-Configuration ::=
    SEQUENCE (SIZE (1..maxTS-2)) OF
        SEQUENCE {
            timeslot                    TimeslotNumber,
            midambleShiftAndBurstType   MidambleShiftAndBurstType-DL
        }
}

```

DL-InformationPerRL ::=	SEQUENCE {	
modeSpecificInfo	CHOICE {	
fdd	SEQUENCE {	
primaryCPICH-Info	PrimaryCPICH-Info,	
pdsch-SHO-DCH-Info	PDSCH-SHO-DCH-Info	OPTIONAL,
pdsch-CodeMapping	PDSCH-CodeMapping	OPTIONAL
},		
tdd	PrimaryCCPCH-Info	
},		
dl-DPCH-InfoPerRL	DL-DPCH-InfoPerRL	OPTIONAL,
sccpch-InfoForFACH	SCCPCH-InfoForFACH	OPTIONAL
}		
DL-InformationPerRL-r4 ::=	SEQUENCE {	
modeSpecificInfo	CHOICE {	
fdd	SEQUENCE {	
primaryCPICH-Info	PrimaryCPICH-Info,	
pdsch-SHO-DCH-Info	PDSCH-SHO-DCH-Info	OPTIONAL,
pdsch-CodeMapping	PDSCH-CodeMapping	OPTIONAL
},		
tdd	PrimaryCCPCH-Info-r4	
},		
dl-DPCH-InfoPerRL	DL-DPCH-InfoPerRL-r4	OPTIONAL,
sccpch-InfoForFACH	SCCPCH-InfoForFACH-r4	OPTIONAL,
cell-id	CellIdentity	OPTIONAL
}		
DL-InformationPerRL-r5 ::=	SEQUENCE {	
modeSpecificInfo	CHOICE {	
fdd	SEQUENCE {	
primaryCPICH-Info	PrimaryCPICH-Info,	
pdsch-SHO-DCH-Info	PDSCH-SHO-DCH-Info	OPTIONAL,
pdsch-CodeMapping	PDSCH-CodeMapping	OPTIONAL,
servingHSDSCH-RL-indicator	BOOLEAN	OPTIONAL,
},		
tdd	PrimaryCCPCH-Info-r4	
},		
dl-DPCH-InfoPerRL	DL-DPCH-InfoPerRL-r5	OPTIONAL,
sccpch-InfoForFACH	SCCPCH-InfoForFACH-r4	OPTIONAL,
cell-id	CellIdentity	OPTIONAL
}		
DL-InformationPerRL-r5bis ::=	SEQUENCE {	
modeSpecificInfo	CHOICE {	
fdd	SEQUENCE {	
primaryCPICH-Info	PrimaryCPICH-Info,	
pdsch-SHO-DCH-Info	PDSCH-SHO-DCH-Info	OPTIONAL,
pdsch-CodeMapping	PDSCH-CodeMapping	OPTIONAL
},		
tdd	PrimaryCCPCH-Info-r4	
},		
dl-DPCH-InfoPerRL	DL-DPCH-InfoPerRL-r5	OPTIONAL,
sccpch-InfoForFACH	SCCPCH-InfoForFACH-r4	OPTIONAL,
cell-id	CellIdentity	OPTIONAL
}		
DL-InformationPerRL-List ::=	SEQUENCE (SIZE (1..maxRL)) OF	
	DL-InformationPerRL	
DL-InformationPerRL-List-r4 ::=	SEQUENCE (SIZE (1..maxRL)) OF	
	DL-InformationPerRL-r4	
DL-InformationPerRL-List-r5 ::=	SEQUENCE (SIZE (1..maxRL)) OF	
	DL-InformationPerRL-r5	
DL-InformationPerRL-List-r5bis ::=	SEQUENCE (SIZE (1..maxRL)) OF	
	DL-InformationPerRL-r5bis	
DL-InformationPerRL-ListPostFDD ::=	SEQUENCE (SIZE (1..maxRL)) OF	
	DL-InformationPerRL-PostFDD	
DL-InformationPerRL-PostFDD ::=	SEQUENCE {	
primaryCPICH-Info	PrimaryCPICH-Info,	
dl-DPCH-InfoPerRL	DL-DPCH-InfoPerRL-PostFDD	
}		

```

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

DL-InformationPerRL-PostTDD-LCR-r4 ::= SEQUENCE {
    primaryCCPCH-Info      PrimaryCCPCH-InfoPostTDD-LCR-r4,
    dl-DPCH-InfoPerRL     DL-DPCH-InfoPerRL-PostTDD-LCR-r4
}

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

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

DL-TPC-PowerOffsetPerRL ::= SEQUENCE {
    powerOffsetTPC-pdpdch PowerOffsetTPC-pdpdch          OPTIONAL
}

-- NOTE: The radio links in the following list have a one-to-one mapping with the
-- radio links in the message.
DL-TPC-PowerOffsetPerRL-List ::= SEQUENCE (SIZE (1..maxRL)) OF
    DL-TPC-PowerOffsetPerRL

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

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

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

DownlinkAdditionalTimeslots-LCR-r4 ::= SEQUENCE {
    parameters CHOICE {
        sameAsLast SEQUENCE {
            timeslotNumber TimeslotNumber-LCR-r4
        },

```



```

        newParameters
            individualTimeslotInfo
            dl-TS-ChannelisationCodesShort
        }
    }
}

DownlinkTimeslotsCodes ::= SEQUENCE {
    firstIndividualTimeslotInfo IndividualTimeslotInfo,
    dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort,
    moreTimeslots CHOICE {
        noMore NULL,
        additionalTimeslots CHOICE {
            consecutive INTEGER (1..maxTS-1),
            timeslotList SEQUENCE (SIZE (1..maxTS-1)) OF
                DownlinkAdditionalTimeslots
        }
    }
}

DownlinkTimeslotsCodes-LCR-r4 ::= SEQUENCE {
    firstIndividualTimeslotInfo IndividualTimeslotInfo-LCR-r4,
    dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort,
    moreTimeslots CHOICE {
        noMore NULL,
        additionalTimeslots CHOICE {
            consecutive INTEGER (1..maxTS-LCR-1),
            timeslotList SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                DownlinkAdditionalTimeslots-LCR-r4
        }
    }
}

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

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

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

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

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

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

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

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

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

DSCH-TransportChannelsInfo ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    SEQUENCE {
        dsch-transport-channel-identity TransportChannelIdentity,
        dsch-TFS TransportFormatSet
    }
}

DurationTimeInfo ::= INTEGER (1..4096)

DynamicPersistenceLevel ::= INTEGER (1..8)

```

```

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

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

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

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

Feedback-cycle ::= ENUMERATED {
    fc0, fc2, fc4, fc8, fc10, fc20, fc40, fc80, fc160}

FPACH-Info-r4 ::= SEQUENCE {
    timeslot TimeslotNumber-LCR-r4,
    channelisationCode TDD-FPACH-CCode16-r4,
    midambleShiftAndBurstType MidambleShiftAndBurstType-LCR-r4,
    wi Wi-LCR
}

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

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

FrequencyInfoTDD ::= SEQUENCE {
    uarfcn-Nt UARFCN
}

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

HS-PDSCH-Midamble-Configuration-TDD128 ::= SEQUENCE {
    midambleAllocationMode CHOICE {
        defaultMidamble NULL,
        commonMidamble NULL,
        ueSpecificMidamble INTEGER (0..15)
    },
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration INTEGER (1..8)
}

HS-SCCH-Info ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            hs-SCCHChannelisationCodeInfo SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                HS-SCCH-Codes,
            dl-ScramblingCode SecondaryScramblingCode OPTIONAL
        },
        tdd CHOICE {
            tdd384 SEQUENCE {
                nack-ack-power-offset INTEGER (-7..8),
                hs-SICH-PowerControl-Info HS-SICH-Power-Control-Info-TDD384,
                hs-SCCH-SetConfiguration SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                    HS-SCCH-TDD384
            },
            tdd128 SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                HS-SCCH-TDD128
        }
    }
}

HS-SCCH-Codes ::= INTEGER (0..127)

```

```

HS-SCCH-TDD128 ::= SEQUENCE {
    timeslotNumber          TimeslotNumber-LCR-r4,
    firstChannelisationCode HS-ChannelisationCode-LCR,
    secondChannelisationCode HS-ChannelisationCode-LCR,
    midambleAllocationMode CHOICE {
        defaultMidamble      NULL,
        commonMidamble       NULL,
        ueSpecificMidamble   INTEGER(0..15)
    },
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration  INTEGER (1..8),
    bler-target            Bler-Target,
    hs-sich-configuration  HS-SICH-Configuration-TDD128
}

HS-SICH-Configuration-TDD128 ::= SEQUENCE {
    timeslotNumber          TimeslotNumber-LCR-r4,
    channelisationCode     HS-ChannelisationCode-LCR,
    midambleAllocationMode CHOICE {
        defaultMidamble      NULL,
        ueSpecificMidamble   SEQUENCE {
            midambleShift    MidambleShiftLong
        }
    },
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration  INTEGER (1..8),
    nack-ack-power-offset  INTEGER (-7..8),
    power-level-HSSICH     INTEGER (-120..-58),
    tpc-step-size          ENUMERATED { s1, s2, s3 , spare1}
}

HS-SCCH-TDD384 ::= SEQUENCE {
    timeslotNumber          TimeslotNumber,
    channelisationCode     DL-TS-ChannelisationCode,
    midambleAllocationMode CHOICE {
        defaultMidamble      NULL,
        commonMidamble       NULL,
        ueSpecificMidamble   SEQUENCE {
            midambleShift    MidambleShiftLong
        }
    },
    midambleconfiguration  MidambleConfigurationBurstTypeland3,
    bler-target            Bler-Target,
    hs-sich-configuration  HS-SICH-Configuration-TDD384
}

HS-SICH-Configuration-TDD384 ::= SEQUENCE {
    timeslotNumber          TimeslotNumber,
    channelisationCode     DL-TS-ChannelisationCode,
    midambleAllocationMode CHOICE {
        defaultMidamble      NULL,
        ueSpecificMidamble   SEQUENCE {
            midambleShift    MidambleShiftLong
        }
    },
    midambleconfiguration  MidambleConfigurationBurstTypeland3
}

HS-SICH-Power-Control-Info-TDD384 ::= SEQUENCE {
    -- Actual value ul-target-SIR = IE value * 0.5
    ul-target-SIR          INTEGER (-22..40),
    hs-sich-ConstantValue  ConstantValue
}

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

IndividualTimeslotInfo-LCR-r4 ::= SEQUENCE {
    timeslotNumber          TimeslotNumber-LCR-r4,
    tfci-Existence         BOOLEAN,
    midambleShiftAndBurstType MidambleShiftAndBurstType-LCR-r4,
    modulation             ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols         ENUMERATED { zero, one, sixteenOverSF },
    additionalSS-TPC-Symbols INTEGER(1..15) OPTIONAL
}

```

```

}

IndividualTimeslotInfo-LCR-r4-ext ::=          SEQUENCE {
-- timeslotNumber and tfci-Existence is taken from IndividualTimeslotInfo.
-- midambleShiftAndBurstType in IndividualTimeslotInfo shall be ignored.
  midambleShiftAndBurstType      MidambleShiftAndBurstType-LCR-r4,
  modulation                     ENUMERATED { mod-QPSK, mod-8PSK },
  ss-TPC-Symbols                 ENUMERATED { zero, one, sixteenOverSF }
}

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

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

ITP ::=                              ENUMERATED {
                                       mode0, mode1 }

NidentifyAbort ::=                    INTEGER (1..128)

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

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

MaxPowerIncrease-r4 ::=              INTEGER (0..3)

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

Measurement-Feedback-Info ::=        SEQUENCE {
  modeSpecificInfo               CHOICE {
    fdd                           SEQUENCE {
      pohsdsch                    Po-hsdsch,
      feedback-cycle              Feedback-cycle,
      cqi-RepetitionFactor        CQI-RepetitionFactor,
      deltaCQI                    DeltaCQI
    },
    tdd                            NULL
  }
}

MidambleConfigurationBurstTypeAnd3 ::= ENUMERATED {ms4, ms8, ms16}

MidambleConfigurationBurstType2 ::=  ENUMERATED {ms3, ms6}

MidambleShiftAndBurstType ::=        SEQUENCE {
  burstType                      CHOICE {
    type1                         SEQUENCE {
      midambleConfigurationBurstTypeAnd3 MidambleConfigurationBurstTypeAnd3,
      midambleAllocationMode           CHOICE {
        defaultMidamble              NULL,
        commonMidamble              NULL,
        ueSpecificMidamble          SEQUENCE {
          midambleShift              MidambleShiftLong
        }
      }
    },
    type2                         SEQUENCE {
      midambleConfigurationBurstType2  MidambleConfigurationBurstType2,
      midambleAllocationMode           CHOICE {
        defaultMidamble              NULL,
        commonMidamble              NULL,
        ueSpecificMidamble          SEQUENCE {
          midambleShift              MidambleShiftShort
        }
      }
    },
    type3                         SEQUENCE {
      midambleConfigurationBurstTypeAnd3 MidambleConfigurationBurstTypeAnd3,
      midambleAllocationMode           CHOICE {
        defaultMidamble              NULL,
        ueSpecificMidamble          SEQUENCE {
          midambleShift              MidambleShiftLong
        }
      }
    }
  }
}

```

```

    }
  }
}

MidambleShiftAndBurstType-LCR-r4 ::= SEQUENCE {
  midambleAllocationMode CHOICE {
    defaultMidamble NULL,
    commonMidamble NULL,
    ueSpecificMidamble SEQUENCE {
      midambleShift INTEGER (0..15)
    }
  },
  -- Actual value midambleConfiguration = IE value * 2
  midambleConfiguration INTEGER (1..8)
}

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

MidambleShiftLong ::= INTEGER (0..15)

MidambleShiftShort ::= INTEGER (0..5)

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

MultiCodeInfo ::= INTEGER (1..16)

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

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

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

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

NB01 ::= INTEGER (0..50)

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

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

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

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

```

```

}

OpenLoopPowerControl-IPDL-TDD-r4 ::= SEQUENCE {
    ipdl-alpha           Alpha,
    maxPowerIncrease     MaxPowerIncrease-r4
}

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

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

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

PCPCH-ChannelInfo ::= SEQUENCE {
    pcpch-UL-ScramblingCode    INTEGER (0..79),
    pcpch-DL-ChannelisationCode INTEGER (0..511),
    pcpch-DL-ScramblingCode    SecondaryScramblingCode    OPTIONAL,
    pcp-Length                 PCP-Length,
    ucsM-Info                  UCSM-Info                OPTIONAL
}

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

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

PDSCH-CapacityAllocationInfo ::= SEQUENCE {
    -- pdsch-PowerControlInfo is conditional on new-configuration branch below, if this
    -- selected the IE is OPTIONAL otherwise it should not be sent
    pdsch-PowerControlInfo    PDSCH-PowerControlInfo    OPTIONAL,
    pdsch-AllocationPeriodInfo AllocationPeriodInfo,
    configuration              CHOICE {
        old-Configuration      SEQUENCE {
            tfcs-ID            TFCS-IdentityPlain    DEFAULT 1,
            pdsch-Identity     PDSCH-Identity
        },
        new-Configuration      SEQUENCE {
            pdsch-Info         PDSCH-Info,
            pdsch-Identity     PDSCH-Identity    OPTIONAL
        }
    }
}

PDSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
    pdsch-AllocationPeriodInfo AllocationPeriodInfo,
    configuration              CHOICE {
        old-Configuration      SEQUENCE {
            tfcs-ID            TFCS-IdentityPlain    DEFAULT 1,
            pdsch-Identity     PDSCH-Identity
        },
        new-Configuration      SEQUENCE {
            pdsch-Info         PDSCH-Info-r4,
            pdsch-Identity     PDSCH-Identity    OPTIONAL,
            pdsch-PowerControlInfo PDSCH-PowerControlInfo    OPTIONAL
        }
    }
}

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

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

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

```

```

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

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

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

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

PDSCH-Info-r4 ::= SEQUENCE {
    tfcs-ID                TFCS-IdentityPlain          DEFAULT 1,
    commonTimeslotInfo     CommonTimeslotInfo         OPTIONAL,
    tddOption              CHOICE {
        tdd384             SEQUENCE {
            pdsch-TimeslotsCodes   DownlinkTimeslotsCodes     OPTIONAL
        },
        tdd128             SEQUENCE {
            pdsch-TimeslotsCodes   DownlinkTimeslotsCodes-LCR-r4  OPTIONAL
        }
    }
}

PDSCH-Info-LCR-r4 ::= SEQUENCE {
    tfcs-ID                TFCS-IdentityPlain          DEFAULT 1,
    commonTimeslotInfo     CommonTimeslotInfo         OPTIONAL,
    pdsch-TimeslotsCodes   DownlinkTimeslotsCodes-LCR-r4  OPTIONAL
}

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

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

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

PDSCH-SysInfo-HCR-r5 ::= SEQUENCE {
    pdsch-Identity         PDSCH-Identity,
    pdsch-Info             PDSCH-Info,
    dsch-TransportChannelsInfo DSCH-TransportChannelsInfo    OPTIONAL,
    dsch-TFCS              TFCS                      OPTIONAL
}

PDSCH-SysInfo-LCR-r4 ::= SEQUENCE {
    pdsch-Identity         PDSCH-Identity,
    pdsch-Info             PDSCH-Info-LCR-r4,
    dsch-TFS               TransportFormatSet        OPTIONAL,
    dsch-TFCS              TFCS                      OPTIONAL
}

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

PDSCH-SysInfoList-HCR-r5 ::= SEQUENCE (SIZE (1..maxPDSCH)) OF PDSCH-SysInfo-HCR-r5

PDSCH-SysInfoList-LCR-r4 ::= SEQUENCE (SIZE (1..maxPDSCH)) OF

```

```

PDSCH-SysInfo-PCR-r4 ::= SEQUENCE (SIZE (1..maxPDSCH)) OF
    SEQUENCE {
        pdsch-SysInfo PDSCH-SysInfo,
        sfn-TimeInfo SFN-TimeInfo OPTIONAL
    }

PDSCH-SysInfoList-SFN-HCR-r5 ::= SEQUENCE (SIZE (1..maxPDSCH)) OF
    SEQUENCE {
        pdsch-SysInfo PDSCH-SysInfo-HCR-r5,
        sfn-TimeInfo SFN-TimeInfo OPTIONAL
    }

PDSCH-SysInfoList-SFN-PCR-r4 ::= SEQUENCE (SIZE (1..maxPDSCH)) OF
    SEQUENCE {
        pdsch-SysInfo PDSCH-SysInfo-PCR-r4,
        sfn-TimeInfo SFN-TimeInfo OPTIONAL
    }

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

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

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

PichChannelisationCodeList-PCR-r4 ::= SEQUENCE (SIZE (1..2)) OF
    DL-TS-ChannelisationCode

PICH-Info ::= CHOICE {
    fdd SEQUENCE {
        channelisationCode256 ChannelisationCode256,
        pi-CountPerFrame PI-CountPerFrame,
        sttd-Indicator BOOLEAN
    },
    tdd SEQUENCE {
        channelisationCode TDD-PICH-CCode OPTIONAL,
        timeslot TimeslotNumber OPTIONAL,
        midambleShiftAndBurstType MidambleShiftAndBurstType,
        repetitionPeriodLengthOffset RepPerLengthOffset-PICH OPTIONAL,
        pagingIndicatorLength PagingIndicatorLength DEFAULT pi4,
        n-GAP N-GAP DEFAULT f4,
        n-PCH N-PCH DEFAULT 2
    }
}

PICH-Info-PCR-r4 ::= SEQUENCE {
    timeslot TimeslotNumber-PCR-r4 OPTIONAL,
    pichChannelisationCodeList-PCR-r4 PichChannelisationCodeList-PCR-r4,
    midambleShiftAndBurstType MidambleShiftAndBurstType-PCR-r4,
    repetitionPeriodLengthOffset RepPerLengthOffset-PICH OPTIONAL,
    pagingIndicatorLength PagingIndicatorLength DEFAULT pi4,
    n-GAP N-GAP DEFAULT f4,
    n-PCH N-PCH DEFAULT 2
}

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

PilotBits128 ::= ENUMERATED {
    pb4, pb8 }

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

-- Actual value Po-hsdSCH = IE value * 0.5
Po-hsdSCH ::= INTEGER (-12..26)

PositionFixedOrFlexible ::= ENUMERATED {
    fixed,
    flexible }

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

```



```

}

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

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

PowerRampStep ::=                    INTEGER (1..8)

PRACH-ChanCodes-LCR-r4 ::=          SEQUENCE (SIZE (1..4)) OF
                                     TDD-PRACH-CCode-LCR-r4

PRACH-Definition-LCR-r4 ::=          SEQUENCE {
    timeslot                          TimeslotNumber-PRACH-LCR-r4,
    prach-ChanCodes-LCR                PRACH-ChanCodes-LCR-r4,
    midambleShiftAndBurstType          MidambleShiftAndBurstType-LCR-r4,
    fpach-Info                          FPACH-Info-r4
}

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

PRACH-Partitioning ::=              CHOICE {
    fdd                                SEQUENCE (SIZE (1..maxASC)) OF
    -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-FDD are listed,
    -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
    ASCSetting-FDD,
    tdd                                SEQUENCE (SIZE (1..maxASC)) OF
    -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-TDD are listed,
    -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
    ASCSetting-TDD
}

PRACH-Partitioning-LCR-r4 ::=        SEQUENCE (SIZE (1..maxASC)) OF
    -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-TDD-LCR-r4 are listed,
    -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
    ASCSetting-TDD-LCR-r4

PRACH-PowerOffset ::=               SEQUENCE {
    powerRampStep                       PowerRampStep,
    preambleRetransMax                  PreambleRetransMax
}

PRACH-RACH-Info ::=                 SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                              SEQUENCE {
            availableSignatures           AvailableSignatures,
            availableSF                   SF-PRACH,
            preambleScramblingCodeWordNumber PreambleScramblingCodeWordNumber,
            puncturingLimit               PuncturingLimit,
            availableSubChannelNumbers     AvailableSubChannelNumbers
        },
        tdd                              SEQUENCE {
            timeslot                       TimeslotNumber,
            channelisationCodeList         TDD-PRACH-CCodeList,
            prach-Midamble                  PRACH-Midamble
        }
    }
}

PRACH-RACH-Info-LCR-r4 ::=           SEQUENCE {
    sync-UL-Info                         SYNC-UL-Info-r4,
    prach-DefinitionList                 SEQUENCE (SIZE (1..maxPRACH-FPACH)) OF
    PRACH-Definition-LCR-r4
}

PRACH-SystemInformation ::=          SEQUENCE {
    prach-RACH-Info                      PRACH-RACH-Info,
    transportChannelIdentity              TransportChannelIdentity,
    rach-TransportFormatSet               TransportFormatSet                                OPTIONAL,
    rach-TFCS                             TFCS                                OPTIONAL,
    prach-Partitioning                    PRACH-Partitioning                        OPTIONAL,
    persistenceScalingFactorList           PersistenceScalingFactorList                OPTIONAL,
    ac-To-ASC-MappingTable                 AC-To-ASC-MappingTable                    OPTIONAL,
    modeSpecificInfo                       CHOICE {
        fdd                               SEQUENCE {
            primaryCPICH-TX-Power          PrimaryCPICH-TX-Power                    OPTIONAL,
            constantValue                  ConstantValue                            OPTIONAL,

```

```

    prach-PowerOffset          PRACH-PowerOffset          OPTIONAL,
    rach-TransmissionParameters RACH-TransmissionParameters OPTIONAL,
    aich-Info                  AICH-Info                  OPTIONAL
  },
  tdd                          NULL
}
}

PRACH-SystemInformation-LCR-r4 ::= SEQUENCE {
  prach-RACH-Info-LCR          PRACH-RACH-Info-LCR-r4,
  rach-TransportFormatSet-LCR TransportFormatSet-LCR    OPTIONAL,
  prach-Partitioning-LCR      PRACH-Partitioning-LCR-r4    OPTIONAL
}

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

PRACH-SystemInformationList-LCR-r4 ::= SEQUENCE (SIZE (1..maxPRACH)) OF
  PRACH-SystemInformation-LCR-r4

PreambleRetransMax ::= INTEGER (1..64)

PreambleScramblingCodeWordNumber ::= INTEGER (0..15)

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

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

PrimaryCCPCH-Info-r4 ::= CHOICE {
  fdd                          SEQUENCE {
    tx-DiversityIndicator      BOOLEAN
  },
  tdd                          SEQUENCE {
    tddOption                  CHOICE {
      tdd384                   SEQUENCE {
        syncCase               CHOICE {
          syncCase1            SEQUENCE {
            timeslot            TimeslotNumber
          },
          syncCase2            SEQUENCE {
            timeslotSync2       TimeslotSync2
          }
        }
      }
    },
    tdd128                     SEQUENCE {
      tstd-Indicator           BOOLEAN
    }
  },
  cellParametersID             CellParametersID          OPTIONAL,
  sctd-Indicator                BOOLEAN
}

PrimaryCCPCH-Info-LCR-r4 ::= SEQUENCE {
  tstd-Indicator                BOOLEAN,
  cellParametersID              CellParametersID          OPTIONAL,
  sctd-Indicator                BOOLEAN
}

```

```

-- For 1.28Mcps TDD, the following IE includes elements for the PCCPCH Info additional to those
-- in PrimaryCCPCH-Info
PrimaryCCPCH-Info-LCR-r4-ext ::= SEQUENCE {
    tstd-Indicator          BOOLEAN
}

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

PrimaryCCPCH-InfoPostTDD-LCR-r4 ::= SEQUENCE {
    tstd-Indicator        BOOLEAN,
    cellParametersID     CellParametersID,
    sctd-Indicator       BOOLEAN
}

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

PrimaryCPICH-Info ::= SEQUENCE {
    primaryScramblingCode PrimaryScramblingCode
}

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

PrimaryScramblingCode ::= INTEGER (0..511)

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

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

PUSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
    pusch-Allocation          CHOICE {
        pusch-AllocationPending NULL,
        pusch-AllocationAssignment SEQUENCE {
            pusch-AllocationPeriodInfo AllocationPeriodInfo,
            pusch-PowerControlInfo-r4 PUSCH-PowerControlInfo-r4 OPTIONAL,
            configuration CHOICE {
                old-Configuration SEQUENCE {
                    tfcs-ID TFCS-IdentityPlain DEFAULT 1,
                    pusch-Identity PUSCH-Identity
                },
                new-Configuration SEQUENCE {
                    pusch-Info-r4 PUSCH-Info-r4,
                    pusch-Identity PUSCH-Identity OPTIONAL
                }
            }
        }
    }
}

```

```

}
}
PUSCH-Identity ::= INTEGER (1..hiPUSCHidentities)
PUSCH-Info ::= SEQUENCE {
    tfcs-ID TFCS-IdentityPlain DEFAULT 1,
    commonTimeslotInfo CommonTimeslotInfo OPTIONAL,
    pusch-TimeslotsCodes UplinkTimeslotsCodes OPTIONAL
}
PUSCH-Info-r4 ::= SEQUENCE {
    tfcs-ID TFCS-IdentityPlain DEFAULT 1,
    commonTimeslotInfo CommonTimeslotInfo OPTIONAL,
    tddOption CHOICE {
        tdd384 SEQUENCE {
            pusch-TimeslotsCodes UplinkTimeslotsCodes OPTIONAL
        },
        tdd128 SEQUENCE {
            pusch-TimeslotsCodes UplinkTimeslotsCodes-LCR-r4 OPTIONAL
        }
    }
}
PUSCH-Info-LCR-r4 ::= SEQUENCE {
    tfcs-ID TFCS-IdentityPlain DEFAULT 1,
    commonTimeslotInfo CommonTimeslotInfo OPTIONAL,
    pusch-TimeslotsCodes UplinkTimeslotsCodes-LCR-r4 OPTIONAL
}
PUSCH-PowerControlInfo-r4 ::= SEQUENCE {
    -- The IE ul-TargetSIR corresponds to PRX-PUSCHdes for 1.28Mcps TDD
    -- Actual value PRX-PUSCHdes = (value of IE "ul-TargetSIR" - 120)
    ul-TargetSIR UL-TargetSIR,
    tddOption CHOICE {
        tdd384 NULL,
        tdd128 SEQUENCE {
            tpc-StepSize TPC-StepSizeTDD OPTIONAL
        }
    }
}
PUSCH-SysInfo ::= SEQUENCE {
    pusch-Identity PUSCH-Identity,
    pusch-Info PUSCH-Info,
    usch-TFS TransportFormatSet OPTIONAL,
    usch-TFCS TFCS OPTIONAL
}
PUSCH-SysInfo-HCR-r5 ::= SEQUENCE {
    pusch-Identity PUSCH-Identity,
    pusch-Info PUSCH-Info,
    usch-TransportChannelsInfo USCH-TransportChannelsInfo OPTIONAL,
    usch-TFCS TFCS OPTIONAL
}
PUSCH-SysInfo-LCR-r4 ::= SEQUENCE {
    pusch-Identity PUSCH-Identity,
    pusch-Info PUSCH-Info-LCR-r4,
    usch-TFS TransportFormatSet OPTIONAL,
    usch-TFCS TFCS OPTIONAL
}
PUSCH-SysInfoList ::= SEQUENCE (SIZE (1..maxPUSCH)) OF PUSCH-SysInfo
PUSCH-SysInfoList-HCR-r5 ::= SEQUENCE (SIZE (1..maxPUSCH)) OF PUSCH-SysInfo-HCR-r5
PUSCH-SysInfoList-LCR-r4 ::= SEQUENCE (SIZE (1..maxPUSCH)) OF PUSCH-SysInfo-LCR-r4
PUSCH-SysInfoList-SFN ::= SEQUENCE (SIZE (1..maxPUSCH)) OF SEQUENCE {
    pusch-SysInfo PUSCH-SysInfo,
    sfn-TimeInfo SFN-TimeInfo OPTIONAL
}

```

```

PUSCH-SysInfoList-SFN-HCR-r5 ::=
    SEQUENCE (SIZE (1..maxPUSCH)) OF
    SEQUENCE {
        pusch-SysInfo
        sfm-TimeInfo
    }
    PUSCH-SysInfo-HCR-r5,
    SFN-TimeInfo
    OPTIONAL

PUSCH-SysInfoList-SFN-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxPUSCH)) OF
    SEQUENCE {
        pusch-SysInfo
        sfm-TimeInfo
    }
    PUSCH-SysInfo-LCR-r4,
    SFN-TimeInfo
    OPTIONAL

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

ReducedScramblingCodeNumber ::=
    INTEGER (0..8191)

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

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

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

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

RepPerLengthOffset-PICH ::=
    CHOICE {
        rpp4-2
        rpp8-2
        rpp8-4
        rpp16-2
        rpp16-4
        rpp32-2
        rpp32-4
        rpp64-2
    }
    INTEGER (0..3),
    INTEGER (0..7),
    INTEGER (0..7),
    INTEGER (0..15),
    INTEGER (0..15),
    INTEGER (0..31),
    INTEGER (0..31),
    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, model }

S-Field ::=                                ENUMERATED {
    e1bit, e2bits }

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

SCCPCH-ChannelisationCodeList ::=          SEQUENCE (SIZE (1..16)) OF
    SCCPCH-ChannelisationCode

SCCPCH-InfoForFACH ::=                     SEQUENCE {
    secondaryCCPCH-Info                   SecondaryCCPCH-Info,
    tfcs                                    TFCS,
    modeSpecificInfo                       CHOICE {
        fdd                                SEQUENCE {
            fach-PCH-InformationList       FACH-PCH-InformationList,
            sib-ReferenceListFACH          SIB-ReferenceListFACH
        },
        tdd                                SEQUENCE {
            fach-PCH-InformationList       FACH-PCH-InformationList
        }
    }
}

SCCPCH-InfoForFACH-r4 ::=                  SEQUENCE {
    secondaryCCPCH-Info                   SecondaryCCPCH-Info-r4,
    tfcs                                    TFCS,
    fach-PCH-InformationList               FACH-PCH-InformationList,
    modeSpecificInfo                       CHOICE {
        fdd                                SEQUENCE {
            sib-ReferenceListFACH          SIB-ReferenceListFACH
        },
        tdd                                NULL
    }
}

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

SCCPCH-SystemInformation-LCR-r4-ext ::=     SEQUENCE {
    secondaryCCPCH-LCR-Extensions          SecondaryCCPCH-Info-LCR-r4-ext,

```

```

-- pich-Info in the SCCPCH-SystemInformation IE shall be absent,
-- and instead the following used.
pich-Info          PICH-Info-LCR-r4          OPTIONAL
}

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

-- SCCPCH-SystemInformationList-LCR-r4-ext includes elements additional to those in
-- SCCPCH-SystemInformationList for the 1.28Mcps TDD. The order of the IEs
-- indicates which SCCPCH-SystemInformation-LCR-r4-ext IE extends which
-- SCCPCH-SystemInformation IE.
SCCPCH-SystemInformationList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
    SCCPCH-SystemInformation-LCR-r4-ext

ScramblingCodeChange ::= ENUMERATED {
    codeChange, noCodeChange }

ScramblingCodeType ::= ENUMERATED {
    shortSC,
    longSC }

SecondaryCCPCH-Info ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            -- dummy1 is not used in this version of the specification and should be ignored.
            dummy1 PCPICH-UsageForChannelEst,
            -- dummy2 is not used in this version of the specification. It should not
            -- be sent and if received it should be ignored.
            dummy2 SecondaryCPICH-Info OPTIONAL,
            secondaryScramblingCode SecondaryScramblingCode OPTIONAL,
            sttd-Indicator BOOLEAN,
            sf-AndCodeNumber SF256-AndCodeNumber,
            pilotSymbolExistence BOOLEAN,
            tfci-Existence BOOLEAN,
            positionFixedOrFlexible PositionFixedOrFlexible,
            timingOffset TimingOffset DEFAULT 0
        },
        tdd SEQUENCE {
            -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
            commonTimeslotInfo CommonTimeslotInfoSCCPCH,
            individualTimeslotInfo IndividualTimeslotInfo,
            channelisationCode SCCPCH-ChannelisationCodeList
        }
    }
}

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

SecondaryCCPCH-Info-LCR-r4-ext ::= SEQUENCE {
    individualTimeslotLCR-Ext IndividualTimeslotInfo-LCR-r4-ext
}

```

```

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

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
        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
        codeWordSet
    }
    CodeWordSet

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

```



```

}

SSDT-UL ::= ENUMERATED {
    ul, ul-AndDL }

SynchronisationParameters-r4 ::= SEQUENCE {
    sync-UL-CodesBitmap BIT STRING {
        code7(0),
        code6(1),
        code5(2),
        code4(3),
        code3(4),
        code2(5),
        code1(6),
        code0(7)
    } (SIZE (8)),
    fpach-Info FPACH-Info-r4,
    -- Actual value prxUpPCHdes = IE value - 120
    prxUpPCHdes INTEGER (0..62),
    sync-UL-Procedure SYNC-UL-Procedure-r4 OPTIONAL
}

SYNC-UL-Procedure-r4 ::= SEQUENCE {
    max-SYNC-UL-Transmissions ENUMERATED { tr1, tr2, tr4, tr8 },
    powerRampStep INTEGER (0..3)
}

SYNC-UL-Info-r4 ::= SEQUENCE {
    sync-UL-Codes-Bitmap BIT STRING {
        code7(0),
        code6(1),
        code5(2),
        code4(3),
        code3(4),
        code2(5),
        code1(6),
        code0(7)
    } (SIZE (8)),
    -- Actual value prxUpPCHdes = IE value - 120
    prxUpPCHdes INTEGER (0..62),
    powerRampStep INTEGER (0..3),
    max-SYNC-UL-Transmissions ENUMERATED { tr1, tr2, tr4, tr8 },
    mmax INTEGER(1..32)
}

TDD-FPACH-CCode16-r4 ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

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

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

TDD-PRACH-CCode8 ::= ENUMERATED {
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8 }

TDD-PRACH-CCode16 ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode-LCR-r4 ::= ENUMERATED {
    cc4-1, cc4-2, cc4-3, cc4-4,
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8,
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

```

```

TDD-PRACH-CCodeList ::= CHOICE {
    sf8 SEQUENCE (SIZE (1..8)) OF
        TDD-PRACH-CCode8,
    -- Channelisation codes cc16-9, cc16-10, cc16-11, cc16-12, cc16-13, cc16-14,
    -- cc16-15 and cc16-16 shall not be used
    sf16 SEQUENCE (SIZE (1..8)) OF
        TDD-PRACH-CCode16
}

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

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

TGCFN ::= INTEGER (0..255)

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

TGL ::= INTEGER (1..14)

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

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

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

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

TGP-SequenceShort ::= SEQUENCE {
    tgpsi TGPSI,
    tgps-Status CHOICE {
        activate SEQUENCE {
            tgcfn TGCFN
        },
        deactivate NULL
    }
}

TGPL ::= INTEGER (1..144)

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

TGPS-ConfigurationParams ::= SEQUENCE {
    tgmp TGMP,
    tgprc TGPRC,
    tgsn TGSN,
    tg11 TGL,
    tg12 TGL OPTIONAL,
    tgd TGD,
    tgpl1 TGPL,
    tgpl2 TGPL OPTIONAL,
    rpp RPP,
    itp ITP,
    -- TABULAR: Compressed mode method is nested inside UL-DL-Mode
    ul-DL-Mode UL-DL-Mode,
    dl-FrameType DL-FrameType,
    deltaSIR1 DeltaSIR,
}

```

```

    deltaSIRAfter1          DeltaSIR,
    deltaSIR2              DeltaSIR          OPTIONAL,
    deltaSIRAfter2        DeltaSIR          OPTIONAL,
    nIdentifyAbort         NIdentifyAbort    OPTIONAL,
    treconfirmAbort       TreconfirmAbort    OPTIONAL
}

TGPSI ::=                  INTEGER (1..maxTGPS)

TGSN ::=                   INTEGER (0..14)

TimeInfo ::=               SEQUENCE {
    activationTime         ActivationTime    OPTIONAL,
    durationTimeInfo      DurationTimeInfo  OPTIONAL
}

TimeslotList ::=          SEQUENCE (SIZE (1..maxTS)) OF
    TimeslotNumber

TimeslotList-r4 ::=       CHOICE {
    tdd384                 SEQUENCE (SIZE (1..maxTS)) OF
        TimeslotNumber,
    tdd128                 SEQUENCE (SIZE (1..maxTS-LCR)) OF
        TimeslotNumber-LCR-r4
}

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

TimeslotNumber-LCR-r4 ::= INTEGER (0..6)

TimeslotNumber-PRACH-LCR-r4 ::= INTEGER (1..6)

TimeslotSync2 ::=         INTEGER (0..6)

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

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

-- Actual value TPC-StepSizeFDD = IE value + 1
TPC-StepSizeFDD ::=       INTEGER (0..1)

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

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

TX-DiversityMode ::=      ENUMERATED {
    noDiversity,
    sttd,
    closedLoopMode1,
    closedLoopMode2 }

UARFCN ::=                INTEGER (0..16383)

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

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

UL-CCTrCH-r4 ::=          SEQUENCE {
    tfcs-ID                TFCS-IdentityPlain          DEFAULT 1,
    -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
    -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
    ul-TargetSIR           UL-TargetSIR,
    timeInfo               TimeInfo,
    commonTimeslotInfo     CommonTimeslotInfo          OPTIONAL,
    tddOption              CHOICE {

```



```

        -- numberOfFBI-Bits is conditional based on history
        numberOfFBI-Bits      NumberOfFBI-Bits      OPTIONAL,
        puncturingLimit      PuncturingLimit
    },
    tdd                        SEQUENCE {
        ul-TimingAdvance      UL-TimingAdvanceControl      OPTIONAL,
        ul-CCTrCHList         UL-CCTrCHList             OPTIONAL,
        ul-CCTrCHListToRemove UL-CCTrCHListToRemove        OPTIONAL
    }
}

UL-DPCH-Info-r4 ::=          SEQUENCE {
    ul-DPCH-PowerControlInfo  UL-DPCH-PowerControlInfo-r4      OPTIONAL,
    modeSpecificInfo          CHOICE {
        fdd                    SEQUENCE {
            scramblingCodeType  ScramblingCodeType,
            scramblingCode      UL-ScramblingCode,
            numberOfDPDCH       NumberOfDPDCH             DEFAULT 1,
            spreadingFactor     SpreadingFactor,
            tfci-Existence      BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits    NumberOfFBI-Bits             OPTIONAL,
            puncturingLimit     PuncturingLimit
        },
        tdd                    SEQUENCE {
            ul-TimingAdvance      UL-TimingAdvanceControl-r4    OPTIONAL,
            ul-CCTrCHList         UL-CCTrCHList-r4             OPTIONAL,
            ul-CCTrCHListToRemove UL-CCTrCHListToRemove        OPTIONAL
        }
    }
}

UL-DPCH-Info-r5 ::=          SEQUENCE {
    ul-DPCH-PowerControlInfo  UL-DPCH-PowerControlInfo-r5      OPTIONAL,
    modeSpecificInfo          CHOICE {
        fdd                    SEQUENCE {
            scramblingCodeType  ScramblingCodeType,
            scramblingCode      UL-ScramblingCode,
            numberOfDPDCH       NumberOfDPDCH             DEFAULT 1,
            spreadingFactor     SpreadingFactor,
            tfci-Existence      BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits    NumberOfFBI-Bits             OPTIONAL,
            puncturingLimit     PuncturingLimit
        },
        tdd                    SEQUENCE {
            ul-TimingAdvance      UL-TimingAdvanceControl-r4    OPTIONAL,
            ul-CCTrCHList         UL-CCTrCHList-r4             OPTIONAL,
            ul-CCTrCHListToRemove UL-CCTrCHListToRemove        OPTIONAL
        }
    }
}

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

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

UL-DPCH-InfoPostTDD-LCR-r4 ::= SEQUENCE {
    ul-DPCH-PowerControlInfo  UL-DPCH-PowerControlInfoPostTDD-LCR-r4,
    ul-TimingAdvance          UL-TimingAdvanceControl-LCR-r4      OPTIONAL,
    ul-CCTrCH-TimeslotsCodes  UplinkTimeslotsCodes-LCR-r4
}

UL-DPCH-InfoPredef ::=      SEQUENCE {
    ul-DPCH-PowerControlInfo  UL-DPCH-PowerControlInfoPredef,
    modeSpecificInfo          CHOICE {
        fdd                    SEQUENCE {

```

```

        tfci-Existence                BOOLEAN,
        puncturingLimit              PuncturingLimit
    },
    tdd                               SEQUENCE {
        commonTimeslotInfo           CommonTimeslotInfo
    }
}

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

UL-DPCH-PowerControlInfo-r4 ::=     CHOICE {
    fdd                               SEQUENCE {
        dpcch-PowerOffset            DPCCH-PowerOffset,
        pc-Preamble                  PC-Preamble,
        srb-delay                    SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm        PowerControlAlgorithm
    },
    tdd                               SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
        -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
        ul-TargetSIR                 UL-TargetSIR                OPTIONAL,
        ul-OL-PC-Signalling           CHOICE {
            broadcast-UL-OL-PC-info   NULL,
            individuallySignalled     SEQUENCE {
                tddOption              CHOICE {
                    tdd384             SEQUENCE {
                        individualTS-InterferenceList IndividualTS-InterferenceList,
                        dpch-ConstantValue ConstantValue
                    },
                    tdd128             SEQUENCE {
                        tpc-StepSize    TPC-StepSizeTDD
                    }
                }
            },
            primaryCCPCH-TX-Power     PrimaryCCPCH-TX-Power
        }
    }
}

UL-DPCH-PowerControlInfo-r5 ::=     CHOICE {
    fdd                               SEQUENCE {
        dpcch-PowerOffset            DPCCH-PowerOffset,
        pc-Preamble                  PC-Preamble,
        srb-delay                    SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm        PowerControlAlgorithm,
        deltaACK                     DeltaACK                OPTIONAL,
        deltaNACK                     DeltaNACK                OPTIONAL,
        ack-NACK-repetition-factor    ACK-NACK-repetitionFactor OPTIONAL
    },
    tdd                               SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
        -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
        ul-TargetSIR                 UL-TargetSIR                OPTIONAL,
        ul-OL-PC-Signalling           CHOICE {
            broadcast-UL-OL-PC-info   NULL,
            individuallySignalled     SEQUENCE {

```



```

    }
  }
}

UL-TimingAdvanceControl-LCR-r4 ::= CHOICE {
  disabled          NULL,
  enabled           SEQUENCE {
    ul-SynchronisationParameters  UL-SynchronisationParameters-r4 OPTIONAL,
    synchronisationParameters     SynchronisationParameters-r4   OPTIONAL
  }
}

UL-TS-ChannelisationCode ::= ENUMERATED {
  cc1-1, cc2-1, cc2-2,
  cc4-1, cc4-2, cc4-3, cc4-4,
  cc8-1, cc8-2, cc8-3, cc8-4,
  cc8-5, cc8-6, cc8-7, cc8-8,
  cc16-1, cc16-2, cc16-3, cc16-4,
  cc16-5, cc16-6, cc16-7, cc16-8,
  cc16-9, cc16-10, cc16-11, cc16-12,
  cc16-13, cc16-14, cc16-15, cc16-16 }

UL-TS-ChannelisationCodeList ::= SEQUENCE (SIZE (1..2)) OF
  UL-TS-ChannelisationCode

UplinkAdditionalTimeslots ::= SEQUENCE {
  parameters          CHOICE {
    sameAsLast        SEQUENCE {
      timeslotNumber  TimeslotNumber
    },
    newParameters     SEQUENCE {
      individualTimeslotInfo  IndividualTimeslotInfo,
      ul-TS-ChannelisationCodeList  UL-TS-ChannelisationCodeList
    }
  }
}

UplinkAdditionalTimeslots-LCR-r4 ::= SEQUENCE {
  parameters          CHOICE {
    sameAsLast        SEQUENCE {
      timeslotNumber  TimeslotNumber
    },
    newParameters     SEQUENCE {
      individualTimeslotInfo  IndividualTimeslotInfo-LCR-r4,
      ul-TS-ChannelisationCodeList  UL-TS-ChannelisationCodeList
    }
  }
}

UplinkTimeslotsCodes ::= SEQUENCE {
  dynamicSFusage      BOOLEAN,
  firstIndividualTimeslotInfo  IndividualTimeslotInfo,
  ul-TS-ChannelisationCodeList  UL-TS-ChannelisationCodeList,
  moreTimeslots      CHOICE {
    noMore            NULL,
    additionalTimeslots  CHOICE {
      consecutive     SEQUENCE {
        numAdditionalTimeslots  INTEGER (1..maxTS-1)
      },
      timeslotList    SEQUENCE (SIZE (1..maxTS-1)) OF
        UplinkAdditionalTimeslots
    }
  }
}

UplinkTimeslotsCodes-LCR-r4 ::= SEQUENCE {
  dynamicSFusage      BOOLEAN,
  firstIndividualTimeslotInfo  IndividualTimeslotInfo-LCR-r4,
  ul-TS-ChannelisationCodeList  UL-TS-ChannelisationCodeList,
  moreTimeslots      CHOICE {
    noMore            NULL,
    additionalTimeslots  CHOICE {
      consecutive     SEQUENCE {
        numAdditionalTimeslots  INTEGER (1..maxTS-LCR-1)
      },
      timeslotList    SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
        UplinkAdditionalTimeslots-LCR-r4
    }
  }
}

```



```

    }
  }
}

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

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

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

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

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

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

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

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

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

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

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

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

BLER-MeasurementResults ::=    SEQUENCE {
  transportChannelIdentity      TransportChannelIdentity,
  dl-TransportChannelBLER       DL-TransportChannelBLER      OPTIONAL
}

```

```

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

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

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

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

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

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

CellDCH-ReportCriteria-LCR-r4 ::= CHOICE {
    intraFreqReportingCriteria IntraFreqReportingCriteria-LCR-r4,
    periodicalReportingCriteria PeriodicalReportingCriteria
}

-- Actual value CellIndividualOffset = IE value * 0.5
CellIndividualOffset ::= INTEGER (-20..20)

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

CellInfo-r4 ::= SEQUENCE {
    cellIndividualOffset CellIndividualOffset DEFAULT 0,
    referenceTimeDifferenceToCell ReferenceTimeDifferenceToCell OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            primaryCPICH-Info PrimaryCPICH-Info OPTIONAL,
            primaryCPICH-TX-Power PrimaryCPICH-TX-Power OPTIONAL,
            readSFN-Indicator BOOLEAN,
            tx-DiversityIndicator BOOLEAN
        },
        tdd SEQUENCE {
            primaryCCPCH-Info PrimaryCCPCH-Info-r4,
            primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power OPTIONAL,
            timeslotInfoList TimeslotInfoList-r4 OPTIONAL,
            readSFN-Indicator BOOLEAN
        }
    }
}

CellInfoSI-RSCP ::= SEQUENCE {
    cellIndividualOffset CellIndividualOffset DEFAULT 0,
    referenceTimeDifferenceToCell ReferenceTimeDifferenceToCell OPTIONAL,

```

```

modeSpecificInfo
  fdd
    primaryCPICH-Info
    primaryCPICH-TX-Power
    readSFN-Indicator
    tx-DiversityIndicator
  },
  tdd
    primaryCCPCH-Info
    primaryCCPCH-TX-Power
    timeslotInfoList
    readSFN-Indicator
  }
},
cellSelectionReselectionInfo      CellSelectReselectInfoSIB-11-12-RSCP      OPTIONAL
}

CellInfoSI-RSCP-LCR-r4 ::=
  cellIndividualOffset             CellIndividualOffset             DEFAULT 0,
  referenceTimeDifferenceToCell    ReferenceTimeDifferenceToCell    OPTIONAL,
  primaryCCPCH-Info               PrimaryCCPCH-Info-LCR-r4,
  primaryCCPCH-TX-Power           PrimaryCCPCH-TX-Power           OPTIONAL,
  timeslotInfoList                TimeslotInfoList-LCR-r4        OPTIONAL,
  readSFN-Indicator               BOOLEAN,
  cellSelectionReselectionInfo     CellSelectReselectInfoSIB-11-12-RSCP      OPTIONAL
}

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

CellInfoSI-ECN0-LCR-r4 ::=
  cellIndividualOffset             CellIndividualOffset             DEFAULT 0,
  referenceTimeDifferenceToCell    ReferenceTimeDifferenceToCell    OPTIONAL,
  primaryCCPCH-Info               PrimaryCCPCH-Info-LCR-r4,
  primaryCCPCH-TX-Power           PrimaryCCPCH-TX-Power           OPTIONAL,
  timeslotInfoList                TimeslotInfoList-LCR-r4        OPTIONAL,
  readSFN-Indicator               BOOLEAN,
  cellSelectionReselectionInfo     CellSelectReselectInfoSIB-11-12-ECN0      OPTIONAL
}

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

CellInfoSI-HCS-RSCP-LCR-r4 ::=
  SEQUENCE {

```

```

cellIndividualOffset          CellIndividualOffset          DEFAULT 0,
referenceTimeDifferenceToCell ReferenceTimeDifferenceToCell  OPTIONAL,
primaryCCPCH-Info            PrimaryCCPCH-Info-LCR-r4,
primaryCCPCH-TX-Power        PrimaryCCPCH-TX-Power          OPTIONAL,
timeslotInfoList             TimeslotInfoList-LCR-r4       OPTIONAL,
readSFN-Indicator            BOOLEAN,
cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12-HCS-RSCP  OPTIONAL
}

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

CellInfoSI-HCS-ECN0-LCR-r4 ::= SEQUENCE {
  cellIndividualOffset        CellIndividualOffset          DEFAULT 0,
  referenceTimeDifferenceToCell ReferenceTimeDifferenceToCell  OPTIONAL,
  primaryCCPCH-Info           PrimaryCCPCH-Info-LCR-r4,
  primaryCCPCH-TX-Power       PrimaryCCPCH-TX-Power          OPTIONAL,
  timeslotInfoList            TimeslotInfoList-LCR-r4       OPTIONAL,
  readSFN-Indicator           BOOLEAN,
  cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12-HCS-ECN0  OPTIONAL
}

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

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

CellMeasurementEventResults-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  PrimaryCCPCH-Info-LCR-r4

CellReportingQuantities ::=   SEQUENCE {
  -- dummy is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored.
  dummy                        SFN-SFN-OTD-Type,
  cellIdentity-reportingIndicator BOOLEAN,
  cellSynchronisationInfoReportingIndicator BOOLEAN,

```

```

modeSpecificInfo CHOICE {
  fdd SEQUENCE {
    cpich-Ec-N0-reportingIndicator BOOLEAN,
    cpich-RSCP-reportingIndicator   BOOLEAN,
    pathloss-reportingIndicator     BOOLEAN
  },
  tdd SEQUENCE {
    timeslotISCP-reportingIndicator   BOOLEAN,
    proposedTGSN-ReportingRequired   BOOLEAN,
    primaryCCPCH-RSCP-reportingIndicator   BOOLEAN,
    pathloss-reportingIndicator       BOOLEAN
  }
}

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

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

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

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

```

```

    q-RxlevMin          Q-RxlevMin          OPTIONAL
  },
  tdd                   SEQUENCE {
    q-RxlevMin          Q-RxlevMin          OPTIONAL
  },
  gsm                   SEQUENCE {
    q-RxlevMin          Q-RxlevMin          OPTIONAL
  }
}

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

CellSelectReselectInfo-v5xyExtv590ext ::= SEQUENCE {
  deltaQrxlevmin        DeltaQrxlevmin        OPTIONAL,
  deltaQhcs             DeltaRSCP             OPTIONAL
}

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

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

CellToReport ::= SEQUENCE {
  bsicReported         BSICReported
}

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

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

CountC-SFN-Frame-difference ::= SEQUENCE {
  -- Actual value countC-SFN-High = IE value * 256
  countC-SFN-High      INTEGER(0..15),
  off                  INTEGER(0..255)
}

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

-- SPARE: CPICH- RSCP, Max = 91

```

```

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

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

--Actual value DeltaQrxlevmin = IE value * 2
DeltaQrxlevmin ::= INTEGER (-2..-1)

DeltaRSCP ::= INTEGER (-5..-1)

DeltaRSCPerCell ::= SEQUENCE {
    deltaRSCP                                DeltaRSCP    OPTIONAL
}

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

DGPS-CorrectionSatInfo ::=                   SEQUENCE {
    satID                                    SatID,
    iode                                    IODE,
    udre                                    UDRE,
    prc                                     PRC,
    rrc                                     RRC,
-- dummy1 and dummy2 are not used in this version of the specification and should be ignored.
    dummy1                                  DeltaPRC,
    dummy2                                  DeltaRRC,
-- dummy3 and dummy4 are not used in this version of the specification. They should not
-- be sent and if received they should be ignored.
    dummy3                                  DeltaPRC    OPTIONAL,
    dummy4                                  DeltaRRC    OPTIONAL
}

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

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

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

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

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

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

EllipsoidPointAltitudeEllipsoide ::=         SEQUENCE {
    latitudeSign                             ENUMERATED { north, south },
    latitude                                  INTEGER (0..8388607),
    longitude                                  INTEGER (-8388608..8388607),
    altitudeDirection                       ENUMERATED {height, depth},
    altitude                                  INTEGER (0..32767),
    uncertaintySemiMajor                     INTEGER (0..127),
    uncertaintySemiMinor                     INTEGER (0..127),
-- Actual value orientationMajorAxis = IE value * 2
    orientationMajorAxis                     INTEGER (0..89),
    uncertaintyAltitude                       INTEGER (0..127),
    confidence                                INTEGER (0..100)
}

EllipsoidPointUncertCircle ::=               SEQUENCE {

```

```

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

EllipsoidPointUncertEllipse ::= SEQUENCE {
latitudeSign          ENUMERATED { north, south },
latitude              INTEGER (0..8388607),
longitude             INTEGER (-8388608..8388607),
uncertaintySemiMajor INTEGER (0..127),
uncertaintySemiMinor INTEGER (0..127),
-- Actual value orientationMajorAxis = IE value * 2
orientationMajorAxis INTEGER (0..89),
confidence            INTEGER (0..100)
}

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

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

Event1a-r4 ::= SEQUENCE {
triggeringCondition  TriggeringCondition2,
reportingRange       ReportingRange,
forbiddenAffectCellList ForbiddenAffectCellList-r4    OPTIONAL,
w                    W,
reportDeactivationThreshold ReportDeactivationThreshold,
reportingAmount       ReportingAmount,
reportingInterval    ReportingInterval
}

Event1a-LCR-r4 ::= SEQUENCE {
triggeringCondition  TriggeringCondition2,
reportingRange       ReportingRange,
forbiddenAffectCellList ForbiddenAffectCellList-LCR-r4  OPTIONAL,
w                    W,
reportDeactivationThreshold ReportDeactivationThreshold,
reportingAmount       ReportingAmount,
reportingInterval    ReportingInterval
}

Event1b ::= SEQUENCE {
triggeringCondition  TriggeringCondition1,
reportingRange       ReportingRange,
forbiddenAffectCellList ForbiddenAffectCellList      OPTIONAL,
w                    W
}

Event1b-r4 ::= SEQUENCE {
triggeringCondition  TriggeringCondition1,
reportingRange       ReportingRange,
forbiddenAffectCellList ForbiddenAffectCellList-r4    OPTIONAL,
w                    W
}

Event1b-LCR-r4 ::= SEQUENCE {
triggeringCondition  TriggeringCondition1,
reportingRange       ReportingRange,
forbiddenAffectCellList ForbiddenAffectCellList-LCR-r4  OPTIONAL,
w                    W
}

Event1c ::= SEQUENCE {
replacementActivationThreshold ReplacementActivationThreshold,

```



```

    reportingAmount          ReportingAmount,
    reportingInterval        ReportingInterval
}

Event1e ::=
    triggeringCondition      TriggeringCondition2,
    thresholdUsedFrequency  ThresholdUsedFrequency
}

Event1f ::=
    triggeringCondition      TriggeringCondition1,
    thresholdUsedFrequency  ThresholdUsedFrequency
}

Event2a ::=
    -- 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 ::=
    usedFreqThreshold        Threshold,
    usedFreqW                W,
    hysteresis                HysteresisInterFreq,
    timeToTrigger            TimeToTrigger,
    reportingCellStatus      ReportingCellStatus          OPTIONAL,
    nonUsedFreqParameterList NonUsedFreqParameterList    OPTIONAL
}

Event2c ::=
    hysteresis                HysteresisInterFreq,
    timeToTrigger            TimeToTrigger,
    reportingCellStatus      ReportingCellStatus          OPTIONAL,
    nonUsedFreqParameterList NonUsedFreqParameterList    OPTIONAL
}

Event2d ::=
    usedFreqThreshold        Threshold,
    usedFreqW                W,
    hysteresis                HysteresisInterFreq,
    timeToTrigger            TimeToTrigger,
    reportingCellStatus      ReportingCellStatus          OPTIONAL
}

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

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

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

Event3b ::=
    thresholdOtherSystem      Threshold,
    hysteresis                Hysteresis,
    timeToTrigger            TimeToTrigger,
    reportingCellStatus      ReportingCellStatus          OPTIONAL
}

```

```

}

Event3c ::=
    thresholdOtherSystem
    hysteresis
    timeToTrigger
    reportingCellStatus
}

SEQUENCE {
    Threshold,
    Hysteresis,
    TimeToTrigger,
    ReportingCellStatus
} OPTIONAL

Event3d ::=
    hysteresis
    timeToTrigger
    reportingCellStatus
}

SEQUENCE {
    Hysteresis,
    TimeToTrigger,
    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 ::=
    intraFreqEventResults
    interFreqEventResults
    interRATEventResults
    trafficVolumeEventResults
    qualityEventResults
    ue-InternalEventResults
    ue-positioning-MeasurementEventResults
    spare
}

CHOICE {
    IntraFreqEventResults,
    InterFreqEventResults,
    InterRATEventResults,
    TrafficVolumeEventResults,
    QualityEventResults,
    UE-InternalEventResults,
    UE-Positioning-MeasurementEventResults,
    NULL
}

ExtraDopplerInfo ::=
    -- Actual value doppler1stOrder = IE value * 0.023
    doppler1stOrder
    dopplerUncertainty
}

SEQUENCE {
    INTEGER (-42..21),
    DopplerUncertainty
}

FACH-MeasurementOccasionInfo ::=
    fACH-meas-occasion-coeff
    inter-freq-FDD-meas-ind
    -- inter-freq-TDD-meas-ind is for 3.84Mcps TDD. For 1.28Mcps TDD, the IE in
    -- FACH-MeasurementOccasionInfo-LCR-r4-ext is used.
    inter-freq-TDD-meas-ind
    inter-RAT-meas-ind
}

SEQUENCE {
    INTEGER (1..12)
    BOOLEAN,
    BOOLEAN,
    SEQUENCE (SIZE (1..maxOtherRAT)) OF
        RAT-Type
} OPTIONAL,
OPTIONAL

FACH-MeasurementOccasionInfo-LCR-r4-ext ::= SEQUENCE {
    inter-freq-TDD128-meas-ind
    BOOLEAN
}

FilterCoefficient ::=
    ENUMERATED {
        fc0, fc1, fc2, fc3, fc4, fc5,
        fc6, fc7, fc8, fc9, fc11, fc13,
        fc15, fc17, fc19, spare1
    }

-- Actual value FineSFN-SFN = IE value * 0.0625
FineSFN-SFN ::=
    INTEGER (0..15)

ForbiddenAffectCell ::=
    fdd
    tdd
}

CHOICE {
    PrimaryCPICH-Info,
    PrimaryCCPCH-Info
}

ForbiddenAffectCell-r4 ::=
    fdd
    tdd
}

CHOICE {
    PrimaryCPICH-Info,
    PrimaryCCPCH-Info-r4
}

ForbiddenAffectCell-LCR-r4 ::=
    tdd
}

SEQUENCE {
    PrimaryCCPCH-Info-LCR-r4
}

```

```

}

ForbiddenAffectCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    ForbiddenAffectCell

ForbiddenAffectCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    ForbiddenAffectCell-r4

ForbiddenAffectCellList-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    ForbiddenAffectCell-LCR-r4

FreqQualityEstimateQuantity-FDD ::= ENUMERATED {
    cpich-EC-N0,
    cpich-RSCP }

FreqQualityEstimateQuantity-TDD ::= ENUMERATED {
    primaryCCPCH-RSCP }

GPS-MeasurementParam ::= SEQUENCE {
    satelliteID INTEGER (0..63),
    c-N0 INTEGER (0..63),
    doppler INTEGER (-32768..32768),
    wholeGPS-Chips INTEGER (0..1022),
    fractionalGPS-Chips INTEGER (0..1023),
    multipathIndicator MultipathIndicator,
    pseudorangeRMS-Error INTEGER (0..63)
}

GPS-MeasurementParamList ::= SEQUENCE (SIZE (1..maxSat)) OF
    GPS-MeasurementParam

GSM-CarrierRSSI ::= BIT STRING (SIZE (6))

GSM-MeasuredResults ::= SEQUENCE {
    gsm-CarrierRSSI GSM-CarrierRSSI OPTIONAL,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy INTEGER (46..173) OPTIONAL,
    bsicReported BSICReported,
    observedTimeDifferenceToGSM ObservedTimeDifferenceToGSM OPTIONAL
}

GSM-MeasuredResultsList ::= SEQUENCE (SIZE (1..maxReportedGSMCells)) OF
    GSM-MeasuredResults

GPS-TOW-1msec ::= INTEGER (0..604799999)

GPS-TOW-Assist ::= SEQUENCE {
    satID SatID,
    tlm-Message BIT STRING (SIZE (14)),
    tlm-Reserved BIT STRING (SIZE (2)),
    alert BOOLEAN,
    antiSpoof BOOLEAN
}

GPS-TOW-AssistList ::= SEQUENCE (SIZE (1..maxSat)) OF
    GPS-TOW-Assist

HCS-CellReselectInformation-RSCP ::= SEQUENCE {
    -- TABULAR: The default value for penaltyTime is "notUsed"
    -- Temporary offset is nested inside PenaltyTime-RSCP
    penaltyTime PenaltyTime-RSCP
}

HCS-CellReselectInformation-ECNO ::= SEQUENCE {
    -- TABULAR: The default value for penaltyTime is "notUsed"
    -- Temporary offset is nested inside PenaltyTime-ECNO
    penaltyTime PenaltyTime-ECNO
}

HCS-NeighbouringCellInformation-RSCP ::= SEQUENCE {
    hcs-PRIO HCS-PRIO DEFAULT 0,
    q-HCS Q-HCS DEFAULT 0,
    hcs-CellReselectInformation HCS-CellReselectInformation-RSCP
}

HCS-NeighbouringCellInformation-ECNO ::= SEQUENCE {

```

```

    hcs-PRIO                HCS-PRIO                DEFAULT 0,
    q-HCS                   Q-HCS                   DEFAULT 0,
    hcs-CellReselectInformation HCS-CellReselectInformation-ECNO
}

HCS-PRIO ::=                INTEGER (0..7)

HCS-ServingCellInformation ::= SEQUENCE {
    hcs-PRIO                HCS-PRIO                DEFAULT 0,
    q-HCS                   Q-HCS                   DEFAULT 0,
    t-CR-Max                T-CRMax                OPTIONAL
}

-- Actual value Hysteresis = IE value * 0.5
Hysteresis ::=                INTEGER (0..15)

-- Actual value HysteresisInterFreq = IE value * 0.5
HysteresisInterFreq ::=        INTEGER (0..29)

InterFreqCell ::=            SEQUENCE {
    frequencyInfo            FrequencyInfo,
    nonFreqRelatedEventResults CellMeasurementEventResults
}

InterFreqCell-LCR-r4 ::=        SEQUENCE {
    frequencyInfo            FrequencyInfo,
    nonFreqRelatedEventResults CellMeasurementEventResults-LCR-r4
}

InterFreqCellID ::=            INTEGER (0..maxCellMeas-1)

InterFreqCellInfoList ::=        SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList     NewInterFreqCellList       OPTIONAL,
    cellsForInterFreqMeasList CellsForInterFreqMeasList  OPTIONAL
}

InterFreqCellInfoList-r4 ::=        SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList     NewInterFreqCellList-r4          OPTIONAL,
    cellsForInterFreqMeasList CellsForInterFreqMeasList  OPTIONAL
}

InterFreqCellInfoSI-List-RSCP ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList     NewInterFreqCellSI-List-RSCP      OPTIONAL
}

InterFreqCellInfoSI-List-ECNO ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList     NewInterFreqCellSI-List-ECNO      OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList     NewInterFreqCellSI-List-HCS-RSCP  OPTIONAL
}

InterFreqCellInfoSI-List-HCS-ECNO ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList     NewInterFreqCellSI-List-HCS-ECNO  OPTIONAL
}

InterFreqCellInfoSI-List-RSCP-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList     NewInterFreqCellSI-List-RSCP-LCR-r4 OPTIONAL
}

InterFreqCellInfoSI-List-ECNO-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList     NewInterFreqCellSI-List-ECNO-LCR-r4 OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList     NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 OPTIONAL
}

InterFreqCellInfoSI-List-HCS-ECNO-LCR ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,

```

```

    newInterFreqCellList                NewInterFreqCellSI-List-HCS-ECN0-LCR-r4 OPTIONAL
}
InterFreqCellList ::=                   SEQUENCE (SIZE (1..maxFreq)) OF
                                        InterFreqCell
InterFreqCellList-LCR-r4-ext ::=        SEQUENCE (SIZE (1..maxFreq)) OF
                                        InterFreqCell-LCR-r4
InterFreqCellMeasuredResultsList ::=    SEQUENCE (SIZE (1..maxCellMeas)) OF
                                        CellMeasuredResults

InterFreqEvent ::=                      CHOICE {
    event2a                             Event2a,
    event2b                             Event2b,
    event2c                             Event2c,
    event2d                             Event2d,
    event2e                             Event2e,
    event2f                             Event2f
}

InterFreqEventList ::=                  SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                        InterFreqEvent

--Following IE shall be used regardless of CPICH RSCP(FDD) or Primary CCPCH RSCP(TDD)
--The order of the list corresponds to the order of the cells in Inter-FrequencyMeasuredResultsList
InterFrequencyMeasuredResultsList-v5xyv590ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                DeltaRSCPPerCell

Inter-FreqEventCriteria-v5xyv590ext ::= SEQUENCE {
    thresholdUsedFrequency-delta         DeltaRSCP,
    thresholdNonUsedFrequency-deltaList  ThresholdNonUsedFrequency-deltaList    OPTIONAL
}

--The order of the list corresponds to the order of the events in Inter-FreqEventList
Inter-FreqEventCriteriaList-v5xyv590ext ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                        Inter-FreqEventCriteria-v5xyv590ext

--The order of the list corresponds to the order of relevant events in Intra-FreqEventCriteriaList
--i.e. the first element of the list corresponds to the first occurrence of event 1e, 1f, 1h, 1i,
--the second element of the list corresponds to the second occurrence of event 1e, 1f, 1h, 1i
Intra-FreqEventCriteriaList-v5xyv590ext ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                                DeltaRSCP

--Following IE shall be used regardless of CPICH RSCP(FDD) or Primary CCPCH RSCP(TDD)
--The order of the list corresponds to the order of the cells in Intra-FrequencyMeasuredResultsList
IntraFrequencyMeasuredResultsList-v5xyv590ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                DeltaRSCPPerCell

IntraFreqReportingCriteria-1b-r5 ::= SEQUENCE {
    periodicReportingInfo-1b             PeriodicReportingInfo-1b
}

PeriodicReportingInfo-1b ::= SEQUENCE {
    reportingAmount                      ReportingAmount,
    reportingInterval                    ReportingInterval
}

InterFreqEventResults ::=               SEQUENCE {
    eventID                              EventIDInterFreq,
    interFreqCellList                    InterFreqCellList                OPTIONAL
}

InterFreqEventResults-LCR-r4-ext ::=    SEQUENCE {
    eventID                              EventIDInterFreq,
    interFreqCellList                    InterFreqCellList-LCR-r4-ext    OPTIONAL
}

InterFreqMeasQuantity ::=               SEQUENCE {
    reportingCriteria                    CHOICE {
        intraFreqReportingCriteria       SEQUENCE {
            intraFreqMeasQuantity        IntraFreqMeasQuantity
        },
        interFreqReportingCriteria        SEQUENCE {
            filterCoefficient             FilterCoefficient            DEFAULT fc0,
            modeSpecificInfo              CHOICE {
                fdd                       SEQUENCE {
                    freqQualityEstimateQuantity-FDD    FreqQualityEstimateQuantity-FDD
                }
            }
        }
    }
}

```

```

        },
        tdd                               SEQUENCE {
            freqQualityEstimateQuantity-TDD  FreqQualityEstimateQuantity-TDD
        }
    }
}

InterFreqMeasuredResults ::=          SEQUENCE {
    frequencyInfo                    FrequencyInfo                OPTIONAL,
    ultra-CarrierRSSI                UTRA-CarrierRSSI          OPTIONAL,
    interFreqCellMeasuredResultsList InterFreqCellMeasuredResultsList  OPTIONAL
}

InterFreqMeasuredResultsList ::=      SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqMeasuredResults

InterFreqMeasurementSysInfo-RSCP ::=  SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-RSCP  OPTIONAL
}

InterFreqMeasurementSysInfo-ECN0 ::=  SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-ECN0  OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-HCS-RSCP  OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-ECN0 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-HCS-ECN0  OPTIONAL
}

InterFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-RSCP-LCR  OPTIONAL
}

InterFreqMeasurementSysInfo-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-ECN0-LCR  OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-HCS-RSCP-LCR  OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List          InterFreqCellInfoSI-List-HCS-ECN0-LCR  OPTIONAL
}

InterFreqReportCriteria ::=          CHOICE {
    intraFreqReportingCriteria        IntraFreqReportingCriteria,
    interFreqReportingCriteria        InterFreqReportingCriteria,
    periodicalReportingCriteria       PeriodicalWithReportingCellStatus,
    noReporting                        ReportingCellStatusOpt
}

InterFreqReportCriteria-r4 ::=       CHOICE {
    intraFreqReportingCriteria-r4     IntraFreqReportingCriteria-r4,
    interFreqReportingCriteria        InterFreqReportingCriteria,
    periodicalReportingCriteria       PeriodicalWithReportingCellStatus,
    noReporting                        ReportingCellStatusOpt
}

InterFreqReportingCriteria ::=       SEQUENCE {
    interFreqEventList                InterFreqEventList            OPTIONAL
}

InterFreqReportingQuantity ::=       SEQUENCE {
    ultra-Carrier-RSSI                BOOLEAN,
    frequencyQualityEstimate          BOOLEAN,
    nonFreqRelatedQuantities          CellReportingQuantities
}

InterFrequencyMeasurement ::=        SEQUENCE {
    interFreqCellInfoList             InterFreqCellInfoList,
    interFreqMeasQuantity              InterFreqMeasQuantity          OPTIONAL,

```

```

interFreqReportingQuantity      InterFreqReportingQuantity      OPTIONAL,
measurementValidity             MeasurementValidity              OPTIONAL,
interFreqSetUpdate              UE-AutonomousUpdateMode        OPTIONAL,
reportCriteria                  InterFreqReportCriteria
}

InterFrequencyMeasurement-r4 ::= SEQUENCE {
  interFreqCellInfoList         InterFreqCellInfoList-r4,
  interFreqMeasQuantity         InterFreqMeasQuantity           OPTIONAL,
  interFreqReportingQuantity    InterFreqReportingQuantity      OPTIONAL,
  measurementValidity           MeasurementValidity              OPTIONAL,
  interFreqSetUpdate            UE-AutonomousUpdateMode        OPTIONAL,
  reportCriteria                InterFreqReportCriteria-r4
}

InterRAT-TargetCellDescription ::= SEQUENCE {
  technologySpecificInfo        CHOICE {
    gsm                          SEQUENCE {
      bsic                       BSIC,
      frequency-band             Frequency-Band,
      bcch-ARFCN                 BCCH-ARFCN,
      ncMode                      NC-Mode                      OPTIONAL
    },
    is-2000                      NULL,
    spare2                        NULL,
    spare1                        NULL
  }
}

InterRATCellID ::= INTEGER (0..maxCellMeas-1)

InterRATCellInfoList ::= SEQUENCE {
  removedInterRATCellList      RemovedInterRATCellList,
  -- NOTE: Future revisions of dedicated messages including IE newInterRATCellList
  -- should use a corrected version of this IE
  newInterRATCellList          NewInterRATCellList,
  cellsForInterRATMeasList     CellsForInterRATMeasList        OPTIONAL
}

InterRATCellInfoList-B ::= SEQUENCE {
  removedInterRATCellList      RemovedInterRATCellList,
  -- NOTE: IE newInterRATCellList should be optional. However, system information
  -- does not support message versions. Hence, this can not be corrected
  newInterRATCellList          NewInterRATCellList-B
}

InterRATCellInfoList-r4 ::= SEQUENCE {
  removedInterRATCellList      RemovedInterRATCellList,
  newInterRATCellList          NewInterRATCellList              OPTIONAL,
  cellsForInterRATMeasList     CellsForInterRATMeasList        OPTIONAL
}

InterRATCellIndividualOffset ::= INTEGER (-50..50)

InterRATEvent ::= CHOICE {
  event3a                       Event3a,
  event3b                       Event3b,
  event3c                       Event3c,
  event3d                       Event3d
}

InterRATEventList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
  InterRATEvent

InterRATEventResults ::= SEQUENCE {
  eventID                       EventIDInterRAT,
  cellToReportList              CellToReportList
}

InterRATInfo ::= ENUMERATED {
  gsm
}

InterRATMeasQuantity ::= SEQUENCE {
  measQuantityUTRAN-QualityEstimate IntraFreqMeasQuantity          OPTIONAL,
  ratSpecificInfo                 CHOICE {
    gsm                             SEQUENCE {
      measurementQuantity           MeasurementQuantityGSM,
      filterCoefficient             FilterCoefficient              DEFAULT fc0,
    }
  }
}

```

```

        bsic-VerificationRequired
    },
    is-2000
        tadd-EcIo
        tcomp-EcIo
        softSlope
        addIntercept
    }
}

InterRATMeasuredResults ::= CHOICE {
    gsm                GSM-MeasuredResultsList,
    spare              NULL
}

InterRATMeasuredResultsList ::= SEQUENCE (SIZE (1..maxOtherRAT-16)) OF
    InterRATMeasuredResults

InterRATMeasurement ::= SEQUENCE {
    interRATCellInfoList      InterRATCellInfoList            OPTIONAL,
    interRATMeasQuantity      InterRATMeasQuantity          OPTIONAL,
    interRATReportingQuantity InterRATReportingQuantity     OPTIONAL,
    reportCriteria             InterRATReportCriteria
}

InterRATMeasurement-r4 ::= SEQUENCE {
    interRATCellInfoList-r4  InterRATCellInfoList-r4        OPTIONAL,
    interRATMeasQuantity     InterRATMeasQuantity          OPTIONAL,
    interRATReportingQuantity InterRATReportingQuantity     OPTIONAL,
    reportCriteria           InterRATReportCriteria
}

InterRATMeasurementSysInfo ::= SEQUENCE {
    interRATCellInfoList      InterRATCellInfoList            OPTIONAL
}

InterRATMeasurementSysInfo-B ::= SEQUENCE {
    interRATCellInfoList-B    InterRATCellInfoList-B        OPTIONAL
}

InterRATReportCriteria ::= CHOICE {
    interRATReportingCriteria InterRATReportingCriteria,
    periodicalReportingCriteria PeriodicalWithReportingCellStatus,
    noReporting                ReportingCellStatusOpt
}

InterRATReportingCriteria ::= SEQUENCE {
    interRATEventList          InterRATEventList            OPTIONAL
}

InterRATReportingQuantity ::= SEQUENCE {
    utran-EstimatedQuality     BOOLEAN,
    ratSpecificInfo            CHOICE {
        gsm                    SEQUENCE {
            dummy                BOOLEAN,
            observedTimeDifferenceGSM BOOLEAN,
            gsm-Carrier-RSSI     BOOLEAN
        }
    }
}

IntraFreqCellID ::= INTEGER (0..maxCellMeas-1)

IntraFreqCellInfoList ::= SEQUENCE {
    removedIntraFreqCellList  RemovedIntraFreqCellList    OPTIONAL,
    newIntraFreqCellList      NewIntraFreqCellList        OPTIONAL,
    cellsForIntraFreqMeasList CellsForIntraFreqMeasList  OPTIONAL
}

IntraFreqCellInfoList-r4 ::= SEQUENCE {
    removedIntraFreqCellList  RemovedIntraFreqCellList    OPTIONAL,
    newIntraFreqCellList-r4   NewIntraFreqCellList-r4    OPTIONAL,
    cellsForIntraFreqMeasList CellsForIntraFreqMeasList  OPTIONAL
}

IntraFreqCellInfoSI-List-RSCP ::= SEQUENCE {
    removedIntraFreqCellList  RemovedIntraFreqCellList    OPTIONAL,

```



```

    newIntraFreqCellList          NewIntraFreqCellSI-List-RSCP
}

IntraFreqCellInfoSI-List-ECNO ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-ECNO
}

IntraFreqCellInfoSI-List-HCS-RSCP ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-HCS-RSCP
}

IntraFreqCellInfoSI-List-HCS-ECNO ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-HCS-ECNO
}

IntraFreqCellInfoSI-List-RSCP-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-RSCP-LCR-r4
}

IntraFreqCellInfoSI-List-ECNO-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-ECNO-LCR-r4
}

IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4
}

IntraFreqCellInfoSI-List-HCS-ECNO-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList      RemovedIntraFreqCellList      OPTIONAL,
    newIntraFreqCellList          NewIntraFreqCellSI-List-HCS-ECNO-LCR-r4
}

IntraFreqEvent ::= CHOICE {
    e1a          Event1a,
    e1b          Event1b,
    e1c          Event1c,
    e1d          NULL,
    e1e          Event1e,
    e1f          Event1f,
    e1g          NULL,
    e1h          ThresholdUsedFrequency,
    e1i          ThresholdUsedFrequency
}

IntraFreqEvent-r4 ::= CHOICE {
    e1a          Event1a-r4,
    e1b          Event1b-r4,
    e1c          Event1c,
    e1d          NULL,
    e1e          Event1e,
    e1f          Event1f,
    e1g          NULL,
    e1h          ThresholdUsedFrequency,
    e1i          ThresholdUsedFrequency
}

IntraFreqEvent-LCR-r4 ::= CHOICE {
    e1a          Event1a-LCR-r4,
    e1b          Event1b-LCR-r4,
    e1c          Event1c,
    e1d          NULL,
    e1e          Event1e,
    e1f          Event1f,
    e1g          NULL,
    e1h          ThresholdUsedFrequency,
    e1i          ThresholdUsedFrequency
}

IntraFreqEvent-ld-r5 ::= SEQUENCE {
    triggeringCondition2          TriggeringCondition2      OPTIONAL,
    useCIO                        BOOLEAN                    OPTIONAL
}

```

```

IntraFreqEventCriteria ::= SEQUENCE {
    event                IntraFreqEvent,
    hysteresis           Hysteresis,
    timeToTrigger       TimeToTrigger,
    reportingCellStatus ReportingCellStatus
} OPTIONAL

IntraFreqEventCriteria-r4 ::= SEQUENCE {
    event                IntraFreqEvent-r4,
    hysteresis           Hysteresis,
    timeToTrigger       TimeToTrigger,
    reportingCellStatus ReportingCellStatus
} OPTIONAL

IntraFreqEventCriteria-LCR-r4 ::= SEQUENCE {
    event                IntraFreqEvent-LCR-r4,
    hysteresis           Hysteresis,
    timeToTrigger       TimeToTrigger,
    reportingCellStatus ReportingCellStatus
} OPTIONAL

IntraFreqEventCriteriaList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria

IntraFreqEventCriteriaList-r4 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria-r4

IntraFreqEventCriteriaList-LCR-r4 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria-LCR-r4

IntraFreqEventResults ::= SEQUENCE {
    eventID              EventIDIntraFreq,
    cellMeasurementEventResults CellMeasurementEventResults
}

IntraFreqMeasQuantity ::= SEQUENCE {
    filterCoefficient    FilterCoefficient           DEFAULT fc0,
    modeSpecificInfo     CHOICE {
        fdd              SEQUENCE {
            intraFreqMeasQuantity-FDD IntraFreqMeasQuantity-FDD
        },
        tdd              SEQUENCE {
            intraFreqMeasQuantity-TDDList IntraFreqMeasQuantity-TDDList
        }
    }
}

-- If IntraFreqMeasQuantity-FDD is used in InterRATMeasQuantity, then only
-- cpich-Ec-N0 and cpich-RSCP are allowed.
-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
IntraFreqMeasQuantity-FDD ::= ENUMERATED {
    cpich-Ec-N0,
    cpich-RSCP,
    pathloss,
    dummy }

-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
IntraFreqMeasQuantity-TDD ::= ENUMERATED {
    primaryCCPCH-RSCP,
    pathloss,
    timeslotISCP,
    dummy }

IntraFreqMeasQuantity-TDDList ::= SEQUENCE (SIZE (1..4)) OF
    IntraFreqMeasQuantity-TDD

IntraFreqMeasuredResultsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellMeasuredResults

IntraFreqMeasurementSysInfo-RSCP ::= SEQUENCE {
    intraFreqMeasurementID MeasurementIdentity           DEFAULT 1,
    intraFreqCellInfoSI-List IntraFreqCellInfoSI-List-RSCP OPTIONAL,
    intraFreqMeasQuantity IntraFreqMeasQuantity           OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH OPTIONAL,
    maxReportedCellsOnRACH MaxReportedCellsOnRACH           OPTIONAL,
}

```

```

    reportingInfoForCellDCH          ReportingInfoForCellDCH          OPTIONAL
}

IntraFreqMeasurementSysInfo-ECNO ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-ECNO  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity        OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH        OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-HCS-RSCP  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity        OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH        OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-ECNO ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-HCS-ECNO  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity        OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH        OPTIONAL
}

IntraFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-RSCP-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity        OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-ECNO-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-ECNO-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity        OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity        OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-ECNO-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID          MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List        IntraFreqCellInfoSI-List-HCS-ECNO-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity        OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH          MaxReportedCellsOnRACH        OPTIONAL,
    reportingInfoForCellDCH          ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqReportCriteria ::= CHOICE {
    intraFreqReportingCriteria      IntraFreqReportingCriteria,
    periodicalReportingCriteria     PeriodicalWithReportingCellStatus,
    noReporting                      ReportingCellStatusOpt
}

IntraFreqReportCriteria-r4 ::= CHOICE {
    intraFreqReportingCriteria-r4   IntraFreqReportingCriteria-r4,
    periodicalReportingCriteria     PeriodicalWithReportingCellStatus,
    noReporting                      ReportingCellStatusOpt
}

```

```

IntraFreqReportingCriteria ::= SEQUENCE {
    eventCriteriaList          IntraFreqEventCriteriaList    OPTIONAL
}

IntraFreqReportingCriteria-r4 ::= SEQUENCE {
    eventCriteriaList          IntraFreqEventCriteriaList-r4  OPTIONAL
}

IntraFreqReportingCriteria-LCR-r4 ::= SEQUENCE {
    eventCriteriaList          IntraFreqEventCriteriaList-LCR-r4  OPTIONAL
}

IntraFreqReportingQuantity ::= SEQUENCE {
    activeSetReportingQuantities    CellReportingQuantities,
    monitoredSetReportingQuantities CellReportingQuantities,
    detectedSetReportingQuantities  CellReportingQuantities    OPTIONAL
}

IntraFreqReportingQuantityForRACH ::= SEQUENCE {
    sfn-SFN-OTD-Type              SFN-SFN-OTD-Type,
    modeSpecificInfo              CHOICE {
        fdd                        SEQUENCE {
            intraFreqRepQuantityRACH-FDD    IntraFreqRepQuantityRACH-FDD
        },
        tdd                        SEQUENCE {
            intraFreqRepQuantityRACH-TDDList IntraFreqRepQuantityRACH-TDDList
        }
    }
}

IntraFreqRepQuantityRACH-FDD ::= ENUMERATED {
    cpich-EcN0, cpich-RSCP,
    pathloss, noReport }

IntraFreqRepQuantityRACH-TDD ::= ENUMERATED {
    timeslotISCP,
    primaryCCPCH-RSCP,
    noReport }

IntraFreqRepQuantityRACH-TDDList ::= SEQUENCE (SIZE (1..2)) OF
    IntraFreqRepQuantityRACH-TDD

IntraFrequencyMeasurement ::= SEQUENCE {
    intraFreqCellInfoList          IntraFreqCellInfoList          OPTIONAL,
    intraFreqMeasQuantity           IntraFreqMeasQuantity           OPTIONAL,
    intraFreqReportingQuantity      IntraFreqReportingQuantity      OPTIONAL,
    measurementValidity             MeasurementValidity             OPTIONAL,
    reportCriteria                  IntraFreqReportCriteria         OPTIONAL
}

IntraFrequencyMeasurement-r4 ::= SEQUENCE {
    intraFreqCellInfoList-r4        IntraFreqCellInfoList-r4        OPTIONAL,
    intraFreqMeasQuantity            IntraFreqMeasQuantity            OPTIONAL,
    intraFreqReportingQuantity-r4    IntraFreqReportingQuantity-r4    OPTIONAL,
    measurementValidity-r4          MeasurementValidity-r4           OPTIONAL,
    reportCriteria-r4                IntraFreqReportCriteria-r4       OPTIONAL
}

IODE ::= INTEGER (0..255)

IP-Length ::= ENUMERATED {
    ip15, ip110 }

IP-PCCPCH-r4 ::= BOOLEAN

IP-Spacing ::= ENUMERATED {
    e5, e7, e10, e15, e20,
    e30, e40, e50 }

IP-Spacing-TDD ::= ENUMERATED {
    e30, e40, e50, e70, e100}

IS-2000SpecificMeasInfo ::= ENUMERATED {
    frequency, timeslot, colourcode,
    outputpower, pn-Offset }

MaxNumberOfReportingCellsType1 ::= ENUMERATED {
    e1, e2, e3, e4, e5, e6}

```

```

MaxNumberOfReportingCellsType2 ::= ENUMERATED {
    e1, e2, e3, e4, e5, e6, e7, e8, e9, e10, e11, e12}

MaxNumberOfReportingCellsType3 ::= ENUMERATED {
    viactCellsPlus1,
    viactCellsPlus2,
    viactCellsPlus3,
    viactCellsPlus4,
    viactCellsPlus5,
    viactCellsPlus6 }

MaxReportedCellsOnRACH ::= ENUMERATED {
    noReport,
    currentCell,
    currentAnd-1-BestNeighbour,
    currentAnd-2-BestNeighbour,
    currentAnd-3-BestNeighbour,
    currentAnd-4-BestNeighbour,
    currentAnd-5-BestNeighbour,
    currentAnd-6-BestNeighbour }

MeasuredResults ::= CHOICE {
    intraFreqMeasuredResultsList      IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList      InterFreqMeasuredResultsList,
    interRATMeasuredResultsList      InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList  TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults            QualityMeasuredResults,
    ue-InternalMeasuredResults        UE-InternalMeasuredResults,
    ue-positioning-MeasuredResults    UE-Positioning-MeasuredResults,
    spare                              NULL
}

MeasuredResults-v390ext ::= SEQUENCE {
    ue-positioning-MeasuredResults-v390ext    UE-Positioning-MeasuredResults-v390ext
}

MeasuredResults-v5xyv590ext ::= CHOICE {
    intraFrequencyMeasuredResultsList      IntraFrequencyMeasuredResultsList-v5xyv590ext,
    interFrequencyMeasuredResultsList      InterFrequencyMeasuredResultsList-v5xyv590ext
}

MeasuredResults-LCR-r4 ::= CHOICE {
    intraFreqMeasuredResultsList      IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList      InterFreqMeasuredResultsList,
    interRATMeasuredResultsList      InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList  TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults            QualityMeasuredResults,
    ue-InternalMeasuredResults        UE-InternalMeasuredResults-LCR-r4,
    ue-positioning-MeasuredResults    UE-Positioning-MeasuredResults,
    spare                              NULL
}

MeasuredResultsList ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasuredResults

MeasuredResultsList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasuredResults-LCR-r4

MeasuredResultsOnRACH ::= SEQUENCE {
    currentCell          SEQUENCE {
        modeSpecificInfo CHOICE {
            fdd SEQUENCE {
                measurementQuantity CHOICE {
                    cpich-Ec-N0      CPICH-Ec-N0,
                    cpich-RSCP       CPICH-RSCP,
                    pathloss         Pathloss,
                    spare            NULL
                }
            },
            tdd SEQUENCE {
                timeslotISCP      TimeslotISCP-List      OPTIONAL,
                primaryCCPCH-RSCP PrimaryCCPCH-RSCP    OPTIONAL
            }
        }
    },
    monitoredCells          MonitoredCellRACH-List      OPTIONAL
}

```

```

}

MeasurementCommand ::=
    CHOICE {
        setup
            MeasurementType,
        modify
            SEQUENCE {
                measurementType
                    MeasurementType
                    OPTIONAL
            },
        release
            NULL
    }

MeasurementCommand-r4 ::=
    CHOICE {
        setup
            MeasurementType-r4,
        modify
            SEQUENCE {
                measurementType
                    MeasurementType-r4
                    OPTIONAL
            },
        release
            NULL
    }

MeasurementControlSysInfo ::=
    SEQUENCE {
        use-of-HCS
            CHOICE {
                hcs-not-used
                    SEQUENCE {
                        cellSelectQualityMeasure
                            CHOICE {
                                cpich-RSCP
                                    SEQUENCE {
                                        intraFreqMeasurementSysInfo
                                            IntraFreqMeasurementSysInfo-RSCP
                                        }
                                    },
                                interFreqMeasurementSysInfo
                                    InterFreqMeasurementSysInfo-RSCP
                                    OPTIONAL
                            },
                        cpich-Ec-N0
                            SEQUENCE {
                                intraFreqMeasurementSysInfo
                                    IntraFreqMeasurementSysInfo-ECN0
                                }
                            },
                        interFreqMeasurementSysInfo
                                    InterFreqMeasurementSysInfo-ECN0
                                    OPTIONAL
                            }
                    },
                interRATMeasurementSysInfo
                    InterRATMeasurementSysInfo-B
                    OPTIONAL
            },
        hcs-used
            SEQUENCE {
                cellSelectQualityMeasure
                    CHOICE {
                        cpich-RSCP
                            SEQUENCE {
                                intraFreqMeasurementSysInfo
                                    IntraFreqMeasurementSysInfo-HCS-RSCP
                                }
                            },
                        interFreqMeasurementSysInfo
                                    InterFreqMeasurementSysInfo-HCS-RSCP
                                }
                            },
                        cpich-Ec-N0
                            SEQUENCE {
                                intraFreqMeasurementSysInfo
                                    IntraFreqMeasurementSysInfo-HCS-ECN0
                                }
                            },
                        interFreqMeasurementSysInfo
                                    InterFreqMeasurementSysInfo-HCS-ECN0
                                }
                    },
                interRATMeasurementSysInfo
                    InterRATMeasurementSysInfo
                    OPTIONAL
            }
    },
    trafficVolumeMeasSysInfo
        TrafficVolumeMeasSysInfo
        OPTIONAL,
    -- dummy is not used in this version of specification and it shall be ignored by the UE.
    dummy
        UE-InternalMeasurementSysInfo
        OPTIONAL
}

MeasurementControlSysInfo-LCR-r4-ext ::=
    SEQUENCE {
        -- CHOICE use-of-HCS shall have the same value as the use-of-HCS
        -- in MeasurementControlSysInfo
        use-of-HCS
            CHOICE {
                hcs-not-used
                    SEQUENCE {
                        -- CHOICE cellSelectQualityMeasure shall have the same value as the
                        -- cellSelectQualityMeasure in MeasurementControlSysInfo
                        cellSelectQualityMeasure
                            CHOICE {
                                cpich-RSCP
                                    SEQUENCE {
                                        intraFreqMeasurementSysInfo
                                            IntraFreqMeasurementSysInfo-RSCP-LCR-r4
                                            OPTIONAL,
                                        interFreqMeasurementSysInfo
                                            InterFreqMeasurementSysInfo-RSCP-LCR-r4
                                            OPTIONAL
                                    },
                                cpich-Ec-N0
                                    SEQUENCE {
                                        intraFreqMeasurementSysInfo
                                            IntraFreqMeasurementSysInfo-ECN0-LCR-r4
                                            OPTIONAL,
                                        interFreqMeasurementSysInfo
                                            InterFreqMeasurementSysInfo-ECN0-LCR-r4
                                            OPTIONAL
                                    }
                                }
                            }
                    },
                hcs-used
                    SEQUENCE {
                        -- CHOICE cellSelectQualityMeasure shall have the same value as the
    
```

```

-- cellSelectQualityMeasure in MeasurementControlSysInfo
cellSelectQualityMeasure CHOICE {
  cpich-RSCP SEQUENCE {
    intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4
  }
  interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 OPTIONAL
},
cpich-Ec-N0 SEQUENCE {
  intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-ECN0-LCR-r4
  interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 OPTIONAL
}
}
}
}
}

MeasurementIdentity ::= INTEGER (1..16)

MeasurementQuantityGSM ::= ENUMERATED {
  gsm-CarrierRSSI,
  dummy }

MeasurementReportingMode ::= SEQUENCE {
  measurementReportTransferMode TransferMode,
  periodicalOrEventTrigger PeriodicalOrEventTrigger
}

MeasurementType ::= CHOICE {
  intraFrequencyMeasurement IntraFrequencyMeasurement,
  interFrequencyMeasurement InterFrequencyMeasurement,
  interRATMeasurement InterRATMeasurement,
  ue-positioning-Measurement UE-Positioning-Measurement,
  trafficVolumeMeasurement TrafficVolumeMeasurement,
  qualityMeasurement QualityMeasurement,
  ue-InternalMeasurement UE-InternalMeasurement
}

MeasurementType-r4 ::= CHOICE {
  intraFrequencyMeasurement-r4 IntraFrequencyMeasurement-r4,
  interFrequencyMeasurement-r4 InterFrequencyMeasurement-r4,
  interRATMeasurement-r4 InterRATMeasurement-r4,
  ue-Positioning-Measurement-r4 UE-Positioning-Measurement-r4,
  trafficVolumeMeasurement TrafficVolumeMeasurement,
  qualityMeasurement QualityMeasurement,
  ue-InternalMeasurement-r4 UE-InternalMeasurement-r4
}

MeasurementValidity ::= SEQUENCE {
  ue-State ENUMERATED {
    cell-DCH, all-But-Cell-DCH, all-States }
}

MonitoredCellRACH-List ::= SEQUENCE (SIZE (1..8)) OF
  MonitoredCellRACH-Result

MonitoredCellRACH-Result ::= SEQUENCE {
  sfn-SFN-ObsTimeDifference SFN-SFN-ObsTimeDifference OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      primaryCPICH-Info PrimaryCPICH-Info,
      measurementQuantity CHOICE {
        cpich-Ec-N0 CPICH-Ec-N0,
        cpich-RSCP CPICH-RSCP,
        pathloss Pathloss,
        spare NULL
      }
    } OPTIONAL,
    tdd SEQUENCE {
      cellParametersID CellParametersID,
      primaryCCPCH-RSCP PrimaryCCPCH-RSCP
    }
  }
}

MultipathIndicator ::= ENUMERATED {
  nm,
  low,
}

```

```

        medium,
        high }

N-CR-T-CRMaxHyst ::= SEQUENCE {
    n-CR                INTEGER (1..16)           DEFAULT 8,
    t-CRMaxHyst         T-CRMaxHyst
}

NavigationModelSatInfo ::= SEQUENCE {
    satID               SatID,
    satelliteStatus     SatelliteStatus,
    ephemerisParameter EphemerisParameter     OPTIONAL
}

NavigationModelSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF
    NavigationModelSatInfo

EphemerisParameter ::= SEQUENCE {
    codeOnL2            BIT STRING (SIZE (2)),
    uraIndex            BIT STRING (SIZE (4)),
    satHealth           BIT STRING (SIZE (6)),
    iodc                BIT STRING (SIZE (10)),
    l2Pflag             BIT STRING (SIZE (1)),
    sflRevd             SubFrameReserved,
    t-GD                BIT STRING (SIZE (8)),
    t-oc                BIT STRING (SIZE (16)),
    af2                 BIT STRING (SIZE (8)),
    af1                 BIT STRING (SIZE (16)),
    af0                 BIT STRING (SIZE (22)),
    c-rs                BIT STRING (SIZE (16)),
    delta-n             BIT STRING (SIZE (16)),
    m0                  BIT STRING (SIZE (32)),
    c-uc                BIT STRING (SIZE (16)),
    e                   BIT STRING (SIZE (32)),
    c-us                BIT STRING (SIZE (16)),
    a-Sqrt              BIT STRING (SIZE (32)),
    t-oe                BIT STRING (SIZE (16)),
    fitInterval         BIT STRING (SIZE (1)),
    aodo                BIT STRING (SIZE (5)),
    c-ic                BIT STRING (SIZE (16)),
    omega0              BIT STRING (SIZE (32)),
    c-is                BIT STRING (SIZE (16)),
    i0                  BIT STRING (SIZE (32)),
    c-rc                BIT STRING (SIZE (16)),
    omega               BIT STRING (SIZE (32)),
    omegaDot            BIT STRING (SIZE (24)),
    iDot                BIT STRING (SIZE (14))
}

NC-Mode ::= BIT STRING (SIZE (3))

Neighbour ::= SEQUENCE {
    modeSpecificInfo    CHOICE {
        fdd              SEQUENCE {
            neighbourIdentity      PrimaryCPICH-Info     OPTIONAL,
            ue-RX-TX-TimeDifferenceType2Info UE-RX-TX-TimeDifferenceType2Info OPTIONAL
        },
        tdd              SEQUENCE {
            neighbourAndChannelIdentity CellAndChannelIdentity     OPTIONAL
        }
    },
    neighbourQuality     NeighbourQuality,
    sfn-SFN-ObsTimeDifference2 SFN-SFN-ObsTimeDifference2}

Neighbour-v390ext ::= SEQUENCE {
    modeSpecificInfo    CHOICE {
        fdd              SEQUENCE {
            frequencyInfo          FrequencyInfo
        },
        tdd              NULL
    }
}

NeighbourList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    Neighbour

-- The order of the cells in IE NeighbourList-v390ext shall be the
-- same as the order in IE NeighbourList
NeighbourList-v390ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF

```


	Neighbour-v390ext	
NeighbourQuality ::=	SEQUENCE {	
ue-Positioning-OTDOA-Quality	UE-Positioning-OTDOA-Quality	
}		
NewInterFreqCell ::=	SEQUENCE {	
interFreqCellID	InterFreqCellID	OPTIONAL,
frequencyInfo	FrequencyInfo	OPTIONAL,
cellInfo	CellInfo	
}		
NewInterFreqCell-r4 ::=	SEQUENCE {	
interFreqCellID	InterFreqCellID	OPTIONAL,
frequencyInfo	FrequencyInfo	OPTIONAL,
cellInfo	CellInfo-r4	
}		
NewInterFreqCellList ::=	SEQUENCE (SIZE (1..maxCellMeas)) OF	
	NewInterFreqCell	
NewInterFreqCellList-r4 ::=	SEQUENCE (SIZE (1..maxCellMeas)) OF	
	NewInterFreqCell-r4	
NewInterFreqCellSI-RSCP ::=	SEQUENCE {	
interFreqCellID	InterFreqCellID	OPTIONAL,
frequencyInfo	FrequencyInfo	OPTIONAL,
cellInfo	CellInfoSI-RSCP	
}		
NewInterFreqCellSI-ECN0 ::=	SEQUENCE {	
interFreqCellID	InterFreqCellID	OPTIONAL,
frequencyInfo	FrequencyInfo	OPTIONAL,
cellInfo	CellInfoSI-ECN0	
}		
NewInterFreqCellSI-HCS-RSCP ::=	SEQUENCE {	
interFreqCellID	InterFreqCellID	OPTIONAL,
frequencyInfo	FrequencyInfo	OPTIONAL,
cellInfo	CellInfoSI-HCS-RSCP	
}		
NewInterFreqCellSI-HCS-ECN0 ::=	SEQUENCE {	
interFreqCellID	InterFreqCellID	OPTIONAL,
frequencyInfo	FrequencyInfo	OPTIONAL,
cellInfo	CellInfoSI-HCS-ECN0	
}		
NewInterFreqCellSI-RSCP-LCR-r4 ::=	SEQUENCE {	
interFreqCellID	InterFreqCellID	OPTIONAL,
frequencyInfo	FrequencyInfo	OPTIONAL,
cellInfo	CellInfoSI-RSCP-LCR-r4	
}		
NewInterFreqCellSI-ECN0-LCR-r4 ::=	SEQUENCE {	
interFreqCellID	InterFreqCellID	OPTIONAL,
frequencyInfo	FrequencyInfo	OPTIONAL,
cellInfo	CellInfoSI-ECN0-LCR-r4	
}		
NewInterFreqCellSI-HCS-RSCP-LCR-r4 ::=	SEQUENCE {	
interFreqCellID	InterFreqCellID	OPTIONAL,
frequencyInfo	FrequencyInfo	OPTIONAL,
cellInfo	CellInfoSI-HCS-RSCP-LCR-r4	
}		
NewInterFreqCellSI-HCS-ECN0-LCR-r4 ::=	SEQUENCE {	
interFreqCellID	InterFreqCellID	OPTIONAL,
frequencyInfo	FrequencyInfo	OPTIONAL,
cellInfo	CellInfoSI-HCS-ECN0-LCR-r4	
}		
NewInterFreqCellSI-List-ECN0 ::=	SEQUENCE (SIZE (1..maxCellMeas)) OF	
	NewInterFreqCellSI-ECN0	
NewInterFreqCellSI-List-HCS-RSCP ::=	SEQUENCE (SIZE (1..maxCellMeas)) OF	
	NewInterFreqCellSI-HCS-RSCP	

```

NewInterFreqCellSI-List-HCS-ECNO ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-ECNO

NewInterFreqCellSI-List-RSCP ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-RSCP

NewInterFreqCellSI-List-ECNO-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-ECNO-LCR-r4

NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-RSCP-LCR-r4

NewInterFreqCellSI-List-HCS-ECNO-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-ECNO-LCR-r4

NewInterFreqCellSI-List-RSCP-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-RSCP-LCR-r4

NewInterRATCell ::=
    SEQUENCE {
        interRATCellID          InterRATCellID          OPTIONAL,
        technologySpecificInfo  CHOICE {
            gsm                SEQUENCE {
                cellSelectionReselectionInfo  CellSelectReselectInfoSIB-11-12  OPTIONAL,
                interRATCellIndividualOffset  InterRATCellIndividualOffset,
                bsic                    BSIC,
                frequency-band            Frequency-Band,
                bcch-ARFCN                BCCH-ARFCN,
                -- dummy is not used in this version of the specification, it should
                -- not be sent and if received it should be ignored.
                dummy                    NULL                    OPTIONAL
            },
            is-2000                SEQUENCE {
                is-2000SpecificMeasInfo        IS-2000SpecificMeasInfo
            },
            -- ASN.1 inconsistency: NewInterRATCellList should be optional within
            -- InterRATCellInfoList. The UE shall consider IE NewInterRATCell with
            -- technologySpecificInfo set to "absent" as valid and handle the
            -- message as if the IE NewInterRATCell was absent
            absent                    NULL,
            spare1                    NULL
        }
    }

NewInterRATCell-B ::=
    SEQUENCE {
        interRATCellID          InterRATCellID          OPTIONAL,
        technologySpecificInfo  CHOICE {
            gsm                SEQUENCE {
                cellSelectionReselectionInfo  CellSelectReselectInfoSIB-11-12  OPTIONAL,
                interRATCellIndividualOffset  InterRATCellIndividualOffset,
                bsic                    BSIC,
                frequency-band            Frequency-Band,
                bcch-ARFCN                BCCH-ARFCN,
                -- dummy is not used in this version of the specification, it should
                -- not be sent and if received it should be ignored.
                dummy                    NULL                    OPTIONAL
            },
            is-2000                SEQUENCE {
                is-2000SpecificMeasInfo        IS-2000SpecificMeasInfo
            },
            -- ASN.1 inconsistency: NewInterRATCellList-B should be optional within
            -- InterRATCellInfoList-B. The UE shall consider IE NewInterRATCell-B with
            -- technologySpecificInfo set to "absent" as valid and handle the
            -- message as if the IE NewInterRATCell-B was absent
            absent                    NULL,
            spare1                    NULL
        }
    }

NewInterRATCellList ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterRATCell

NewInterRATCellList-B ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterRATCell-B

NewIntraFreqCell ::=
    SEQUENCE {
        intraFreqCellID        IntraFreqCellID          OPTIONAL,
        cellInfo                CellInfo
    }

```

```

NewIntraFreqCell-r4 ::= SEQUENCE {
    intraFreqCellID          IntraFreqCellID          OPTIONAL,
    cellInfo                  CellInfo-r4
}

NewIntraFreqCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCell

NewIntraFreqCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCell-r4

NewIntraFreqCellSI-RSCP ::= SEQUENCE {
    intraFreqCellID          IntraFreqCellID          OPTIONAL,
    cellInfo                  CellInfoSI-RSCP
}

NewIntraFreqCellSI-ECN0 ::= SEQUENCE {
    intraFreqCellID          IntraFreqCellID          OPTIONAL,
    cellInfo                  CellInfoSI-ECN0
}

NewIntraFreqCellSI-HCS-RSCP ::= SEQUENCE {
    intraFreqCellID          IntraFreqCellID          OPTIONAL,
    cellInfo                  CellInfoSI-HCS-RSCP
}

NewIntraFreqCellSI-HCS-ECN0 ::= SEQUENCE {
    intraFreqCellID          IntraFreqCellID          OPTIONAL,
    cellInfo                  CellInfoSI-HCS-ECN0
}

NewIntraFreqCellSI-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqCellID          IntraFreqCellID          OPTIONAL,
    cellInfo                  CellInfoSI-RSCP-LCR-r4
}

NewIntraFreqCellSI-ECN0-LCR-r4 ::= SEQUENCE {
    intraFreqCellID          IntraFreqCellID          OPTIONAL,
    cellInfo                  CellInfoSI-ECN0-LCR-r4
}

NewIntraFreqCellSI-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqCellID          IntraFreqCellID          OPTIONAL,
    cellInfo                  CellInfoSI-HCS-RSCP-LCR-r4
}

NewIntraFreqCellSI-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    intraFreqCellID          IntraFreqCellID          OPTIONAL,
    cellInfo                  CellInfoSI-HCS-ECN0-LCR-r4
}

NewIntraFreqCellSI-List-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-RSCP

NewIntraFreqCellSI-List-ECN0 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-ECN0

NewIntraFreqCellSI-List-HCS-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-RSCP

NewIntraFreqCellSI-List-HCS-ECN0 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-ECN0

NewIntraFreqCellSI-List-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-RSCP-LCR-r4

NewIntraFreqCellSI-List-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-ECN0-LCR-r4

NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-RSCP-LCR-r4

NewIntraFreqCellSI-List-HCS-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-ECN0-LCR-r4

-- IE "nonUsedFreqThreshold" is not needed in case of event 2a
-- In case of event 2a UTRAN should include value 0 within IE "nonUsedFreqThreshold"
-- In case of event 2a, the UE shall be ignore IE "nonUsedFreqThreshold"
-- In later versions of the message including this IE, a special version of

```

```

-- IE "NonUsedFreqParameterList" may be defined for event 2a, namely a
-- version not including IE "nonUsedFreqThreshold"
NonUsedFreqParameter ::= SEQUENCE {
    nonUsedFreqThreshold Threshold,
    nonUsedFreqW W
}

NonUsedFreqParameterList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    NonUsedFreqParameter

ObservedTimeDifferenceToGSM ::= INTEGER (0..4095)

OTDOA-SearchWindowSize ::= ENUMERATED {
    c20, c40, c80, c160, c320,
    c640, c1280, moreThan1280 }

-- SPARE: Pathloss, Max = 158
-- Values above Max are spare
Pathloss ::= INTEGER (46..173)

PenaltyTime-RSCP ::= CHOICE {
    notUsed NULL,
    pt10 TemporaryOffset1,
    pt20 TemporaryOffset1,
    pt30 TemporaryOffset1,
    pt40 TemporaryOffset1,
    pt50 TemporaryOffset1,
    pt60 TemporaryOffset1
}

PenaltyTime-ECNO ::= CHOICE {
    notUsed NULL,
    pt10 TemporaryOffsetList,
    pt20 TemporaryOffsetList,
    pt30 TemporaryOffsetList,
    pt40 TemporaryOffsetList,
    pt50 TemporaryOffsetList,
    pt60 TemporaryOffsetList
}

PendingTimeAfterTrigger ::= ENUMERATED {
    ptat0-25, ptat0-5, ptat1,
    ptat2, ptat4, ptat8, ptat16 }

PeriodicalOrEventTrigger ::= ENUMERATED {
    periodical,
    eventTrigger }

PeriodicalReportingCriteria ::= SEQUENCE {
    reportingAmount ReportingAmount DEFAULT ra-Infinity,
    reportingInterval ReportingIntervalLong
}

PeriodicalWithReportingCellStatus ::= SEQUENCE {
    periodicalReportingCriteria PeriodicalReportingCriteria,
    reportingCellStatus ReportingCellStatus OPTIONAL
}

PLMNIdentitiesOfNeighbourCells ::= SEQUENCE {
    plmnsOfIntraFreqCellsList PLMNsOfIntraFreqCellsList OPTIONAL,
    plmnsOfInterFreqCellsList PLMNsOfInterFreqCellsList OPTIONAL,
    plmnsOfInterRATCellsList PLMNsOfInterRATCellsList OPTIONAL
}

PLMNsOfInterFreqCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    SEQUENCE {
        plmn-Identity PLMN-Identity OPTIONAL
    }

PLMNsOfIntraFreqCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    SEQUENCE {
        plmn-Identity PLMN-Identity OPTIONAL
    }

PLMNsOfInterRATCellsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    SEQUENCE {
        plmn-Identity PLMN-Identity OPTIONAL
    }

```

```

PositionEstimate ::=
    ellipsoidPoint
    ellipsoidPointUncertCircle
    ellipsoidPointUncertEllipse
    ellipsoidPointAltitude
    ellipsoidPointAltitudeEllipse
}
CHOICE {
    EllipsoidPoint,
    EllipsoidPointUncertCircle,
    EllipsoidPointUncertEllipse,
    EllipsoidPointAltitude,
    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 ::=
    blerMeasurementResultsList
    modeSpecificInfo
    fdd
    tdd
    sir-MeasurementResults
}
SEQUENCE {
    BLER-MeasurementResultsList
    CHOICE {
        NULL,
        SEQUENCE {
            SIR-MeasurementList
        }
    }
}
OPTIONAL,
OPTIONAL

QualityMeasurement ::=
    qualityReportingQuantity
    reportCriteria
}
SEQUENCE {
    QualityReportingQuantity
    QualityReportCriteria
}
OPTIONAL,

QualityReportCriteria ::=
    qualityReportingCriteria
    periodicalReportingCriteria
    noReporting
}
CHOICE {
    QualityReportingCriteria,
    PeriodicalReportingCriteria,
    NULL
}

QualityReportingCriteria ::=
    SEQUENCE (SIZE (1..maxTrCH)) OF
        QualityReportingCriteriaSingle

QualityReportingCriteriaSingle ::=
    transportChannelIdentity
    totalCRC
    badCRC
    pendingAfterTrigger
}
SEQUENCE {
    TransportChannelIdentity,
    INTEGER (1..512),
    INTEGER (1..512),
    INTEGER (1..512)
}

QualityReportingQuantity ::=
    dl-TransChBLER
    bler-dl-TransChIdList
    modeSpecificInfo
    fdd
    tdd
    sir-TFCS-List
}
SEQUENCE {
    BOOLEAN,
    BLER-TransChIdList
    CHOICE {
        NULL,
        SEQUENCE {
            SIR-TFCS-List
        }
    }
}
OPTIONAL,
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
    measurementReportingMode
    reportCriteria
}

ReportingInfoForCellDCH-LCR-r4 ::= SEQUENCE {
    intraFreqReportingQuantity
    measurementReportingMode
    reportCriteria
    CellDCH-ReportCriteria-LCR-r4
}

ReportingInterval ::= ENUMERATED {
    noPeriodicalreporting, ri0-25,
    ri0-5, ri1, ri2, ri4, ri8, ri16 }

ReportingIntervalLong ::= ENUMERATED {
    ril0, ril0-25, ril0-5, ril1,
    ril2, ril3, ril4, ril6, ril8,
    ril12, ril16, ril20, ril24,
    ril28, ril32, ril64 }
-- When the value "ril0" is used, the UE behaviour is not
-- defined.

-- Actual value ReportingRange = IE value * 0.5
ReportingRange ::= INTEGER (0..29)

RL-AdditionInfoList ::= SEQUENCE (SIZE (1..maxRL)) OF
    PrimaryCPICH-Info

RL-InformationLists ::= SEQUENCE {
    rl-AdditionInfoList                OPTIONAL,
    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
    iode
}

SatDataList ::= SEQUENCE (SIZE (0..maxSat)) OF
    SatData

SatelliteStatus ::= ENUMERATED {
    ns-NN-U,
    es-SN,
    es-NN-U,
    rev2,
    rev }

-- Identifies the satellite and is equal to (SV ID No - 1) where SV ID No is defined in [12].
SatID ::= INTEGER (0..63)

SFN-Offset-Validity ::= ENUMERATED { false }

SFN-SFN-Drift ::= ENUMERATED {
    sfnsfndrift0, sfnsfndrift1, sfnsfndrift2,
    sfnsfndrift3, sfnsfndrift4, sfnsfndrift5,
    sfnsfndrift8, sfnsfndrift10, sfnsfndrift15,
    sfnsfndrift25, sfnsfndrift35, sfnsfndrift50,
    sfnsfndrift65, sfnsfndrift80, sfnsfndrift100,
    sfnsfndrift-1, sfnsfndrift-2, sfnsfndrift-3,
    sfnsfndrift-4, sfnsfndrift-5, sfnsfndrift-8,
    sfnsfndrift-10, sfnsfndrift-15, sfnsfndrift-25,

```

```

sfnsfndrift-35, sfnsfndrift-50, sfnsfndrift-65,
sfnsfndrift-80, sfnsfndrift-100}

SFN-SFN-ObsTimeDifference ::=      CHOICE {
    type1                          SFN-SFN-ObsTimeDifference1,
    type2                          SFN-SFN-ObsTimeDifference2
}

-- SPARE: SFN-SFN-ObsTimeDifference1, Max = 9830399
-- For 1.28Mcps TDD, Max value of SFN-SFN-ObsTimeDifference1 is 3276799.
-- Values above Max are spare
SFN-SFN-ObsTimeDifference1 ::=    INTEGER (0..16777215)

-- SPARE: SFN-SFN-ObsTimeDifference2, Max = 40961
-- Values above Max are spare
SFN-SFN-ObsTimeDifference2 ::=    INTEGER (0..65535)

SFN-SFN-OTD-Type ::=              ENUMERATED {
    noReport,
    type1,
    type2 }

SFN-SFN-RelTimeDifference1 ::=    SEQUENCE {
    sfm-Offset                      INTEGER (0 .. 4095),
    sfm-sfm-Reltimedifference       INTEGER (0.. 38399)
}

SFN-TOW-Uncertainty ::=          ENUMERATED {
    lessThan10,
    moreThan10 }

SIR ::=                          INTEGER (0..63)

SIR-MeasurementList ::=          SEQUENCE (SIZE (1..maxCCTrCH)) OF
    SIR-MeasurementResults

SIR-MeasurementResults ::=       SEQUENCE {
    tfcs-ID                        TFCS-IdentityPlain,
    sir-TimeslotList               SIR-TimeslotList
}

SIR-TFCS ::=                    TFCS-IdentityPlain

SIR-TFCS-List ::=               SEQUENCE (SIZE (1..maxCCTrCH)) OF
    SIR-TFCS

SIR-TimeslotList ::=            SEQUENCE (SIZE (1..maxTS)) OF
    SIR

-- SubFrame1Reserved, reserved bits in subframe 1 of the GPS navigation message
SubFrame1Reserved ::=          SEQUENCE {
    reserved1                      BIT STRING (SIZE (23)),
    reserved2                      BIT STRING (SIZE (24)),
    reserved3                      BIT STRING (SIZE (24)),
    reserved4                      BIT STRING (SIZE (16))
}

T-ADVinfo ::=                   SEQUENCE {
    t-ADV                          INTEGER(0..2047),
    sfm                             INTEGER(0..4095)
}

T-CRMax ::=                     CHOICE {
    notUsed                        NULL,
    t30                            N-CR-T-CRMaxHyst,
    t60                            N-CR-T-CRMaxHyst,
    t120                           N-CR-T-CRMaxHyst,
    t180                           N-CR-T-CRMaxHyst,
    t240                           N-CR-T-CRMaxHyst
}

T-CRMaxHyst ::=                 ENUMERATED {
    notUsed, t10, t20, t30,
    t40, t50, t60, t70 }

```



```

TemporaryOffset1 ::=          ENUMERATED {
                                to3, to6, to9, to12, to15,
                                to18, to21, infinite }

TemporaryOffset2 ::=          ENUMERATED {
                                to2, to3, to4, to6, to8,
                                to10, to12, infinite }

TemporaryOffsetList ::=      SEQUENCE {
                                temporaryOffset1
                                temporaryOffset2
                                }

Threshold ::=                 INTEGER (-115..0)

-- The order of the list corresponds to the order of frequency defined in Inter-FreqEventCriteria
ThresholdNonUsedFrequency-deltaList ::= SEQUENCE (SIZE (1..maxFreq)) OF
                                         DeltaRSCPPerCell

ThresholdPositionChange ::=   ENUMERATED {
                                pc10, pc20, pc30, pc40, pc50,
                                pc100, pc200, pc300, pc500,
                                pc1000, pc2000, pc5000, pc10000,
                                pc20000, pc50000, pc100000 }

ThresholdSFN-GPS-TOW ::=      ENUMERATED {
                                ms1, ms2, ms3, ms5, ms10,
                                ms20, ms50, ms100 }

ThresholdSFN-SFN-Change ::=   ENUMERATED {
                                c0-25, c0-5, c1, c2, c3, c4, c5,
                                c10, c20, c50, c100, c200, c500,
                                c1000, c2000, c5000 }

ThresholdUsedFrequency ::=     INTEGER (-115..165)

-- Actual value TimeInterval = IE value * 20.
TimeInterval ::=              INTEGER (1..13)

TimeslotInfo ::=              SEQUENCE {
                                timeslotNumber
                                burstType
                                }

TimeslotInfo-LCR-r4 ::=        SEQUENCE {
                                timeslotNumber
                                TimeslotNumber-LCR-r4
                                }

TimeslotInfoList ::=           SEQUENCE (SIZE (1..maxTS)) OF
                                TimeslotInfo

TimeslotInfoList-LCR-r4 ::=    SEQUENCE (SIZE (1..maxTS-LCR)) OF
                                TimeslotInfo-LCR-r4

TimeslotInfoList-r4 ::=        CHOICE {
                                tdd384
                                    SEQUENCE (SIZE (1..maxTS)) OF
                                        TimeslotInfo,
                                tdd128
                                    SEQUENCE (SIZE (1..maxTS-LCR)) OF
                                        TimeslotInfo-LCR-r4
                                }

-- SPARE: TimeslotISCP, Max = 91
-- Values above Max are spare
TimeslotISCP ::=               INTEGER (0..127)

-- TimeslotISCP-List shall not include more than 6 elements in 1.28Mcps TDD mode.
TimeslotISCP-List ::=          SEQUENCE (SIZE (1..maxTS)) OF
                                TimeslotISCP

TimeslotListWithISCP ::=       SEQUENCE (SIZE (1..maxTS)) OF
                                TimeslotWithISCP

TimeslotWithISCP ::=           SEQUENCE {
                                timeslot
                                TimeslotNumber,

```

```

    timeslotISCP                TimeslotISCP
}

TimeToTrigger ::=                ENUMERATED {
    ttt0, ttt10, ttt20, ttt40, ttt60,
    ttt80, ttt100, ttt120, ttt160,
    ttt200, ttt240, tt320, ttt640,
    ttt1280, ttt2560, ttt5000 }

TrafficVolumeEventParam ::=     SEQUENCE {
    eventID                      TrafficVolumeEventType,
    reportingThreshold           TrafficVolumeThreshold,
    timeToTrigger                TimeToTrigger                OPTIONAL,
    pendingTimeAfterTrigger     PendingTimeAfterTrigger    OPTIONAL,
    tx-InterruptionAfterTrigger TX-InterruptionAfterTrigger    OPTIONAL
}

TrafficVolumeEventResults ::=   SEQUENCE {
    ul-transportChannelCausingEvent UL-TrCH-Identity,
    trafficVolumeEventIdentity    TrafficVolumeEventType
}

TrafficVolumeEventType ::=     ENUMERATED {
    e4a,
    e4b }

TrafficVolumeMeasQuantity ::=   CHOICE {
    rlc-BufferPayload            NULL,
    averageRLC-BufferPayload     TimeInterval,
    varianceOfRLC-BufferPayload  TimeInterval
}

TrafficVolumeMeasSysInfo ::=   SEQUENCE {
    trafficVolumeMeasurementID    MeasurementIdentity        DEFAULT 4,
    trafficVolumeMeasurementObjectList TrafficVolumeMeasurementObjectList OPTIONAL,
    trafficVolumeMeasQuantity     TrafficVolumeMeasQuantity   OPTIONAL,
    trafficVolumeReportingQuantity TrafficVolumeReportingQuantity OPTIONAL,
    -- dummy is not used in this version of specification, it should
    -- not be sent and if received it should be ignored.
    dummy                         TrafficVolumeReportingCriteria OPTIONAL,
    measurementValidity           MeasurementValidity          OPTIONAL,
    measurementReportingMode      MeasurementReportingMode,
    reportCriteriaSysInf          TrafficVolumeReportCriteriaSysInfo
}

TrafficVolumeMeasuredResults ::= SEQUENCE {
    rb-Identity                  RB-Identity,
    rlc-BuffersPayload           RLC-BuffersPayload         OPTIONAL,
    averageRLC-BufferPayload     AverageRLC-BufferPayload   OPTIONAL,
    varianceOfRLC-BufferPayload  VarianceOfRLC-BufferPayload OPTIONAL
}

TrafficVolumeMeasuredResultsList ::= SEQUENCE (SIZE (1..maxRB)) OF
    TrafficVolumeMeasuredResults

TrafficVolumeMeasurement ::=   SEQUENCE {
    trafficVolumeMeasurementObjectList TrafficVolumeMeasurementObjectList OPTIONAL,
    trafficVolumeMeasQuantity     TrafficVolumeMeasQuantity   OPTIONAL,
    trafficVolumeReportingQuantity TrafficVolumeReportingQuantity OPTIONAL,
    measurementValidity           MeasurementValidity          OPTIONAL,
    reportCriteria                TrafficVolumeReportCriteria
}

TrafficVolumeMeasurementObjectList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    UL-TrCH-Identity

TrafficVolumeReportCriteria ::= CHOICE {
    trafficVolumeReportingCriteria TrafficVolumeReportingCriteria,
    periodicalReportingCriteria    PeriodicalReportingCriteria,
    noReporting                     NULL
}

TrafficVolumeReportCriteriaSysInfo ::= CHOICE {
    trafficVolumeReportingCriteria TrafficVolumeReportingCriteria,
    periodicalReportingCriteria    PeriodicalReportingCriteria
}

```

```

TrafficVolumeReportingCriteria ::= SEQUENCE {
    -- NOTE: transChCriteriaList should be mandatory in later versions of this message
    transChCriteriaList          TransChCriteriaList          OPTIONAL
}

TrafficVolumeReportingQuantity ::= SEQUENCE {
    rlc-RB-BufferPayload          BOOLEAN,
    rlc-RB-BufferPayloadAverage   BOOLEAN,
    rlc-RB-BufferPayloadVariance  BOOLEAN
}

TrafficVolumeThreshold ::=
    ENUMERATED {
        th8, th16, th32, th64, th128,
        th256, th512, th1024, th2k, th3k,
        th4k, th6k, th8k, th12k, th16k,
        th24k, th32k, th48k, th64k, th96k,
        th128k, th192k, th256k, th384k,
        th512k, th768k }

TransChCriteria ::=
    SEQUENCE {
        ul-transportChannelID      UL-TrCH-Identity          OPTIONAL,
        eventSpecificParameters    SEQUENCE (SIZE (1..maxMeasParEvent)) OF
                                     TrafficVolumeEventParam    OPTIONAL
    }

TransChCriteriaList ::=
    SEQUENCE (SIZE (1..maxTrCH)) OF
        TransChCriteria

TransferMode ::=
    ENUMERATED {
        acknowledgedModeRLC,
        unacknowledgedModeRLC }

TransmittedPowerThreshold ::=
    INTEGER (-50..33)

TriggeringCondition1 ::=
    ENUMERATED {
        activeSetCellsOnly,
        monitoredSetCellsOnly,
        activeSetAndMonitoredSetCells }

TriggeringCondition2 ::=
    ENUMERATED {
        activeSetCellsOnly,
        monitoredSetCellsOnly,
        activeSetAndMonitoredSetCells,
        detectedSetCellsOnly,
        detectedSetAndMonitoredSetCells }

TX-InterruptionAfterTrigger ::=
    ENUMERATED {
        txiat0-25, txiat0-5, txiat1,
        txiat2, txiat4, txiat8, txiat16 }

UDRE ::=
    ENUMERATED {
        lessThan1,
        between1-and-4,
        between4-and-8,
        over8 }

UE-6AB-Event ::=
    SEQUENCE {
        timeToTrigger              TimeToTrigger,
        transmittedPowerThreshold  TransmittedPowerThreshold
    }

UE-6FG-Event ::=
    SEQUENCE {
        timeToTrigger              TimeToTrigger,
        -- in 1.28 Mcps TDD ue-RX-TX-TimeDifferenceThreshold corresponds to TADV Threshold
        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-InternalMeasuredResults-LCR-r4 ::= SEQUENCE {
    ue-TransmittedPowerTDD-List  UE-TransmittedPowerTDD-List    OPTIONAL,
    t-ADVinfo                    T-ADVinfo                        OPTIONAL
}

UE-InternalMeasurement ::= SEQUENCE {
    ue-InternalMeasQuantity    UE-InternalMeasQuantity    OPTIONAL,
    ue-InternalReportingQuantity  UE-InternalReportingQuantity  OPTIONAL,
    reportCriteria              UE-InternalReportCriteria
}

UE-InternalMeasurement-r4 ::= SEQUENCE {
    ue-InternalMeasQuantity    UE-InternalMeasQuantity    OPTIONAL,
    ue-InternalReportingQuantity  UE-InternalReportingQuantity-r4  OPTIONAL,
    reportCriteria              UE-InternalReportCriteria
}

UE-InternalMeasurementSysInfo ::= SEQUENCE {
    ue-InternalMeasurementID    MeasurementIdentity        DEFAULT 5,
    ue-InternalMeasQuantity     UE-InternalMeasQuantity
}

UE-InternalReportCriteria ::= CHOICE {
    ue-InternalReportingCriteria  UE-InternalReportingCriteria,
    periodicalReportingCriteria  PeriodicalReportingCriteria,
    noReporting                   NULL
}

UE-InternalReportingCriteria ::= SEQUENCE {
    ue-InternalEventParamList    UE-InternalEventParamList    OPTIONAL
}

UE-InternalReportingQuantity ::= SEQUENCE {
    ue-TransmittedPower          BOOLEAN,
    modeSpecificInfo            CHOICE {
        fdd                SEQUENCE {
            ue-RX-TX-TimeDifference    BOOLEAN
        },
        tdd                SEQUENCE {
            appliedTA                BOOLEAN
        }
    }
}

```

```

    }
}

UE-InternalReportingQuantity-r4 ::= SEQUENCE {
    ue-TransmittedPower          BOOLEAN,
    modeSpecificInfo             CHOICE {
        fdd                      SEQUENCE {
            ue-RX-TX-TimeDifference  BOOLEAN
        },
        tdd                      SEQUENCE {
            tddOption             CHOICE {
                tdd384            SEQUENCE {
                    appliedTA      BOOLEAN
                },
                tdd128            SEQUENCE {
                    t-ADVinfo      BOOLEAN
                }
            }
        }
    }
}

-- TABULAR: UE-MeasurementQuantity, for 3.84 Mcps TDD only the first two values
-- ue-TransmittedPower and ultra-Carrier-RSSI are used.
-- For 1.28 Mcps TDD ue-RX-TX-TimeDifference corresponds to T-ADV in the tabular
UE-MeasurementQuantity ::=
    ENUMERATED {
        ue-TransmittedPower,
        ultra-Carrier-RSSI,
        ue-RX-TX-TimeDifference }

UE-RX-TX-ReportEntry ::=
    SEQUENCE {
        primaryCPICH-Info      PrimaryCPICH-Info,
        ue-RX-TX-TimeDifferenceType1  UE-RX-TX-TimeDifferenceType1
    }

UE-RX-TX-ReportEntryList ::=
    SEQUENCE (SIZE (1..maxRL)) OF
        UE-RX-TX-ReportEntry

-- SPARE: UE-RX-TX-TimeDifferenceType1, Max = 1280
-- Values above Max are spare
UE-RX-TX-TimeDifferenceType1 ::=
    INTEGER (768..1791)

UE-RX-TX-TimeDifferenceType2 ::=
    INTEGER (0..8191)

UE-RX-TX-TimeDifferenceType2Info ::=
    SEQUENCE {
        ue-RX-TX-TimeDifferenceType2  UE-RX-TX-TimeDifferenceType2,
        neighbourQuality               NeighbourQuality
    }

-- In 1.28 Mcps TDD, actual value for
-- T-ADV Threshold = (UE-RX-TX-TimeDifferenceThreshold - 768) * 0.125
UE-RX-TX-TimeDifferenceThreshold ::=
    INTEGER (768..1280)

UE-TransmittedPower ::=
    INTEGER (0..104)

UE-TransmittedPowerTDD-List ::=
    SEQUENCE (SIZE (1..maxTS)) OF
        UE-TransmittedPower

UL-TrCH-Identity ::=
    CHOICE{
        dch          TransportChannelIdentity,
        -- Default transport channel in the UL is either RACH or CPCH, but not both.
        rachorcpch  NULL,
        usch        TransportChannelIdentity
    }

UE-Positioning-Accuracy ::=
    BIT STRING (SIZE (7))

UE-Positioning-CipherParameters ::=
    SEQUENCE {
        cipheringKeyFlag      BIT STRING (SIZE (1)),
        cipheringSerialNumber  INTEGER (0..65535)
    }

UE-Positioning-Error ::=
    SEQUENCE {
        errorReason           UE-Positioning-ErrorCause,
        ue-positioning-GPS-additionalAssistanceDataRequest  UE-Positioning-GPS-
        AdditionalAssistanceDataRequest OPTIONAL
    }

```

```

}

UE-Positioning-ErrorCause ::=
    ENUMERATED {
        notEnoughOTDOA-Cells,
        notEnoughGPS-Satellites,
        assistanceDataMissing,
        notAccomplishedGPS-TimingOfCellFrames,
        undefinedError,
        requestDeniedByUser,
        notProcessedAndTimeout,
        referenceCellNotServingCell }

UE-Positioning-EventParam ::=
    SEQUENCE {
        reportingAmount          ReportingAmount,
        reportFirstFix           BOOLEAN,
        measurementInterval      UE-Positioning-MeasurementInterval,
        eventSpecificInfo        UE-Positioning-EventSpecificInfo
    }

UE-Positioning-EventParamList ::=
    SEQUENCE (SIZE (1..maxMeasEvent)) OF
    UE-Positioning-EventParam

UE-Positioning-EventSpecificInfo ::=
    CHOICE {
        e7a                      ThresholdPositionChange,
        e7b                      ThresholdSFN-SFN-Change,
        e7c                      ThresholdSFN-GPS-TOW
    }

UE-Positioning-GPS-AcquisitionAssistance ::=
    SEQUENCE {
        gps-ReferenceTime        INTEGER (0..604799999),
        utran-GPSReferenceTime   UTRAN-GPSReferenceTime          OPTIONAL,
        satelliteInformationList AcquisitionSatInfoList
    }

UE-Positioning-GPS-AdditionalAssistanceDataRequest ::=
    SEQUENCE {
        almanacRequest           BOOLEAN,
        utcModelRequest          BOOLEAN,
        ionosphericModelRequest  BOOLEAN,
        navigationModelRequest   BOOLEAN,
        dgpsCorrectionsRequest   BOOLEAN,
        referenceLocationRequest  BOOLEAN,
        referenceTimeRequest      BOOLEAN,
        acquisitionAssistanceRequest  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-NavModelAddDataReq ::= SEQUENCE {
    navigationModelSatInfoList        NavigationModelSatInfoList
}

UE-Positioning-GPS-NavModelAddDataReq ::= SEQUENCE {
    gps-Week          INTEGER (0..1023),
    -- SPARE: gps-Toe, Max = 167
    -- Values above Max are spare
    gps-Toe          INTEGER (0..255),
    -- SPARE: tToeLimit, Max = 10
    -- Values above Max are spare
    tToeLimit        INTEGER (0..15),
    satDataList      SatDataList
}

UE-Positioning-GPS-ReferenceCellInfo ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            referenceIdentity PrimaryCPICH-Info
        },
        tdd SEQUENCE {
            referenceIdentity CellParametersID
        }
    }
}

UE-Positioning-GPS-ReferenceTime ::= SEQUENCE {
    gps-Week          INTEGER (0..1023),
    gps-tow-lmsec     GPS-TOW-lmsec,    utran-GPSReferenceTime    UTRAN-
GPSReferenceTime    OPTIONAL,
    sfn-tow-Uncertainty SFN-TOW-Uncertainty    OPTIONAL,
    utran-GPS-DriftRate UTRAN-GPS-DriftRate    OPTIONAL,
    gps-TOW-AssistList GPS-TOW-AssistList    OPTIONAL
}

UE-Positioning-GPS-UTC-Model ::= SEQUENCE {
    a1          BIT STRING (SIZE (24)),
    a0          BIT STRING (SIZE (32)),
    t-ot        BIT STRING (SIZE (8)),
    wn-t        BIT STRING (SIZE (8)),
    delta-t-LS BIT STRING (SIZE (8)),
    wn-lsf      BIT STRING (SIZE (8)),
    dn          BIT STRING (SIZE (8)),
    delta-t-LSF BIT STRING (SIZE (8))
}

UE-Positioning-IPDL-Parameters ::= SEQUENCE {
    ip-Spacing      IP-Spacing,
    ip-Length       IP-Length,
    ip-Offset       INTEGER (0..9),
    seed            INTEGER (0..63),
    burstModeParameters BurstModeParameters    OPTIONAL
}

UE-Positioning-IPDL-Parameters-r4 ::= SEQUENCE {
    modeSpecificInfo CHOICE {

```

```

    fdd
        ip-Spacing
        ip-Length
        ip-Offset
        seed
    },
    tdd
        ip-Spacing-TDD
        ip-slot
        ip-Start
        ip-PCCPCG
    }
},
burstModeParameters          BurstModeParameters          OPTIONAL
}

UE-Positioning-IPDL-Parameters-TDD-r4-ext ::= SEQUENCE {
    ip-Spacing                IP-Spacing-TDD,
    ip-slot                   INTEGER (0..14),
    ip-Start                  INTEGER (0..4095),
    ip-PCCPCG                 IP-PCCPCH-r4          OPTIONAL,
    burstModeParameters       BurstModeParameters
}

UE-Positioning-MeasuredResults ::= SEQUENCE {
    ue-positioning-OTDOA-Measurement          UE-Positioning-OTDOA-Measurement
    OPTIONAL,
    ue-positioning-PositionEstimateInfo       UE-Positioning-PositionEstimateInfo
    OPTIONAL,
    ue-positioning-GPS-Measurement            UE-Positioning-GPS-MeasurementResults
    OPTIONAL,
    ue-positioning-Error                      UE-Positioning-Error
    OPTIONAL
}

UE-Positioning-MeasuredResults-v390ext ::= SEQUENCE {
    ue-Positioning-OTDOA-Measurement-v390ext  UE-Positioning-OTDOA-Measurement-v390ext
}

UE-Positioning-Measurement ::= SEQUENCE {
    ue-positioning-ReportingQuantity          UE-Positioning-ReportingQuantity,
    reportCriteria                           UE-Positioning-ReportCriteria,
    ue-positioning-OTDOA-AssistanceData       UE-Positioning-OTDOA-AssistanceData
    OPTIONAL,
    ue-positioning-GPS-AssistanceData         UE-Positioning-GPS-AssistanceData
    OPTIONAL
}

UE-Positioning-Measurement-v390ext ::= SEQUENCE {
    ue-positioning-ReportingQuantity-v390ext  UE-Positioning-ReportingQuantity-v390ext
    OPTIONAL,
    measurementValidity                       MeasurementValidity          OPTIONAL,
    ue-positioning-OTDOA-AssistanceData-UEB    UE-Positioning-OTDOA-AssistanceData-UEB
    OPTIONAL
}

UE-Positioning-Measurement-r4 ::= SEQUENCE {
    ue-positioning-ReportingQuantity          UE-Positioning-ReportingQuantity-r4,
    measurementValidity                       MeasurementValidity
    OPTIONAL,
    reportCriteria                           UE-Positioning-ReportCriteria,
    ue-positioning-OTDOA-AssistanceData       UE-Positioning-OTDOA-AssistanceData-r4
    OPTIONAL,
    ue-positioning-GPS-AssistanceData         UE-Positioning-GPS-AssistanceData
    OPTIONAL
}

UE-Positioning-MeasurementEventResults ::= CHOICE {
    event7a          UE-Positioning-PositionEstimateInfo,
    event7b          UE-Positioning-OTDOA-Measurement,
    event7c          UE-Positioning-GPS-MeasurementResults,
    spare           NULL
}

UE-Positioning-MeasurementInterval ::= ENUMERATED {
    e5, e15, e60, e300,
    e900, e1800, e3600, e7200 }

```



```

UE-Positioning-MethodType ::=
    ENUMERATED {
        ue-Assisted,
        ue-Based,
        ue-BasedPreferred,
        ue-AssistedPreferred }

UE-Positioning-OTDOA-AssistanceData ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo    UE-Positioning-OTDOA-ReferenceCellInfo
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList    UE-Positioning-OTDOA-NeighbourCellList
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-r4 ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo    UE-Positioning-OTDOA-ReferenceCellInfo-r4
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList    UE-Positioning-OTDOA-NeighbourCellList-r4
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-r4ext ::= SEQUENCE {
    -- In case of TDD these IPDL parameters shall be used for the reference cell instead of
    -- IPDL Parameters in IE UE-Positioning-OTDOA-ReferenceCellInfo
    ue-Positioning-IPDL-Parameters-TDD-r4-ext    UE-Positioning-IPDL-Parameters-TDD-r4-ext
    OPTIONAL,
    -- These IPDL parameters shall be used for the neighbour cells in case of TDD instead of
    -- IPDL Parameters in IE UE-Positioning-OTDOA-NeighbourCellInfoList. The cells shall be
    -- listed in the same order as in IE UE-Positioning-OTDOA-NeighbourCellInfoList
    ue-Positioning-IPDL-Parameters-TDDList-r4-ext    UE-Positioning-IPDL-Parameters-TDDList-r4-ext
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-UEB ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo-UEB    UE-Positioning-OTDOA-ReferenceCellInfo-UEB
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList-UEB    UE-Positioning-OTDOA-NeighbourCellList-
    UEB
    OPTIONAL
}

UE-Positioning-IPDL-Parameters-TDDList-r4-ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    UE-Positioning-IPDL-Parameters-TDD-r4-ext

UE-Positioning-OTDOA-Measurement ::= SEQUENCE {
    sfn
    modeSpecificInfo    INTEGER (0..4095),
    fdd
    referenceCellIdentity    CHOICE {
        ue-RX-TX-TimeDifferenceType2Info    PrimaryCPICH-Info,
        ue-RX-TX-TimeDifferenceType2Info    UE-RX-TX-TimeDifferenceType2Info
    },
    tdd
    referenceCellIdentity    SEQUENCE {
        CellParametersID
    }
    },
    neighbourList    NeighbourList
    OPTIONAL
}

UE-Positioning-OTDOA-Measurement-v390ext ::= SEQUENCE {
    neighbourList-v390ext    NeighbourList-v390ext
}

UE-Positioning-OTDOA-NeighbourCellInfo ::= SEQUENCE {
    modeSpecificInfo    CHOICE {
        fdd
        primaryCPICH-Info    SEQUENCE {
            PrimaryCPICH-Info
        },
        tdd
        cellAndChannelIdentity    SEQUENCE {
            CellAndChannelIdentity
        }
    },
    frequencyInfo    FrequencyInfo
    OPTIONAL,
    ue-positioning-IPDL-Parameters    UE-Positioning-IPDL-Parameters
    OPTIONAL,
    sfn-SFN-RelTimeDifference    SFN-SFN-RelTimeDifference1,
    sfn-SFN-Drift    SFN-SFN-Drift
    OPTIONAL,
    searchWindowSize    OTDOA-SearchWindowSize,
    positioningMode    CHOICE {
        ueBased    SEQUENCE {},
        ueAssisted    SEQUENCE {}
    }
}

```

```

    }
}

UE-Positioning-OTDOA-NeighbourCellInfo-r4 ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd
            primaryCPICH-Info SEQUENCE {
                PrimaryCPICH-Info
            },
        tdd
            cellAndChannelIdentity SEQUENCE {
                CellAndChannelIdentity
            }
    },
    frequencyInfo FrequencyInfo OPTIONAL,
    ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters-r4 OPTIONAL,
    sfn-SFN-RelTimeDifference SFN-SFN-RelTimeDifference,
    sfn-Offset-Validity SFN-Offset-Validity OPTIONAL,
    sfn-SFN-Drift SFN-SFN-Drift OPTIONAL,
    searchWindowSize OTDOA-SearchWindowSize,
    positioningMode CHOICE {
        ueBased SEQUENCE {
            relativeNorth INTEGER (-20000..20000) OPTIONAL,
            relativeEast INTEGER (-20000..20000) OPTIONAL,
            relativeAltitude INTEGER (-4000..4000) OPTIONAL,
            fineSFN-SFN FineSFN-SFN OPTIONAL,
            -- actual value roundTripTime = (IE value * 0.0625) + 876
            roundTripTime INTEGER (0.. 32766) OPTIONAL
        },
        ueAssisted SEQUENCE {}
    }
}

UE-Positioning-OTDOA-NeighbourCellInfo-UEB ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd
            primaryCPICH-Info SEQUENCE {
                PrimaryCPICH-Info
            },
        tdd
            cellAndChannelIdentity SEQUENCE {
                CellAndChannelIdentity
            }
    },
    frequencyInfo FrequencyInfo OPTIONAL,
    ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters OPTIONAL,
    sfn-SFN-RelTimeDifference SFN-SFN-RelTimeDifference,
    sfn-SFN-Drift SFN-SFN-Drift OPTIONAL,
    searchWindowSize OTDOA-SearchWindowSize,
    relativeNorth INTEGER (-20000..20000) OPTIONAL,
    relativeEast INTEGER (-20000..20000) OPTIONAL,
    relativeAltitude INTEGER (-4000..4000) OPTIONAL,
    fineSFN-SFN FineSFN-SFN,
    -- actual value roundTripTime = (IE value * 0.0625) + 876
    roundTripTime INTEGER (0..32766) OPTIONAL
}

UE-Positioning-OTDOA-NeighbourCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    UE-Positioning-OTDOA-NeighbourCellInfo

UE-Positioning-OTDOA-NeighbourCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    UE-Positioning-OTDOA-NeighbourCellInfo-r4

UE-Positioning-OTDOA-NeighbourCellList-UEB ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    UE-Positioning-OTDOA-NeighbourCellInfo-UEB

UE-Positioning-OTDOA-Quality ::= SEQUENCE {
    stdResolution BIT STRING (SIZE (2)),
    numberOfOTDOA-Measurements BIT STRING (SIZE (3)),
    stdOfOTDOA-Measurements BIT STRING (SIZE (5))
}

UE-Positioning-OTDOA-ReferenceCellInfo ::= SEQUENCE {
    sfn INTEGER (0..4095)
    OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd
            primaryCPICH-Info SEQUENCE {
                PrimaryCPICH-Info
            },
        tdd
            cellAndChannelIdentity SEQUENCE {
                CellAndChannelIdentity
            }
    }
}

```

```

    },
    frequencyInfo                                FrequencyInfo                                OPTIONAL,
    positioningMode CHOICE {
        ueBased                                  SEQUENCE {},
        ueAssisted                              SEQUENCE {}
    },
    ue-positioning-IPDL-Parameters                UE-Positioning-IPDL-Parameters  OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-r4 ::= SEQUENCE {
    sfn                                           INTEGER (0..4095)
    OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                                       SEQUENCE {
            primaryCPICH-Info                    PrimaryCPICH-Info
        },
        tdd                                       SEQUENCE {
            cellAndChannelIdentity                CellAndChannelIdentity
        }
    },
    frequencyInfo                                FrequencyInfo                                OPTIONAL,
    positioningMode CHOICE {
        ueBased                                  SEQUENCE {
            cellPosition                          ReferenceCellPosition  OPTIONAL,
            -- actual value roundTripTime = (IE value * 0.0625) + 876
            roundTripTime                        INTEGER (0..32766)    OPTIONAL
        },
        ueAssisted                              SEQUENCE {}
    },
    ue-positioning-IPDL-Parameters                UE-Positioning-IPDL-Parameters-r4  OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-UEB ::= SEQUENCE {
    sfn                                           INTEGER (0..4095)                                OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd                                       SEQUENCE {
            primaryCPICH-Info                    PrimaryCPICH-Info
        },
        tdd                                       SEQUENCE {
            cellAndChannelIdentity                CellAndChannelIdentity
        }
    },
    frequencyInfo                                FrequencyInfo                                OPTIONAL,
    cellPosition                                ReferenceCellPosition                        OPTIONAL,
    -- actual value roundTripTime = (IE value * 0.0625) + 876
    roundTripTime                                INTEGER (0..32766)                            OPTIONAL,
    ue-positioning-IPDL-Parameters                UE-Positioning-IPDL-Parameters            OPTIONAL
}

UE-Positioning-PositionEstimateInfo ::= SEQUENCE {
    referenceTime                                CHOICE {
        utran-GPSReferenceTimeResult            UTRAN-GPSReferenceTimeResult,
        gps-ReferenceTimeOnly                    INTEGER (0..60479999),
        cell-Timing                              SEQUENCE {
            sfn                                  INTEGER (0..4095),
            modeSpecificInfo                    CHOICE {
                fdd                             SEQUENCE {
                    primaryCPICH-Info            PrimaryCPICH-Info
                },
                tdd                             SEQUENCE {
                    cellAndChannelIdentity        CellAndChannelIdentity
                }
            }
        }
    },
    positionEstimate                            PositionEstimate
}

UE-Positioning-ReportCriteria ::= CHOICE {
    ue-positioning-ReportingCriteria            UE-Positioning-EventParamList,
    periodicalReportingCriteria                PeriodicalReportingCriteria,
    noReporting                                NULL
}

UE-Positioning-ReportingQuantity ::= SEQUENCE {
    methodType                                UE-Positioning-MethodType,
    positioningMethod                          PositioningMethod,
    -- dummy1 is not used in this version of specification and it should

```

```

-- be ignored.
dummy1                                UE-Positioning-ResponseTime,
horizontal-Accuracy                    UE-Positioning-Accuracy           OPTIONAL,
gps-TimingOfCellWanted                 BOOLEAN,
-- dummy2 is not used in this version of specification and it should
-- be ignored.
dummy2                                BOOLEAN,
additionalAssistanceDataRequest        BOOLEAN,
environmentCharacterisation             EnvironmentCharacterisation       OPTIONAL
}

UE-Positioning-ReportingQuantity-v390ext ::=      SEQUENCE {
    vertical-Accuracy                    UE-Positioning-Accuracy
}

UE-Positioning-ReportingQuantity-r4 ::=          SEQUENCE {
    methodType                          UE-Positioning-MethodType,
    positioningMethod                    PositioningMethod,
    horizontalAccuracy                   UE-Positioning-Accuracy           OPTIONAL,
    verticalAccuracy                      UE-Positioning-Accuracy           OPTIONAL,
    gps-TimingOfCellWanted               BOOLEAN,
    additionalAssistanceDataReq          BOOLEAN,
    environmentCharacterisation           EnvironmentCharacterisation       OPTIONAL
}

UE-Positioning-ResponseTime ::=                ENUMERATED {
    s1, s2, s4, s8, s16,
    s32, s64, s128 }

-- SPARE: UTRA-CarrierRSSI, Max = 76
-- Values above Max are spare
UTRA-CarrierRSSI ::=                          INTEGER (0..127)

UTRAN-GPS-DriftRate ::=                       ENUMERATED {
    utran-GPSDrift0, utran-GPSDrift1, utran-GPSDrift2,
    utran-GPSDrift5, utran-GPSDrift10, utran-GPSDrift15,
    utran-GPSDrift25, utran-GPSDrift50, utran-GPSDrift-1,
    utran-GPSDrift-2, utran-GPSDrift-5, utran-GPSDrift-10,
    utran-GPSDrift-15, utran-GPSDrift-25, utran-GPSDrift-50}

UTRAN-GPSReferenceTime ::=                    SEQUENCE {
    -- For utran-GPSTimingOfCell values above 2322431999999 are not
    -- used in this version of the specification
    -- Actual value utran-GPSTimingOfCell = (ms-part * 4294967296) + ls-part
    utran-GPSTimingOfCell                SEQUENCE {
        ms-part                          INTEGER (0..1023),
        ls-part                          INTEGER (0..4294967295)
    },
    modeSpecificInfo                     CHOICE {
        fdd                               SEQUENCE {
            referenceIdentity              PrimaryCPICH-Info
        },
        tdd                               SEQUENCE {
            referenceIdentity              CellParametersID
        }
    } OPTIONAL,
    sfn                                  INTEGER (0..4095)
}

UTRAN-GPSReferenceTimeResult ::=              SEQUENCE {
    -- For ue-GPSTimingOfCell values above 37158911999999 are not
    -- used in this version of the specification
    -- Actual value ue-GPSTimingOfCell = (ms-part * 4294967296) + ls-part
    ue-GPSTimingOfCell                   SEQUENCE {
        ms-part                          INTEGER (0.. 16383),
        ls-part                          INTEGER (0..4294967295)
    },
    modeSpecificInfo                     CHOICE {
        fdd                               SEQUENCE {
            referenceIdentity              PrimaryCPICH-Info
        },
        tdd                               SEQUENCE {
            referenceIdentity              CellParametersID
        }
    },
    sfn                                  INTEGER (0..4095)
}

```

```

VarianceOfRLC-BufferPayload ::=      ENUMERATED {
                                        plv0, plv4, plv8, plv16, plv32, plv64,
                                        plv128, plv256, plv512, plv1024,
                                        plv2k, plv4k, plv8k, plv16k, spare2, spare1 }

-- Actual value W = IE value * 0.1
W ::=                                  INTEGER (0..20)

-- *****
--
--      OTHER INFORMATION ELEMENTS (10.3.8)
--
-- *****

BCC ::=                                INTEGER (0..7)

BCCH-ModificationInfo ::=             SEQUENCE {
    mib-ValueTag                       MIB-ValueTag,
    bcch-ModificationTime               BCCH-ModificationTime           OPTIONAL
}

-- Actual value BCCH-ModificationTime = IE value * 8
BCCH-ModificationTime ::=             INTEGER (0..511)

BSIC ::=                               SEQUENCE {
    ncc                                  NCC,
    bcc                                  BCC
}

CBS-DRX-Level1Information ::=         SEQUENCE {
    ctch-AllocationPeriod               INTEGER (1..256),
    cbs-FrameOffset                     INTEGER (0..255)
}

CDMA2000-Message ::=                  SEQUENCE {
    msg-Type                             BIT STRING (SIZE (8)),
    payload                              BIT STRING (SIZE (1..512))
}

CDMA2000-MessageList ::=               SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                                        CDMA2000-Message

CDMA2000-UMTS-Frequency-List ::=      SEQUENCE (SIZE (1..maxNumCDMA2000Freqs)) OF
                                        FrequencyInfoCDMA2000

CellValueTag ::=                       INTEGER (1..4)

--Actual value = 2^(IE value)
ExpirationTimeFactor ::=               INTEGER (1..8)

FDD-UMTS-Frequency-List ::=           SEQUENCE (SIZE (1..maxNumFDDFreqs)) OF
                                        FrequencyInfoFDD

FrequencyInfoCDMA2000 ::=              SEQUENCE {
    band-Class                           BIT STRING (SIZE (5)),
    cdma-Freq                             BIT STRING (SIZE(11))
}

GERAN-SystemInfoBlock ::=              OCTET STRING (SIZE (1..23))

GERAN-SystemInformation ::=            SEQUENCE (SIZE (1..maxGERAN-SI)) OF GERAN-SystemInfoBlock

GSM-BA-Range ::=                       SEQUENCE {
    gsmLowRangeUARFCN                    UARFCN,
    gsmUpRangeUARFCN                     UARFCN
}

GSM-BA-Range-List ::=                  SEQUENCE (SIZE (1..maxNumGSMFreqRanges)) OF
                                        GSM-BA-Range

-- This IE is formatted as 'TLV' and is coded in the same way as the Mobile Station Classmark 2
-- information element in [5]. The first octet is the Mobile station classmark 2 IEI and its value
-- shall be set to 33H. The second octet is the Length of mobile station classmark 2 and its value
-- shall be set to 3. The octet 3 contains the first octet of the value part of the Mobile Station
-- Classmark 2 information element, the octet 4 contains the second octet of the value part of the
-- Mobile Station Classmark 2 information element and so on. For each of these octets, the first/
-- leftmost/ most significant bit of the octet contains b8 of the corresponding octet of the Mobile

```

```

-- Station Classmark 2.
GSM-Classmark2 ::= OCTET STRING (SIZE (5))

-- This IE is formatted as 'V' and is coded in the same way as the value part in the Mobile station
-- classmark 3 information element in [5]
-- The value part is specified by means of CSN.1, which encoding results in a bit string, to which
-- final padding may be appended upto the next octet boundary [5]. The first/ leftmost bit of the
-- CSN.1 bit string is placed in the first/ leftmost/ most significant bit of the first
-- octet. This continues until the last bit of the CSN.1 bit string, which is placed in the last/
-- rightmost/ least significant bit of the last octet.
GSM-Classmark3 ::= OCTET STRING (SIZE (1..32))

GSM-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
    BIT STRING (SIZE (1..512))

GsmSecurityCapability ::= BIT STRING {
    -- For each bit value "0" means false/ not supported
    a5-7(0),
    a5-6(1),
    a5-5(2),
    a5-4(3),
    a5-3(4),
    a5-2(5),
    a5-1(6)
    } (SIZE (7))

IdentificationOfReceivedMessage ::= SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    receivedMessageType ReceivedMessageType
}

InterRAT-ChangeFailureCause ::= CHOICE {
    configurationUnacceptable NULL,
    physicalChannelFailure NULL,
    protocolError ProtocolErrorInformation,
    unspecified NULL,
    spare4 NULL,
    spare3 NULL,
    spare2 NULL,
    spare1 NULL
}

GERANIu-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
    BIT STRING (SIZE (1..32768))

GERANIu-RadioAccessCapability ::= BIT STRING (SIZE (1..170))

InterRAT-UE-RadioAccessCapability ::= CHOICE {
    gsm SEQUENCE {
        gsm-Classmark2 GSM-Classmark2,
        gsm-Classmark3 GSM-Classmark3
    },
    cdma2000 SEQUENCE {
        cdma2000-MessageList CDMA2000-MessageList
    }
}

InterRAT-UE-RadioAccessCapabilityList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
    InterRAT-UE-RadioAccessCapability

InterRAT-UE-RadioAccessCapability-ext ::= SEQUENCE {
    geraniu-RadioAccessCapability GERANIu-RadioAccessCapability
}

InterRAT-UE-SecurityCapability ::= CHOICE {
    gsm SEQUENCE {
        gsmSecurityCapability GsmSecurityCapability
    }
}

InterRAT-UE-SecurityCapList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
    InterRAT-UE-SecurityCapability

InterRAT-HO-FailureCause ::= CHOICE {
    configurationUnacceptable NULL,
    physicalChannelFailure NULL,
    protocolError ProtocolErrorInformation,
    interRAT-ProtocolError NULL,

```

```

    unspecified                NULL,
    spare11                    NULL,
    spare10                    NULL,
    spare9                     NULL,
    spare8                     NULL,
    spare7                     NULL,
    spare6                     NULL,
    spare5                     NULL,
    spare4                     NULL,
    spare3                     NULL,
    spare2                     NULL,
    spare1                     NULL
}

MasterInformationBlock ::=          SEQUENCE {
    mib-ValueTag                MIB-ValueTag,
    -- TABULAR: The PLMN identity and ANSI-41 core network information
    -- are included in PLMN-Type.
    plmn-Type                   PLMN-Type,
    sibSb-ReferenceList         SIBSb-ReferenceList,
    -- Extension mechanism for non- release99 information
    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,

```

```

OPTIONAL,
OPTIONAL,
List OPTIONAL
}

Rplmn-Information-r4 ::= SEQUENCE {
    gsm-BA-Range-List          GSM-BA-Range-List          OPTIONAL,
    fdd-UMTS-Frequency-List    FDD-UMTS-Frequency-List    OPTIONAL,
    tdd384-UMTS-Frequency-List TDD-UMTS-Frequency-List    OPTIONAL,
    tdd128-UMTS-Frequency-List TDD-UMTS-Frequency-List    OPTIONAL,
    cdma2000-UMTS-Frequency-List CDMA2000-UMTS-Frequency-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
    scheduling
}

SchedulingInformationSIBSb ::= SEQUENCE {
    sibSb-Type
    scheduling
}

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

```



```

sysInfoType9                NULL,
sysInfoType10               NULL,
sysInfoType11               CellValueTag,
sysInfoType12               CellValueTag,
sysInfoType13               CellValueTag,
sysInfoType13-1             CellValueTag,
sysInfoType13-2             CellValueTag,
sysInfoType13-3             CellValueTag,
sysInfoType13-4             CellValueTag,
sysInfoType14               NULL,
sysInfoType15               CellValueTag,
sysInfoType16               PredefinedConfigIdentityAndValueTag,
sysInfoType17               NULL,
sysInfoTypeSB1              CellValueTag,
sysInfoTypeSB2              CellValueTag,
sysInfoType15-1             CellValueTag,
sysInfoType15-2             SIBOccurrenceIdentityAndValueTag,
sysInfoType15-3             SIBOccurrenceIdentityAndValueTag,
sysInfoType15-4             CellValueTag,
sysInfoType18               CellValueTag,
sysInfoType15-5             CellValueTag,
spare3                       NULL,
spare2                       NULL,
spare1                       NULL
}

SibOFF ::=                    ENUMERATED {
                                so2, so4, so6, so8, so10,
                                so12, so14, so16, so18,
                                so20, so22, so24, so26,
                                so28, so30, so32 }

SibOFF-List ::=              SEQUENCE (SIZE (1..15)) OF
                                SibOFF

SysInfoType1 ::=             SEQUENCE {
-- Core network IEs
  cn-CommonGSM-MAP-NAS-SysInfo NAS-SystemInformationGSM-MAP,
  cn-DomainSysInfoList         CN-DomainSysInfoList,
-- User equipment IEs
  ue-ConnTimersAndConstants    UE-ConnTimersAndConstants    OPTIONAL,
  ue-IdleTimersAndConstants    UE-IdleTimersAndConstants    OPTIONAL,
-- Extension mechanism for non- release99 information
  v3a0NonCriticalExtensions    SEQUENCE {
    sysInfoType1-v3a0ext       SysInfoType1-v3a0ext-IEs,
    nonCriticalExtensions      SEQUENCE {} OPTIONAL
  }
}

SysInfoType1-v3a0ext-IEs ::= SEQUENCE {
  ue-ConnTimersAndConstants-v3a0ext UE-ConnTimersAndConstants-v3a0ext,
  ue-IdleTimersAndConstants-v3a0ext UE-IdleTimersAndConstants-v3a0ext
}

SysInfoType2 ::=             SEQUENCE {
-- UTRAN mobility IEs
  ura-IdentityList             URA-IdentityList,
-- Extension mechanism for non- release99 information
  nonCriticalExtensions        SEQUENCE {} OPTIONAL
}

SysInfoType3 ::=             SEQUENCE {
  sib4indicator                 BOOLEAN,
-- UTRAN mobility IEs
  cellIdentity                  CellIdentity,
  cellSelectReselectInfo        CellSelectReselectInfoSIB-3-4,
  cellAccessRestriction         CellAccessRestriction,
-- Extension mechanism for non- release99 information
  v4b0NonCriticalExtensions     SEQUENCE {
    sysInfoType3-v4b0ext        SysInfoType3-v4b0ext-IEs,
    v5xyv590NonCriticalExtension SEQUENCE {
      sysInfoType3-v5xyv590ext  SysInfoType3-v5xyv590ext,
      nonCriticalExtensions      SEQUENCE {} OPTIONAL
    }
  }
}

SysInfoType3-v4b0ext-IEs ::= SEQUENCE {

```

```

    mapping-LCR                                Mapping-LCR-r4                                OPTIONAL
}

SysInfoType3-v5xyv590ext ::= SEQUENCE {
    cellSelectReselectInfo-v5xyv590ext        CellSelectReselectInfo-v5xyExtv590ext        OPTIONAL
}

SysInfoType4 ::=                               SEQUENCE {
    -- UTRAN mobility IEs
    cellIdentity                               CellIdentity,
    cellSelectReselectInfo                     CellSelectReselectInfoSIB-3-4,
    cellAccessRestriction                     CellAccessRestriction,
    -- Extension mechanism for non- release99 information
    v4b0NonCriticalExtensions                 SEQUENCE {
        sysInfoType4-v4b0ext                   SysInfoType4-v4b0ext-IEs,
        v5xyv590NonCriticalExtension           SEQUENCE {
            sysInfoType4-v5xyv590ext           SysInfoType4-v5xyv590ext,
            nonCriticalExtensions              SEQUENCE {}                                OPTIONAL
        }
    }
}

SysInfoType4-v4b0ext-IEs ::= SEQUENCE {
    mapping-LCR                                Mapping-LCR-r4                                OPTIONAL
}

SysInfoType4-v5xyv590ext ::= SEQUENCE {
    cellSelectReselectInfo-v5xyv590ext        CellSelectReselectInfo-v5xyExtv590ext        OPTIONAL
}

SysInfoType5 ::=                               SEQUENCE {
    sib6indicator                              BOOLEAN,
    -- Physical channel IEs
    pich-PowerOffset                           PICH-PowerOffset,
    modeSpecificInfo                            CHOICE {
        fdd                                     SEQUENCE {
            aich-PowerOffset                   AICH-PowerOffset
        },
        tdd                                     SEQUENCE {
            -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, the following IEs should be absent
            -- and the info included in the tddl28SpecificInfo instead.
            -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
            -- included.
            pusch-SysInfoList-SFN              PUSCH-SysInfoList-SFN                        OPTIONAL,
            pdsch-SysInfoList-SFN              PDSCH-SysInfoList-SFN                        OPTIONAL,
            openLoopPowerControl-TDD            OpenLoopPowerControl-TDD
        }
    },
    primaryCCPCH-Info                           PrimaryCCPCH-Info                            OPTIONAL,
    prach-SystemInformationList                 PRACH-SystemInformationList,
    sccpch-SystemInformationList               SCCPCH-SystemInformationList,
    -- cbs-DRX-Level1Information is conditional on any of the CTCH indicator IEs in
    -- sccpch-SystemInformationList
    cbs-DRX-Level1Information                 CBS-DRX-Level1Information                    OPTIONAL,
    -- Extension mechanism for non- release99 information
    v4b0NonCriticalExtensions                 SEQUENCE {
        sysInfoType5-v4b0ext                   SysInfoType5-v4b0ext-IEs                    OPTIONAL,
        -- Extension mechanism for non- rel-4 information
        v5xyv590NonCriticalExtensions         SEQUENCE {
            sysInfoType5-v5xyv590ext           SysInfoType5-v5xyv590ext-IEs                OPTIONAL,
            nonCriticalExtensions              SEQUENCE {}                                OPTIONAL
        }
    }
}

SysInfoType5-v4b0ext-IEs ::= SEQUENCE {
    --The following IE PNBSCH-Allocation-r4 shall be used for 3.84Mcps TDD only.
    pNBSCH-Allocation-r4                       PNBSCH-Allocation-r4                        OPTIONAL,
    -- In case of TDD, the following IE is included instead of the
    -- IE up-IPDL-Parameter in up-OTDOA-AssistanceData.
    openLoopPowerControl-IPDL-TDD              OpenLoopPowerControl-IPDL-TDD-r4            OPTIONAL,
    -- If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included in
    -- PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
    -- IE rach-TransportFormatSet shall be absent and the corresponding IE in the following
    -- PRACH-SystemInformationList-LCR-r4 shall be used
    prach-SystemInformationList-LCR-r4         PRACH-SystemInformationList-LCR-r4          OPTIONAL,
    tddl28SpecificInfo                          SEQUENCE {
        pusch-SysInfoList-SFN                  PUSCH-SysInfoList-SFN-LCR-r4                OPTIONAL,

```

```

    pdsch-SysInfoList-SFN          PDSCH-SysInfoList-SFN-LCR-r4    OPTIONAL,
    pCCPCH-LCR-Extensions          PrimaryCCPCH-Info-LCR-r4-ext  OPTIONAL,
    sCCPCH-LCR-ExtensionsList      SCCPCH-SystemInformationList-LCR-r4-ext
}
frequencyBandIndicator            RadioFrequencyBandFDDSPare  OPTIONAL
}

SysInfoType5-v5xyv590ext-IEs ::= SEQUENCE {
  hcr-r5-SpecificInfo              SEQUENCE {
    pusch-SysInfoList-SFN          PUSCH-SysInfoList-SFN-HCR-r5  OPTIONAL,
    pdsch-SysInfoList-SFN          PDSCH-SysInfoList-SFN-HCR-r5  OPTIONAL
  }
}

SysInfoType6 ::= SEQUENCE {
  -- Physical channel IEs
  pich-PowerOffset                 PICH-PowerOffset,
  modeSpecificInfo                 CHOICE {
    fdd                             SEQUENCE {
      aich-PowerOffset              AICH-PowerOffset,
      -- dummy is not used in this version of specification, it should
      -- not be sent and if received it should be ignored.
      dummy                          CSICH-PowerOffset          OPTIONAL
    },
    tdd                             SEQUENCE {
      -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList-SFN,
      -- pdsch-SysInfoList-SFN and openLoopPowerControl-TDD should be absent
      -- and the info included in the tdd128SpecificInfo instead.
      -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should
      -- also be included.
      pusch-SysInfoList-SFN          PUSCH-SysInfoList-SFN          OPTIONAL,
      pdsch-SysInfoList-SFN          PDSCH-SysInfoList-SFN          OPTIONAL,
      openLoopPowerControl-TDD        OpenLoopPowerControl-TDD
    }
  },
  primaryCCPCH-Info                 PrimaryCCPCH-Info              OPTIONAL,
  prach-SystemInformationList        PRACH-SystemInformationList    OPTIONAL,
  sCCPCH-SystemInformationList        SCCPCH-SystemInformationList    OPTIONAL,
  cbs-DRX-Level1Information           CBS-DRX-Level1Information      OPTIONAL,
  -- Conditional on any of the CTCH indicator IEs in
  -- sCCPCH-SystemInformationList
  -- Extension mechanism for non- release99 information
  v4b0NonCriticalExtensions          SEQUENCE {
    sysInfoType6-v4b0ext             SysInfoType6-v4b0ext-IEs      OPTIONAL,
    -- Extension mechanism for non- rel-4 information
    v5xyv590NonCriticalExtensions    SEQUENCE {
      sysInfoType6-v5xyv590ext       SysInfoType6-v5xyv590ext-IEs  OPTIONAL,
      nonCriticalExtensions           SEQUENCE {}
    }
  }
}

SysInfoType6-v4b0ext-IEs ::= SEQUENCE {
  -- openLoopPowerControl-IPDL-TDD is present only if IPDLs are applied for TDD
  openLoopPowerControl-IPDL-TDD      OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL,
  -- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included
  -- in PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
  -- IE rach-TransportFormatSet shall be absent and the corresponding IEs in the following
  -- PRACH-SystemInformationList-LCR-r4 shall be used
  prach-SystemInformationList-LCR-r4  PRACH-SystemInformationList-LCR-r4  OPTIONAL,
  tdd128SpecificInfo                 SEQUENCE {
    pusch-SysInfoList-SFN            PUSCH-SysInfoList-SFN-LCR-r4  OPTIONAL,
    pdsch-SysInfoList-SFN            PDSCH-SysInfoList-SFN-LCR-r4  OPTIONAL,
    pCCPCH-LCR-Extensions             PrimaryCCPCH-Info-LCR-r4-ext  OPTIONAL,
    sCCPCH-LCR-ExtensionsList         SCCPCH-SystemInformationList-LCR-r4-ext  OPTIONAL
  }
  frequencyBandIndicator              RadioFrequencyBandFDDSPare  OPTIONAL
}

SysInfoType6-v5xyv590ext-IEs ::= SEQUENCE {
  hcr-r5-SpecificInfo                SEQUENCE {
    pusch-SysInfoList-SFN            PUSCH-SysInfoList-SFN-HCR-r5  OPTIONAL,
    pdsch-SysInfoList-SFN            PDSCH-SysInfoList-SFN-HCR-r5  OPTIONAL
  }
}

SysInfoType7 ::= SEQUENCE {
  -- Physical channel IEs

```

```

modeSpecificInfo CHOICE {
  fdd SEQUENCE {
    ul-Interference
  },
  tdd NULL
},
prach-Information-SIB5-List DynamicPersistenceLevelList,
prach-Information-SIB6-List DynamicPersistenceLevelList OPTIONAL,
expirationTimeFactor ExpirationTimeFactor OPTIONAL,
-- Extension mechanism for non- release99 information OPTIONAL
nonCriticalExtensions SEQUENCE {}
}

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 {
sibl2indicator BOOLEAN,
-- Measurement IEs
fach-MeasurementOccasionInfo FACH-MeasurementOccasionInfo OPTIONAL,
measurementControlSysInfo MeasurementControlSysInfo,
-- Extension mechanism for non- release99 information
v4b0NonCriticalExtensions SEQUENCE {
  sysInfoType11-v4b0ext SysInfoType11-v4b0ext-IEs OPTIONAL,
  v5xyv590NonCriticalExtension SEQUENCE {
    sysInfoType11-v5xyv590ext SysInfoType11-v5xyv590ext-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  }
} OPTIONAL
} OPTIONAL

SysInfoType11-v4b0ext-IEs ::= SEQUENCE {
  fach-MeasurementOccasionInfo-LCR-Ext FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
  measurementControlSysInfo-LCR MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType11-v5xyv590ext-IEs ::= SEQUENCE {
--The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
newIntraFrequencyCellInfoList-v5xyv590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
  CellSelectReselectInfo-v5xyExtv590ext OPTIONAL,
--The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
newInterFrequencyCellInfoList-v5xyv590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
  CellSelectReselectInfo-v5xyExtv590ext OPTIONAL,
--The order of the list corresponds to the order of cell in newInterRATCellInfoList
newInterRATCellInfoList-v5xyv590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
  CellSelectReselectInfo-v5xyExtv590ext OPTIONAL,
intraFreqEventCriteriaList-v5xyv590ext Intra-FreqEventCriteriaList-v5xyv590ext
OPTIONAL,
intraFreqReportingCriteria-1b-r5 IntraFreqReportingCriteria-1b-r5 OPTIONAL,
intraFreqEvent-1d-r5 IntraFreqEvent-1d-r5 OPTIONAL
}

SysInfoType12 ::= SEQUENCE {
-- Measurement IEs
fach-MeasurementOccasionInfo FACH-MeasurementOccasionInfo OPTIONAL,
measurementControlSysInfo MeasurementControlSysInfo,
-- Extension mechanism for non- release99 information

```

```

v4b0NonCriticalExtensions      SEQUENCE {
  sysInfoType12-v4b0ext        SysInfoType12-v4b0ext-IEs      OPTIONAL,
  v5xyv590NonCriticalExtension SEQUENCE {
    sysInfoType12-v5xyv590ext  SysInfoType12-v5xyv590ext-IEs,
    nonCriticalExtensions      SEQUENCE {}              OPTIONAL
  }
}
OPTIONAL

SysInfoType12-v4b0ext-IEs ::= SEQUENCE {
  fach-MeasurementOccasionInfo-LCR-Ext  FACH-MeasurementOccasionInfo-LCR-r4-ext OPTIONAL,
  measurementControlSysInfo-LCR        MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType12-v5xyv590ext-IEs ::= SEQUENCE {
  --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
  newIntraFrequencyCellInfoList-v5xyv590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
  CellSelectReselectInfo-v5xyExtv590ext      OPTIONAL,
  --The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
  newInterFrequencyCellInfoList-v5xyv590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
  CellSelectReselectInfo-v5xyExtv590ext      OPTIONAL,
  --The order of the list corresponds to the order of cell in newInterRATCellInfoList
  newInterRATCellInfoList-v5xyv590ext       SEQUENCE (SIZE (1..maxCellMeas)) OF
  CellSelectReselectInfo-v5xyExtv590ext      OPTIONAL,
  intraFreqEventCriteriaList-v5xyv590ext    Intra-FreqEventCriteriaList-v5xyv590ext
  OPTIONAL,
  intraFreqReportingCriteria-lb-r5          IntraFreqReportingCriteria-lb-r5      OPTIONAL,
  intraFreqEvent-ld-r5                     IntraFreqEvent-ld-r5                 OPTIONAL
}

SysInfoType13 ::= SEQUENCE {
  -- Core network IEs
  cn-DomainSysInfoList      CN-DomainSysInfoList,
  -- User equipment IEs
  ue-IdleTimersAndConstants UE-IdleTimersAndConstants      OPTIONAL,
  capabilityUpdateRequirement CapabilityUpdateRequirement  OPTIONAL,
  -- Extension mechanism for non- release99 information
  v3a0NonCriticalExtensions SEQUENCE {
    sysInfoType13-v3a0ext    SysInfoType13-v3a0ext-IEs,
    v4b0NonCriticalExtensions SEQUENCE {
      sysInfoType13-v4b0ext  SysInfoType13-v4b0ext-IEs,
      -- Extension mechanism for non- release99 information
      nonCriticalExtensions SEQUENCE {}              OPTIONAL
    }
  }
}
OPTIONAL

SysInfoType13-v3a0ext-IEs ::= SEQUENCE {
  ue-IdleTimersAndConstants-v3a0ext  UE-IdleTimersAndConstants-v3a0ext
}

SysInfoType13-v4b0ext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4Ext  CapabilityUpdateRequirement-r4-ext  OPTIONAL
}

SysInfoType13-1 ::= SEQUENCE {
  -- ANSI-41 IEs
  ansi-41-RAND-Information  ANSI-41-RAND-Information,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions     SEQUENCE {}              OPTIONAL
}

SysInfoType13-2 ::= SEQUENCE {
  -- ANSI-41 IEs
  ansi-41-UserZoneID-Information ANSI-41-UserZoneID-Information,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions         SEQUENCE {}              OPTIONAL
}

SysInfoType13-3 ::= SEQUENCE {
  -- ANSI-41 IEs
  ansi-41-PrivateNeighbourListInfo ANSI-41-PrivateNeighbourListInfo,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions           SEQUENCE {}              OPTIONAL
}

SysInfoType13-4 ::= SEQUENCE {
  -- ANSI-41 IEs

```

```

        ansi-41-GlobalServiceRedirectInfo
        ANSI-41-GlobalServiceRedirectInfo,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions      SEQUENCE {}                OPTIONAL
}

SysInfoType14 ::=                               SEQUENCE {
    -- Physical channel IEs
        individualTS-InterferenceList  IndividualTS-InterferenceList,
        expirationTimeFactor           ExpirationTimeFactor      OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}                OPTIONAL
}

SysInfoType15 ::=                               SEQUENCE {
    -- Measurement IEs

        ue-positioning-GPS-CipherParameters  UE-Positioning-CipherParameters      OPTIONAL,
        ue-positioning-GPS-ReferenceLocation  ReferenceLocation,
        ue-positioning-GPS-ReferenceTime      UE-Positioning-GPS-ReferenceTime,

        ue-positioning-GPS-Real-timeIntegrity  BadSatList                        OPTIONAL,
    -- Extension mechanism for non- release99 information
        v4b0NonCriticalExtensions            SEQUENCE {
            sysInfoType15-v4b0ext            SysInfoType15-v4b0ext-IEs,
            -- Extension mechanism for non- release4 information
            nonCriticalExtensions            SEQUENCE {}                OPTIONAL
        } OPTIONAL
}

SysInfoType15-v4b0ext-IEs ::= SEQUENCE {
    up-IPDL-Parameters-TDD                UE-Positioning-IPDL-Parameters-TDD-r4-ext  OPTIONAL
}

SysInfoType15-1 ::=                               SEQUENCE {
    -- DGPS corrections
        ue-positioning-GPS-DGPS-Corrections  UE-Positioning-GPS-DGPS-Corrections,

    -- Extension mechanism for non- release99 information
        nonCriticalExtensions                SEQUENCE {}                OPTIONAL
}

SysInfoType15-2 ::=                               SEQUENCE {
    -- Ephemeris and clock corrections
        transmissionTOW                    INTEGER (0..604799),
        satID                               SatID,
        ephemerisParameter                 EphemerisParameter,

    -- Extension mechanism for non- release99 information
        nonCriticalExtensions                SEQUENCE {}                OPTIONAL
}

SysInfoType15-3 ::=                               SEQUENCE {
    -- Almanac and other data
        transmissionTOW                    INTEGER (0.. 604799),
        ue-positioning-GPS-Almanac          UE-Positioning-GPS-Almanac
    OPTIONAL,
        ue-positioning-GPS-IonosphericModel UE-Positioning-GPS-IonosphericModel
    OPTIONAL,
        ue-positioning-GPS-UTC-Model        UE-Positioning-GPS-UTC-Model
    OPTIONAL,
        satMask                             BIT STRING (SIZE (1..32))  OPTIONAL,
        lsbTOW                               BIT STRING (SIZE (8))    OPTIONAL,
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions                SEQUENCE {}                OPTIONAL
}

SysInfoType15-4 ::=                               SEQUENCE {
    -- Measurement IEs
        ue-positioning-OTDOA-CipherParameters  UE-Positioning-CipherParameters      OPTIONAL,
        ue-positioning-OTDOA-AssistanceData    UE-Positioning-OTDOA-AssistanceData,
        v3a0NonCriticalExtensions              SEQUENCE {
            sysInfoType15-4-v3a0ext            SysInfoType15-4-v3a0ext,
            -- Extension mechanism for non- release99 information
            v4b0NonCriticalExtensions          SEQUENCE {
                sysInfoType15-4-v4b0ext        SysInfoType15-4-v4b0ext,
                nonCriticalExtensions          SEQUENCE {}                OPTIONAL
            } OPTIONAL
        }
}

```

```

    } OPTIONAL
}

SysInfoType15-4-v3a0ext ::= SEQUENCE {
    sfn-Offset-Validity          SFN-Offset-Validity          OPTIONAL
}

SysInfoType15-4-v4b0ext ::= SEQUENCE {
    ue-Positioning-OTDOA-AssistanceData-r4ext  UE-Positioning-OTDOA-AssistanceData-r4ext  OPTIONAL
}

SysInfoType15-5 ::=
    SEQUENCE {
        -- Measurement IEs
        ue-positioning-OTDOA-AssistanceData-UEB  UE-Positioning-OTDOA-AssistanceData-UEB,
        v3a0NonCriticalExtensions                SEQUENCE {
            sysInfoType15-5-v3a0ext              SysInfoType15-5-v3a0ext,
            -- Extension mechanism for non- release99 information
            nonCriticalExtensions                SEQUENCE {}          OPTIONAL
        } OPTIONAL
    }

SysInfoType15-5-v3a0ext ::= SEQUENCE {
    sfn-Offset-Validity          SFN-Offset-Validity          OPTIONAL
}

SysInfoType16 ::=
    SEQUENCE {
        -- Radio bearer IEs
        preDefinedRadioConfiguration  PreDefRadioConfiguration,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}              OPTIONAL
    }

SysInfoType17 ::=
    SEQUENCE {
        -- Physical channel IEs
        -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList and
        -- pdsch-SysInfoList should be absent and the info included in the
        -- tdd128SpecificInfo instead.
        -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
        -- included.
        pusch-SysInfoList              PUSCH-SysInfoList          OPTIONAL,
        pdsch-SysInfoList              PDSCH-SysInfoList          OPTIONAL,
        -- Extension mechanism for non- release99 information
        v4b0NonCriticalExtensions      SEQUENCE {
            sysInfoType17-v4b0ext      SysInfoType17-v4b0ext-IEs,
            v5xyv590v590NonCriticalExtensions  SEQUENCE {
                sysInfoType17-v5xyv590ext      SysInfoType17-v5xyv590ext-IEs          OPTIONAL,
                nonCriticalExtensions          SEQUENCE {}          OPTIONAL
            }
        } OPTIONAL
    } OPTIONAL
}

SysInfoType17-v4b0ext-IEs ::= SEQUENCE {
    tdd128SpecificInfo                SEQUENCE {
        pusch-SysInfoList              PUSCH-SysInfoList-LCR-r4          OPTIONAL,
        pdsch-SysInfoList              PDSCH-SysInfoList-LCR-r4          OPTIONAL
    }
}

SysInfoType17-v5xyv590v590ext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo                SEQUENCE {
        pusch-SysInfoList              PUSCH-SysInfoList-HCR-r5          OPTIONAL,
        pdsch-SysInfoList              PDSCH-SysInfoList-HCR-r5          OPTIONAL
    }
}

SysInfoType18 ::=
    SEQUENCE {
        idleModePLMNIdentities          PLMNIdentitiesOfNeighbourCells  OPTIONAL,
        connectedModePLMNIdentities    PLMNIdentitiesOfNeighbourCells  OPTIONAL,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}          OPTIONAL
    }

SysInfoTypeSB1 ::=
    SEQUENCE {
        -- Other IEs
        sib-ReferenceList                SIB-ReferenceList,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions          SEQUENCE {}              OPTIONAL
    }

```



```

SysInfoTypeSB2 ::=                               SEQUENCE {
  -- Other IEs
  sib-ReferenceList          SIB-ReferenceList,
  -- Extension mechanism for non-release99 information
  nonCriticalExtensions      SEQUENCE {}          OPTIONAL
}

TDD-UMTS-Frequency-List ::=                      SEQUENCE (SIZE (1..maxNumTDDFreqs)) OF
                                                FrequencyInfoTDD

-- *****
--
--      ANSI-41 INFORMATION ELEMENTS (10.3.9)
--
-- *****

ANSI-41-GlobalServiceRedirectInfo ::=           ANSI-41-NAS-Parameter
ANSI-41-PrivateNeighbourListInfo ::=           ANSI-41-NAS-Parameter
ANSI-41-RAND-Information ::=                   ANSI-41-NAS-Parameter
ANSI-41-UserZoneID-Information ::=             ANSI-41-NAS-Parameter
ANSI-41-NAS-Parameter ::=                     BIT STRING (SIZE (1..2048))

Min-P-REV ::=                                  BIT STRING (SIZE (8))

NAS-SystemInformationANSI-41 ::=               ANSI-41-NAS-Parameter
NID ::=                                        BIT STRING (SIZE (16))

P-REV ::=                                      BIT STRING (SIZE (8))

SID ::=                                        BIT STRING (SIZE (15))

END

```

11.4 Constant definitions

```
Constant-definitions DEFINITIONS AUTOMATIC TAGS ::=
```

```
BEGIN
```

```

hipDSCHidentities          INTEGER ::= 64
hipUSCHidentities         INTEGER ::= 64
hiRM                       INTEGER ::= 256
maxAC                     INTEGER ::= 16
maxAdditionalMeas          INTEGER ::= 4
maxASC                    INTEGER ::= 8
maxASCmap                 INTEGER ::= 7
maxASCpersist             INTEGER ::= 6
maxCCTrCH                 INTEGER ::= 8
maxCellMeas               INTEGER ::= 32
maxCellMeas-1             INTEGER ::= 31
maxCNDomains              INTEGER ::= 4
maxCPCHsets               INTEGER ::= 16
maxDPCH-DLchan            INTEGER ::= 8
maxDPDCH-UL               INTEGER ::= 6
maxDRACclasses            INTEGER ::= 8
maxFACHPCH                INTEGER ::= 8
maxFreq                   INTEGER ::= 8
maxFreqBandsFDD           INTEGER ::= 8
maxFreqBandsTDD           INTEGER ::= 4
maxFreqBandsGSM           INTEGER ::= 16
maxGERAN-SI               INTEGER ::= 8
maxHProcesses             INTEGER ::= 8
maxHSDSCHTbIndex          INTEGER ::= 64
maxHSDSCHTbIndex-tdd384   INTEGER ::= 512
maxHSSCCHs                INTEGER ::= 4
maxInterSysMessages       INTEGER ::= 4
maxLoCHperRLC             INTEGER ::= 2
maxMAC-d-PDU sizes        INTEGER ::= 8
maxMeasEvent              INTEGER ::= 8
maxMeasIntervals          INTEGER ::= 3
maxMeasParEvent           INTEGER ::= 2
maxNumCDMA2000Freqs       INTEGER ::= 8
maxNumGSMFreqRanges       INTEGER ::= 32
maxNumFDDFreqs            INTEGER ::= 8
maxNumTDDFreqs            INTEGER ::= 8
maxNoOfMeas               INTEGER ::= 16

```

```

maxOtherRAT                INTEGER ::= 15
maxOtherRAT-16             INTEGER ::= 16
maxPage1                   INTEGER ::= 8
maxPCPCH-APsig            INTEGER ::= 16
maxPCPCH-APsubCh          INTEGER ::= 12
maxPCPCH-CDsig            INTEGER ::= 16
maxPCPCH-CDsubCh          INTEGER ::= 12
maxPCPCH-SF                INTEGER ::= 7
maxPCPCHs                  INTEGER ::= 64
maxPDCPALgoType           INTEGER ::= 8
maxPDSCH                   INTEGER ::= 8
maxPDSCH-TFCIgroups       INTEGER ::= 256
maxPRACH                   INTEGER ::= 16
maxPRACH-FPACH            INTEGER ::= 8
maxPredefConfig            INTEGER ::= 16
maxPUSCH                   INTEGER ::= 8
maxQueueIDs                INTEGER ::= 8
maxRABsetup                INTEGER ::= 16
maxRAT                     INTEGER ::= 16
maxRB                       INTEGER ::= 32
maxRBallRABs               INTEGER ::= 27
maxRBMuxOptions            INTEGER ::= 8
maxRBperRAB                INTEGER ::= 8
maxReportedGSMCells        INTEGER ::= 8
maxRL                       INTEGER ::= 8
maxRL-1                    INTEGER ::= 7
maxRFC3095-CID             INTEGER ::= 16384
maxROHC-PacketSizes-r4     INTEGER ::= 16
maxROHC-Profile-r4         INTEGER ::= 8
maxSat                      INTEGER ::= 16
maxSCCPCH                  INTEGER ::= 16
maxSIB                      INTEGER ::= 32
maxSIB-FACH                INTEGER ::= 8
maxSIBperMsg               INTEGER ::= 16
maxSRBsetup                INTEGER ::= 8
maxSystemCapability         INTEGER ::= 16
maxTF                       INTEGER ::= 32
maxTF-CPCH                 INTEGER ::= 16
maxTFC                      INTEGER ::= 1024
maxTFCsub                   INTEGER ::= 1024
maxTFCI-2-Combs            INTEGER ::= 512
maxTGPS                     INTEGER ::= 6
maxTrCH                     INTEGER ::= 32
-- maxTrCHpreconf should be 16 but has been set to 32 for compatibility
maxTrCHpreconf              INTEGER ::= 32
maxTS                       INTEGER ::= 14
maxTS-1                     INTEGER ::= 13
maxTS-2                     INTEGER ::= 12
maxTS-LCR                   INTEGER ::= 6
maxTS-LCR-1                 INTEGER ::= 5
maxURA                      INTEGER ::= 8
maxURNTI-Group              INTEGER ::= 8

```

END

11.5 RRC information between network nodes

```
Internode-definitions DEFINITIONS AUTOMATIC TAGS ::=
```

```
BEGIN
```

```
IMPORTS
```

```

    HandoverToUTRANCommand,
    MeasurementReport,
    PhysicalChannelReconfiguration,
    RadioBearerReconfiguration,
    RadioBearerRelease,
    RadioBearerSetup,
    RRC-FailureInfo,
    TransportChannelReconfiguration

```

```
FROM PDU-definitions
```

```

-- Core Network IEs :
    CN-DomainIdentity,
    CN-DomainInformationList,
    CN-DomainInformationListFull,

```

```

    CN-DRX-CycleLengthCoefficient,
    NAS-SystemInformationGSM-MAP,
-- UTRAN Mobility IEs :
    CellIdentity,
    URA-Identity,
-- User Equipment IEs :
    AccessStratumReleaseIndicator,
    C-RNTI,
    ChipRateCapability,
    DL-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-PowerClassExt,
    UE-RadioAccessCapabBandFDDList,
    UE-RadioAccessCapability,
    UE-RadioAccessCapability-v370ext,
    UE-RadioAccessCapability-v380ext,
    UE-RadioAccessCapability-v3a0ext,
    UE-RadioAccessCapability-v3g0ext,
    UE-RadioAccessCapability-v4b0ext,
    UE-RadioAccessCapability-v5xyv590ext,
    UL-PhysChCapabilityFDD,
    UL-PhysChCapabilityTDD,
    UL-PhysChCapabilityTDD-LCR-r4,
-- Radio Bearer IEs :
    PredefinedConfigStatusList,
    PredefinedConfigValueTag,
    RAB-InformationSetupList,
    RAB-InformationSetupList-r4,
    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,
-- Physical Channel IEs :
    PrimaryCPICH-Info,
    TPC-CombinationIndex,
-- Measurement IEs :
    MeasurementIdentity,
    MeasurementReportingMode,
    MeasurementType,
    MeasurementType-r4,
    AdditionalMeasurementID-List,
    PositionEstimate,
-- Other IEs :
    InterRAT-UE-RadioAccessCapabilityList,
    InterRAT-UE-RadioAccessCapability-v5xyv590ext,
    UESpecificBehaviourInformationIdle,
    UESpecificBehaviourInformationInterRAT

FROM InformationElements

```

```

maxCNdomains,
maxNoOfMeas,

maxRB,
maxRBallRABs,
maxRFC3095-CID,
maxSRBsetup,
maxRL
FROM Constant-definitions
;

-- Part 1: Class definitions similar to what has been defined in 11.1 for RRC messages
-- Information that is tranferred in the same direction and across the same path is grouped
-- *****
--
-- RRC information, to target RNC
--
-- *****
-- RRC Information to target RNC sent either from source RNC or from another RAT

ToTargetRNC-Container ::= CHOICE {
    interRATHandoverInfo          InterRATHandoverInfoWithInterRATCapabilities-r3,
    srncRelocation                SRNC-RelocationInfo-r3,
    rfc3095-ContextInfo          RFC3095-ContextInfo-r5,
    extension                     NULL
}

-- *****
--
-- RRC information, target RNC to source RNC
--
-- *****

TargetRNC-ToSourceRNC-Container ::= CHOICE {
    radioBearerSetup              RadioBearerSetup,
    radioBearerReconfiguration    RadioBearerReconfiguration,
    radioBearerRelease            RadioBearerRelease,
    transportChannelReconfiguration TransportChannelReconfiguration,
    physicalChannelReconfiguration PhysicalChannelReconfiguration,
    rrc-FailureInfo              RRC-FailureInfo,
    -- IE dl-DCCHmessage consists of an octet string that includes the IE DL-DCCH-Message
    dl-DCCHmessage                OCTET STRING,
    extension                     NULL
}

-- Part 2: Container definitions, similar to the PDU definitions in 11.2 for RRC messages
-- In alphabetical order

-- *****
--
-- Handover to UTRAN information
--
-- *****

InterRATHandoverInfoWithInterRATCapabilities-r3 ::= CHOICE {
    r3                             SEQUENCE {
        -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also
        -- includes non critical extensions
        interRATHandoverInfo-r3    InterRATHandoverInfoWithInterRATCapabilities-r3-IEs,
        v390NonCriticalExtensions  SEQUENCE {
            interRATHandoverInfoWithInterRATCapabilities-v390ext
        }
        InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs,
        -- Reserved for future non critical extension
        nonCriticalExtensions      SEQUENCE {} OPTIONAL
    } OPTIONAL
},
criticalExtensions              SEQUENCE {}
}

InterRATHandoverInfoWithInterRATCapabilities-r3-IEs ::= SEQUENCE {
    -- The order of the IEs may not reflect the tabular format
    -- but has been chosen to simplify the handling of the information in the BSC
    -- Other IEs
    ue-RATSpecificCapability      InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
    -- interRATHandoverInfo, Octet string is used to obtain 8 bit length field prior to

```

```

-- actual information. This makes it possible for BSS to transparently handle information
-- received via GSM air interface even when it includes non critical extensions.
-- The octet string shall include the InterRATHandoverInfo information
-- The BSS can re-use the 04.18 length field received from the MS
interRATHandoverInfo      OCTET STRING (SIZE (0..255))
}

InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  failureCauseWithProtErr      FailureCauseWithProtErr      OPTIONAL
}

-- *****
--
-- RFC3095 context, source RNC to target RNC
--
-- *****

RFC3095-ContextInfo-r5 ::= CHOICE {
  r5
    SEQUENCE {
      RFC3095-ContextInfoList-r5      RFC3095-ContextInfoList-r5,
      -- Reserved for future non critical extension
      nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
  criticalExtensions                SEQUENCE {}
}

RFC3095-ContextInfoList-r5 ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
  RFC3095-ContextInfo

-- *****
--
-- SRNC Relocation information
--
-- *****

SRNC-RelocationInfo-r3 ::= CHOICE {
  r3
    SEQUENCE {
      SRNC-RelocationInfo-r3      SRNC-RelocationInfo-r3-IEs,
      v380NonCriticalExtensions    SEQUENCE {
        SRNC-RelocationInfo-v380ext SRNC-RelocationInfo-v380ext-IEs,
        -- Reserved for future non critical extension
        v390NonCriticalExtensions  SEQUENCE {
          SRNC-RelocationInfo-v390ext      SRNC-RelocationInfo-v390ext-IEs,
          v3a0NonCriticalExtensions        SEQUENCE {
            SRNC-RelocationInfo-v3a0ext    SRNC-RelocationInfo-v3a0ext-IEs,
            v3b0NonCriticalExtensions      SEQUENCE {
              SRNC-RelocationInfo-v3b0ext  SRNC-RelocationInfo-v3b0ext-IEs,
              v3c0NonCriticalExtensions    SEQUENCE {
                SRNC-RelocationInfo-v3c0ext SRNC-RelocationInfo-v3c0ext-IEs,
                laterNonCriticalExtensions SEQUENCE {
                  SRNC-RelocationInfo-v3d0ext      SRNC-RelocationInfo-v3d0ext-
IEs,
                  -- Container for additional R99 extensions
                  SRNC-RelocationInfo-r3-add-ext    BIT STRING
                  (CONTAINING SRNC-RelocationInfo-v3h0ext-IEs)      OPTIONAL,
                  v3g0NonCriticalExtensions        SEQUENCE {
                    SRNC-RelocationInfo-v3g0ext    SRNC-RelocationInfo-v3g0ext-IEs,
                    v4b0NonCriticalExtensions      SEQUENCE {
                      SRNC-RelocationInfo-v4b0ext    SRNC-RelocationInfo-v4b0ext-IEs,
                      v5xyv590NonCriticalExtensions SEQUENCE {
                        SRNC-RelocationInfo-v5xyv590ext      SRNC-
RelocationInfo-v5xyv590ext-IEs,
                        -- Reserved for future non critical extension
                        nonCriticalExtensions        SEQUENCE {} OPTIONAL
                      }
                    } OPTIONAL
                  } OPTIONAL
                } OPTIONAL
              } OPTIONAL
            } OPTIONAL
          } OPTIONAL
        }
      }
    }
  later-than-r3
    CHOICE {
      r4
        SEQUENCE {

```

```

        SRNC-RelocationInfo-r4          SRNC-RelocationInfo-r4-IEs,
        v4d0NonCriticalExtensions SEQUENCE {
            SRNC-RelocationInfo-v4c0ext SRNC-RelocationInfo-v4c0ext-IEs,
            -- Container for adding non critical extensions after freezing REL-5
            SRNC-RelocationInfo-r4-add-ext BIT STRING OPTIONAL,
            v5xyv590NonCriticalExtensions SEQUENCE {
                SRNC-RelocationInfo-v5xyv590ext SRNC-RelocationInfo-v5xyv590ext-IEs,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    criticalExtensions SEQUENCE {}
}

SRNC-RelocationInfo-r3-IEs ::= SEQUENCE {
    -- Non-RRC IEs
    stateOfRRC StateOfRRC,
    stateOfRRC-Procedure StateOfRRC-Procedure,
    -- Ciphering related information IEs
    -- If the extension v380 is included use the extension for the ciphering status per CN domain
    cipheringStatus CipheringStatus,
    calculationTimeForCiphering CalculationTimeForCiphering OPTIONAL,
    -- The order of occurrence in the IE cipheringInfoPerRB-List is the
    -- same as the RBs in SRB-InformationSetupList in RAB-InformationSetupList.
    -- The signalling RBs are supposed to be listed
    -- first. Only UM and AM RBs that are ciphered are listed here
    cipheringInfoPerRB-List CipheringInfoPerRB-List OPTIONAL,
    count-C-List COUNT-C-List OPTIONAL,
    integrityProtectionStatus IntegrityProtectionStatus,
    -- In the IE srb-SpecificIntegrityProtInfo, the first information listed corresponds to
    -- signalling radio bearer RB0 and after the order of occurrence is the same as the SRBs in
    -- SRB-InformationSetupList
    srb-SpecificIntegrityProtInfo SRB-SpecificIntegrityProtInfoList,
    implementationSpecificParams ImplementationSpecificParams OPTIONAL,
    -- User equipment IEs
    u-RNTI U-RNTI,
    c-RNTI C-RNTI OPTIONAL,
    ue-RadioAccessCapability UE-RadioAccessCapability,
    ue-Positioning-LastKnownPos UE-Positioning-LastKnownPos OPTIONAL,
    -- Other IEs
    ue-RATSpecificCapability InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity URA-Identity OPTIONAL,
    -- Core network IEs
    cn-CommonGSM-MAP-NAS-SysInfo NAS-SystemInformationGSM-MAP,
    cn-DomainInformationList CN-DomainInformationList OPTIONAL,
    -- Measurement IEs
    ongoingMeasRepList OngoingMeasRepList OPTIONAL,
    -- Radio bearer IEs
    predefinedConfigStatusList PredefinedConfigStatusList,
    srb-InformationList SRB-InformationSetupList,
    rab-InformationList RAB-InformationSetupList OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
    ul-TransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            cpch-SetID CPCH-SetID OPTIONAL,
            transChDRAC-Info DRAC-StaticInformationList OPTIONAL
        },
        tdd NULL
    },
    dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,
    dl-TransChInfoList DL-AddReconfTransChInfoList OPTIONAL,
    -- Measurement report
    measurementReport MeasurementReport OPTIONAL
}

SRNC-RelocationInfo-v380ext-IEs ::= SEQUENCE {
    -- Ciphering related information IEs
    cn-DomainIdentity CN-DomainIdentity,
    cipheringStatusList CipheringStatusList
}

SRNC-RelocationInfo-v390ext-IEs ::= SEQUENCE {
    cn-DomainInformationList-v390ext CN-DomainInformationList-v390ext OPTIONAL,
    ue-RadioAccessCapability-v370ext UE-RadioAccessCapability-v370ext OPTIONAL,

```

```

    ue-RadioAccessCapability-v380ext    UE-RadioAccessCapability-v380ext    OPTIONAL,
    dl-PhysChCapabilityFDD-v380ext      DL-PhysChCapabilityFDD-v380ext,
    failureCauseWithProtErr            FailureCauseWithProtErr            OPTIONAL
}

SRNC-RelocationInfo-v3a0ext-IEs ::= SEQUENCE {
    cipheringInfoForSRB1-v3a0ext        CipheringInfoPerRB-List-v3a0ext,
    ue-RadioAccessCapability-v3a0ext    UE-RadioAccessCapability-v3a0ext    OPTIONAL,
    -- cn-domain identity for IE startValueForCiphering-v3a0ext is specified
    -- in subsequent extension (SRNC-RelocationInfo-v3b0ext-IEs)
    startValueForCiphering-v3a0ext      START-Value
}

SRNC-RelocationInfo-v3b0ext-IEs ::= SEQUENCE {
    -- cn-domain identity for IE startValueForCiphering-v3a0ext included in previous extension
    cn-DomainIdentity                  CN-DomainIdentity,
    -- the IE startValueForCiphering-v3b0ext contains the start values for each CN Domain. The
    -- value of start indicated by the IE startValueForCiphering-v3a0ext should be set to the
    -- same value as the start-Value for the corresponding cn-DomainIdentity in the IE
    -- startValueForCiphering-v3b0ext
    startValueForCiphering-v3b0ext      STARTList2                            OPTIONAL
}

SRNC-RelocationInfo-v3c0ext-IEs ::= SEQUENCE {
    -- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
    -- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
    -- Only included if type is "UE involved"
    rb-IdentityForHOMessage             RB-Identity                            OPTIONAL
}

SRNC-RelocationInfo-v3d0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    uESpecificBehaviourInformationIdle  UESpecificBehaviourInformationIdle    OPTIONAL,
    uESpecificBehaviourInformationInterRAT UESpecificBehaviourInformationInterRAT
    OPTIONAL
}

SRNC-RelocationInfo-v3g0ext-IEs ::= SEQUENCE {
    ue-RadioAccessCapability-v3g0ext    UE-RadioAccessCapability-v3g0ext    OPTIONAL
}

SRNC-RelocationInfo-v3h0ext-IEs ::= SEQUENCE {
    tpc-CombinationInfoList             TPC-CombinationInfoList             OPTIONAL,
    nonCriticalExtension                 SEQUENCE {}                          OPTIONAL
}

SRNC-RelocationInfo-v4c0ext-IEs ::= SEQUENCE {
    tpc-CombinationInfoList             TPC-CombinationInfoList             OPTIONAL
}

TPC-CombinationInfoList ::= SEQUENCE (SIZE (1..maxRL)) OF
    TPC-Combination-Info

STARTList2 ::=
    SEQUENCE (SIZE (2..maxCNdomains)) OF
        STARTSingle

SRNC-RelocationInfo-v4b0ext-IEs ::= SEQUENCE {
    ue-RadioAccessCapability-v4b0ext    UE-RadioAccessCapability-v4b0ext
}

SRNC-RelocationInfo-v5xyv590ext-IEs ::= SEQUENCE {
    ue-RadioAccessCapability-v5xyv590ext UE-RadioAccessCapability-v5xyv590ext,
    ue-RATSpecificCapability-v5xyv590ext InterRAT-UE-RadioAccessCapability-v5xyv590ext
    OPTIONAL
}

CipheringInfoPerRB-List-v3a0ext ::= SEQUENCE {
    dl-UM-SN                            BIT STRING (SIZE (7))
}

CipheringStatusList ::=
    SEQUENCE (SIZE (1..maxCNdomains)) OF
        CipheringStatusCNdomain

CipheringStatusCNdomain ::=
    SEQUENCE {
        cn-DomainIdentity                CN-DomainIdentity,
        cipheringStatus                  CipheringStatus
    }

```

```

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,
  uESpecificBehaviourInformationlidle      UESpecificBehaviourInformationlidle  OPTIONAL,
  uESpecificBehaviourInformationlinterRAT  UESpecificBehaviourInformationlinterRAT
OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability                  InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                             URA-Identity                     OPTIONAL,
  -- Core network IEs
  cn-CommonGSM-MAP-NAS-SysInfo             NAS-SystemInformationGSM-MAP,
  cn-DomainInformationList                  CN-DomainInformationListFull      OPTIONAL,
  -- Measurement IEs
  ongoingMeasRepList                       OngoingMeasRepList-r4           OPTIONAL,
  -- Radio bearer IEs
  predefinedConfigStatusList                PredefinedConfigStatusList,
  srb-InformationList                       SRB-InformationSetupList,
  rab-InformationList                       RAB-InformationSetupList-r4      OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo                     UL-CommonTransChInfo-r4         OPTIONAL,
  ul-TransChInfoList                       UL-AddReconfTransChInfoList     OPTIONAL,
  modeSpecificInfo                          CHOICE {
    fdd                                      SEQUENCE {
      cpch-SetID                            CPCH-SetID                       OPTIONAL,
      transChDRAC-Info                       DRAC-StaticInformationList      OPTIONAL
    },
    tdd                                      NULL
  }
  dl-CommonTransChInfo                     DL-CommonTransChInfo-r4         OPTIONAL,
  dl-TransChInfoList                       DL-AddReconfTransChInfoList-r4  OPTIONAL,
  -- Measurement report
  measurementReport                         MeasurementReport                 OPTIONAL,
  failureCause                              FailureCauseWithProtErr          OPTIONAL
}

-- IE definitions

CalculationTimeForCiphering ::=          SEQUENCE {
  cell-Id                                   CellIdentity,
  sfn                                       INTEGER (0..4095)
}

CipheringInfoPerRB ::=                    SEQUENCE {
  dl-HFN                                    BIT STRING (SIZE (20..25)),
  ul-HFN                                    BIT STRING (SIZE (20..25))
}

CipheringInfoPerRB-r4 ::=                  SEQUENCE {
  rb-Identity                               RB-Identity,
  dl-HFN                                    BIT STRING (SIZE (20..25)),
  dl-UM-SN                                  BIT STRING (SIZE (7))             OPTIONAL,
  ul-HFN                                    BIT STRING (SIZE (20..25))
}

-- TABULAR: CipheringInfoPerRB-List, multiplicity value numberOfRadioBearers
-- has been replaced with maxRB.

```



```

CipheringInfoPerRB-List ::= SEQUENCE (SIZE (1..maxRB)) OF
                             CipheringInfoPerRB

CipheringInfoPerRB-List-r4 ::= SEQUENCE (SIZE (1..maxRB)) OF
                               CipheringInfoPerRB-r4

CipheringStatus ::= ENUMERATED {
                       started, notStarted }

CipheringStatusList-r4 ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
                           CipheringStatusCNdomain-r4

CipheringStatusCNdomain-r4 ::= SEQUENCE {
    cn-DomainIdentity      CN-DomainIdentity,
    cipheringStatus        CipheringStatus,
    start-Value            START-Value
}

CN-DomainInformation-v390ext ::= SEQUENCE {
    cn-DRX-CycleLengthCoeff CN-DRX-CycleLengthCoefficient
}

CN-DomainInformationList-v390ext ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CN-DomainInformation-v390ext

CompressedModeMeasCapability-r4 ::= SEQUENCE {
    fdd-Measurements          BOOLEAN,
    -- TABULAR: The IEs tdd-Measurements, gsm-Measurements and multiCarrierMeasurements
    -- are made optional since they are conditional based on another information element.
    -- Their absence corresponds to the case where the condition is not true.
    tdd384-Measurements       BOOLEAN                               OPTIONAL,
    tdd128-Measurements       BOOLEAN                               OPTIONAL,
    gsm-Measurements          GSM-Measurements                     OPTIONAL,
    multiCarrierMeasurements  BOOLEAN                               OPTIONAL
}

COUNT-C-List ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    COUNT-CSingle

COUNT-CSingle ::= SEQUENCE {
    cn-DomainIdentity        CN-DomainIdentity,
    count-C                  BIT STRING (SIZE (32))
}

DL-PhysChCapabilityFDD-r4 ::= SEQUENCE {
    maxNoDPCH-PDSCH-Codes    INTEGER (1..8),
    maxNoPhysChBitsReceived  MaxNoPhysChBitsReceived,
    supportForSF-512         BOOLEAN,
    supportOfPDSCH           BOOLEAN,
    simultaneousSCCPCH-DPCH-Reception SimultaneousSCCPCH-DPCH-Reception,
    supportOfDedicatedPilotsForChEstimation SupportOfDedicatedPilotsForChEstimation OPTIONAL
}

DL-RFC3095-Context ::= SEQUENCE {
    rfc3095-Context-Identity  INTEGER (0..16383),
    dl-mode                   ENUMERATED {u, o, r},
    dl-ref-ir                 OCTET STRING ( SIZE (1..3000)),
    dl-ref-time               INTEGER (0..4294967295) OPTIONAL,
    dl-curr-time              INTEGER (0..4294967295) OPTIONAL,
    dl-syn-offset-id         INTEGER (0..65535) OPTIONAL,
    dl-syn-slope-ts          INTEGER (0..4294967295) OPTIONAL,
    dl-dyn-changed           BOOLEAN
}

ImplementationSpecificParams ::= BIT STRING (SIZE (1..512))

IntegrityProtectionStatus ::= ENUMERATED {
    started, notStarted }

MeasurementCapability-r4 ::= SEQUENCE {
    downlinkCompressedMode    CompressedModeMeasCapability-r4,
    uplinkCompressedMode      CompressedModeMeasCapability-r4
}

MeasurementCommandWithType ::= CHOICE {
    setup                      MeasurementType,
}

```

```

    modify                NULL,
    release                NULL
}

MeasurementCommandWithType-r4 ::= CHOICE {
    setup                  MeasurementType-r4,
    modify                 NULL,
    release                NULL
}

OngoingMeasRep ::= SEQUENCE {
    measurementIdentity    MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType
    measurementCommandWithType MeasurementCommandWithType,
    measurementReportingMode MeasurementReportingMode OPTIONAL,
    additionalMeasurementID-List AdditionalMeasurementID-List OPTIONAL
}

OngoingMeasRep-r4 ::= SEQUENCE {
    measurementIdentity    MeasurementIdentity,
    -- TABULAR: The CHOICE Measurement in the tabular description is included
    -- in MeasurementCommandWithType-r4.
    measurementCommandWithType-r4 MeasurementCommandWithType-r4,
    measurementReportingMode MeasurementReportingMode OPTIONAL,
    additionalMeasurementID-List AdditionalMeasurementID-List OPTIONAL
}

OngoingMeasRepList ::= SEQUENCE (SIZE (1..maxNoOfMeas)) OF
    OngoingMeasRep

OngoingMeasRepList-r4 ::= SEQUENCE (SIZE (1..maxNoOfMeas)) OF
    OngoingMeasRep-r4

PDCP-Capability-r4 ::= SEQUENCE {
    losslessSRNS-RelocationSupport BOOLEAN,
    supportForRfc2507 CHOICE {
        notSupported NULL,
        supported MaxHcContextSpace
    },
    supportForRfc3095 CHOICE {
        notSupported NULL,
        supported SEQUENCE {
            maxROHC-ContextSessions MaxROHC-ContextSessions-r4 DEFAULT s16,
            reverseCompressionDepth INTEGER (0..65535) DEFAULT 0
        }
    }
}

PhysicalChannelCapability-r4 ::= SEQUENCE {
    fddPhysChCapability SEQUENCE {
        downlinkPhysChCapability DL-PhysChCapabilityFDD-r4,
        uplinkPhysChCapability UL-PhysChCapabilityFDD
    } OPTIONAL,
    tdd384-PhysChCapability SEQUENCE {
        downlinkPhysChCapability DL-PhysChCapabilityTDD,
        uplinkPhysChCapability UL-PhysChCapabilityTDD
    } OPTIONAL,
    tdd128-PhysChCapability SEQUENCE {
        downlinkPhysChCapability DL-PhysChCapabilityTDD-LCR-r4,
        uplinkPhysChCapability UL-PhysChCapabilityTDD-LCR-r4
    } OPTIONAL
}

RF-Capability-r4 ::= SEQUENCE {
    fddRF-Capability SEQUENCE {
        ue-PowerClass UE-PowerClassExt,
        txRxFrequencySeparation TxRxFrequencySeparation
    } OPTIONAL,
    tdd384-RF-Capability SEQUENCE {
        ue-PowerClass UE-PowerClassExt,
        radioFrequencyBandTDDList RadioFrequencyBandTDDList,
        chipRateCapability ChipRateCapability
    } OPTIONAL,
    tdd128-RF-Capability SEQUENCE {
        ue-PowerClass UE-PowerClassExt,
        radioFrequencyBandTDDList RadioFrequencyBandTDDList,
        chipRateCapability ChipRateCapability
    }
}

```

```

    }
}
OPTIONAL

RFC3095-ContextInfo ::= SEQUENCE {
    rb-Identity          RB-Identity,
    rfc3095-Context-List RFC3095-Context-List
}

RFC3095-Context-List ::= SEQUENCE (SIZE (1..maxRFC3095-CID)) OF SEQUENCE {
    dl-RFC3095-Context DL-RFC3095-Context OPTIONAL,
    ul-RFC3095-Context UL-RFC3095-Context OPTIONAL
}

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
}

TPC-Combination-Info ::= SEQUENCE {
    primaryCPICH-Info          PrimaryCPICH-Info,
    tpc-CombinationIndex       TPC-CombinationIndex
}

UE-Positioning-Capability-r4 ::= SEQUENCE {
    standaloneLocMethodsSupported    BOOLEAN,
    ue-BasedOTDOA-Supported           BOOLEAN,
    networkAssistedGPS-Supported      NetworkAssistedGPS-Supported,
    supportForUE-GPS-TimingOfCellFrames    BOOLEAN,
    supportForIPDL                     BOOLEAN,
    rx-tx-TimeDifferenceType2Capable      BOOLEAN,
    validity-CellPCH-UraPCH             ENUMERATED { true (0) } OPTIONAL
}

UE-Positioning-LastKnownPos ::= SEQUENCE {
    sfn          INTEGER (0..4095),
    cell-id      CellIdentity,
    positionEstimate PositionEstimate
}

UE-RadioAccessCapability-r4 ::= SEQUENCE {
    accessStratumReleaseIndicator    AccessStratumReleaseIndicator,
    pdcp-Capability                  PDCP-Capability-r4,
    rlc-Capability                    RLC-Capability,
    transportChannelCapability        TransportChannelCapability,
    rf-Capability                     RF-Capability-r4,
    physicalChannelCapability         PhysicalChannelCapability-r4,
    ue-MultiModeRAT-Capability        UE-MultiModeRAT-Capability,
    securityCapability                SecurityCapability,
    ue-positioning-Capability-r4       UE-Positioning-Capability-r4,
    measurementCapability-r4          MeasurementCapability-r4 OPTIONAL
}

```

```
UL-RFC3095-Context ::=
  rfc3095-Context-Identity
  ul-mode
  ul-ref-ir
  ul-ref-time
  ul-curr-time
  ul-syn-offset-id
  ul-syn-slope-ts
  ul-ref-sn-1
}
END
```

```
SEQUENCE {
  INTEGER (0..16383),
  ENUMERATED {u, o, r},
  OCTET STRING ( SIZE (1..3000)),
  INTEGER (0..4294967295) OPTIONAL,
  INTEGER (0..4294967295) OPTIONAL,
  INTEGER (0..65535) OPTIONAL,
  INTEGER (0..4294967295) OPTIONAL,
  INTEGER (0..65535) OPTIONAL
}
```

CR-Form-v7

CHANGE REQUEST

⌘ **25.331 CR 2313** ⌘ rev **-** ⌘ Current version: **6.1.0** ⌘

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Closing the REL-5 extensions in the ASN.1		
Source:	⌘ RAN WG2		
Work item code:	⌘ TEI5	Date:	⌘ 12/05/2004
Category:	⌘ A	Release:	⌘ REL-6
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	⌘ As long as a certain release of the protocol is kept open, new information may be added to the REL-5 non-critical extensions of the RRC messages. During this process, the "v5xy" prefix/suffix is usually used in many of the various ASN.1 entities that are not yet closed for modifications. When the protocol stabilises, those ASN.1 entities should be renamed such that the "v5xy" is replaced by an explicit reference to the version number of the specification where it is supposed to be closed for further non-backward compatible extension, e.g., "v590".
Summary of change:	⌘ The "v5xy" prefixes/suffixes are replaced by "v590", which is the next version of the REL-5 RRC specification. -- In one case (IE "CellSelectReselectInfo-v5xyExt"), the entire suffix "v5xyExt" is replaced by "v590ext", in order to harmonise the use of this suffix throughout the specification.
Consequences if not approved:	⌘ There is no visible indication of the fact that the REL-5 version of the protocol is supposed to be closed for non-backward compatible extensions. Isolated impact analysis There is no impact on the transport syntax. The correction may be implemented independently by the UE and the UTRAN.

Clauses affected:	⌘ 11.2, 11.3, 11.5								
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications	Y	N		X		X	⌘	
Y	N								
	X								
	X								
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;"> </td> <td style="width: 20px; text-align: center;">X</td> </tr> </table> Test specifications		X	⌘					
	X								

O&M Specifications

Other comments: ⌘

11 Message and Information element abstract syntax (with ASN.1)

This clause contains definitions for RRC PDUs and IEs using a subset of ASN.1 as specified in [14]. PDU and IE definitions are grouped into separate ASN.1 modules.

11.0 General

Some messages and/or IEs may include one or more IEs with name "dummy" that are included only in the ASN.1. The UE should avoid sending information elements that are named "dummy" to UTRAN. Likewise, UTRAN should avoid sending IEs with name "dummy" to the UE. If the UE anyhow receives an information element named "dummy", it shall ignore the IE and process the rest of the message as if the IE was not included.

NOTE: An IE with name "dummy" concerns an information element that was (erroneously) included in a previous version of the specification and has been removed by replacing it with a dummy with same type.

The UE shall only include the "variable length extension container" when it sends a non critical extension that according to this specification shall be transferred within this container.

If the abstract syntax of an IE is defined using the ASN.1 type "BIT STRING", and this IE corresponds to a functional IE definition in tabular format, in which the significance of bits is semantically defined, the following general rule shall be applied:

The bits in the ASN.1 bit string shall represent the semantics of the functional IE definition in decreasing order of bit significance;

- with the first (or leftmost) bit in the bit string representing the most significant bit; and
- with the last (or rightmost) bit in the bit string representing the least significant bit.

11.1 General message structure

```
Class-definitions DEFINITIONS AUTOMATIC TAGS ::=
```

```
BEGIN
```

```
IMPORTS
```

```

ActiveSetUpdate,
ActiveSetUpdateComplete,
ActiveSetUpdateFailure,
AssistanceDataDelivery,
CellChangeOrderFromUTRAN,
CellChangeOrderFromUTRANFailure,
CellUpdate,
CellUpdateConfirm-CCCH,
CellUpdateConfirm,
CounterCheck,
CounterCheckResponse,
DownlinkDirectTransfer,
HandoverToUTRANComplete,
InitialDirectTransfer,
HandoverFromUTRANCommand-GERANIu,
HandoverFromUTRANCommand-GSM,
HandoverFromUTRANCommand-CDMA2000,
HandoverFromUTRANFailure,
MeasurementControl,
MeasurementControlFailure,
MeasurementReport,
PagingType1,
PagingType2,
PhysicalChannelReconfiguration,
PhysicalChannelReconfigurationComplete,

```

```

PhysicalChannelReconfigurationFailure,
PhysicalSharedChannelAllocation,
PUSCHCapacityRequest,
RadioBearerReconfiguration,
RadioBearerReconfigurationComplete,
RadioBearerReconfigurationFailure,
RadioBearerRelease,
RadioBearerReleaseComplete,
RadioBearerReleaseFailure,
RadioBearerSetup,
RadioBearerSetupComplete,
RadioBearerSetupFailure,
RRCConnectionReject,
RRCConnectionRelease,
RRCConnectionRelease-CCCH,
RRCConnectionReleaseComplete,
RRCConnectionRequest,
RRCConnectionSetup,
RRCConnectionSetupComplete,
RRCStatus,
SecurityModeCommand,
SecurityModeComplete,
SecurityModeFailure,
SignallingConnectionRelease,
SignallingConnectionReleaseIndication,
SystemInformation-BCH,
SystemInformation-FACH,
SystemInformationChangeIndication,
TransportChannelReconfiguration,
TransportChannelReconfigurationComplete,
TransportChannelReconfigurationFailure,
TransportFormatCombinationControl,
TransportFormatCombinationControlFailure,
UECapabilityEnquiry,
UECapabilityInformation,
UECapabilityInformationConfirm,
UplinkDirectTransfer,
UplinkPhysicalChannelControl,
URAUpdate,
URAUpdateConfirm,
URAUpdateConfirm-CCCH,
UTRANMobilityInformation,
UTRANMobilityInformationConfirm,
UTRANMobilityInformationFailure
FROM PDU-definitions

-- User Equipment IEs :
  IntegrityCheckInfo
FROM InformationElements;

--*****
--
-- Downlink DCCH messages
--
--*****

DL-DCCH-Message ::= SEQUENCE {
    integrityCheckInfo      IntegrityCheckInfo      OPTIONAL,
    message                  DL-DCCH-MessageType
}

DL-DCCH-MessageType ::= CHOICE {
    activeSetUpdate          ActiveSetUpdate,
    assistanceDataDelivery  AssistanceDataDelivery,
    cellChangeOrderFromUTRAN CellChangeOrderFromUTRAN,
    cellUpdateConfirm       CellUpdateConfirm,
    counterCheck            CounterCheck,
    downlinkDirectTransfer  DownlinkDirectTransfer,
    handoverFromUTRANCommand-GSM HandoverFromUTRANCommand-GSM,
    handoverFromUTRANCommand-CDMA2000 HandoverFromUTRANCommand-CDMA2000,
    measurementControl      MeasurementControl,
    pagingType2             PagingType2,
    physicalChannelReconfiguration PhysicalChannelReconfiguration,
    physicalSharedChannelAllocation PhysicalSharedChannelAllocation,
    radioBearerReconfiguration RadioBearerReconfiguration,
    radioBearerRelease      RadioBearerRelease,
    radioBearerSetup        RadioBearerSetup,
    rrcConnectionRelease    RRCConnectionRelease,

```



```

securityModeCommand          SecurityModeCommand,
signallingConnectionRelease  SignallingConnectionRelease,
transportChannelReconfiguration TransportChannelReconfiguration,
transportFormatCombinationControl TransportFormatCombinationControl,
ueCapabilityEnquiry          UECapabilityEnquiry,
ueCapabilityInformationConfirm UECapabilityInformationConfirm,
uplinkPhysicalChannelControl UplinkPhysicalChannelControl,
uraUpdateConfirm             URAUpdateConfirm,
utranMobilityInformation      UTRANMobilityInformation,
handoverFromUTRANCommand-GERANIu HandoverFromUTRANCommand-GERANIu,
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 :
    CellIdentity,
    CellIdentity-PerRL-List,
    URA-Identity,
-- User Equipment IEs :
    AccessStratumReleaseIndicator,
    ActivationTime,
    C-RNTI,
    CapabilityUpdateRequirement,
    CapabilityUpdateRequirement-r4,
    CapabilityUpdateRequirement-r4-ext,
    CellUpdateCause,
    CipheringAlgorithm,
    CipheringModeInfo,
    DSCH-RNTI,
    EstablishmentCause,
    FailureCauseWithProtErr,
    FailureCauseWithProtErrTrId,
    GroupReleaseInformation,

```

```

H-RNTI,
UESpecificBehaviourInformationIdle,
UESpecificBehaviourInformationInterRAT,
InitialUE-Identity,
IntegrityProtActivationInfo,
IntegrityProtectionModeInfo,
N-308,
PagingCause,
PagingRecordList,
PagingRecord2List-r5,
ProtocolErrorIndicator,
ProtocolErrorIndicatorWithMoreInfo,
RadioFrequencyBandTDDList,
Rb-timer-indicator,
RedirectionInfo,
RedirectionInfo-r6,
RejectionCause,
ReleaseCause,
RF-CapabilityComp,
RRC-StateIndicator,
RRC-TransactionIdentifier,
SecurityCapability,
START-Value,
STARTList,
U-RNTI,
U-RNTI-Short,
UE-RadioAccessCapability,
UE-RadioAccessCapability-v370ext,
UE-RadioAccessCapability-v380ext,
UE-RadioAccessCapability-v3a0ext,
UE-RadioAccessCapability-v3g0ext,
UE-RadioAccessCapability-v4b0ext,
UE-RadioAccessCapability-v5xyv590ext,
UE-RadioAccessCapabilityComp,
DL-PhysChCapabilityFDD-v380ext,
UE-ConnTimersAndConstants,
UE-ConnTimersAndConstants-v3a0ext,
UE-ConnTimersAndConstants-r5,
UE-SecurityInformation,
URA-UpdateCause,
UTRAN-DRX-CycleLengthCoefficient,
WaitTime,
-- Radio Bearer IEs :
DefaultConfigIdentity,
DefaultConfigIdentity-r4,
DefaultConfigIdentity-r5,
DefaultConfigMode,
DL-CounterSynchronisationInfo,
DL-CounterSynchronisationInfo-r5,
PredefinedConfigIdentity,
PredefinedConfigStatusList,
PredefinedConfigStatusListComp,
PredefinedConfigSetWithDifferentValueTag,
RAB-Info,
RAB-Info-Post,
RAB-InformationList,
RAB-InformationReconfigList,
RAB-InformationSetupList,
RAB-InformationSetupList-r4,
RAB-InformationSetupList-r5,
RB-ActivationTimeInfoList,
RB-COUNT-C-InformationList,
RB-COUNT-C-MSB-InformationList,
RB-IdentityList,
RB-InformationAffectedList,
RB-InformationAffectedList-r5,
RB-InformationReconfigList,
RB-InformationReconfigList-r4,
RB-InformationReconfigList-r5,
RB-InformationReleaseList,
RB-PDCPContextRelocationList,
SRB-InformationSetupList,
SRB-InformationSetupList-r5,
SRB-InformationSetupList2,
UL-CounterSynchronisationInfo,
-- Transport Channel IEs:
CPCH-SetID,
DL-AddReconfTransChInfo2List,

```

```

DL-AddReconfTransChInfoList,
DL-AddReconfTransChInfoList-r4,
DL-AddReconfTransChInfoList-r5,
DL-CommonTransChInfo,
DL-CommonTransChInfo-r4,
DL-DeletedTransChInfoList,
DL-DeletedTransChInfoList-r5,
DRAC-StaticInformationList,
TFC-Subset,
TFC-Identity,
UL-AddReconfTransChInfoList,
UL-CommonTransChInfo,
UL-CommonTransChInfo-r4,
UL-DeletedTransChInfoList,
-- Physical Channel IEs :
Alpha,
CCTrCH-PowerControlInfo,
CCTrCH-PowerControlInfo-r4,
CCTrCH-PowerControlInfo-r5,
ConstantValue,
ConstantValueTdd,
CPCH-SetInfo,
DL-CommonInformation,
DL-CommonInformation-r4,
DL-CommonInformation-r5,
DL-CommonInformationPost,
DL-HSPDSCH-Information,
DL-InformationPerRL-List,
DL-InformationPerRL-List-r4,
DL-InformationPerRL-List-r5,
DL-InformationPerRL-List-r5bis,
DL-InformationPerRL-ListPostFDD,
DL-InformationPerRL-PostTDD,
DL-InformationPerRL-PostTDD-LCR-r4,
DL-PDSCH-Information,
DL-TPC-PowerOffsetPerRL-List,
DPC-Mode,
DPCH-CompressedModeStatusInfo,
FrequencyInfo,
FrequencyInfoFDD,
FrequencyInfoTDD,
HS-SICH-Power-Control-Info-TDD384,
MaxAllowedUL-TX-Power,
OpenLoopPowerControl-IPDL-TDD-r4,
PDSCH-CapacityAllocationInfo,
PDSCH-CapacityAllocationInfo-r4,
PDSCH-Identity,
PrimaryCPICH-Info,
PrimaryCCPCH-TX-Power,
PUSCH-CapacityAllocationInfo,
PUSCH-CapacityAllocationInfo-r4,
PUSCH-Identity,
PUSCH-SysInfoList-HCR-r5,
PDSCH-SysInfoList-HCR-r5,
RL-AdditionInformationList,
RL-RemovalInformationList,
SpecialBurstScheduling,
SSDT-Information,
TFC-ControlDuration,
SSDT-UL,
TimeslotList,
TimeslotList-r4,
TX-DiversityMode,
UL-ChannelRequirement,
UL-ChannelRequirement-r4,
UL-ChannelRequirement-r5,
UL-ChannelRequirementWithCPCH-SetID,
UL-ChannelRequirementWithCPCH-SetID-r4,
UL-ChannelRequirementWithCPCH-SetID-r5,
UL-DPCH-Info,
UL-DPCH-Info-r4,
UL-DPCH-Info-r5,
UL-DPCH-InfoPostFDD,
UL-DPCH-InfoPostTDD,
UL-DPCH-InfoPostTDD-LCR-r4,
UL-SynchronisationParameters-r4,
UL-TimingAdvance,
UL-TimingAdvanceControl,

```

```

    UL-TimingAdvanceControl-r4,
-- Measurement IEs :
    AdditionalMeasurementID-List,
    DeltaRSCP,
    Frequency-Band,
    EventResults,
    Inter-FreqEventCriteriaList-v5xyv590ext,
    Intra-FreqEventCriteriaList-v5xyv590ext,
    IntraFreqReportingCriteria-lb-r5,
    IntraFreqEvent-ld-r5,
    InterFreqEventResults-LCR-r4-ext,
    InterRAT-TargetCellDescription,
    MeasuredResults,
    MeasuredResults-v390ext,
    MeasuredResults-v5xyv590ext,
    MeasuredResultsList,
    MeasuredResultsList-LCR-r4-ext,
    MeasuredResultsOnRACH,
    MeasurementCommand,
    MeasurementCommand-r4,
    MeasurementIdentity,
    MeasurementReportingMode,
    PrimaryCCPCH-RSCP,
    SFN-Offset-Validity,
    TimeslotListWithISCP,
    TrafficVolumeMeasuredResultsList,
    UE-Positioning-GPS-AssistanceData,
    UE-Positioning-Measurement-v390ext,
    UE-Positioning-OTDOA-AssistanceData,
    UE-Positioning-OTDOA-AssistanceData-r4ext,
    UE-Positioning-OTDOA-AssistanceData-UEB,
-- Other IEs :
    BCCH-ModificationInfo,
    CDMA2000-MessageList,
    GSM-TargetCellInfoList,
    GERANIu-MessageList,
    GERAN-SystemInformation,
    GSM-MessageList,
    InterRAT-ChangeFailureCause,
    InterRAT-HO-FailureCause,
    InterRAT-UE-RadioAccessCapabilityList,
    InterRAT-UE-RadioAccessCapability-v5xyv590ext,
    InterRAT-UE-SecurityCapList,
    IntraDomainNasNodeSelector,
    ProtocolErrorMoreInformation,
    Rplmn-Information,
    Rplmn-Information-r4,
    SegCount,
    SegmentIndex,
    SFN-Prime,
    SIB-Data-fixed,
    SIB-Data-variable,
    SIB-Type
FROM InformationElements

    maxSIBperMsg,
    maxURNTI-Group
FROM Constant-definitions;

-- *****
--
-- ACTIVE SET UPDATE (FDD only)
--
-- *****

ActiveSetUpdate ::= CHOICE {
    r3
        SEQUENCE {
            activeSetUpdate-r3
                ActiveSetUpdate-r3-IEs,
            laterNonCriticalExtensions
                SEQUENCE {
                    -- Container for additional R99 extensions
                    activeSetUpdate-r3-add-ext
                        BIT STRING OPTIONAL,
                    v4b0NonCriticalExtensions
                        SEQUENCE {
                            activeSetUpdate-v4b0ext
                                ActiveSetUpdate-v4b0ext-IEs,
                            v5xyv590NonCriticalExtensions
                                SEQUENCE {
                                    activeSetUpdate-v5xyv590ext
                                        ActiveSetUpdate-v5xyv590ext-IEs,
                                    nonCriticalExtensions
                                        SEQUENCE {} OPTIONAL
                                } OPTIONAL
                        } OPTIONAL
                } OPTIONAL
        } OPTIONAL
} OPTIONAL

```

```

    },
    later-than-r3
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
        criticalExtensions SEQUENCE {}
    }
}

ActiveSetUpdate-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    -- dummy and dummy2 are not used in this version of the specification, they should
    -- not be sent and if received they should be ignored.
    dummy IntegrityProtectionModeInfo OPTIONAL,
    dummy2 CipheringModeInfo OPTIONAL,
    activationTime ActivationTime OPTIONAL,
    newU-RNTI U-RNTI OPTIONAL,
    -- Core network IEs
    cn-InformationInfo CN-InformationInfo OPTIONAL,
    -- Radio bearer IEs
    -- dummy3 is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy3 DL-CounterSynchronisationInfo OPTIONAL,
    -- Physical channel IEs
    maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
    rl-AdditionInformationList RL-AdditionInformationList OPTIONAL,
    rl-RemovalInformationList RL-RemovalInformationList OPTIONAL,
    tx-DiversityMode TX-DiversityMode OPTIONAL,
    ssdt-Information SSDT-Information OPTIONAL
}

ActiveSetUpdate-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- ssdt-UL extends SSDT-Information. FDD only.
    ssdt-UL-r4 SSDT-UL OPTIONAL,
    -- The order of the RLs in IE cell-id-PerRL-List is the same as
    -- in IE RL-AdditionInformationList included in this message
    cell-id-PerRL-List CellIdentity-PerRL-List OPTIONAL
}

ActiveSetUpdate-v5xyv590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    dpc-Mode DPC-Mode,
    dl-TPC-PowerOffsetPerRL-List DL-TPC-PowerOffsetPerRL-List OPTIONAL
}

-- *****
--
-- ACTIVE SET UPDATE COMPLETE (FDD only)
--
-- *****

ActiveSetUpdateComplete ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy IntegrityProtActivationInfo OPTIONAL,
    -- Radio bearer IEs
    -- dummy2 and dummy3 are not used in this version of the specification, they should
    -- not be sent and if received they should be ignored.
    dummy2 RB-ActivationTimeInfoList OPTIONAL,
    dummy3 UL-CounterSynchronisationInfo OPTIONAL,
    laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions
        activeSetUpdateComplete-r3-add-ext BIT STRING OPTIONAL,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
}

-- *****
--
-- ACTIVE SET UPDATE FAILURE (FDD only)
--
-- *****

ActiveSetUpdateFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,

```

```

failureCause                FailureCauseWithProtErr,
laterNonCriticalExtensions  SEQUENCE {
  -- Container for additional R99 extensions
  activeSetUpdateFailure-r3-add-ext  BIT STRING      OPTIONAL,
  nonCriticalExtensions              SEQUENCE {} OPTIONAL
} OPTIONAL
}

-- *****
--
-- Assistance Data Delivery
--
-- *****

AssistanceDataDelivery ::= CHOICE {
  r3                SEQUENCE {
    assistanceDataDelivery-r3      AssistanceDataDelivery-r3-IEs,
    v3a0NonCriticalExtensions      SEQUENCE {
      assistanceDataDelivery-v3a0ext AssistanceDataDelivery-v3a0ext,
      laterNonCriticalExtensions  SEQUENCE {
        -- Container for additional R99 extensions
        assistanceDataDelivery-r3-add-ext  BIT STRING      OPTIONAL,
        v4b0NonCriticalExtensions      SEQUENCE {
          assistanceDataDelivery-v4b0ext
            AssistanceDataDelivery-v4b0ext-IEs,
            SEQUENCE {}          OPTIONAL
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  later-than-r3      SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions            SEQUENCE {}
  }
}

AssistanceDataDelivery-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- Measurement Information Elements
  ue-positioning-GPS-AssistanceData      UE-Positioning-GPS-AssistanceData
  OPTIONAL,
  ue-positioning-OTDOA-AssistanceData-UEB      UE-Positioning-OTDOA-AssistanceData-UEB
  OPTIONAL
}

AssistanceDataDelivery-v3a0ext ::= SEQUENCE {
  sfn-Offset-Validity            SFN-Offset-Validity      OPTIONAL
}

AssistanceDataDelivery-v4b0ext-IEs ::= SEQUENCE {
  ue-Positioning-OTDOA-AssistanceData-r4ext      UE-Positioning-OTDOA-AssistanceData-r4ext      OPTIONAL
}

-- *****
--
-- CELL CHANGE ORDER FROM UTRAN
--
-- *****

CellChangeOrderFromUTRAN ::= CHOICE {
  r3                SEQUENCE {
    cellChangeOrderFromUTRAN-IEs      CellChangeOrderFromUTRAN-r3-IEs,
    laterNonCriticalExtensions        SEQUENCE {
      -- Container for additional R99 extensions
      cellChangeOrderFromUTRAN-r3-add-ext  BIT STRING      OPTIONAL,
      v5xyv590NonCriticalExtensions      SEQUENCE {
        cellChangeOrderFromUTRAN-v5xyv590ext      CellChangeOrderFromUTRAN-v5xyv590ext-IEs,
        nonCriticalExtensions              SEQUENCE {} OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  later-than-r3      SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions            SEQUENCE {}
  }
}

```



```

CellChangeOrderFromUTRAN-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- dummy is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored.
  dummy                          IntegrityProtectionModeInfo      OPTIONAL,
  activationTime                  ActivationTime                    OPTIONAL,
  -- the IE rab-InformationList is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored. The IE may be used in a later
  -- version of the protocol and hence it is not changed into a dummy
  rab-InformationList             RAB-InformationList              OPTIONAL,
  interRAT-TargetCellDescription InterRAT-TargetCellDescription
}

```

```

CellChangeOrderFromUTRAN-v5xyv590ext-IEs ::= SEQUENCE {
  geran-SystemInfoType           CHOICE {
    sI                            GERAN-SystemInformation,
    pSI                           GERAN-SystemInformation
  } OPTIONAL
}

```

```

-- *****
--
-- CELL CHANGE ORDER FROM UTRAN FAILURE
--
-- *****

```

```

CellChangeOrderFromUTRANFailure ::= CHOICE {
  r3                               SEQUENCE {
    cellChangeOrderFromUTRANFailure-r3
    laterNonCriticalExtensions      SEQUENCE {
      -- Container for additional R99 extensions
      cellChangeOrderFromUTRANFailure-r3-add-ext BIT STRING OPTIONAL,
      nonCriticalExtensions          SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  -- dummy is not used in this version of the specification and it
  -- should be ignored.
  dummy                            SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions             SEQUENCE {}
  }
}

```

```

CellChangeOrderFromUTRANFailure-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- dummy is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored.
  dummy                          IntegrityProtectionModeInfo      OPTIONAL,
  interRAT-ChangeFailureCause    InterRAT-ChangeFailureCause
}

```

```

-- *****
--
-- CELL UPDATE
--
-- *****

```

```

CellUpdate ::= SEQUENCE {
  -- User equipment IEs
  u-RNTI                          U-RNTI,
  startList                        STARTList,
  am-RLC-ErrorIndicationRb2-3or4  BOOLEAN,
  am-RLC-ErrorIndicationRb5orAbove BOOLEAN,
  cellUpdateCause                  CellUpdateCause,
  -- TABULAR: RRC transaction identifier is nested in FailureCauseWithProtErrTrId
  failureCause                     FailureCauseWithProtErrTrId    OPTIONAL,
  rb-timer-indicator               Rb-timer-indicator,
  -- Measurement IEs
  measuredResultsOnRACH             MeasuredResultsOnRACH      OPTIONAL,
  laterNonCriticalExtensions        SEQUENCE {
    -- Container for additional R99 extensions
    cellUpdate-r3-add-ext           BIT STRING OPTIONAL,
    v5xyv590NonCriticalExtensions  SEQUENCE {
      cellUpdate-v5xyv590ext       CellUpdate-v5xyv590ext,
      nonCriticalExtensions         SEQUENCE {} OPTIONAL
    }
  }
}

```

```

    } OPTIONAL
  } OPTIONAL
}

CellUpdate-v5xyv590ext ::= SEQUENCE {
  establishmentCause      EstablishmentCause OPTIONAL
}
-- *****
--
-- CELL UPDATE CONFIRM
--
-- *****

CellUpdateConfirm ::= CHOICE {
  r3                      SEQUENCE {
    cellUpdateConfirm-r3      CellUpdateConfirm-r3-IEs,
    v3a0NonCriticalExtensions SEQUENCE {
      cellUpdateConfirm-v3a0ext CellUpdateConfirm-v3a0ext,
      laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions
        cellUpdateConfirm-r3-add-ext BIT STRING OPTIONAL,
        v4b0NonCriticalExtensions SEQUENCE {
          cellUpdateConfirm-v4b0ext CellUpdateConfirm-v4b0ext-IEs,
          v5xyv590NonCriticalExtensions SEQUENCE {
            cellUpdateConfirm-v5xyv590ext CellUpdateConfirm-v5xyv590ext-IEs,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
          } OPTIONAL
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  later-than-r3           SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions        CHOICE {
      r4                      SEQUENCE {
        cellUpdateConfirm-r4      CellUpdateConfirm-r4-IEs,
        v4d0NonCriticalExtensions SEQUENCE {
          -- Container for adding non critical extensions after freezing REL-5
          cellUpdateConfirm-r4-add-ext BIT STRING OPTIONAL,
          v5xyv590NonCriticalExtensions SEQUENCE {
            cellUpdateConfirm-v5xyv590ext CellUpdateConfirm-v5xyv590ext-IEs,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
          } OPTIONAL
        } OPTIONAL
      } OPTIONAL
    },
    criticalExtensions        CHOICE {
      r5                      SEQUENCE {
        cellUpdateConfirm-r5      CellUpdateConfirm-r5-IEs,
        -- Container for adding non critical extensions after freezing REL-6
        cellUpdateConfirm-r5-add-ext BIT STRING OPTIONAL,
        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-v4b0ext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  -- ssdt-UL extends SSdT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL-r4                     SSdT-UL                          OPTIONAL,
  -- The order of the RLs in IE cell-id-PerRL-List is the same as
  -- in IE DL-InformationPerRL-List included in this message
  cell-id-PerRL-List             CellIdentity-PerRL-List         OPTIONAL
}

CellUpdateConfirm-v5xyv590ext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  dl-TPC-PowerOffsetPerRL-List   DL-TPC-PowerOffsetPerRL-List   OPTIONAL
}

CellUpdateConfirm-r4-IEs ::= SEQUENCE {
  -- User equipment IEs
  integrityProtectionModeInfo    IntegrityProtectionModeInfo     OPTIONAL,
  cipheringModeInfo              CipheringModeInfo                 OPTIONAL,
  activationTime                  ActivationTime                     OPTIONAL,
  new-U-RNTI                      U-RNTI                           OPTIONAL,
  new-C-RNTI                      C-RNTI                           OPTIONAL,
  new-DSCH-RNTI                   DSCH-RNTI                         OPTIONAL,
  rrc-StateIndicator              RRC-StateIndicator              OPTIONAL,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  rlc-Re-establishIndicatorRb2-3or4 BOOLEAN,
  rlc-Re-establishIndicatorRb5orAbove BOOLEAN,
  -- CN information elements
  cn-InformationInfo              CN-InformationInfo               OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                    URA-Identity                     OPTIONAL,
  -- Radio bearer IEs
  rb-InformationReleaseList       RB-InformationReleaseList        OPTIONAL,
  rb-InformationReconfigList      RB-InformationReconfigList-r4    OPTIONAL,
  rb-InformationAffectedList      RB-InformationAffectedList       OPTIONAL,
  dl-CounterSynchronisationInfo   DL-CounterSynchronisationInfo    OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo           UL-CommonTransChInfo-r4         OPTIONAL,
  ul-deletedTransChInfoList      UL-DeletedTransChInfoList       OPTIONAL,
  ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList     OPTIONAL,
  modeSpecificTransChInfo        CHOICE {
    fdd                           SEQUENCE {
      cpch-SetID                  CPCH-SetID                  OPTIONAL,
      addReconfTransChDRAC-Info   DRAC-StaticInformationList   OPTIONAL
    },

```

```

    tdd                NULL
  },
  dl-CommonTransChInfo      DL-CommonTransChInfo-r4      OPTIONAL,
  dl-DeletedTransChInfoList DL-DeletedTransChInfoList    OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r4    OPTIONAL,
-- Physical channel IEs
  frequencyInfo            FrequencyInfo                OPTIONAL,
  maxAllowedUL-TX-Power    MaxAllowedUL-TX-Power        OPTIONAL,
  ul-ChannelRequirement    UL-ChannelRequirement-r4      OPTIONAL,
  modeSpecificPhysChInfo   CHOICE {
    fdd                    SEQUENCE {
      dl-PDSCH-Information DL-PDSCH-Information    OPTIONAL
    },
    tdd                    NULL
  },
  dl-CommonInformation      DL-CommonInformation-r4      OPTIONAL,
  dl-InformationPerRL-List  DL-InformationPerRL-List-r4    OPTIONAL
}

```

```

CellUpdateConfirm-r5-IEs ::= SEQUENCE {
-- User equipment IEs
  integrityProtectionModeInfo IntegrityProtectionModeInfo  OPTIONAL,
  cipheringModeInfo          CipheringModeInfo              OPTIONAL,
  activationTime              ActivationTime                    OPTIONAL,
  new-U-RNTI                  U-RNTI                          OPTIONAL,
  new-C-RNTI                  C-RNTI                          OPTIONAL,
  new-DSCH-RNTI              DSCH-RNTI                       OPTIONAL,
  new-H-RNTI                  H-RNTI                          OPTIONAL,
  rrc-StateIndicator          RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  rlc-Re-establishIndicatorRb2-3or4 BOOLEAN,
  rlc-Re-establishIndicatorRb5orAbove BOOLEAN,
-- CN information elements
  cn-InformationInfo          CN-InformationInfo              OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                URA-Identity                    OPTIONAL,
-- Radio bearer IEs
  rb-InformationReleaseList   RB-InformationReleaseList    OPTIONAL,
  rb-InformationReconfigList  RB-InformationReconfigList-r5  OPTIONAL,
  rb-InformationAffectedList  RB-InformationAffectedList-r5  OPTIONAL,
  dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5  OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo        UL-CommonTransChInfo-r4      OPTIONAL,
  ul-deletedTransChInfoList   UL-DeletedTransChInfoList    OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList    OPTIONAL,
  modeSpecificTransChInfo     CHOICE {
    fdd                    SEQUENCE {
      cpch-SetID           CPCH-SetID                OPTIONAL,
      addReconfTransChDRAC-Info DRAC-StaticInformationList  OPTIONAL
    },
    tdd                    NULL
  },
  dl-CommonTransChInfo        DL-CommonTransChInfo-r4      OPTIONAL,
  dl-DeletedTransChInfoList   DL-DeletedTransChInfoList-r5  OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r5  OPTIONAL,
-- Physical channel IEs
  frequencyInfo              FrequencyInfo                OPTIONAL,
  maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power        OPTIONAL,
  ul-ChannelRequirement      UL-ChannelRequirement-r5    OPTIONAL,
  modeSpecificPhysChInfo     CHOICE {
    fdd                    SEQUENCE {
      dl-PDSCH-Information DL-PDSCH-Information    OPTIONAL
    },
    tdd                    NULL
  },
  dl-HSPDSCH-Information      DL-HSPDSCH-Information        OPTIONAL,
  dl-CommonInformation        DL-CommonInformation-r5      OPTIONAL,
  dl-InformationPerRL-List    DL-InformationPerRL-List-r5  OPTIONAL
}

```

```

-- *****
--
-- CELL UPDATE CONFIRM for CCCH
--
-- *****

```

```

CellUpdateConfirm-CCCH ::= CHOICE {
  r3                SEQUENCE {

```

```

-- User equipment IEs
u-RNTI                U-RNTI,
-- The rest of the message is identical to the one sent on DCCH.
cellUpdateConfirm-r3  CellUpdateConfirm-r3-IEs,
laterNonCriticalExtensions SEQUENCE {
  -- Container for additional R99 extensions
  cellUpdateConfirm-CCCH-r3-add-ext BIT STRING OPTIONAL,
v4b0NonCriticalExtensions SEQUENCE {
  cellUpdateConfirm-v4b0ext CellUpdateConfirm-v4b0ext-IEs,
  v5xyv590NonCriticalExtensions SEQUENCE {
    cellUpdateConfirm-v5xyv590ext CellUpdateConfirm-v5xyv590ext-IEs,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  } OPTIONAL
} OPTIONAL
} OPTIONAL
},
later-than-r3 SEQUENCE {
  u-RNTI                U-RNTI,
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  criticalExtensions CHOICE {
    r4 SEQUENCE {
      -- The rest of the message is identical to the one sent on DCCH.
      cellUpdateConfirm-r4 CellUpdateConfirm-r4-IEs,
v4d0NonCriticalExtensions SEQUENCE {
      -- Container for adding non critical extensions after freezing REL-5
      cellUpdateConfirm-CCCH-r4-add-ext BIT STRING OPTIONAL,
      v5xyv590NonCriticalExtensions SEQUENCE {
        cellUpdateConfirm-v5xyv590ext CellUpdateConfirm-v5xyv590ext-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  criticalExtensions CHOICE {
    r5 SEQUENCE {
      cellUpdateConfirm-r5 CellUpdateConfirm-r5-IEs,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
    criticalExtensions SEQUENCE {}
  }
}
}
}

-- *****
--
-- COUNTER CHECK
--
-- *****

CounterCheck ::= CHOICE {
  r3 SEQUENCE {
    counterCheck-r3 CounterCheck-r3-IEs,
    laterNonCriticalExtensions SEQUENCE {
      -- Container for additional R99 extensions
      counterCheck-r3-add-ext BIT STRING OPTIONAL,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
  },
  later-than-r3 SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions SEQUENCE {}
  }
}

CounterCheck-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  -- Radio bearer IEs
  rb-COUNT-C-MSB-InformationList RB-COUNT-C-MSB-InformationList
}

-- *****
--
-- COUNTER CHECK RESPONSE
--
-- *****

CounterCheckResponse ::= SEQUENCE {

```

```

-- User equipment IEs
rrc-TransactionIdentifier      RRC-TransactionIdentifier,
-- Radio bearer IEs
rb-COUNT-C-InformationList     RB-COUNT-C-InformationList      OPTIONAL,
laterNonCriticalExtensions     SEQUENCE {
  -- Container for additional R99 extensions
  counterCheckResponse-r3-add-ext  BIT STRING  OPTIONAL,
  nonCriticalExtensions            SEQUENCE {} OPTIONAL
}
}

-- *****
--
-- DOWNLINK DIRECT TRANSFER
--
-- *****

DownlinkDirectTransfer ::= CHOICE {
  r3
    SEQUENCE {
      downlinkDirectTransfer-r3      DownlinkDirectTransfer-r3-IEs,
      laterNonCriticalExtensions     SEQUENCE {
        -- Container for additional R99 extensions
        downlinkDirectTransfer-r3-add-ext  BIT STRING  OPTIONAL,
        nonCriticalExtensions            SEQUENCE {} OPTIONAL
      }
    } OPTIONAL,
  later-than-r3
    SEQUENCE {
      rrc-TransactionIdentifier      RRC-TransactionIdentifier,
      criticalExtensions             SEQUENCE {}
    }
}

DownlinkDirectTransfer-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  -- Core network IEs
  cn-DomainIdentity              CN-DomainIdentity,
  nas-Message                     NAS-Message
}

-- *****
--
-- HANDOVER TO UTRAN COMMAND
--
-- *****

HandoverToUTRANCommand ::= CHOICE {
  r3
    SEQUENCE {
      handoverToUTRANCommand-r3      HandoverToUTRANCommand-r3-IEs,
      nonCriticalExtensions           SEQUENCE {} OPTIONAL
    },
  criticalExtensions
    CHOICE {
      r4
        SEQUENCE {
          handoverToUTRANCommand-r4      HandoverToUTRANCommand-r4-IEs,
          v4d0NonCriticalExtensions      SEQUENCE {
            -- Container for adding non critical extensions after freezing REL-5
            handoverToUTRANCommand-r4-add-ext  BIT STRING  OPTIONAL,
            nonCriticalExtensions           SEQUENCE {}  OPTIONAL
          }
        } OPTIONAL,
      r5
        CHOICE {
          SEQUENCE {
            handoverToUTRANCommand-r5      HandoverToUTRANCommand-r5-IEs,
            -- Container for adding non critical extensions after freezing REL-6
            handoverToUTRANCommand-r5-add-ext  BIT STRING  OPTIONAL,
            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
cipheringAlgorithm          ActivationTime          OPTIONAL,
-- Radio bearer IEs        CipheringAlgorithm          OPTIONAL,
-- Specification mode information
specificationMode          CHOICE {
  complete                  SEQUENCE {
    srb-InformationSetupList SRB-InformationSetupList,
    rab-InformationSetupList RAB-InformationSetupList          OPTIONAL,
    ul-CommonTransChInfo    UL-CommonTransChInfo,
    ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
    dl-CommonTransChInfo    DL-CommonTransChInfo,
    dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList,
    ul-DPCH-Info            UL-DPCH-Info,
    modeSpecificInfo        CHOICE {
      fdd                    SEQUENCE {
        dl-PDSCH-Information DL-PDSCH-Information OPTIONAL,
        cpch-SetInfo         CPCH-SetInfo          OPTIONAL
      },
      tdd                    NULL
    },
    dl-CommonInformation    DL-CommonInformation,
    dl-InformationPerRL-List DL-InformationPerRL-List,
    frequencyInfo           FrequencyInfo
  },
  preconfiguration         SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
    preConfigMode          CHOICE {
      predefinedConfigIdentity PredefinedConfigIdentity,
      defaultConfig           SEQUENCE {
        defaultConfigMode     DefaultConfigMode,
        defaultConfigIdentity DefaultConfigIdentity
      }
    },
    rab-Info                RAB-Info-Post          OPTIONAL,
    modeSpecificInfo        CHOICE {
      fdd                    SEQUENCE {
        ul-DPCH-Info          UL-DPCH-InfoPostFDD,
        dl-CommonInformationPost DL-CommonInformationPost,
        dl-InformationPerRL-List DL-InformationPerRL-ListPostFDD,
        frequencyInfo         FrequencyInfoFDD
      },
      tdd                    SEQUENCE {
        ul-DPCH-Info          UL-DPCH-InfoPostTDD,
        dl-CommonInformationPost DL-CommonInformationPost,
        dl-InformationPerRL-List DL-InformationPerRL-ListPostTDD,
        frequencyInfo         FrequencyInfoTDD,
        primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power
      }
    }
  },
}
-- Physical channel IEs
maxAllowedUL-TX-Power      MaxAllowedUL-TX-Power
}

HandoverToUTRANCommand-r4-IEs ::= SEQUENCE {
-- User equipment IEs
new-U-RNTI                 U-RNTI-Short,
cipheringAlgorithm         CipheringAlgorithm          OPTIONAL,
-- Radio bearer IEs
-- Specification mode information
specificationMode          CHOICE {
  complete                  SEQUENCE {
    srb-InformationSetupList SRB-InformationSetupList,
    rab-InformationSetupList RAB-InformationSetupList-r4          OPTIONAL,
    ul-CommonTransChInfo    UL-CommonTransChInfo-r4,
    ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList,
    dl-CommonTransChInfo    DL-CommonTransChInfo-r4,
    dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r4,
    ul-DPCH-Info            UL-DPCH-Info-r4,
    modeSpecificInfo        CHOICE {
      fdd                    SEQUENCE {
        dl-PDSCH-Information DL-PDSCH-Information OPTIONAL,
        cpch-SetInfo         CPCH-SetInfo          OPTIONAL
      },
      tdd                    NULL
    }
  },
}

```

```

        tdd                                NULL
    },
    dl-CommonInformation                    DL-CommonInformation-r4,
    dl-InformationPerRL-List                DL-InformationPerRL-List-r4,
    frequencyInfo                          FrequencyInfo
},
preconfiguration                          SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
    preConfigMode                          CHOICE {
        predefinedConfigIdentity            PredefinedConfigIdentity,
        defaultConfig                      SEQUENCE {
            defaultConfigMode              DefaultConfigMode,
            defaultConfigIdentity          DefaultConfigIdentity-r4
        }
    },
    rab-Info                                RAB-Info-Post        OPTIONAL,
    modeSpecificInfo                        CHOICE {
        fdd                                SEQUENCE {
            ul-DPCH-Info                   UL-DPCH-InfoPostFDD,
            dl-CommonInformationPost        DL-CommonInformationPost,
            dl-InformationPerRL-List        DL-InformationPerRL-ListPostFDD,
            frequencyInfo                   FrequencyInfoFDD
        },
        tdd                                CHOICE {
            tdd384                          SEQUENCE {
                ul-DPCH-Info                UL-DPCH-InfoPostTDD,
                dl-InformationPerRL          DL-InformationPerRL-PostTDD,
                frequencyInfo                FrequencyInfoTDD,
                primaryCCPCH-TX-Power        PrimaryCCPCH-TX-Power
            },
            tdd128                          SEQUENCE {
                ul-DPCH-Info                UL-DPCH-InfoPostTDD-LCR-r4,
                dl-InformationPerRL          DL-InformationPerRL-PostTDD-LCR-r4,
                frequencyInfo                FrequencyInfoTDD,
                primaryCCPCH-TX-Power        PrimaryCCPCH-TX-Power
            }
        }
    }
},
}
},
-- Physical channel IEs
    maxAllowedUL-TX-Power                  MaxAllowedUL-TX-Power
}

HandoverToUTRANCommand-r5-IEs ::= SEQUENCE {
-- User equipment IEs
    new-U-RNTI                             U-RNTI-Short,
    cipheringAlgorithm                       CipheringAlgorithm                OPTIONAL,
-- Radio bearer IEs
-- Specification mode information
    specificationMode                       CHOICE {
        complete                            SEQUENCE {
            srb-InformationSetupList        SRB-InformationSetupList-r5,
            rab-InformationSetupList        RAB-InformationSetupList-r5        OPTIONAL,
            ul-CommonTransChInfo           UL-CommonTransChInfo-r4,
            ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList,
            dl-CommonTransChInfo           DL-CommonTransChInfo-r4,
            dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r5,
            ul-DPCH-Info                   UL-DPCH-Info-r5,
            modeSpecificInfo                CHOICE {
                fdd                         SEQUENCE {
                    dl-PDSCH-Information    DL-PDSCH-Information OPTIONAL,
                    cpch-SetInfo            CPCH-SetInfo            OPTIONAL
                },
                tdd                         NULL
            },
            dl-CommonInformation            DL-CommonInformation-r4,
            dl-InformationPerRL-List        DL-InformationPerRL-List-r5,
            frequencyInfo                   FrequencyInfo
        },
        preconfiguration                    SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
            preConfigMode                  CHOICE {
                predefinedConfigIdentity    PredefinedConfigIdentity,

```



```

        defaultConfig
            defaultConfigMode
            defaultConfigIdentity
        },
        rab-Info
        modeSpecificInfo
            fdd
                ul-DPCH-Info
                dl-CommonInformationPost
                dl-InformationPerRL-List
                frequencyInfo
            },
            tdd
                tdd384
                    ul-DPCH-Info
                    dl-InformationPerRL
                    frequencyInfo
                    primaryCCPCH-TX-Power
                },
                tdd128
                    ul-DPCH-Info
                    dl-InformationPerRL
                    frequencyInfo
                    primaryCCPCH-TX-Power
            }
        }
    },
    -- Physical channel IEs
    maxAllowedUL-TX-Power
}

-- *****
--
-- HANDOVER TO UTRAN COMPLETE
--
-- *****

HandoverToUTRANComplete ::= SEQUENCE {
    --TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    -- TABULAR: startList is conditional on history.
    startList
        STARTList
        OPTIONAL,
    -- Radio bearer IEs
    count-C-ActivationTime
        ActivationTime
        OPTIONAL,
    laterNonCriticalExtensions
        SEQUENCE {
            -- Container for additional R99 extensions
            handoverToUTRANComplete-r3-add-ext
                BIT STRING OPTIONAL,
            nonCriticalExtensions
                SEQUENCE {}
        }
        OPTIONAL
}

-- *****
--
-- 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,
            v5xyv590NonCriticalExtensions
                SEQUENCE {
                initialDirectTransfer-v5xyv590ext
                    InitialDirectTransfer-v5xyv590ext,
                nonCriticalExtensions
                    SEQUENCE {}
                }
            }
        }
        OPTIONAL
    }
    OPTIONAL
}

```

```

}

InitialDirectTransfer-v3a0ext ::= SEQUENCE {
    -- start-value shall always be included in this version of the protocol
    start-Value          START-Value          OPTIONAL
}

InitialDirectTransfer-v5xyv590ext ::= SEQUENCE {
    establishmentCause   EstablishmentCause   OPTIONAL
}

-- *****
--
-- HANOVER FROM UTRAN COMMAND
--
-- *****

HandoverFromUTRANCommand-GSM ::= CHOICE {
    r3          SEQUENCE {
        handoverFromUTRANCommand-GSM-r3
            HandoverFromUTRANCommand-GSM-r3-IEs,
        -- UTRAN should not include the IE laterNonCriticalExtensions when it sets the IE
        -- gsm-message included in handoverFromUTRANCommand-GSM-r3 to single-GSM-Message. The UE
        -- behaviour upon receiving a message with this combination of IE values is unspecified.
        laterNonCriticalExtensions SEQUENCE {
            -- Container for additional R99 extensions
            handoverFromUTRANCommand-GSM-r3-add-ext BIT STRING OPTIONAL,
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        } OPTIONAL
    },
    later-than-r3 SEQUENCE {
        rrc-TransactionIdentifier RRC-TransactionIdentifier,
        criticalExtensions SEQUENCE {}
    }
}

HandoverFromUTRANCommand-GSM-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    activationTime           OPTIONAL,
    -- Radio bearer IEs
    toHandoverRAB-Info      RAB-Info           OPTIONAL,
    -- Measurement IEs
    frequency-band          Frequency-Band,
    -- Other IEs
    gsm-message             CHOICE {
        -- In the single-GSM-Message case the following rules apply:
        -- 1> the GSM message directly follows the basic production; the final padding that
        -- results when PER encoding the abstract syntax value is removed prior to appending
        -- the GSM message.
        -- 2> the RRC message excluding the GSM part, does not contain a length determinant;
        -- there is no explicit parameter indicating the size of the included GSM message.
        -- 3> depending on need, final padding (all "0"s) is added to ensure the final result
        -- comprises a full number of octets
        single-GSM-Message SEQUENCE {},
        gsm-MessageList SEQUENCE {
            gsm-Messages GSM-MessageList
        }
    }
}

HandoverFromUTRANCommand-GERANIu ::= SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    handoverFromUTRANCommand-GERANIu CHOICE {
        r5 SEQUENCE {
            handoverFromUTRANCommand-GERANIu-r5
                HandoverFromUTRANCommand-GERANIu-r5-IEs,
            -- UTRAN should not include the IE nonCriticalExtensions when it sets
            -- the IE geranIu-message included in handoverFromUTRANCommand-GERANIu-r5 to
            -- single-GERANIu-Message
            -- The UE behaviour upon receiving a message including this combination of IE values is
            -- not specified
            nonCriticalExtensions SEQUENCE {} OPTIONAL
        },
        later-than-r5 SEQUENCE {
            criticalExtensions SEQUENCE {}
        }
    }
}

```

```

}

HandoverFromUTRANCommand-GERANIu-r5-IEs ::= SEQUENCE {
  -- User equipment IEs
  activationTime          ActivationTime          OPTIONAL,
  -- Measurement IEs
  frequency-Band         Frequency-Band,
  -- Other IEs
  geranIu-Message        CHOICE {
    -- In the single-GERANIu-Message case the following rules apply:
    -- 1> the GERAN Iu message directly follows the basic production; the final padding that
    -- results when PER encoding the abstract syntax value is removed prior to appending
    -- the GERAN Iu message.
    -- 2> the RRC message excluding the GERAN Iu part does not contain a length determinant;
    -- there is no explicit parameter indicating the size of the included GERAN Iu
    -- message.
    -- 3> depending on need, final padding (all "0"s) is added to ensure the final result
    -- comprises a full number of octets.
    single-GERANIu-Message SEQUENCE {},
    geranIu-MessageList    SEQUENCE {
      geranIu-Messages      GERANIu-MessageList
    }
  }
}

HandoverFromUTRANCommand-CDMA2000 ::= CHOICE {
  r3          SEQUENCE {
    handoverFromUTRANCommand-CDMA2000-r3
      HandoverFromUTRANCommand-CDMA2000-r3-IEs,
    laterNonCriticalExtensions SEQUENCE {
      -- Container for additional R99 extensions
      handoverFromUTRANCommand-CDMA2000-r3-add-ext
        BIT STRING OPTIONAL,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    }
  },
  later-than-r3 SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions        SEQUENCE {}
  }
}

HandoverFromUTRANCommand-CDMA2000-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  activationTime            ActivationTime          OPTIONAL,
  -- Radio bearer IEs
  toHandoverRAB-Info       RAB-Info              OPTIONAL,
  -- Other IEs
  cdma2000-MessageList      CDMA2000-MessageList
}

-- *****
--
-- HANOVER FROM UTRAN FAILURE
--
-- *****

HandoverFromUTRANFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  -- Other IEs
  interRAT-HO-FailureCause InterRAT-HO-FailureCause OPTIONAL,
  -- In case the interRATMessage to be transferred is for GERAN Iu mode, the
  -- message should be placed in the HandoverFromUtranFailure-v5xyv590ext-IEs
  -- non-critical extension container.
  interRATMessage          CHOICE {
    gsm SEQUENCE {
      gsm-MessageList      GSM-MessageList
    },
    cdma2000 SEQUENCE {
      cdma2000-MessageList CDMA2000-MessageList
    }
  }
  OPTIONAL,
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    handoverFromUTRANFailure-r3-add-ext BIT STRING OPTIONAL,
    v5xyv590NonCriticalExtensions SEQUENCE {

```

```

        handoverFromUTRANFailure-v5xyv590ext HandoverFromUtranFailure-v5xyv590ext-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
}

HandoverFromUtranFailure-v5xyv590ext-IEs ::= SEQUENCE {
    geranIu-MessageList GERANIu-MessageList OPTIONAL
}

-- *****
--
-- INTER RAT HANDOVER INFO
--
-- *****

InterRATHandoverInfo ::= SEQUENCE {
    -- This structure is defined for historical reasons, backward compatibility with 04.18
    predefinedConfigStatusList CHOICE {
        absent NULL,
        present PredefinedConfigStatusList
    },
    ue-SecurityInformation CHOICE {
        absent NULL,
        present UE-SecurityInformation
    },
    ue-CapabilityContainer CHOICE {
        absent NULL,
        -- present is an octet aligned string containing IE UE-RadioAccessCapabilityInfo
        present OCTET STRING (SIZE (0..63))
    },
    -- Non critical extensions
    v390NonCriticalExtensions CHOICE {
        absent NULL,
        present SEQUENCE {
            interRATHandoverInfo-v390ext InterRATHandoverInfo-v390ext-IEs,
            v3a0NonCriticalExtensions SEQUENCE {
                interRATHandoverInfo-v3a0ext InterRATHandoverInfo-v3a0ext-IEs,
                laterNonCriticalExtensions SEQUENCE {
                    interRATHandoverInfo-v3d0ext InterRATHandoverInfo-v3d0ext-IEs,
                    -- Container for additional R99 extensions
                    interRATHandoverInfo-r3-add-ext BIT STRING OPTIONAL,
                    v3g0NonCriticalExtensions SEQUENCE {
                        interRATHandoverInfo-v3g0ext InterRATHandoverInfo-v3g0ext-IEs,
                        v4b0NonCriticalExtensions SEQUENCE {
                            interRATHandoverInfo-v4b0ext InterRATHandoverInfo-v4b0ext-IEs,
                            v4d0NonCriticalExtensions SEQUENCE {
                                interRATHandoverInfo-v4d0ext InterRATHandoverInfo-v4d0ext-IEs,
                                -- Reserved for future non critical extension
                                v5xyv590NonCriticalExtensions SEQUENCE {
                                    interRATHandoverInfo-v5xyv590ext
                                }
                            }
                        }
                    }
                }
            }
        }
    }
}

IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
} OPTIONAL
} OPTIONAL
} OPTIONAL
}

InterRATHandoverInfo-v390ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v380ext UE-RadioAccessCapability-v380ext OPTIONAL,
    dl-PhysChCapabilityFDD-v380ext DL-PhysChCapabilityFDD-v380ext
}

InterRATHandoverInfo-v3a0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v3a0ext UE-RadioAccessCapability-v3a0ext OPTIONAL
}

InterRATHandoverInfo-v3d0ext-IEs ::= SEQUENCE {
    -- User equipment IEs

```

```

        uESpecificBehaviourInformationInterRAT    UESpecificBehaviourInformationInterRAT
    OPTIONAL
}

InterRATHandoverInfo-v3g0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v3g0ext    UE-RadioAccessCapability-v3g0ext    OPTIONAL
}

InterRATHandoverInfo-v4b0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    accessStratumReleaseIndicator    AccessStratumReleaseIndicator
}

InterRATHandoverInfo-v4d0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    tdd128-RF-Capability    RadioFrequencyBandTDDList    OPTIONAL
}

InterRATHandoverInfo-v5xyv590ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    predefinedConfigStatusListComp    PredefinedConfigStatusListComp    OPTIONAL,
    ue-RadioAccessCapabilityComp    UE-RadioAccessCapabilityComp    OPTIONAL
}

-- *****
--
-- MEASUREMENT CONTROL
--
-- *****

MeasurementControl ::= CHOICE {
    r3
        SEQUENCE {
            measurementControl-r3    MeasurementControl-r3-IEs,
            v390nonCriticalExtensions    SEQUENCE {
                measurementControl-v390ext    MeasurementControl-v390ext,
                v3a0NonCriticalExtensions    SEQUENCE {
                    measurementControl-v3a0ext    MeasurementControl-v3a0ext,
                    laterNonCriticalExtensions    SEQUENCE {
                        -- Container for additional R99 extensions
                        measurementControl-r3-add-ext    BIT STRING OPTIONAL,
                        v4b0NonCriticalExtensions    SEQUENCE {
                            measurementControl-v4b0ext    MeasurementControl-v4b0ext-IEs,
                            v5xyv590NonCriticalExtensions    SEQUENCE {
                                measurementControl-v5xyv590ext    MeasurementControl-v5xyv590ext-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,
                        v4d0NonCriticalExtensions    SEQUENCE {
                            -- Container for adding non critical extensions after freezing REL-5
                            measurementControl-r4-add-ext    BIT STRING OPTIONAL,
                            v5xyv590NonCriticalExtensions    SEQUENCE {
                                measurementControl-v5xyv590ext    MeasurementControl-v5xyv590ext-IEs,
                                nonCriticalExtensions    SEQUENCE {} OPTIONAL
                            }
                        } OPTIONAL
                    } OPTIONAL
                },
            criticalExtensions    SEQUENCE {}
        }
}

MeasurementControl-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    -- Measurement IEs
    measurementIdentity    MeasurementIdentity,
    -- TABULAR: The measurement type is included in MeasurementCommand.
    measurementCommand    MeasurementCommand,

```

```

        measurementReportingMode      MeasurementReportingMode      OPTIONAL,
        additionalMeasurementList      AdditionalMeasurementID-List    OPTIONAL,
-- Physical channel IEs
        dpch-CompressedModeStatusInfo  DPCH-CompressedModeStatusInfo  OPTIONAL
    }
MeasurementControl-v4b0ext-IEs ::= SEQUENCE {
    ue-Positioning-OTDOA-AssistanceData-r4ext  UE-Positioning-OTDOA-AssistanceData-r4ext  OPTIONAL
}
MeasurementControl-v390ext ::= SEQUENCE {
    ue-Positioning-Measurement-v390ext      UE-Positioning-Measurement-v390ext  OPTIONAL
}
MeasurementControl-v3a0ext ::= SEQUENCE {
    sfm-Offset-Validity                    SFN-Offset-Validity              OPTIONAL
}
MeasurementControl-r4-IEs ::= SEQUENCE {
-- Measurement IEs
    measurementIdentity      MeasurementIdentity,
-- TABULAR: The measurement type is included in measurementCommand.
    measurementCommand      MeasurementCommand-r4,
    measurementReportingMode      MeasurementReportingMode      OPTIONAL,
    additionalMeasurementList      AdditionalMeasurementID-List    OPTIONAL,
-- Physical channel IEs
    dpch-CompressedModeStatusInfo  DPCH-CompressedModeStatusInfo  OPTIONAL
}
MeasurementControl-v5xyv590ext-IEs ::= SEQUENCE {
    measurementCommand-v5xyv590ext      CHOICE {
-- the choice "intra-frequency" shall be used for the case of intra-frequency measurement,
-- as well as when intra-frequency events are configured for inter-frequency measurement
        intra-frequency      Intra-FreqEventCriteriaList-v5xyv590ext,
        inter-frequency      Inter-FreqEventCriteriaList-v5xyv590ext
    }
    OPTIONAL,
    intraFreqReportingCriteria-lb-r5      IntraFreqReportingCriteria-lb-r5      OPTIONAL,
    intraFreqEvent-lb-r5                  IntraFreqEvent-lb-r5                  OPTIONAL,
-- most significant part of "RRC transaction identifier" (MSP),
-- "RRC transaction identifier" = rrc-TransactionIdentifier-MSP-v5xyv590ext * 4 +
-- rrc-TransactionIdentifier
    rrc-TransactionIdentifier-MSP-v5xyv590ext  RRC-TransactionIdentifier
}
-- *****
--
-- MEASUREMENT CONTROL FAILURE
--
-- *****

MeasurementControlFailure ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    failureCause                    FailureCauseWithProtErr,
    laterNonCriticalExtensions      SEQUENCE {
-- Container for additional R99 extensions
        measurementControlFailure-r3-add-ext      BIT STRING      OPTIONAL,
        v5xyv590NonCriticalExtensions      SEQUENCE {
            measurementControlFailure-v5xyv590ext      MeasurementControlFailure-v5xyv590ext-
IEs,
                nonCriticalExtensions      SEQUENCE {}      OPTIONAL
        }
    }
    OPTIONAL
}
MeasurementControlFailure-v5xyv590ext-IEs ::= SEQUENCE {
-- most significant part of "RRC transaction identifier" (MSP),
-- "RRC transaction identifier" = rrc-TransactionIdentifier-MSP-v5xyv590ext * 4 +
-- rrc-TransactionIdentifier
-- If the rrc-TransactionIdentifier-MSP-v5xyv590ext was not received in the MEASUREMENT CONTROL
-- message, then the rrc-TransactionIdentifier-MSP-v5xyv590ext shall be set to zero
    rrc-TransactionIdentifier-MSP-v5xyv590ext  RRC-TransactionIdentifier
}
-- *****
--
-- MEASUREMENT REPORT
--
-- *****

```

```

MeasurementReport ::= SEQUENCE {
  -- Measurement IEs
  measurementIdentity      MeasurementIdentity,
  measuredResults           MeasuredResults           OPTIONAL,
  measuredResultsOnRACH    MeasuredResultsOnRACH     OPTIONAL,
  additionalMeasuredResults MeasuredResultsList     OPTIONAL,
  eventResults             EventResults             OPTIONAL,
  -- Non-critical extensions
  v390nonCriticalExtensions SEQUENCE {
    measurementReport-v390ext MeasurementReport-v390ext,
    laterNonCriticalExtensions SEQUENCE {
      -- Container for additional R99 extensions
      measurementReport-r3-add-ext BIT STRING      OPTIONAL,
      v4b0NonCriticalExtensions SEQUENCE {
        measurementReport-v4b0ext MeasurementReport-v4b0ext-IEs,
        -- Extension mechanism for non-Rel4 information
        v5xyv590NonCriticalExtensions SEQUENCE {
          measurementReport-v5xyv590ext MeasurementReport-v5xyv590ext-IEs,
          nonCriticalExtensions SEQUENCE {}          OPTIONAL
        }
      }
    }
  }
}

MeasurementReport-v390ext ::= SEQUENCE {
  measuredResults-v390ext MeasuredResults-v390ext OPTIONAL
}

MeasurementReport-v4b0ext-IEs ::= SEQUENCE {
  interFreqEventResults-LCR InterFreqEventResults-LCR-r4-ext OPTIONAL,
  additionalMeasuredResults-LCR MeasuredResultsList-LCR-r4-ext OPTIONAL,
  gsmOTDreferenceCell PrimaryCPICH-Info OPTIONAL
}

MeasurementReport-v5xyv590ext-IEs ::= SEQUENCE {
  measuredResults-v5xyv590ext MeasuredResults-v5xyv590ext 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,
    v5xyv590NonCriticalExtensions SEQUENCE {
      pagingType1-v5xyv590ext PagingType1-v5xyv590ext-IEs,
      nonCriticalExtensions SEQUENCE {}    OPTIONAL
    }
  }
}

PagingType1-v5xyv590ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  pagingRecord2List PagingRecord2List-r5 OPTIONAL
}

-- *****
--
-- PAGING TYPE 2
--
-- *****

PagingType2 ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  pagingCause               PagingCause,
  -- Core network IEs
  cn-DomainIdentity         CN-DomainIdentity,
}

```

```

    pagingRecordTypeID          PagingRecordTypeID,
    laterNonCriticalExtensions  SEQUENCE {
      -- Container for additional R99 extensions
      pagingType2-r3-add-ext    BIT STRING      OPTIONAL,
      nonCriticalExtensions     SEQUENCE {}      OPTIONAL
    }
  }
}

-- *****
--
-- 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,
        v4b0NonCriticalExtensions                  SEQUENCE {
          physicalChannelReconfiguration-v4b0ext
          PhysicalChannelReconfiguration-v4b0ext-IEs,
          v5xyv590NonCriticalExtensions            SEQUENCE {
            physicalChannelReconfiguration-v5xyv590ext
            PhysicalChannelReconfiguration-v5xyv590ext-IEs,
            nonCriticalExtensions                  SEQUENCE {} OPTIONAL
          } OPTIONAL
        } OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  later-than-r3                    SEQUENCE {
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    criticalExtensions             CHOICE {
      r4                           SEQUENCE {
        physicalChannelReconfiguration-r4
        PhysicalChannelReconfiguration-r4-IEs,
        v4d0NonCriticalExtensions  SEQUENCE {
          -- Container for adding non critical extensions after freezing REL-5
          physicalChannelReconfiguration-r4-add-ext    BIT STRING      OPTIONAL,
          v5xyv590NonCriticalExtensions                SEQUENCE {
            physicalChannelReconfiguration-v5xyv590ext
            PhysicalChannelReconfiguration-v5xyv590ext-IEs,
            nonCriticalExtensions                      SEQUENCE {}      OPTIONAL
          } OPTIONAL
        } OPTIONAL
      } OPTIONAL
    },
    criticalExtensions             CHOICE {
      r5                           SEQUENCE {
        physicalChannelReconfiguration-r5
        PhysicalChannelReconfiguration-r5-IEs,
        -- Container for adding non critical extensions after freezing REL-6
        physicalChannelReconfiguration-r5-add-ext    BIT STRING      OPTIONAL,
        nonCriticalExtensions                      SEQUENCE {}      OPTIONAL
      } OPTIONAL
    },
    criticalExtensions             SEQUENCE {}
  }
}

PhysicalChannelReconfiguration-r3-IEs ::= SEQUENCE {
  -- User equipment IES
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo             CipheringModeInfo                OPTIONAL,
  activationTime                 ActivationTime                    OPTIONAL,
  new-U-RNTI                     U-RNTI                          OPTIONAL,
  new-C-RNTI                     C-RNTI                          OPTIONAL,
  rrc-StateIndicator             RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- Core network IES
  cn-InformationInfo             CN-InformationInfo                OPTIONAL,
  -- UTRAN mobility IES

```



```

ura-Identity                URA-Identity                OPTIONAL,
-- Radio bearer IEs
  dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo  OPTIONAL,
-- Physical channel IEs
  frequencyInfo                FrequencyInfo                OPTIONAL,
  maxAllowedUL-TX-Power        MaxAllowedUL-TX-Power        OPTIONAL,
-- TABULAR: UL-ChannelRequirementWithCPCH-SetID contains the choice
-- between UL DPCH info, CPCH SET info and CPCH set ID.
  ul-ChannelRequirement        UL-ChannelRequirementWithCPCH-SetID  OPTIONAL,
  modeSpecificInfo            CHOICE {
    fdd                        SEQUENCE {
      dl-PDSCH-Information    DL-PDSCH-Information    OPTIONAL
    },
    tdd                        NULL
  },
  dl-CommonInformation        DL-CommonInformation        OPTIONAL,
  dl-InformationPerRL-List    DL-InformationPerRL-List    OPTIONAL
}

PhysicalChannelReconfiguration-v3a0ext ::= SEQUENCE {
  new-DSCH-RNTI                DSCH-RNTI                OPTIONAL
}

PhysicalChannelReconfiguration-v4b0ext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- ssdt-UL extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
  ssdt-UL-r4                    SSdT-UL                    OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
  cell-id-PerRL-List            CellIdentity-PerRL-List    OPTIONAL
}

PhysicalChannelReconfiguration-v5xyv590ext-IEs ::= SEQUENCE {
-- Physical channel IEs
  dl-TPC-PowerOffsetPerRL-List  DL-TPC-PowerOffsetPerRL-List  OPTIONAL
}

PhysicalChannelReconfiguration-r4-IEs ::= SEQUENCE {
-- User equipment IEs
  integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo              CipheringModeInfo              OPTIONAL,
  activationTime                  ActivationTime                  OPTIONAL,
  new-U-RNTI                      U-RNTI                        OPTIONAL,
  new-C-RNTI                      C-RNTI                        OPTIONAL,
  new-DSCH-RNTI                  DSCH-RNTI                    OPTIONAL,
  rrc-StateIndicator              RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
  cn-InformationInfo              CN-InformationInfo            OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity                    URA-Identity                  OPTIONAL,
-- Radio bearer IEs
  dl-CounterSynchronisationInfo    DL-CounterSynchronisationInfo  OPTIONAL,
-- Physical channel IEs
  frequencyInfo                  FrequencyInfo                  OPTIONAL,
  maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power        OPTIONAL,
-- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r4 contains the choice
-- between UL DPCH info, CPCH SET info and CPCH set ID.
  ul-ChannelRequirement          UL-ChannelRequirementWithCPCH-SetID-r4  OPTIONAL,
  modeSpecificInfo              CHOICE {
    fdd                          SEQUENCE {
      dl-PDSCH-Information      DL-PDSCH-Information      OPTIONAL
    },
    tdd                          NULL
  },
  dl-CommonInformation            DL-CommonInformation-r4        OPTIONAL,
  dl-InformationPerRL-List        DL-InformationPerRL-List-r4    OPTIONAL
}

PhysicalChannelReconfiguration-r5-IEs ::= SEQUENCE {
-- User equipment IEs
  integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo              CipheringModeInfo              OPTIONAL,
  activationTime                  ActivationTime                  OPTIONAL,
  new-U-RNTI                      U-RNTI                        OPTIONAL,
  new-C-RNTI                      C-RNTI                        OPTIONAL,
  new-DSCH-RNTI                  DSCH-RNTI                    OPTIONAL,

```

```

    new-H-RNTI                H-RNTI                OPTIONAL,
    rrc-StateIndicator        RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff  UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
  cn-InformationInfo        CN-InformationInfo        OPTIONAL,
-- UTRAN mobility IEs
  ura-Identity              URA-Identity              OPTIONAL,
-- Radio bearer IEs
  dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo-r5  OPTIONAL,
-- Physical channel IEs
  frequencyInfo            FrequencyInfo            OPTIONAL,
  maxAllowedUL-TX-Power    MaxAllowedUL-TX-Power    OPTIONAL,
-- TABULAR: UL-ChannelRequirementWithCPCH-SetID-r5 contains the choice
-- between UL DPCH info, CPCH SET info and CPCH set ID.
  ul-ChannelRequirement    UL-ChannelRequirementWithCPCH-SetID-r5  OPTIONAL,
  modeSpecificInfo        CHOICE {
    fdd                    SEQUENCE {
      dl-PDSCH-Information  DL-PDSCH-Information  OPTIONAL
    },
    tdd                    NULL
  },
  dl-HSPDSCH-Information    DL-HSPDSCH-Information    OPTIONAL,
  dl-CommonInformation      DL-CommonInformation-r5  OPTIONAL,
  dl-InformationPerRL-List  DL-InformationPerRL-List-r5  OPTIONAL
}

-- *****
--
-- 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,
    nonCriticalExtensions    SEQUENCE {}    OPTIONAL
  }
  OPTIONAL
}

-- *****
--
-- PHYSICAL CHANNEL RECONFIGURATION FAILURE
--
-- *****

PhysicalChannelReconfigurationFailure ::= SEQUENCE {
-- User equipment IEs
  rrc-TransactionIdentifier    RRC-TransactionIdentifier    OPTIONAL,
  failureCause                FailureCauseWithProtErr,
  laterNonCriticalExtensions    SEQUENCE {
-- Container for additional R99 extensions
    physicalChannelReconfigurationFailure-r3-add-ext    BIT STRING    OPTIONAL,
    nonCriticalExtensions    SEQUENCE {}    OPTIONAL
  }
  OPTIONAL
}

-- *****
--
-- PHYSICAL SHARED CHANNEL ALLOCATION (TDD only)
--
-- *****

PhysicalSharedChannelAllocation ::= CHOICE {
  r3                            SEQUENCE {
    physicalSharedChannelAllocation-r3
    PhysicalSharedChannelAllocation-r3-IEs,
    laterNonCriticalExtensions    SEQUENCE {
-- Container for additional R99 extensions

```

```

        physicalSharedChannelAllocation-r3-add-ext    BIT STRING    OPTIONAL,
        nonCriticalExtensions                        SEQUENCE {}    OPTIONAL
    }
    OPTIONAL
},
later-than-r3                                     SEQUENCE {
    dsch-RNTI                                     DSCH-RNTI                                     OPTIONAL,
    rrc-TransactionIdentifier                     RRC-TransactionIdentifier,
    criticalExtensions                             CHOICE {
        r4                                         SEQUENCE {
            physicalSharedChannelAllocation-r4
            PhysicalSharedChannelAllocation-r4-IEs,
            v4d0NonCriticalExtensions              SEQUENCE {
                -- Container for adding non critical extensions after freezing REL-5
                physicalSharedChannelAllocation-r4-add-ext    BIT STRING    OPTIONAL,
                nonCriticalExtensions                    SEQUENCE {}    OPTIONAL
            }
        },
        criticalExtensions                         SEQUENCE {}
    }
}
}
}

```

```

PhysicalSharedChannelAllocation-r3-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    dsch-RNTI                                     DSCH-RNTI                                     OPTIONAL,
    rrc-TransactionIdentifier                     RRC-TransactionIdentifier,
    -- Physical channel IEs
    ul-TimingAdvance                             UL-TimingAdvanceControl                       OPTIONAL,
    pusch-CapacityAllocationInfo                 PUSCH-CapacityAllocationInfo                 OPTIONAL,
    pdsch-CapacityAllocationInfo                 PDSCH-CapacityAllocationInfo                 OPTIONAL,
    -- TABULAR: If confirmRequest is not present, the default value "No Confirm"
    -- shall be used as specified in 10.2.25.
    confirmRequest                                ENUMERATED {
                                                confirmPDSCH, confirmPUSCH }    OPTIONAL,
    trafficVolumeReportRequest                   INTEGER (0..255)                               OPTIONAL,
    iscpTimeslotList                             TimeslotList                                  OPTIONAL,
    requestPCCPCHRSCP                            BOOLEAN
}

```

```

PhysicalSharedChannelAllocation-r4-IEs ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- Physical channel IEs
    ul-TimingAdvance                             UL-TimingAdvanceControl-r4                   OPTIONAL,
    pusch-CapacityAllocationInfo                 PUSCH-CapacityAllocationInfo-r4             OPTIONAL,
    pdsch-CapacityAllocationInfo                 PDSCH-CapacityAllocationInfo-r4             OPTIONAL,
    -- TABULAR: If confirmRequest is not present, the default value "No Confirm"
    -- shall be used in 10.2.25.
    confirmRequest                                ENUMERATED {
                                                confirmPDSCH, confirmPUSCH }    OPTIONAL,
    trafficVolumeReportRequest                   INTEGER (0..255)                               OPTIONAL,
    iscpTimeslotList                             TimeslotList-r4                              OPTIONAL,
    requestPCCPCHRSCP                            BOOLEAN
}

```

```

-- *****
--
-- PUSCH CAPACITY REQUEST (TDD only)
--
-- *****

```

```

PUSCHCapacityRequest ::= SEQUENCE {
    -- User equipment IEs
    dsch-RNTI                                     DSCH-RNTI                                     OPTIONAL,
    -- Measurement IEs
    trafficVolume                                 TrafficVolumeMeasuredResultsList             OPTIONAL,
    timeslotListWithISCP                         TimeslotListWithISCP                         OPTIONAL,
    primaryCCPCH-RSCP                             PrimaryCCPCH-RSCP                             OPTIONAL,
    allocationConfirmation                       CHOICE {
        pdschConfirmation                         PDSCH-Identity,
        puschConfirmation                         PUSCH-Identity
    }
    OPTIONAL,
    protocolErrorIndicator                       ProtocolErrorIndicatorWithMoreInfo,
    laterNonCriticalExtensions                   SEQUENCE {
        -- Container for additional R99 extensions
        puschCapacityRequest-r3-add-ext           BIT STRING    OPTIONAL,
        v5xyv590NonCriticalExtensions             SEQUENCE {
            puschCapacityRequest-v5xyv590ext     PUSCHCapacityRequest-v5xyv590ext,

```

```

        nonCriticalExtensions      SEQUENCE {} OPTIONAL
    }
    } OPTIONAL
}

PUSCHCapacityRequest-v5xyv590ext ::= SEQUENCE {
    primaryCCPCH-RSCP-delta      DeltaRSCP      OPTIONAL
}
-- *****
--
-- RADIO BEARER RECONFIGURATION
--
-- *****

RadioBearerReconfiguration ::= CHOICE {
    r3          SEQUENCE {
        radioBearerReconfiguration-r3      RadioBearerReconfiguration-r3-IEs,
        -- Prefix "v3ao" is used (in one instance) to keep alignment with R99
        v3aoNonCriticalExtensions          SEQUENCE {
            radioBearerReconfiguration-v3a0ext      RadioBearerReconfiguration-v3a0ext,
            laterNonCriticalExtensions          SEQUENCE {
                -- Container for additional R99 extensions
                radioBearerReconfiguration-r3-add-ext      BIT STRING      OPTIONAL,
                v4b0NonCriticalExtensions          SEQUENCE {
                    radioBearerReconfiguration-v4b0ext
                        RadioBearerReconfiguration-v4b0ext-IEs,
                    v5xyv590NonCriticalExtensions          SEQUENCE {
                        radioBearerReconfiguration-v5xyv590ext
                            RadioBearerReconfiguration-v5xyv590ext-IEs,
                        nonCriticalExtensions          SEQUENCE {} OPTIONAL
                    } OPTIONAL
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3      SEQUENCE {
        rrc-TransactionIdentifier      RRC-TransactionIdentifier,
        criticalExtensions          CHOICE {
            r4          SEQUENCE {
                radioBearerReconfiguration-r4      RadioBearerReconfiguration-r4-IEs,
                v4d0NonCriticalExtensions          SEQUENCE {
                    -- Container for adding non critical extensions after freezing REL-5
                    radioBearerReconfiguration-r4-add-ext      BIT STRING      OPTIONAL,
                    v5xyv590NonCriticalExtensions          SEQUENCE {
                        radioBearerReconfiguration-v5xyv590ext
                            RadioBearerReconfiguration-v5xyv590ext-IEs,
                        nonCriticalExtensions          SEQUENCE {}      OPTIONAL
                    } OPTIONAL
                } OPTIONAL
            },
            criticalExtensions          CHOICE {
                r5          SEQUENCE {
                    radioBearerReconfiguration-r5      RadioBearerReconfiguration-r5-IEs,
                    -- Container for adding non critical extensions after freezing REL-6
                    radioBearerReconfiguration-r5-add-ext      BIT STRING      OPTIONAL,
                    nonCriticalExtensions          SEQUENCE {}      OPTIONAL
                },
                criticalExtensions          SEQUENCE {}
            }
        }
    }
}

RadioBearerReconfiguration-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    integrityProtectionModeInfo      IntegrityProtectionModeInfo      OPTIONAL,
    cipheringModeInfo      CipheringModeInfo      OPTIONAL,
    activationTime      ActivationTime      OPTIONAL,
    new-U-RNTI      U-RNTI      OPTIONAL,
    new-C-RNTI      C-RNTI      OPTIONAL,
    rrc-StateIndicator      RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient      OPTIONAL,
    -- Core network IEs
    cn-InformationInfo      CN-InformationInfo      OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity      URA-Identity      OPTIONAL,
    -- Radio bearer IEs

```

```

    rab-InformationReconfigList      RAB-InformationReconfigList      OPTIONAL,
    -- NOTE: IE rb-InformationReconfigList should be optional in later versions
    -- of this message
    rb-InformationReconfigList      RB-InformationReconfigList,
    rb-InformationAffectedList      RB-InformationAffectedList      OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo           UL-CommonTransChInfo           OPTIONAL,
    ul-deletedTransChInfoList      UL-DeletedTransChInfoList      OPTIONAL,
    ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList    OPTIONAL,
    modeSpecificTransChInfo        CHOICE {
        fdd                         SEQUENCE {
            cpch-SetID              CPCH-SetID              OPTIONAL,
            addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
        },
        tdd                         NULL
    }
    dl-CommonTransChInfo           DL-CommonTransChInfo           OPTIONAL,
    dl-DeletedTransChInfoList      DL-DeletedTransChInfoList      OPTIONAL,
    dl-AddReconfTransChInfoList    DL-AddReconfTransChInfo2List   OPTIONAL,
-- Physical channel IEs
    frequencyInfo                 FrequencyInfo                   OPTIONAL,
    maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power         OPTIONAL,
    ul-ChannelRequirement          UL-ChannelRequirement         OPTIONAL,
    modeSpecificPhysChInfo        CHOICE {
        fdd                         SEQUENCE {
            dl-PDSCH-Information     DL-PDSCH-Information     OPTIONAL
        },
        tdd                         NULL
    },
    dl-CommonInformation           DL-CommonInformation           OPTIONAL,
    -- NOTE: IE dl-InformationPerRL-List should be optional in later versions
    -- of this message
    dl-InformationPerRL-List       DL-InformationPerRL-List
}

RadioBearerReconfiguration-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI                  DSCH-RNTI                      OPTIONAL
}

RadioBearerReconfiguration-v4b0ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    -- ssdt-UL extends SSdT-Information, which is included in
    -- DL-CommonInformation. FDD only.
    ssdt-UL-r4                     SSdT-UL                          OPTIONAL,
    -- The order of the RLs in IE cell-id-PerRL-List is the same as
    -- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List              CellIdentity-PerRL-List         OPTIONAL
}

RadioBearerReconfiguration-v5xyv590ext-IEs ::= SEQUENCE {
    -- Physical channel IEs
    dl-TPC-PowerOffsetPerRL-List    DL-TPC-PowerOffsetPerRL-List    OPTIONAL
}

RadioBearerReconfiguration-r4-IEs ::= SEQUENCE {
    -- User equipment IEs
    integrityProtectionModeInfo     IntegrityProtectionModeInfo     OPTIONAL,
    cipheringModeInfo               CipheringModeInfo               OPTIONAL,
    activationTime                  ActivationTime                   OPTIONAL,
    new-U-RNTI                      U-RNTI                         OPTIONAL,
    new-C-RNTI                      C-RNTI                         OPTIONAL,
    new-DSCH-RNTI                  DSCH-RNTI                      OPTIONAL,
    rrc-StateIndicator              RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
    -- Core network IEs
    cn-InformationInfo              CN-InformationInfo              OPTIONAL,
    -- UTRAN mobility IEs
    ura-Identity                    URA-Identity                    OPTIONAL,
    -- Radio bearer IEs
    rab-InformationReconfigList     RAB-InformationReconfigList     OPTIONAL,
    rb-InformationReconfigList      RB-InformationReconfigList-r4   OPTIONAL,
    rb-InformationAffectedList      RB-InformationAffectedList      OPTIONAL,
    -- Transport channel IEs
    ul-CommonTransChInfo-r4        UL-CommonTransChInfo-r4        OPTIONAL,
    ul-deletedTransChInfoList      UL-DeletedTransChInfoList      OPTIONAL,
    ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList    OPTIONAL,
    modeSpecificTransChInfo        CHOICE {
        fdd                         SEQUENCE {

```

```

        cpch-SetID                CPCH-SetID                OPTIONAL,
        addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
    },
    tdd                            NULL
}
dl-CommonTransChInfo             DL-CommonTransChInfo-r4     OPTIONAL,
dl-DeletedTransChInfoList        DL-DeletedTransChInfoList   OPTIONAL,
dl-AddReconfTransChInfoList      DL-AddReconfTransChInfoList-r4  OPTIONAL,
-- Physical channel IEs
frequencyInfo                    FrequencyInfo                OPTIONAL,
maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power       OPTIONAL,
ul-ChannelRequirement            UL-ChannelRequirement-r4     OPTIONAL,
modeSpecificPhysChInfo           CHOICE {
    fdd                            SEQUENCE {
        dl-PDSCH-Information        DL-PDSCH-Information        OPTIONAL
    },
    tdd                            NULL
},
dl-CommonInformation             DL-CommonInformation-r4     OPTIONAL,
dl-InformationPerRL-List         DL-InformationPerRL-List-r4  OPTIONAL
}

RadioBearerReconfiguration-r5-IEs ::= SEQUENCE {
-- User equipment IEs
integrityProtectionModeInfo      IntegrityProtectionModeInfo   OPTIONAL,
cipheringModeInfo                CipheringModeInfo             OPTIONAL,
activationTime                    ActivationTime                 OPTIONAL,
new-U-RNTI                       U-RNTI                       OPTIONAL,
new-C-RNTI                       C-RNTI                       OPTIONAL,
new-DSCH-RNTI                    DSCH-RNTI                    OPTIONAL,
new-H-RNTI                       H-RNTI                       OPTIONAL,
rrc-StateIndicator               RRC-StateIndicator,
utran-DRX-CycleLengthCoeff       UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
-- Core network IEs
cn-InformationInfo               CN-InformationInfo           OPTIONAL,
-- UTRAN mobility IEs
ura-Identity                     URA-Identity                 OPTIONAL,
-- Specification mode information
specificationMode                CHOICE {
    complete                       SEQUENCE {
-- Radio bearer IEs
rab-InformationReconfigList       RAB-InformationReconfigList   OPTIONAL,
rb-InformationReconfigList        RB-InformationReconfigList-r5  OPTIONAL,
rb-InformationAffectedList        RB-InformationAffectedList-r5  OPTIONAL,
rb-PDCPContextRelocationList     RB-PDCPContextRelocationList  OPTIONAL,
-- Transport channel IEs
ul-CommonTransChInfo             UL-CommonTransChInfo-r4       OPTIONAL,
ul-deletedTransChInfoList        UL-DeletedTransChInfoList     OPTIONAL,
ul-AddReconfTransChInfoList      UL-AddReconfTransChInfoList   OPTIONAL,
modeSpecificTransChInfo           CHOICE {
    fdd                            SEQUENCE {
        cpch-SetID                CPCH-SetID                OPTIONAL,
        addReconfTransChDRAC-Info  DRAC-StaticInformationList  OPTIONAL
    },
    tdd                            NULL
}
dl-CommonTransChInfo             DL-CommonTransChInfo-r4       OPTIONAL,
dl-DeletedTransChInfoList        DL-DeletedTransChInfoList-r5  OPTIONAL,
dl-AddReconfTransChInfoList      DL-AddReconfTransChInfoList-r5  OPTIONAL
},
preconfiguration                 SEQUENCE {
-- All IEs that include an FDD/TDD choice are split in two IEs for this message,
-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
preConfigMode                    CHOICE {
    predefinedConfigIdentity       PredefinedConfigIdentity,
    defaultConfig                 SEQUENCE {
        defaultConfigMode         DefaultConfigMode,
        defaultConfigIdentity     DefaultConfigIdentity-r5
    }
}
},
-- Physical channel IEs
frequencyInfo                    FrequencyInfo                OPTIONAL,
maxAllowedUL-TX-Power            MaxAllowedUL-TX-Power       OPTIONAL,
ul-ChannelRequirement            UL-ChannelRequirement-r5     OPTIONAL,
modeSpecificPhysChInfo           CHOICE {

```

```

        fdd                SEQUENCE {
            dl-PDSCH-Information    DL-PDSCH-Information    OPTIONAL
        },
        tdd                NULL
    },
    dl-HSPDSCH-Information    DL-HSPDSCH-Information    OPTIONAL,
    dl-CommonInformation    DL-CommonInformation-r5    OPTIONAL,
    dl-InformationPerRL-List    DL-InformationPerRL-List-r5    OPTIONAL
}

-- *****
--
-- RADIO BEARER RECONFIGURATION COMPLETE
--
-- *****

RadioBearerReconfigurationComplete ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo    IntegrityProtActivationInfo    OPTIONAL,
    -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance    UL-TimingAdvance    OPTIONAL,
    -- Radio bearer IEs
    count-C-ActivationTime    ActivationTime    OPTIONAL,
    rb-UL-CiphActivationTimeInfo    RB-ActivationTimeInfoList    OPTIONAL,
    ul-CounterSynchronisationInfo    UL-CounterSynchronisationInfo    OPTIONAL,
    laterNonCriticalExtensions    SEQUENCE {
        -- Container for additional R99 extensions
        radioBearerReconfigurationComplete-r3-add-ext    BIT STRING    OPTIONAL,
        nonCriticalExtensions    SEQUENCE {} OPTIONAL
    } OPTIONAL
}

-- *****
--
-- RADIO BEARER RECONFIGURATION FAILURE
--
-- *****

RadioBearerReconfigurationFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    failureCause    FailureCauseWithProtErr,
    -- Radio bearer IEs
    potentiallySuccessfulBearerList    RB-IdentityList    OPTIONAL,
    laterNonCriticalExtensions    SEQUENCE {
        -- Container for additional R99 extensions
        radioBearerReconfigurationFailure-r3-add-ext    BIT STRING    OPTIONAL,
        nonCriticalExtensions    SEQUENCE {} OPTIONAL
    } OPTIONAL
}

-- *****
--
-- RADIO BEARER RELEASE
--
-- *****

RadioBearerRelease ::= CHOICE {
    r3                SEQUENCE {
        radioBearerRelease-r3    RadioBearerRelease-r3-IEs,
        v3a0NonCriticalExtensions    SEQUENCE {
            radioBearerRelease-v3a0ext    RadioBearerRelease-v3a0ext,
            laterNonCriticalExtensions    SEQUENCE {
                -- Container for additional R99 extensions
                radioBearerRelease-r3-add-ext    BIT STRING    OPTIONAL,
                v4b0NonCriticalExtensions    SEQUENCE {
                    radioBearerRelease-v4b0ext    RadioBearerRelease-v4b0ext-IEs,
                    v5xyv590NonCriticalExtensions    SEQUENCE {
                        radioBearerRelease-v5xyv590ext    RadioBearerRelease-v5xyv590ext-IEs,
                        nonCriticalExtensions    SEQUENCE {} OPTIONAL
                    } OPTIONAL
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    } OPTIONAL
},
    later-than-r3    SEQUENCE {
        rrc-TransactionIdentifier    RRC-TransactionIdentifier,

```

```

criticalExtensions CHOICE {
  r4 SEQUENCE {
    radioBearerRelease-r4 RadioBearerRelease-r4-IEs,
    v4d0NonCriticalExtensions SEQUENCE {
      -- Container for adding non critical extensions after freezing REL-5
      radioBearerRelease-r4-add-ext BIT STRING OPTIONAL,
      v5xyv590NonCriticalExtensions SEQUENCE {
        radioBearerRelease-v5xyv590ext RadioBearerRelease-v5xyv590ext-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  criticalExtensions CHOICE {
    r5 SEQUENCE {
      radioBearerRelease-r5 RadioBearerRelease-r5-IEs,
      -- Container for adding non critical extensions after freezing REL-6
      radioBearerRelease-r5-add-ext BIT STRING OPTIONAL,
      nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
    criticalExtensions SEQUENCE {}
  }
}
}
}

```

```

RadioBearerRelease-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
  cipheringModeInfo CipheringModeInfo OPTIONAL,
  activationTime ActivationTime OPTIONAL,
  new-U-RNTI U-RNTI OPTIONAL,
  new-C-RNTI C-RNTI OPTIONAL,
  rrc-StateIndicator RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
  -- Core network IEs
  cn-InformationInfo CN-InformationInfo OPTIONAL,
  signallingConnectionRelIndication CN-DomainIdentity OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity URA-Identity OPTIONAL,
  -- Radio bearer IEs
  rab-InformationReconfigList RAB-InformationReconfigList OPTIONAL,
  rb-InformationReleaseList RB-InformationReleaseList,
  rb-InformationAffectedList RB-InformationAffectedList OPTIONAL,
  dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo UL-CommonTransChInfo OPTIONAL,
  ul-deletedTransChInfoList UL-DeletedTransChInfoList OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
  modeSpecificTransChInfo CHOICE {
    fdd SEQUENCE {
      cpch-SetID CPCH-SetID OPTIONAL,
      addReconfTransChDRAC-Info DRAC-StaticInformationList OPTIONAL
    },
    tdd NULL
  }
  dl-CommonTransChInfo DL-CommonTransChInfo OPTIONAL,
  dl-DeletedTransChInfoList DL-DeletedTransChInfoList OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfo2List OPTIONAL,
  -- Physical channel IEs
  frequencyInfo FrequencyInfo OPTIONAL,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
  ul-ChannelRequirement UL-ChannelRequirement OPTIONAL,
  modeSpecificPhysChInfo CHOICE {
    fdd SEQUENCE {
      dl-PDSCH-Information DL-PDSCH-Information OPTIONAL
    },
    tdd NULL
  },
  dl-CommonInformation DL-CommonInformation OPTIONAL,
  dl-InformationPerRL-List DL-InformationPerRL-List OPTIONAL
}

```

```

RadioBearerRelease-v3a0ext ::= SEQUENCE {
  new-DSCH-RNTI DSCH-RNTI OPTIONAL
}

```

```

RadioBearerRelease-v4b0ext-IEs ::= SEQUENCE {

```



```

-- Physical channel IEs
-- IE ssdt-UL extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
ssdt-UL-r4          SSdT-UL          OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
cell-id-PerRL-List CellIdentity-PerRL-List OPTIONAL
}

RadioBearerRelease-v5xyv590ext-IEs ::= SEQUENCE {
-- Physical channel IEs
dl-TPC-PowerOffsetPerRL-List DL-TPC-PowerOffsetPerRL-List OPTIONAL
}

RadioBearerRelease-r4-IEs ::= SEQUENCE {
-- User equipment IEs
integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
cipheringModeInfo           CipheringModeInfo           OPTIONAL,
activationTime               ActivationTime           OPTIONAL,
new-U-RNTI                   U-RNTI                   OPTIONAL,
new-C-RNTI                   C-RNTI                   OPTIONAL,
new-DSCH-RNTI                DSCH-RNTI                OPTIONAL,
rrc-StateIndicator           RRC-StateIndicator,
utran-DRX-CycleLengthCoeff   UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- Core network IEs
cn-InformationInfo           CN-InformationInfo           OPTIONAL,
signallingConnectionRelIndication CN-DomainIdentity           OPTIONAL,
-- UTRAN mobility IEs
ura-Identity                 URA-Identity                 OPTIONAL,
-- Radio bearer IEs
rab-InformationReconfigList  RAB-InformationReconfigList OPTIONAL,
rb-InformationReleaseList    RB-InformationReleaseList,
rb-InformationAffectedList   RB-InformationAffectedList   OPTIONAL,
dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo OPTIONAL,
-- Transport channel IEs
ul-CommonTransChInfo        UL-CommonTransChInfo-r4     OPTIONAL,
ul-deletedTransChInfoList   UL-DeletedTransChInfoList   OPTIONAL,
ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList OPTIONAL,
modeSpecificTransChInfo     CHOICE {
fdd                          SEQUENCE {
cpch-SetID                   CPCH-SetID                   OPTIONAL,
addReconfTransChDRAC-Info    DRAC-StaticInformationList   OPTIONAL
},
tdd                          NULL
}
dl-CommonTransChInfo        DL-CommonTransChInfo-r4     OPTIONAL,
dl-DeletedTransChInfoList   DL-DeletedTransChInfoList   OPTIONAL,
dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r4 OPTIONAL,
-- Physical channel IEs
frequencyInfo                FrequencyInfo                OPTIONAL,
maxAllowedUL-TX-Power        MaxAllowedUL-TX-Power       OPTIONAL,
ul-ChannelRequirement        UL-ChannelRequirement-r4    OPTIONAL,
modeSpecificPhysChInfo       CHOICE {
fdd                          SEQUENCE {
dl-PDSCH-Information         DL-PDSCH-Information         OPTIONAL
},
tdd                          NULL
},
dl-CommonInformation        DL-CommonInformation-r4     OPTIONAL,
dl-InformationPerRL-List    DL-InformationPerRL-List-r4 OPTIONAL
}

RadioBearerRelease-r5-IEs ::= SEQUENCE {
-- User equipment IEs
integrityProtectionModeInfo IntegrityProtectionModeInfo OPTIONAL,
cipheringModeInfo           CipheringModeInfo           OPTIONAL,
activationTime               ActivationTime           OPTIONAL,
new-U-RNTI                   U-RNTI                   OPTIONAL,
new-C-RNTI                   C-RNTI                   OPTIONAL,
new-DSCH-RNTI                DSCH-RNTI                OPTIONAL,
new-H-RNTI                   H-RNTI                   OPTIONAL,
rrc-StateIndicator           RRC-StateIndicator,
utran-DRX-CycleLengthCoeff   UTRAN-DRX-CycleLengthCoefficient OPTIONAL,
-- Core network IEs
cn-InformationInfo           CN-InformationInfo           OPTIONAL,
signallingConnectionRelIndication CN-DomainIdentity           OPTIONAL,
-- UTRAN mobility IEs
ura-Identity                 URA-Identity                 OPTIONAL,

```

```

-- Radio bearer IEs
  rab-InformationReconfigList      RAB-InformationReconfigList      OPTIONAL,
  rb-InformationReleaseList        RB-InformationReleaseList,
  rb-InformationAffectedList       RB-InformationAffectedList-r5    OPTIONAL,
  dl-CounterSynchronisationInfo    DL-CounterSynchronisationInfo-r5 OPTIONAL,
-- Transport channel IEs
  ul-CommonTransChInfo            UL-CommonTransChInfo-r4         OPTIONAL,
  ul-deletedTransChInfoList       UL-DeletedTransChInfoList       OPTIONAL,
  ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList     OPTIONAL,
  modeSpecificTransChInfo         CHOICE {
    fdd                            SEQUENCE {
      cpch-SetID                   CPCH-SetID                       OPTIONAL,
      addReconfTransChDRAC-Info    DRAC-StaticInformationList      OPTIONAL
    },
    tdd                            NULL
  }
  dl-CommonTransChInfo            DL-CommonTransChInfo-r4         OPTIONAL,
  dl-DeletedTransChInfoList       DL-DeletedTransChInfoList-r5    OPTIONAL,
  dl-AddReconfTransChInfoList     DL-AddReconfTransChInfoList-r5  OPTIONAL,
-- Physical channel IEs
  frequencyInfo                   FrequencyInfo                     OPTIONAL,
  maxAllowedUL-TX-Power           MaxAllowedUL-TX-Power            OPTIONAL,
  ul-ChannelRequirement           UL-ChannelRequirement-r5        OPTIONAL,
  modeSpecificPhysChInfo         CHOICE {
    fdd                            SEQUENCE {
      dl-PDSCH-Information         DL-PDSCH-Information            OPTIONAL
    },
    tdd                            NULL
  },
  dl-HSPDSCH-Information          DL-HSPDSCH-Information          OPTIONAL,
  dl-CommonInformation            DL-CommonInformation-r5         OPTIONAL,
  dl-InformationPerRL-List        DL-InformationPerRL-List-r5     OPTIONAL
}

```

```

-- *****
--
-- RADIO BEARER RELEASE COMPLETE
--
-- *****

```

```

RadioBearerReleaseComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier        RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo       IntegrityProtActivationInfo      OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance                 UL-TimingAdvance                OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime           ActivationTime                    OPTIONAL,
  rb-UL-CiphActivationTimeInfo     RB-ActivationTimeInfoList       OPTIONAL,
  ul-CounterSynchronisationInfo    UL-CounterSynchronisationInfo   OPTIONAL,
  laterNonCriticalExtensions       SEQUENCE {
    -- Container for additional R99 extensions
    radioBearerReleaseComplete-r3-add-ext  BIT STRING      OPTIONAL,
    nonCriticalExtensions                 SEQUENCE {}    OPTIONAL
  }
  OPTIONAL
}

```

```

-- *****
--
-- RADIO BEARER RELEASE FAILURE
--
-- *****

```

```

RadioBearerReleaseFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier        RRC-TransactionIdentifier,
  failureCause                     FailureCauseWithProtErr,
  -- Radio bearer IEs
  potentiallySuccessfulBearerList  RB-IdentityList                 OPTIONAL,
  laterNonCriticalExtensions       SEQUENCE {
    -- Container for additional R99 extensions
    radioBearerReleaseFailure-r3-add-ext  BIT STRING      OPTIONAL,
    nonCriticalExtensions                 SEQUENCE {}    OPTIONAL
  }
  OPTIONAL
}

```

```

-- *****

```

```

--
-- RADIO BEARER SETUP
--
-- *****

RadioBearerSetup ::= CHOICE {
  r3
    SEQUENCE {
      radioBearerSetup-r3      RadioBearerSetup-r3-IEs,
      v3a0NonCriticalExtensions SEQUENCE {
        radioBearerSetup-v3a0ext      RadioBearerSetup-v3a0ext,
        laterNonCriticalExtensions    SEQUENCE {
          -- Container for additional R99 extensions
          radioBearerSetup-r3-add-ext  BIT STRING      OPTIONAL,
          v4b0NonCriticalExtensions    SEQUENCE {
            radioBearerSetup-v4b0ext      RadioBearerSetup-v4b0ext-IEs,
            v5xyv590NonCriticalExtensions SEQUENCE {
              radioBearerSetup-v5xyv590ext      RadioBearerSetup-v5xyv590ext-IEs,
              nonCriticalExtensions            SEQUENCE {} OPTIONAL
            } OPTIONAL
          } OPTIONAL
        } OPTIONAL
      } OPTIONAL
    },
  later-than-r3
    SEQUENCE {
      rrc-TransactionIdentifier RRC-TransactionIdentifier,
      criticalExtensions        CHOICE {
        r4
          SEQUENCE {
            radioBearerSetup-r4      RadioBearerSetup-r4-IEs,
            v4d0NonCriticalExtensions SEQUENCE {
              -- Container for adding non critical extensions after freezing REL-5
              radioBearerSetup-r4-add-ext  BIT STRING      OPTIONAL,
              v5xyv590NonCriticalExtensions SEQUENCE {
                radioBearerSetup-v5xyv590ext      RadioBearerSetup-v5xyv590ext-IEs,
                nonCriticalExtensions            SEQUENCE {}      OPTIONAL
              } OPTIONAL
            } OPTIONAL
          }
        },
      criticalExtensions        CHOICE {
        r5
          SEQUENCE {
            radioBearerSetup-r5      RadioBearerSetup-r5-IEs,
            -- Container for adding non critical extensions after freezing REL-6
            radioBearerSetup-r5-add-ext  BIT STRING      OPTIONAL,
            nonCriticalExtensions        SEQUENCE {}      OPTIONAL
          }
        },
      criticalExtensions        SEQUENCE {}
    }
  }
}

RadioBearerSetup-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  integrityProtectionModeInfo    IntegrityProtectionModeInfo      OPTIONAL,
  cipheringModeInfo              CipheringModeInfo                          OPTIONAL,
  activationTime                  ActivationTime                            OPTIONAL,
  new-U-RNTI                      U-RNTI                                OPTIONAL,
  new-C-RNTI                      C-RNTI                                OPTIONAL,
  rrc-StateIndicator              RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient    OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                    URA-Identity                            OPTIONAL,
  -- Core network IEs
  cn-InformationInfo              CN-InformationInfo                          OPTIONAL,
  -- Radio bearer IEs
  srb-InformationSetupList        SRB-InformationSetupList            OPTIONAL,
  rab-InformationSetupList        RAB-InformationSetupList            OPTIONAL,
  rb-InformationAffectedList      RB-InformationAffectedList          OPTIONAL,
  dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo        OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo            UL-CommonTransChInfo                    OPTIONAL,
  ul-deletedTransChInfoList       UL-DeletedTransChInfoList              OPTIONAL,
  ul-AddReconfTransChInfoList     UL-AddReconfTransChInfoList            OPTIONAL,
  modeSpecificTransChInfo         CHOICE {
    fdd
      SEQUENCE {
        cpch-SetID                  CPCH-SetID                            OPTIONAL,
        addReconfTransChDRAC-Info    DRAC-StaticInformationList            OPTIONAL
      }
  },
}

```

```

        tdd                                NULL
    }
    dl-CommonTransChInfo                   DL-CommonTransChInfo                   OPTIONAL,
    dl-DeletedTransChInfoList               DL-DeletedTransChInfoList               OPTIONAL,
    dl-AddReconfTransChInfoList             DL-AddReconfTransChInfoList             OPTIONAL,
-- Physical channel IEs
    frequencyInfo                           FrequencyInfo                           OPTIONAL,
    maxAllowedUL-TX-Power                   MaxAllowedUL-TX-Power                   OPTIONAL,
    ul-ChannelRequirement                   UL-ChannelRequirement                   OPTIONAL,
    modeSpecificPhysChInfo                   CHOICE {
        fdd                                  SEQUENCE {
            dl-PDSCH-Information             DL-PDSCH-Information                   OPTIONAL
        },
        tdd                                  NULL
    },
    dl-CommonInformation                     DL-CommonInformation                     OPTIONAL,
    dl-InformationPerRL-List                 DL-InformationPerRL-List                 OPTIONAL
}

RadioBearerSetup-v3a0ext ::= SEQUENCE {
    new-DSCH-RNTI                            DSCH-RNTI                            OPTIONAL
}

RadioBearerSetup-v4b0ext-IEs ::= SEQUENCE {
-- Physical channel IEs
-- ssdt-UL extends SSdT-Information, which is included in
-- DL-CommonInformation. FDD only.
    ssdt-UL-r4                               SSdT-UL                               OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
    cell-id-PerRL-List                       CellIdentity-PerRL-List                 OPTIONAL
}

RadioBearerSetup-v5xyv590ext-IEs ::= SEQUENCE {
-- Physical channel IEs
    dl-TPC-PowerOffsetPerRL-List             DL-TPC-PowerOffsetPerRL-List           OPTIONAL
}

RadioBearerSetup-r4-IEs ::= SEQUENCE {
-- User equipment IEs
    integrityProtectionModeInfo              IntegrityProtectionModeInfo             OPTIONAL,
    cipheringModeInfo                        CipheringModeInfo                       OPTIONAL,
    activationTime                            ActivationTime                            OPTIONAL,
    new-U-RNTI                                U-RNTI                                  OPTIONAL,
    new-C-RNTI                                C-RNTI                                  OPTIONAL,
    new-DSCH-RNTI                            DSCH-RNTI                               OPTIONAL,
    rrc-StateIndicator                       RRC-StateIndicator,
    utran-DRX-CycleLengthCoeff               UTRAN-DRX-CycleLengthCoefficient       OPTIONAL,
-- UTRAN mobility IEs
    ura-Identity                             URA-Identity                            OPTIONAL,
-- Core network IEs
    cn-InformationInfo                       CN-InformationInfo                       OPTIONAL,
-- Radio bearer IEs
    srb-InformationSetupList                 SRB-InformationSetupList                OPTIONAL,
    rab-InformationSetupList                 RAB-InformationSetupList-r4             OPTIONAL,
    rb-InformationAffectedList               RB-InformationAffectedList              OPTIONAL,
    dl-CounterSynchronisationInfo            DL-CounterSynchronisationInfo           OPTIONAL,
-- Transport channel IEs
    ul-CommonTransChInfo-r4                 UL-CommonTransChInfo-r4                OPTIONAL,
    ul-deletedTransChInfoList                UL-DeletedTransChInfoList               OPTIONAL,
    ul-AddReconfTransChInfoList              UL-AddReconfTransChInfoList             OPTIONAL,
    modeSpecificTransChInfo                   CHOICE {
        fdd                                  SEQUENCE {
            cpch-SetID                       CPCH-SetID                             OPTIONAL,
            addReconfTransChDRAC-Info        DRAC-StaticInformationList              OPTIONAL
        },
        tdd                                  NULL
    }
    dl-CommonTransChInfo-r4                 DL-CommonTransChInfo-r4                 OPTIONAL,
    dl-DeletedTransChInfoList-r4             DL-DeletedTransChInfoList-r4            OPTIONAL,
    dl-AddReconfTransChInfoList-r4          DL-AddReconfTransChInfoList-r4         OPTIONAL,
-- Physical channel IEs
    frequencyInfo                            FrequencyInfo                            OPTIONAL,
    maxAllowedUL-TX-Power-r4                 MaxAllowedUL-TX-Power-r4                OPTIONAL,
    ul-ChannelRequirement-r4                 UL-ChannelRequirement-r4                OPTIONAL,
    modeSpecificPhysChInfo-r4                 CHOICE {
        fdd                                  SEQUENCE {
            dl-PDSCH-Information             DL-PDSCH-Information                   OPTIONAL
        }
    }
}

```

```

    },
    tdd
  },
  dl-CommonInformation          DL-CommonInformation-r4          OPTIONAL,
  dl-InformationPerRL-List     DL-InformationPerRL-List-r4        OPTIONAL
}

RadioBearerSetup-r5-IEs ::= SEQUENCE {
  -- User equipment IEs
  integrityProtectionModeInfo IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo          CipheringModeInfo                OPTIONAL,
  activationTime             ActivationTime                    OPTIONAL,
  new-U-RNTI                 U-RNTI                          OPTIONAL,
  new-C-RNTI                 C-RNTI                          OPTIONAL,
  new-DSCH-RNTI             DSCH-RNTI                       OPTIONAL,
  new-H-RNTI                 H-RNTI                          OPTIONAL,
  rrc-StateIndicator        RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity               URA-Identity                    OPTIONAL,
  -- Core network IEs
  cn-InformationInfo        CN-InformationInfo                OPTIONAL,
  -- Radio bearer IEs
  srb-InformationSetupList  SRB-InformationSetupList-r5    OPTIONAL,
  rab-InformationSetupList  RAB-InformationSetupList-r5    OPTIONAL,
  rb-InformationAffectedList RB-InformationAffectedList-r5    OPTIONAL,
  dl-CounterSynchronisationInfo DL-CounterSynchronisationInfo-r5  OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo     UL-CommonTransChInfo-r4        OPTIONAL,
  ul-deletedTransChInfoList UL-DeletedTransChInfoList        OPTIONAL,
  ul-AddReconfTransChInfoList UL-AddReconfTransChInfoList      OPTIONAL,
  modeSpecificTransChInfo  CHOICE {
    fdd                      SEQUENCE {
      cpch-SetID            CPCH-SetID                OPTIONAL,
      addReconfTransChDRAC-Info DRAC-StaticInformationList  OPTIONAL
    },
    tdd                      NULL
  }
  dl-CommonTransChInfo     DL-CommonTransChInfo-r4        OPTIONAL,
  dl-DeletedTransChInfoList DL-DeletedTransChInfoList-r5    OPTIONAL,
  dl-AddReconfTransChInfoList DL-AddReconfTransChInfoList-r5  OPTIONAL,
  -- Physical channel IEs
  frequencyInfo            FrequencyInfo                    OPTIONAL,
  maxAllowedUL-TX-Power    MaxAllowedUL-TX-Power                OPTIONAL,
  ul-ChannelRequirement    UL-ChannelRequirement-r5          OPTIONAL,
  modeSpecificPhysChInfo  CHOICE {
    fdd                      SEQUENCE {
      dl-PDSCH-Information  DL-PDSCH-Information    OPTIONAL
    },
    tdd                      NULL
  },
  dl-HSPDSCH-Information  DL-HSPDSCH-Information          OPTIONAL,
  dl-CommonInformation    DL-CommonInformation-r5          OPTIONAL,
  dl-InformationPerRL-List DL-InformationPerRL-List-r5    OPTIONAL
}

```

```

-- *****
--
-- RADIO BEARER SETUP COMPLETE
--
-- *****

```

```

RadioBearerSetupComplete ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  ul-IntegProtActivationInfo IntegrityProtActivationInfo    OPTIONAL,
  -- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
  ul-TimingAdvance         UL-TimingAdvance                OPTIONAL,
  start-Value              START-Value                    OPTIONAL,
  -- Radio bearer IEs
  count-C-ActivationTime  ActivationTime                    OPTIONAL,
  rb-UL-CiphActivationTimeInfo RB-ActivationTimeInfoList        OPTIONAL,
  ul-CounterSynchronisationInfo UL-CounterSynchronisationInfo    OPTIONAL,
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    radioBearerSetupComplete-r3-add-ext BIT STRING          OPTIONAL,
    nonCriticalExtensions SEQUENCE {}                       OPTIONAL
  }
  OPTIONAL
}

```

```

}

-- *****
--
-- RADIO BEARER SETUP FAILURE
--
-- *****

RadioBearerSetupFailure ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
  -- Radio bearer IEs
  potentiallySuccessfulBearerList  RB-IdentityList                OPTIONAL,
  laterNonCriticalExtensions        SEQUENCE {
    -- Container for additional R99 extensions
    radioBearerSetupFailure-r3-add-ext  BIT STRING                OPTIONAL,
    nonCriticalExtensions                SEQUENCE {}                OPTIONAL
  }
}

-- *****
--
-- RRC CONNECTION REJECT
--
-- *****

RRCConnectionReject ::= CHOICE {
  r3                               SEQUENCE {
    rrcConnectionReject-r3          RRCConnectionReject-r3-IEs,
    laterNonCriticalExtensions        SEQUENCE {
      -- Container for additional R99 extensions
      rrcConnectionReject-r3-add-ext  BIT STRING                OPTIONAL,
      v6xyNonCriticalExtensions        SEQUENCE {
        rrcConnectionReject-v6xyext  RRCConnectionReject-v6xyext-IEs,
        nonCriticalExtensions          SEQUENCE {}                OPTIONAL
      }
    }
  },
  later-than-r3                     SEQUENCE {
    initialUE-Identity               InitialUE-Identity,
    rrc-TransactionIdentifier         RRC-TransactionIdentifier,
    criticalExtensions                SEQUENCE {}
  }
}

RRCConnectionReject-r3-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  initialUE-Identity                 InitialUE-Identity,
  rrc-TransactionIdentifier           RRC-TransactionIdentifier,
  rejectionCause                     RejectionCause,
  waitTime                           WaitTime,
  redirectionInfo                     RedirectionInfo                OPTIONAL
}

RRCConnectionReject-v6xyext-IEs ::= SEQUENCE {
  redirectionInfo-v6xyext             GSM-TargetCellInfoList        OPTIONAL
}

-- *****
--
-- RRC CONNECTION RELEASE
--
-- *****

RRCConnectionRelease ::= CHOICE {
  r3                               SEQUENCE {
    rrcConnectionRelease-r3          RRCConnectionRelease-r3-IEs,
    laterNonCriticalExtensions        SEQUENCE {
      -- Container for additional R99 extensions
      rrcConnectionRelease-r3-add-ext  BIT STRING                OPTIONAL,
      v6xyNonCriticalExtensions        SEQUENCE {
        rrcConnectionRelease-v6xyext  RRCConnectionRelease-v6xyext-IEs,
        nonCriticalExtensions          SEQUENCE {}                OPTIONAL
      }
    }
  },
}

```

```

later-than-r3          SEQUENCE {
  rrc-TransactionIdentifier  RRC-TransactionIdentifier,
  criticalExtensions        CHOICE {
    r4                      SEQUENCE {
      rrcConnectionRelease-r4  RRCConnectionRelease-r4-IEs,
      v4d0NonCriticalExtensions SEQUENCE {
        -- Container for adding non critical extensions after freezing REL-6
        rrcConnectionRelease-r4-add-ext  BIT STRING  OPTIONAL,
        v6xyNonCriticalExtensions       SEQUENCE {
          rrcConnectionRelease-v6xyext
          RRCConnectionRelease-v6xyext-IEs,
          nonCriticalExtensions         SEQUENCE {}  OPTIONAL
        }  OPTIONAL
      }  OPTIONAL
    },
    criticalExtensions          SEQUENCE {}
  }
}

}

}

RRCConnectionRelease-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier  RRC-TransactionIdentifier,
  -- n-308 is conditional on the UE state
  n-308                      N-308                      OPTIONAL,
  releaseCause               ReleaseCause,
  rplmn-information          Rplmn-Information          OPTIONAL
}

RRCConnectionRelease-r4-IEs ::= SEQUENCE {
  -- User equipment IEs
  -- n-308 is conditional on the UE state.
  n-308                      N-308                      OPTIONAL,
  releaseCause               ReleaseCause,
  rplmn-information          Rplmn-Information-r4      OPTIONAL
}

RRCConnectionRelease-v6xyext-IEs ::= SEQUENCE {
  redirectionInfo-v6xyext    RedirectionInfo-r6  OPTIONAL
}

-- *****
--
-- RRC CONNECTION RELEASE for CCCH
--
-- *****

RRCConnectionRelease-CCCH ::= CHOICE {
  r3                      SEQUENCE {
    rrcConnectionRelease-CCCH-r3  RRCConnectionRelease-CCCH-r3-IEs,
    laterNonCriticalExtensions    SEQUENCE {
      -- Container for additional R99 extensions
      rrcConnectionRelease-CCCH-r3-add-ext  BIT STRING  OPTIONAL,
      nonCriticalExtensions              SEQUENCE {}  OPTIONAL
    }  OPTIONAL
  },
  later-than-r3          SEQUENCE {
    u-RNTI                U-RNTI,
    rrc-TransactionIdentifier  RRC-TransactionIdentifier,
    criticalExtensions        CHOICE {
      r4                      SEQUENCE {
        rrcConnectionRelease-CCCH-r4  RRCConnectionRelease-CCCH-r4-IEs,
        v4d0NonCriticalExtensions    SEQUENCE {
          -- Container for adding non critical extensions after freezing REL-5
          rrcConnectionRelease-CCCH-r4-add-ext  BIT STRING  OPTIONAL,
          nonCriticalExtensions              SEQUENCE {}  OPTIONAL
        }  OPTIONAL
      },
      criticalExtensions          SEQUENCE {
        -- TABULAR: CHOICE IdentityType (U-RNTI, GroupIdentity) is replaced with the
        -- optional element groupIdentity, since the U-RNTI is mandatory in ASN.1.
        -- In case CHOICE IdentityType is equal to GroupIdentity the value of the U-RNTI
        -- shall be ignored by a UE complying with this version of the message.
        groupIdentity          SEQUENCE ( SIZE (1 .. maxURNTI-Group) ) OF
          GroupReleaseInformation  OPTIONAL,
        criticalExtensions      CHOICE {
          r5                      SEQUENCE {
            rrcConnectionRelease-CCCH-r5  RRCConnectionRelease-CCCH-r5-IEs,

```

```

        -- Container for adding non critical extensions after freezing REL-6
        rrcConnectionRelease-CCCH-r5-add-ext      BIT STRING      OPTIONAL,
        nonCriticalExtensions                     SEQUENCE {}     OPTIONAL
    },
    criticalExtensions                           SEQUENCE {}
}
}
}
}
}

RRCCConnectionRelease-CCCH-r3-IEs ::= SEQUENCE {
    -- User equipment IEs
    u-RNTI                                     U-RNTI,
    -- The rest of the message is identical to the one sent on DCCH.
    rrcConnectionRelease                      RRCCConnectionRelease-r3-IEs
}

RRCCConnectionRelease-CCCH-r4-IEs ::= SEQUENCE {
    -- The rest of the message is identical to the one sent on DCCH.
    rrcConnectionRelease                      RRCCConnectionRelease-r4-IEs
}

-- The R5 and R4 sequence of IEs are identical in this message
RRCCConnectionRelease-CCCH-r5-IEs ::= RRCCConnectionRelease-CCCH-r4-IEs

-- *****
--
-- RRC CONNECTION RELEASE COMPLETE
--
-- *****

RRCCConnectionReleaseComplete ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier                RRC-TransactionIdentifier,
    errorIndication                          FailureCauseWithProtErr      OPTIONAL,
    laterNonCriticalExtensions               SEQUENCE {
        -- Container for additional R99 extensions
        rrcConnectionReleaseComplete-r3-add-ext  BIT STRING      OPTIONAL,
        nonCriticalExtensions                   SEQUENCE {}     OPTIONAL
    } OPTIONAL
}

-- *****
--
-- RRC CONNECTION REQUEST
--
-- *****

RRCCConnectionRequest ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    initialUE-Identity                       InitialUE-Identity,
    establishmentCause                       EstablishmentCause,
    -- protocolErrorIndicator is MD, but for compactness reasons no default value
    -- has been assigned to it.
    protocolErrorIndicator                   ProtocolErrorIndicator,
    -- Measurement IEs
    measuredResultsOnRACH                    MeasuredResultsOnRACH      OPTIONAL,
    -- Non critical Extensions
    v3d0NonCriticalExtensions                SEQUENCE {
        rrcConnectionRequest-v3d0ext         RRCCConnectionRequest-v3d0ext-IEs,
        -- Reserved for future non critical extension
        v4b0NonCriticalExtensions            SEQUENCE {
            rrcConnectionRequest-v4b0ext     RRCCConnectionRequest-v4b0ext-IEs,
            v5xyv590NonCriticalExtensions    SEQUENCE {
                rrcConnectionRequest-v5xyv590ext  RRCCConnectionRequest-v5xyv590ext-IEs,
                -- Reserved for future non critical extension
                nonCriticalExtensions         SEQUENCE {}     OPTIONAL
            } OPTIONAL
        } OPTIONAL
    } OPTIONAL
}

RRCCConnectionRequest-v3d0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    uESpecificBehaviourInformationIdle       UESpecificBehaviourInformationIdle  OPTIONAL
}

```



```

RRCConnectionRequest-v4b0ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  accessStratumReleaseIndicator      AccessStratumReleaseIndicator
}

RRCConnectionRequest-v5xyv590ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  predefinedConfigStatusInfo         BOOLEAN
}

-- *****
--
-- RRC CONNECTION SETUP
--
-- *****

RRCConnectionSetup ::= CHOICE {
  r3
    SEQUENCE {
      rrcConnectionSetup-r3          RRCConnectionSetup-r3-IEs,
      laterNonCriticalExtensions      SEQUENCE {
        -- Container for additional R99 extensions
        rrcConnectionSetup-r3-add-ext BIT STRING      OPTIONAL,
        v4b0NonCriticalExtensions     SEQUENCE {
          rrcConnectionSetup-v4b0ext  RRCConnectionSetup-v4b0ext-IEs,
          v5xyv590NonCriticalExtensions SEQUENCE {
            rrcConnectionSetup-v5xyv590ext RRCConnectionSetup-v5xyv590ext-IEs,
            nonCriticalExtensions         SEQUENCE {}    OPTIONAL
          } OPTIONAL
        } OPTIONAL
      } OPTIONAL
    },
  later-than-r3
    SEQUENCE {
      initialUE-Identity              InitialUE-Identity,
      rrc-TransactionIdentifier        RRC-TransactionIdentifier,
      criticalExtensions               CHOICE {
        r4
          SEQUENCE {
            rrcConnectionSetup-r4      RRCConnectionSetup-r4-IEs,
            v4d0NonCriticalExtensions  SEQUENCE {
              -- Container for adding non critical extensions after freezing REL-5
              rrcConnectionSetup-r4-add-ext BIT STRING      OPTIONAL,
              v5xyv590NonCriticalExtensions SEQUENCE {
                rrcConnectionSetup-v5xyv590ext RRCConnectionSetup-v5xyv590ext-IEs,
                nonCriticalExtensions         SEQUENCE {}    OPTIONAL
              } OPTIONAL
            } OPTIONAL
          } OPTIONAL
        },
      criticalExtensions               CHOICE {
        r5
          SEQUENCE {
            rrcConnectionSetup-r5      RRCConnectionSetup-r5-IEs,
            -- Container for adding non critical extensions after freezing REL-6
            rrcConnectionSetup-r5-add-ext BIT STRING      OPTIONAL,
            nonCriticalExtensions       SEQUENCE {}    OPTIONAL
          }
        },
      criticalExtensions               SEQUENCE {}
    }
}

RRCConnectionSetup-r3-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  -- User equipment IEs
  initialUE-Identity              InitialUE-Identity,
  rrc-TransactionIdentifier        RRC-TransactionIdentifier,
  activationTime                   ActivationTime              OPTIONAL,
  new-U-RNTI                       U-RNTI,
  new-c-RNTI                       C-RNTI                  OPTIONAL,
  rrc-StateIndicator               RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff       UTRAN-DRX-CycleLengthCoefficient,
  -- TABULAR: If capabilityUpdateRequirement is not present, the default value
  -- defined in 10.3.3.2 shall be used.
  capabilityUpdateRequirement      CapabilityUpdateRequirement OPTIONAL,
  -- Radio bearer IEs
  srb-InformationSetupList         SRB-InformationSetupList2,
  -- Transport channel IEs
  ul-CommonTransChInfo             UL-CommonTransChInfo      OPTIONAL,
  -- NOTE: ul-AddReconfTransChInfoList should be optional in later versions of

```

```

-- this message
ul-AddReconfTransChInfoList      UL-AddReconfTransChInfoList,
dl-CommonTransChInfo              DL-CommonTransChInfo              OPTIONAL,
-- NOTE: dl-AddReconfTransChInfoList should be optional in later versions
-- of this message
dl-AddReconfTransChInfoList      DL-AddReconfTransChInfoList,
-- Physical channel IEs
frequencyInfo                      FrequencyInfo                  OPTIONAL,
maxAllowedUL-TX-Power              MaxAllowedUL-TX-Power          OPTIONAL,
ul-ChannelRequirement              UL-ChannelRequirement          OPTIONAL,
dl-CommonInformation               DL-CommonInformation           OPTIONAL,
dl-InformationPerRL-List           DL-InformationPerRL-List       OPTIONAL
}

RRCConnectionSetup-v4b0ext-IEs ::= SEQUENCE {
  capabilityUpdateRequirement-r4-ext  CapabilityUpdateRequirement-r4-ext  OPTIONAL,
  -- Physical channel IEs
  -- ssdt-UL extends SSDT-Information, which is included in
  -- DL-CommonInformation. FDD only.
  ssdt-UL-r4                        SSDT-UL                        OPTIONAL,
  -- The order of the RLs in IE cell-id-PerRL-List is the same as
  -- in IE DL-InformationPerRL-List included in this message
  cell-id-PerRL-List                 CellIdentity-PerRL-List          OPTIONAL
}

RRCConnectionSetup-v5xyv590ext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  dl-TPC-PowerOffsetPerRL-List       DL-TPC-PowerOffsetPerRL-List       OPTIONAL
}

RRCConnectionSetup-r4-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  activationTime                      ActivationTime                      OPTIONAL,
  new-U-RNTI                          U-RNTI,
  new-c-RNTI                          C-RNTI                            OPTIONAL,
  rrc-StateIndicator                  RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff          UTRAN-DRX-CycleLengthCoefficient,
  -- TABULAR: If capabilityUpdateRequirement is not present, the default value
  -- defined in 10.3.3.2 shall be used.
  capabilityUpdateRequirement         CapabilityUpdateRequirement-r4      OPTIONAL,
  -- Radio bearer IEs
  srb-InformationSetupList            SRB-InformationSetupList2,
  -- Transport channel IEs
  ul-CommonTransChInfo                UL-CommonTransChInfo-r4           OPTIONAL,
  ul-AddReconfTransChInfoList         UL-AddReconfTransChInfoList       OPTIONAL,
  dl-CommonTransChInfo                DL-CommonTransChInfo-r4           OPTIONAL,
  dl-AddReconfTransChInfoList         DL-AddReconfTransChInfoList-r4    OPTIONAL,
  -- Physical channel IEs
  frequencyInfo                      FrequencyInfo                      OPTIONAL,
  maxAllowedUL-TX-Power                MaxAllowedUL-TX-Power              OPTIONAL,
  ul-ChannelRequirement                UL-ChannelRequirement-r4          OPTIONAL,
  dl-CommonInformation                 DL-CommonInformation-r4           OPTIONAL,
  dl-InformationPerRL-List              DL-InformationPerRL-List-r4       OPTIONAL
}

RRCConnectionSetup-r5-IEs ::= SEQUENCE {
  -- TABULAR: Integrity protection shall not be performed on this message.
  activationTime                      ActivationTime                      OPTIONAL,
  new-U-RNTI                          U-RNTI,
  new-c-RNTI                          C-RNTI                            OPTIONAL,
  rrc-StateIndicator                  RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff          UTRAN-DRX-CycleLengthCoefficient,
  -- TABULAR: If capabilityUpdateRequirement is not present, the default value
  -- defined in 10.3.3.2 shall be used.
  capabilityUpdateRequirement         CapabilityUpdateRequirement-r4      OPTIONAL,
  -- Specification mode information
  specificationMode                    CHOICE {
    complete                            SEQUENCE {
      -- Radio bearer IEs
      srb-InformationSetupList          SRB-InformationSetupList2,
      -- Transport channel IEs
      ul-CommonTransChInfo              UL-CommonTransChInfo-r4           OPTIONAL,
      ul-AddReconfTransChInfoList       UL-AddReconfTransChInfoList       OPTIONAL,
      dl-CommonTransChInfo              DL-CommonTransChInfo-r4           OPTIONAL,
      dl-AddReconfTransChInfoList       DL-AddReconfTransChInfoList-r4    OPTIONAL
    },
    preconfiguration                    SEQUENCE {
      -- All IEs that include an FDD/TDD choice are split in two IEs for this message,

```

```

-- one for the FDD only elements and one for the TDD only elements, so that one
-- FDD/TDD choice in this level is sufficient.
preConfigMode CHOICE {
    predefinedConfigIdentity PredefinedConfigIdentity,
    defaultConfig SEQUENCE {
        defaultConfigMode DefaultConfigMode,
        defaultConfigIdentity DefaultConfigIdentity-r5
    }
}
},
-- Physical channel IEs
frequencyInfo FrequencyInfo OPTIONAL,
maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
ul-ChannelRequirement UL-ChannelRequirement-r4 OPTIONAL,
dl-CommonInformation DL-CommonInformation-r4 OPTIONAL,
dl-InformationPerRL-List DL-InformationPerRL-List-r5bis OPTIONAL
}

-- *****
--
-- RRC CONNECTION SETUP COMPLETE
--
-- *****

RRCConnectionSetupComplete ::= SEQUENCE {
    -- TABULAR: Integrity protection shall not be performed on this message.
    -- User equipment IEs
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    startList STARTList,
    ue-RadioAccessCapability UE-RadioAccessCapability OPTIONAL,
    -- Other IEs
    ue-RATSpecificCapability InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
    -- Non critical extensions
    v370NonCriticalExtensions SEQUENCE {
        rrcConnectionSetupComplete-v370ext RRCConnectionSetupComplete-v370ext,
        v380NonCriticalExtensions SEQUENCE {
            rrcConnectionSetupComplete-v380ext RRCConnectionSetupComplete-v380ext-IEs,
            -- Reserved for future non critical extension
            v3a0NonCriticalExtensions SEQUENCE {
                rrcConnectionSetupComplete-v3a0ext RRCConnectionSetupComplete-v3a0ext-IEs,
                laterNonCriticalExtensions SEQUENCE {
                    -- Container for additional R99 extensions
                    rrcConnectionSetupComplete-r3-add-ext BIT STRING OPTIONAL,
                    v3g0NonCriticalExtensions SEQUENCE {
                        rrcConnectionSetupComplete-v3g0ext RRCConnectionSetupComplete-v3g0ext-IEs,
                        v4b0NonCriticalExtensions SEQUENCE {
                            rrcConnectionSetupComplete-v4b0ext
                                RRCConnectionSetupComplete-v4b0ext-IEs,
                            v5xyv590NonCriticalExtensions SEQUENCE {
                                rrcConnectionSetupComplete-v5xyv590ext
                                    RRCConnectionSetupComplete-v5xyv590ext-
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-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v3a0ext UE-RadioAccessCapability-v3a0ext OPTIONAL
}

```

```

RRCConnectionSetupComplete-v3g0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v3g0ext    UE-RadioAccessCapability-v3g0ext    OPTIONAL
}

RRCConnectionSetupComplete-v4b0ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v4b0ext    UE-RadioAccessCapability-v4b0ext
}

RRCConnectionSetupComplete-v5xyv590ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    ue-RadioAccessCapability-v5xyv590ext    UE-RadioAccessCapability-v5xyv590ext,
    -- Other IEs
    ue-RATSpecificCapability-v5xyv590ext    InterRAT-UE-RadioAccessCapability-v5xyv590ext
    OPTIONAL
}

-- *****
--
-- RRC FAILURE INFO
--
-- *****

RRC-FailureInfo ::= CHOICE {
    r3
        SEQUENCE {
            rRC-FailureInfo-r3
            laterNonCriticalExtensions    SEQUENCE {
                -- Container for additional R99 extensions
                rrc-FailureInfo-r3-add-ext    BIT STRING    OPTIONAL,
                nonCriticalExtensions        SEQUENCE {}    OPTIONAL
            }    OPTIONAL
        },
    criticalExtensions    SEQUENCE {}
}

RRC-FailureInfo-r3-IEs ::= SEQUENCE {
    -- Non-RRC IEs
    failureCauseWithProtErr    FailureCauseWithProtErr
}

-- *****
--
-- RRC STATUS
--
-- *****

RRCStatus ::= SEQUENCE {
    -- Other IEs
    -- TABULAR: Identification of received message is nested in
    -- ProtocolErrorMoreInformation
    protocolErrorInformation    ProtocolErrorMoreInformation,
    laterNonCriticalExtensions    SEQUENCE {
        -- Container for additional R99 extensions
        rrcStatus-r3-add-ext    BIT STRING    OPTIONAL,
        nonCriticalExtensions    SEQUENCE {}    OPTIONAL
    }    OPTIONAL
}

-- *****
--
-- SECURITY MODE COMMAND
--
-- *****

SecurityModeCommand ::= CHOICE {
    r3
        SEQUENCE {
            securityModeCommand-r3
            laterNonCriticalExtensions    SEQUENCE {
                -- Container for additional R99 extensions
                securityModeCommand-r3-add-ext    BIT STRING    OPTIONAL,
                nonCriticalExtensions    SEQUENCE {}    OPTIONAL
            }    OPTIONAL
        },
    later-than-r3
        SEQUENCE {
            rrc-TransactionIdentifier    RRC-TransactionIdentifier,
            criticalExtensions    SEQUENCE {}
        }
}

```

```

    }
}

SecurityModeCommand-r3-IEs ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.
-- User equipment IEs
   rrc-TransactionIdentifier      RRC-TransactionIdentifier,
   securityCapability             SecurityCapability,
   cipheringModeInfo             CipheringModeInfo             OPTIONAL,
   integrityProtectionModeInfo   IntegrityProtectionModeInfo OPTIONAL,
-- Core network IEs
   cn-DomainIdentity             CN-DomainIdentity,
-- Other IEs
   ue-SystemSpecificSecurityCap  InterRAT-UE-SecurityCapList  OPTIONAL
}

-- *****
--
-- SECURITY MODE COMPLETE
--
-- *****

SecurityModeComplete ::= SEQUENCE {
-- TABULAR: Integrity protection shall always be performed on this message.

-- User equipment IEs
   rrc-TransactionIdentifier      RRC-TransactionIdentifier,
   ul-IntegProtActivationInfo    IntegrityProtActivationInfo  OPTIONAL,
-- Radio bearer IEs
   rb-UL-CiphActivationTimeInfo  RB-ActivationTimeInfoList   OPTIONAL,
   laterNonCriticalExtensions     SEQUENCE {
      -- Container for additional R99 extensions
      securityModeComplete-r3-add-ext  BIT STRING  OPTIONAL,
      nonCriticalExtensions            SEQUENCE {}  OPTIONAL
   }  OPTIONAL
}

-- *****
--
-- SECURITY MODE FAILURE
--
-- *****

SecurityModeFailure ::= SEQUENCE {
-- User equipment IEs
   rrc-TransactionIdentifier      RRC-TransactionIdentifier,
   failureCause                  FailureCauseWithProtErr,
   laterNonCriticalExtensions     SEQUENCE {
      -- Container for additional R99 extensions
      securityModeFailure-r3-add-ext  BIT STRING  OPTIONAL,
      nonCriticalExtensions            SEQUENCE {}  OPTIONAL
   }  OPTIONAL
}

-- *****
--
-- SIGNALLING CONNECTION RELEASE
--
-- *****

SignallingConnectionRelease ::= CHOICE {
   r3
      SEQUENCE {
         signallingConnectionRelease-r3  SignallingConnectionRelease-r3-IEs,
         laterNonCriticalExtensions      SEQUENCE {
            -- Container for additional R99 extensions
            signallingConnectionRelease-r3-add-ext  BIT STRING  OPTIONAL,
            nonCriticalExtensions                  SEQUENCE {}  OPTIONAL
         }  OPTIONAL
      },
   later-than-r3
      SEQUENCE {
         rrc-TransactionIdentifier      RRC-TransactionIdentifier,
         criticalExtensions             SEQUENCE {}
      }
}

SignallingConnectionRelease-r3-IEs ::= SEQUENCE {
-- User equipment IEs
   rrc-TransactionIdentifier      RRC-TransactionIdentifier,

```

```

-- Core network IEs
  cn-DomainIdentity          CN-DomainIdentity
}
-- *****
--
-- SIGNALLING CONNECTION RELEASE INDICATION
--
-- *****

SignallingConnectionReleaseIndication ::= SEQUENCE {
  -- Core network IEs
  cn-DomainIdentity          CN-DomainIdentity,
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    signallingConnectionReleaseIndication-r3-add-ext BIT STRING OPTIONAL,
    nonCriticalExtensions SEQUENCE {} OPTIONAL
  } OPTIONAL
}
-- *****
--
-- SYSTEM INFORMATION for BCH
--
-- *****

SystemInformation-BCH ::= SEQUENCE {
  -- Other information elements
  sfn-Prime          SFN-Prime,
  payload            CHOICE {
    noSegment          NULL,
    firstSegment       FirstSegment,
    subsequentSegment SubsequentSegment,
    lastSegmentShort   LastSegmentShort,
    lastAndFirst       SEQUENCE {
      lastSegmentShort LastSegmentShort,
      firstSegment       FirstSegmentShort
    },
    lastAndComplete    SEQUENCE {
      lastSegmentShort LastSegmentShort,
      completeSIB-List CompleteSIB-List
    },
    lastAndCompleteAndFirst SEQUENCE {
      lastSegmentShort LastSegmentShort,
      completeSIB-List CompleteSIB-List,
      firstSegment       FirstSegmentShort
    },
    completeSIB-List   CompleteSIB-List,
    completeAndFirst   SEQUENCE {
      completeSIB-List CompleteSIB-List,
      firstSegment       FirstSegmentShort
    },
    completeSIB        CompleteSIB,
    lastSegment        LastSegment,
    spare5              NULL,
    spare4              NULL,
    spare3              NULL,
    spare2              NULL,
    spare1              NULL
  }
}
-- *****
--
-- SYSTEM INFORMATION for FACH
--
-- *****

SystemInformation-FACH ::= SEQUENCE {
  -- Other information elements
  payload            CHOICE {
    noSegment          NULL,
    firstSegment       FirstSegment,
    subsequentSegment SubsequentSegment,
    lastSegmentShort   LastSegmentShort,
    lastAndFirst       SEQUENCE {
      lastSegmentShort LastSegmentShort,
      firstSegment       FirstSegmentShort
    }
  }
}

```

```

    },
    lastAndComplete          SEQUENCE {
        lastSegmentShort    LastSegmentShort,
        completeSIB-List    CompleteSIB-List
    },
    lastAndCompleteAndFirst SEQUENCE {
        lastSegmentShort    LastSegmentShort,
        completeSIB-List    CompleteSIB-List,
        firstSegment        FirstSegmentShort
    },
    completeSIB-List         CompleteSIB-List,
    completeAndFirst         SEQUENCE {
        completeSIB-List    CompleteSIB-List,
        firstSegment        FirstSegmentShort
    },
    completeSIB              CompleteSIB,
    lastSegment              LastSegment,
    spare5                   NULL,
    spare4                   NULL,
    spare3                   NULL,
    spare2                   NULL,
    spare1                   NULL
}

-- *****
--
-- First segment
--
-- *****

FirstSegment ::=
    SEQUENCE {
        -- Other information elements
        sib-Type          SIB-Type,
        seg-Count         SegCount,
        sib-Data-fixed    SIB-Data-fixed
    }

-- *****
--
-- First segment (short)
--
-- *****

FirstSegmentShort ::=
    SEQUENCE {
        -- Other information elements
        sib-Type          SIB-Type,
        seg-Count         SegCount,
        sib-Data-variable SIB-Data-variable
    }

-- *****
--
-- Subsequent segment
--
-- *****

SubsequentSegment ::=
    SEQUENCE {
        -- Other information elements
        sib-Type          SIB-Type,
        segmentIndex      SegmentIndex,
        sib-Data-fixed    SIB-Data-fixed
    }

-- *****
--
-- Last segment
--
-- *****

LastSegment ::=
    SEQUENCE {
        -- Other information elements
        sib-Type          SIB-Type,
        segmentIndex      SegmentIndex,
        -- For sib-Data-fixed, in case the SIB data is less than 222 bits, padding
        -- shall be used. The same padding bits shall be used as defined in clause 12.1
        sib-Data-fixed    SIB-Data-fixed
    }

```

```

LastSegmentShort ::=                               SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    segmentIndex            SegmentIndex,
    sib-Data-variable       SIB-Data-variable
}

-- *****
--
-- Complete SIB
--
-- *****

CompleteSIB-List ::=                               SEQUENCE (SIZE (1..maxSIBperMsg)) OF
    CompleteSIBshort

CompleteSIB ::=                                    SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    -- For sib-Data-fixed, in case the SIB data is less than 226 bits, padding
    -- shall be used. The same padding bits shall be used as defined in clause 12.1
    sib-Data-fixed          BIT STRING (SIZE (226))
}

CompleteSIBshort ::=                               SEQUENCE {
    -- Other information elements
    sib-Type                SIB-Type,
    sib-Data-variable       SIB-Data-variable
}

-- *****
--
-- SYSTEM INFORMATION CHANGE INDICATION
--
-- *****

SystemInformationChangeIndication ::= SEQUENCE {
    -- Other IEs
    bcch-ModificationInfo   BCCH-ModificationInfo,
    laterNonCriticalExtensions SEQUENCE {
        -- Container for additional R99 extensions
        systemInformationChangeIndication-r3-add-ext BIT STRING OPTIONAL,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    } OPTIONAL
}

-- *****
--
-- TRANSPORT CHANNEL RECONFIGURATION
--
-- *****

TransportChannelReconfiguration ::= CHOICE {
    r3 SEQUENCE {
        transportChannelReconfiguration-r3
        TransportChannelReconfiguration-r3-IEs,
        v3a0NonCriticalExtensions SEQUENCE {
            transportChannelReconfiguration-v3a0ext
            TransportChannelReconfiguration-v3a0ext,
            laterNonCriticalExtensions SEQUENCE {
                -- Container for additional R99 extensions
                transportChannelReconfiguration-r3-add-ext BIT STRING OPTIONAL,
                v4b0NonCriticalExtensions SEQUENCE {
                    transportChannelReconfiguration-v4b0ext
                    TransportChannelReconfiguration-v4b0ext-IEs,
                    transportChannelReconfiguration-v5xyv590ext
                    TransportChannelReconfiguration-v5xyv590ext-
                    IEs,
                    nonCriticalExtensions SEQUENCE {} OPTIONAL
                } OPTIONAL
            } OPTIONAL
        } OPTIONAL
    },
    later-than-r3 SEQUENCE {
        rrc-TransactionIdentifier RRC-TransactionIdentifier,

```



```

criticalExtensions          CHOICE {
  r4                        SEQUENCE {
    transportChannelReconfiguration-r4
                                TransportChannelReconfiguration-r4-IEs,
    v4d0NonCriticalExtensions SEQUENCE {
      -- Container for adding non critical extensions after freezing REL-5
      transportChannelReconfiguration-r4-add-ext BIT STRING OPTIONAL,
      v5xyv590NonCriticalExtensions SEQUENCE {
        transportChannelReconfiguration-v5xyv590ext
                                TransportChannelReconfiguration-v5xyv590ext-IEs,
        nonCriticalExtensions SEQUENCE {} OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  criticalExtensions        CHOICE {
    r5                      SEQUENCE {
      transportChannelReconfiguration-r5
                                TransportChannelReconfiguration-r5-IEs,
      -- Container for adding non critical extensions after freezing REL-6
      transportChannelReconfiguration-r5-add-ext BIT STRING OPTIONAL,
      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-v4b0ext-IEs ::= SEQUENCE {
  -- Physical channel IES
  -- ssdt-UL extends SSDDT-Information, which is included in
  -- DL-CommonInformation. FDD only.

```

```

ssdt-UL-r4                SSDT-UL                OPTIONAL,
-- The order of the RLs in IE cell-id-PerRL-List is the same as
-- in IE DL-InformationPerRL-List included in this message
cell-id-PerRL-List        CellIdentity-PerRL-List  OPTIONAL
}

TransportChannelReconfiguration-v5xyv590ext-IEs ::= SEQUENCE {
  -- Physical channel IEs
  dl-TPC-PowerOffsetPerRL-List  DL-TPC-PowerOffsetPerRL-List  OPTIONAL
}

TransportChannelReconfiguration-r4-IEs ::= SEQUENCE {
  -- User equipment IEs
  integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo              CipheringModeInfo              OPTIONAL,
  activationTime                  ActivationTime                  OPTIONAL,
  new-U-RNTI                      U-RNTI                        OPTIONAL,
  new-C-RNTI                      C-RNTI                        OPTIONAL,
  new-DSCH-RNTI                  DSCH-RNTI                    OPTIONAL,
  rrc-StateIndicator             RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- Core network IEs
  cn-InformationInfo             CN-InformationInfo            OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                   URA-Identity                 OPTIONAL,
  -- Radio bearer IEs
  dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo  OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo           UL-CommonTransChInfo-r4       OPTIONAL,
  ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList   OPTIONAL,
  modeSpecificTransChInfo        CHOICE {
    fdd                            SEQUENCE {
      cpch-SetID                  CPCH-SetID                    OPTIONAL,
      addReconfTransChDRAC-Info   DRAC-StaticInformationList    OPTIONAL
    },
    tdd                            NULL
  }
  dl-CommonTransChInfo           DL-CommonTransChInfo-r4       OPTIONAL,
  dl-AddReconfTransChInfoList    DL-AddReconfTransChInfoList-r4  OPTIONAL,
  -- Physical channel IEs
  frequencyInfo                  FrequencyInfo                  OPTIONAL,
  maxAllowedUL-TX-Power          MaxAllowedUL-TX-Power         OPTIONAL,
  ul-ChannelRequirement          UL-ChannelRequirement-r4      OPTIONAL,
  modeSpecificPhysChInfo         CHOICE {
    fdd                            SEQUENCE {
      dl-PDSCH-Information        DL-PDSCH-Information          OPTIONAL
    },
    tdd                            NULL
  },
  dl-CommonInformation           DL-CommonInformation-r4       OPTIONAL,
  dl-InformationPerRL-List       DL-InformationPerRL-List-r4   OPTIONAL
}

TransportChannelReconfiguration-r5-IEs ::= SEQUENCE {
  -- User equipment IEs
  integrityProtectionModeInfo    IntegrityProtectionModeInfo    OPTIONAL,
  cipheringModeInfo              CipheringModeInfo              OPTIONAL,
  activationTime                  ActivationTime                  OPTIONAL,
  new-U-RNTI                      U-RNTI                        OPTIONAL,
  new-C-RNTI                      C-RNTI                        OPTIONAL,
  new-DSCH-RNTI                  DSCH-RNTI                    OPTIONAL,
  new-H-RNTI                      H-RNTI                        OPTIONAL,
  rrc-StateIndicator             RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff     UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- Core network IEs
  cn-InformationInfo             CN-InformationInfo            OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                   URA-Identity                 OPTIONAL,
  -- Radio bearer IEs
  dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo-r5  OPTIONAL,
  -- Transport channel IEs
  ul-CommonTransChInfo           UL-CommonTransChInfo-r4       OPTIONAL,
  ul-AddReconfTransChInfoList    UL-AddReconfTransChInfoList   OPTIONAL,
  modeSpecificTransChInfo        CHOICE {
    fdd                            SEQUENCE {
      cpch-SetID                  CPCH-SetID                    OPTIONAL,
      addReconfTransChDRAC-Info   DRAC-StaticInformationList    OPTIONAL
    },

```

```

        tdd                                NULL
    }
    dl-CommonTransChInfo                    DL-CommonTransChInfo-r4                OPTIONAL,
    dl-AddReconfTransChInfoList             DL-AddReconfTransChInfoList-r5         OPTIONAL,
-- Physical channel IEs
    frequencyInfo                           FrequencyInfo                        OPTIONAL,
    maxAllowedUL-TX-Power                   MaxAllowedUL-TX-Power                OPTIONAL,
    ul-ChannelRequirement                   UL-ChannelRequirement-r5             OPTIONAL,
    modeSpecificPhysChInfo                  CHOICE {
        fdd                                  SEQUENCE {
            dl-PDSCH-Information             DL-PDSCH-Information                OPTIONAL
        },
        tdd                                  NULL
    },
    dl-HSPDSCH-Information                  DL-HSPDSCH-Information                OPTIONAL,
    dl-CommonInformation                    DL-CommonInformation-r5               OPTIONAL,
    dl-InformationPerRL-List                DL-InformationPerRL-List-r5           OPTIONAL
}

-- *****
--
-- TRANSPORT CHANNEL RECONFIGURATION COMPLETE
--
-- *****

TransportChannelReconfigurationComplete ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier               RRC-TransactionIdentifier,
    ul-IntegProtActivationInfo              IntegrityProtActivationInfo            OPTIONAL,
-- TABULAR: UL-TimingAdvance is applicable for TDD mode only.
    ul-TimingAdvance                       UL-TimingAdvance                      OPTIONAL,
-- Radio bearer IEs
    count-C-ActivationTime                  ActivationTime                          OPTIONAL,
    rb-UL-CiphActivationTimeInfo            RB-ActivationTimeInfoList             OPTIONAL,
    ul-CounterSynchronisationInfo           UL-CounterSynchronisationInfo         OPTIONAL,
    laterNonCriticalExtensions              SEQUENCE {
-- Container for additional R99 extensions
        transportChannelReconfigurationComplete-r3-add-ext BIT STRING    OPTIONAL,
        nonCriticalExtensions                SEQUENCE {}                          OPTIONAL
    }
}

-- *****
--
-- TRANSPORT CHANNEL RECONFIGURATION FAILURE
--
-- *****

TransportChannelReconfigurationFailure ::= SEQUENCE {
-- User equipment IEs
    rrc-TransactionIdentifier               RRC-TransactionIdentifier,
    failureCause                            FailureCauseWithProtErr,
    laterNonCriticalExtensions              SEQUENCE {
-- Container for additional R99 extensions
        transportChannelReconfigurationFailure-r3-add-ext BIT STRING    OPTIONAL,
        nonCriticalExtensions                SEQUENCE {}                          OPTIONAL
    }
}

-- *****
--
-- TRANSPORT FORMAT COMBINATION CONTROL in AM or UM RLC mode
--
-- *****

TransportFormatCombinationControl ::= SEQUENCE {
-- rrc-TransactionIdentifier is always included in this 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,
    activationTimeForTFCSsubset             ActivationTime                          OPTIONAL,
    tfc-ControlDuration                     TFC-ControlDuration                  OPTIONAL,
    laterNonCriticalExtensions              SEQUENCE {

```

```

        -- Container for additional R99 extensions
        transportFormatCombinationControl-r3-add-ext      BIT STRING      OPTIONAL,
        nonCriticalExtensions                             SEQUENCE {}   OPTIONAL
    } OPTIONAL
}

-- *****
--
-- TRANSPORT FORMAT COMBINATION CONTROL FAILURE
--
-- *****

TransportFormatCombinationControlFailure ::= SEQUENCE {
    -- User equipment IEs
    rrc-TransactionIdentifier      RRC-TransactionIdentifier,
    failureCause                   FailureCauseWithProtErr,
    laterNonCriticalExtensions     SEQUENCE {
        -- Container for additional R99 extensions
        transportFormatCombinationControlFailure-r3-add-ext      BIT STRING      OPTIONAL,
        nonCriticalExtensions                             SEQUENCE {}   OPTIONAL
    } OPTIONAL
}

-- *****
--
-- UE CAPABILITY ENQUIRY
--
-- *****

UECapabilityEnquiry ::= CHOICE {
    r3
        SEQUENCE {
            ueCapabilityEnquiry-r3      UECapabilityEnquiry-r3-IEs,
            laterNonCriticalExtensions  SEQUENCE {
                -- Container for additional R99 extensions
                ueCapabilityEnquiry-r3-add-ext      BIT STRING      OPTIONAL,
                v4b0NonCriticalExtensions  SEQUENCE {
                    ueCapabilityEnquiry-v4b0ext    UECapabilityEnquiry-v4b0ext-IEs,
                    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-v4b0ext-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-IEs,
                laterNonCriticalExtensions     SEQUENCE {
                    -- Container for additional R99 extensions

```



```

--
-- *****
UplinkDirectTransfer ::= SEQUENCE {
  -- Core network IEs
  cn-DomainIdentity          CN-DomainIdentity,
  nas-Message                NAS-Message,
  -- Measurement IEs
  measuredResultsOnRACH      MeasuredResultsOnRACH          OPTIONAL,
  laterNonCriticalExtensions SEQUENCE {
    -- Container for additional R99 extensions
    uplinkDirectTransfer-r3-add-ext BIT STRING          OPTIONAL,
    nonCriticalExtensions          SEQUENCE {}          OPTIONAL
  } OPTIONAL
}

-- *****
--
-- UPLINK PHYSICAL CHANNEL CONTROL
--
-- *****

UplinkPhysicalChannelControl ::= CHOICE {
  r3 SEQUENCE {
    uplinkPhysicalChannelControl-r3 UplinkPhysicalChannelControl-r3-IEs,
    laterNonCriticalExtensions SEQUENCE {
      -- Container for additional R99 extensions
      uplinkPhysicalChannelControl-r3-add-ext BIT STRING          OPTIONAL,
      v4b0NonCriticalExtensions SEQUENCE {
        uplinkPhysicalChannelControl-v4b0ext UplinkPhysicalChannelControl-v4b0ext-IEs,
        -- Extension mechanism for non- release4 information
        noncriticalExtensions SEQUENCE {}          OPTIONAL
      } OPTIONAL
    } OPTIONAL
  },
  later-than-r3 SEQUENCE {
    rrc-TransactionIdentifier RRC-TransactionIdentifier,
    criticalExtensions CHOICE {
      r4 SEQUENCE {
        uplinkPhysicalChannelControl-r4 UplinkPhysicalChannelControl-r4-IEs,
        v4d0NonCriticalExtensions SEQUENCE {
          -- Container for adding non critical extensions after freezing REL-5
          uplinkPhysicalChannelControl-r4-add-ext BIT STRING          OPTIONAL,
          nonCriticalExtensions SEQUENCE {}          OPTIONAL
        } OPTIONAL
      },
      criticalExtensions CHOICE {
        r5 SEQUENCE {
          uplinkPhysicalChannelControl-r5 UplinkPhysicalChannelControl-r5-IEs,
          -- Container for adding non critical extensions after freezing REL-6
          uplinkPhysicalChannelControl-r5-add-ext BIT STRING          OPTIONAL,
          nonCriticalExtensions SEQUENCE {}          OPTIONAL
        }
      },
      criticalExtensions SEQUENCE {}
    }
  }
}

UplinkPhysicalChannelControl-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier RRC-TransactionIdentifier,
  -- Physical channel IEs
  ccTrCH-PowerControlInfo CCTrCH-PowerControlInfo          OPTIONAL,
  timingAdvance            UL-TimingAdvanceControl          OPTIONAL,
  alpha                    Alpha                            OPTIONAL,
  specialBurstScheduling   SpecialBurstScheduling           OPTIONAL,
  prach-ConstantValue      ConstantValueTdd                OPTIONAL,
  pusch-ConstantValue      ConstantValueTdd                OPTIONAL
}

UplinkPhysicalChannelControl-v4b0ext-IEs ::= SEQUENCE {
  -- In case of TDD, openLoopPowerControl-IPDL-TDD is included instead of IE
  -- up-IPDL-Parameters in up-OTDOA-AssistanceData
  openLoopPowerControl-IPDL-TDD OpenLoopPowerControl-IPDL-TDD-r4          OPTIONAL
}

UplinkPhysicalChannelControl-r4-IEs ::= SEQUENCE {

```

```

-- Physical channel IEs
ccTrCH-PowerControlInfo      CTrCH-PowerControlInfo-r4      OPTIONAL,
specialBurstScheduling        SpecialBurstScheduling           OPTIONAL,
tddOption                     CHOICE {
  tdd384                       SEQUENCE {
    timingAdvance              UL-TimingAdvanceControl-r4    OPTIONAL,
    alpha                      Alpha                            OPTIONAL,
    prach-ConstantValue        ConstantValueTdd              OPTIONAL,
    pusch-ConstantValue        ConstantValueTdd              OPTIONAL,
    openLoopPowerControl-IPDL-TDD  OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL
  },
  tdd128                       SEQUENCE {
    ul-SynchronisationParameters  UL-SynchronisationParameters-r4  OPTIONAL
  }
}
}

UplinkPhysicalChannelControl-r5-IEs ::= SEQUENCE {
  -- Physical channel IEs
  ccTrCH-PowerControlInfo      CTrCH-PowerControlInfo-r5      OPTIONAL,
  specialBurstScheduling        SpecialBurstScheduling           OPTIONAL,
  tddOption                     CHOICE {
    tdd384                       SEQUENCE {
      timingAdvance              UL-TimingAdvanceControl-r4    OPTIONAL,
      alpha                      Alpha                            OPTIONAL,
      prach-ConstantValue        ConstantValueTdd              OPTIONAL,
      pusch-ConstantValue        ConstantValueTdd              OPTIONAL,
      openLoopPowerControl-IPDL-TDD  OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL,
      hs-SICH-PowerControl        HS-SICH-Power-Control-Info-TDD384  OPTIONAL
    },
    tdd128                       SEQUENCE {
      ul-SynchronisationParameters  UL-SynchronisationParameters-r4  OPTIONAL
    }
  }
}

-- *****
--
-- URA UPDATE
--
-- *****

URAUUpdate ::= SEQUENCE {
  -- User equipment IEs
  u-RNTI                        U-RNTI,
  ura-UpdateCause               URA-UpdateCause,
  protocolErrorIndicator        ProtocolErrorIndicatorWithMoreInfo,
  laterNonCriticalExtensions     SEQUENCE {
    -- Container for additional R99 extensions
    uraUpdate-r3-add-ext        BIT STRING      OPTIONAL,
    nonCriticalExtensions       SEQUENCE {}         OPTIONAL
  }
}

-- *****
--
-- URA UPDATE CONFIRM
--
-- *****

URAUUpdateConfirm ::= CHOICE {
  r3                             SEQUENCE {
    uraUpdateConfirm-r3         URAUpdateConfirm-r3-IEs,
    laterNonCriticalExtensions   SEQUENCE {
      -- Container for additional R99 extensions
      uraUpdateConfirm-r3-add-ext  BIT STRING      OPTIONAL,
      nonCriticalExtensions        SEQUENCE {}         OPTIONAL
    }
  },
  later-than-r3                 SEQUENCE {
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    criticalExtensions           CHOICE {
      r5                         SEQUENCE {
        uraUpdateConfirm-r5       URAUpdateConfirm-r5-IEs,
        nonCriticalExtensions      SEQUENCE {}         OPTIONAL
      },
      criticalExtensions          SEQUENCE {}
    }
  }
}

```

```

    }
}

URAUUpdateConfirm-r3-IEs ::= SEQUENCE {
  -- User equipment IEs
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  integrityProtectionModeInfo    IntegrityProtectionModeInfo      OPTIONAL,
  cipheringModeInfo              CipheringModeInfo                  OPTIONAL,
  new-U-RNTI                     U-RNTI                          OPTIONAL,
  new-C-RNTI                     C-RNTI                          OPTIONAL,
  rrc-StateIndicator              RRC-StateIndicator,
  utran-DRX-CycleLengthCoeff      UTRAN-DRX-CycleLengthCoefficient  OPTIONAL,
  -- CN information elements
  cn-InformationInfo              CN-InformationInfo              OPTIONAL,
  -- UTRAN mobility IEs
  ura-Identity                    URA-Identity                    OPTIONAL,
  -- Radio bearer IEs
  dl-CounterSynchronisationInfo  DL-CounterSynchronisationInfo    OPTIONAL
}

URAUUpdateConfirm-r5-IEs ::= SEQUENCE {
  -- User equipment IEs
  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
--
-- *****

URAUUpdateConfirm-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
    }
  },
  later-than-r3                   SEQUENCE {
    u-RNTI                          U-RNTI,
    rrc-TransactionIdentifier        RRC-TransactionIdentifier,
    criticalExtensions               SEQUENCE {}
  }
}

URAUUpdateConfirm-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
},
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
    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
        utranMobilityInformationConfirm-r3-add-ext    BIT STRING    OPTIONAL,
        nonCriticalExtensions                       SEQUENCE {}   OPTIONAL
    }
}

-- *****
--
-- UTRAN MOBILITY INFORMATION FAILURE

```

```

--
-- *****
UTRANMobilityInformationFailure ::= SEQUENCE {
  -- UE information elements
  rrc-TransactionIdentifier      RRC-TransactionIdentifier,
  failureCause                   FailureCauseWithProtErr,
  laterNonCriticalExtensions      SEQUENCE {
    -- Container for additional R99 extensions
    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,
  maxDPCH-UL,
  maxDRACclasses,
  maxFACHPCH,
  maxFreq,
  maxFreqBandsFDD,
  maxFreqBandsTDD,
  maxFreqBandsGSM,
  maxGERAN-SI,
  maxHProcesses,
  maxHSDSCHTBIndex,
  maxHSDSCHTBIndex-tdd384,
  maxHSSCCHs,
  maxInterSysMessages,
  maxLoCHperRLC,
  maxMAC-d-PDU sizes,
  maxMeasEvent,
  maxMeasIntervals,
  maxMeasParEvent,
  maxNumCDMA2000Freqs,
  maxNumFDDFreqs,
  maxNumGSMFreqRanges,
  maxGSMTargetCells,
  maxNumTDDFreqs,
  maxOtherRAT,
  maxOtherRAT-16,
  maxPage1,
  maxPCPCH-APsig,
  maxPCPCH-APsubCh,
  maxPCPCH-CDsig,
  maxPCPCH-CsubCh,
  maxPCPCH-SF,
  maxPCPCHs,
  maxPDCPAlgoType,
  maxPDSCH,

```

```

maxPDSCH-TFCIgroups,
maxPRACH,
maxPRACH-FPACH,
maxPredefConfig,
maxPUSCH,
maxQueueIDs,
maxRABsetup,
maxRAT,
maxRB,
maxRBallRABs,
maxRBMuxOptions,
maxRBperRAB,
maxReportedGSMCells,
maxSRBsetup,
maxRL,
maxRL-1,
maxROHC-PacketSizes-r4,
maxROHC-Profile-r4,
maxSCCPCH,
maxSat,
maxSIB,
maxSIB-FACH,
maxSystemCapability,
maxTF,
maxTF-CPCH,
maxTFC,
maxTFCsub,
maxTFCI-2-Combs,
maxTGPS,
maxTrCH,
maxTrCHpreconf,
maxTS,
maxTS-1,
maxTS-2,
maxTS-LCR,
maxTS-LCR-1,
maxURA,
maxURNTI-Group
FROM Constant-definitions;

```

```

Ansi-41-IDNNS ::= BIT STRING (SIZE (14))

CN-DomainIdentity ::= ENUMERATED {
    cs-domain,
    ps-domain }

CN-DomainInformation ::= SEQUENCE {
    cn-DomainIdentity
    cn-DomainSpecificNAS-Info
}

CN-DomainInformationFull ::= SEQUENCE {
    cn-DomainIdentity
    cn-DomainSpecificNAS-Info
    cn-DRX-CycleLengthCoeff
}

CN-DomainInformationList ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CN-DomainInformation

CN-DomainInformationListFull ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CN-DomainInformationFull

CN-DomainSysInfo ::= SEQUENCE {
    cn-DomainIdentity
    cn-Type
        gsm-MAP
        ansi-41
    },
    cn-DRX-CycleLengthCoeff
}

CN-DomainSysInfoList ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CN-DomainSysInfo

CN-InformationInfo ::= SEQUENCE {
    plmn-Identity
    cn-CommonGSM-MAP-NAS-SysInfo
    cn-DomainInformationList
}
OPTIONAL,
OPTIONAL,
OPTIONAL

```

```

}

CN-InformationInfoFull ::=          SEQUENCE {
    plmn-Identity                    PLMN-Identity                    OPTIONAL,
    cn-CommonGSM-MAP-NAS-SysInfo    NAS-SystemInformationGSM-MAP    OPTIONAL,
    cn-DomainInformationListFull    CN-DomainInformationListFull    OPTIONAL
}

Digit ::=                          INTEGER (0..9)

Gsm-map-IDNNS ::=                  SEQUENCE {
    routingbasis                      CHOICE {
        localPTMSI                    SEQUENCE {
            routingparameter           RoutingParameter
        },
        tMSIofsamePLMN                SEQUENCE {
            routingparameter           RoutingParameter
        },
        tMSIofdifferentPLMN           SEQUENCE {
            routingparameter           RoutingParameter
        },
        iMSIresponsetopaging           SEQUENCE {
            routingparameter           RoutingParameter
        },
        iMSIcauseUEinitiatedEvent     SEQUENCE {
            routingparameter           RoutingParameter
        },
        iMEI                           SEQUENCE {
            routingparameter           RoutingParameter
        },
        spare2                          SEQUENCE {
            routingparameter           RoutingParameter
        },
        spare1                          SEQUENCE {
            routingparameter           RoutingParameter
        }
    },
    -- dummy is not used in this version of the specification and
    -- it should be ignored by the receiver.
    dummy                              BOOLEAN
}

IMEI ::=                           SEQUENCE (SIZE (15)) OF
    IMEI-Digit

IMEI-Digit ::=                     INTEGER (0..15)

IMSI-GSM-MAP ::=                   SEQUENCE (SIZE (6..21)) OF
    Digit

IntraDomainNasNodeSelector ::=     SEQUENCE {
    version                            CHOICE {
        release99                      SEQUENCE {
            cn-Type                    CHOICE {
                gsm-Map-IDNNS          Gsm-map-IDNNS,
                ansi-41-IDNNS          Ansi-41-IDNNS
            }
        },
        later                            SEQUENCE {
            futurecoding                BIT STRING (SIZE (15))
        }
    }
}

LAI ::=                            SEQUENCE {
    plmn-Identity                      PLMN-Identity,
    lac                                BIT STRING (SIZE (16))
}

MCC ::=                            SEQUENCE (SIZE (3)) OF
    Digit

MNC ::=                            SEQUENCE (SIZE (2..3)) OF
    Digit

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))

CellIdentity-PerRL-List ::=               SEQUENCE (SIZE (1..maxRL)) OF CellIdentity

CellSelectReselectInfoSIB-3-4 ::=        SEQUENCE {
    mappingInfo                            MappingInfo                            OPTIONAL,
    cellSelectQualityMeasure               CHOICE {
        cpich-Ec-NO                        SEQUENCE {
            -- Default value for q-HYST-2-S is q-HYST-1-S
            q-HYST-2-S                       Q-Hyst-S                            OPTIONAL
            -- Default value for q-HYST-2-S is q-HYST-1-S
        },
        cpich-RSCP                          NULL
    },
    modeSpecificInfo                       CHOICE {
        fdd                                 SEQUENCE {
            s-Intrasearch                    S-SearchQual                        OPTIONAL,
            s-Intersearch                    S-SearchQual                        OPTIONAL,
            s-SearchHCS                      S-SearchRXLEV                       OPTIONAL,
            rat-List                          RAT-FDD-InfoList                    OPTIONAL,
            q-QualMin                         Q-QualMin,
            q-RxlevMin                       Q-RxlevMin
        },
        tdd                                 SEQUENCE {
            s-Intrasearch                    S-SearchRXLEV                       OPTIONAL,
            s-Intersearch                    S-SearchRXLEV                       OPTIONAL,
            s-SearchHCS                      S-SearchRXLEV                       OPTIONAL,
            rat-List                          RAT-TDD-InfoList                    OPTIONAL,
            q-RxlevMin                       Q-RxlevMin
        }
    },
    q-Hyst-1-S                              Q-Hyst-S,
    t-Reselection-S                        T-Reselection-S,
    hcs-ServingCellInformation              HCS-ServingCellInformation          OPTIONAL,
    maxAllowedUL-TX-Power                  MaxAllowedUL-TX-Power
}

MapParameter ::=                          INTEGER (0..99)

Mapping ::=                                SEQUENCE {
    rat                                     RAT,
    mappingFunctionParameterList           MappingFunctionParameterList
}

Mapping-LCR-r4 ::=                        SEQUENCE {
    mappingFunctionParameterList           MappingFunctionParameterList
}

MappingFunctionParameter ::=              SEQUENCE {
    functionType                           MappingFunctionType,
    mapParameter1                          MapParameter                          OPTIONAL,
    mapParameter2                          MapParameter,
    -- The presence of upperLimit is conditional on the number of repetition
    upperLimit                             UpperLimit                            OPTIONAL
}

MappingFunctionParameterList ::=          SEQUENCE (SIZE (1..maxMeasIntervals)) OF
    MappingFunctionParameter

MappingFunctionType ::=                   ENUMERATED {
    linear,
    functionType2,
    functionType3,
    functionType4 }

-- In MappingInfo list, mapping for FDD and 3.84Mcps TDD is defined.
-- For 1.28Mcps TDD, Mapping-LCR-r4 is used instead.
MappingInfo ::=                           SEQUENCE (SIZE (1..maxRAT)) OF
    Mapping

-- Actual value Q-Hyst-S = IE value * 2
Q-Hyst-S ::=                              INTEGER (0..20)

```

```

RAT ::=
    ENUMERATED {
        ultra-FDD,
        ultra-TDD,
        gsm,
        cdma2000 }

RAT-FDD-Info ::=
    SEQUENCE {
        rat-Identifier          RAT-Identifier,
        s-SearchRAT            S-SearchQual,
        s-HCS-RAT              S-SearchRXLEV OPTIONAL,
        s-Limit-SearchRAT     S-SearchQual
    }

RAT-FDD-InfoList ::=
    SEQUENCE (SIZE (1..maxOtherRAT)) OF
        RAT-FDD-Info

RAT-Identifier ::=
    ENUMERATED {
        gsm, cdma2000 }

RAT-TDD-Info ::=
    SEQUENCE {
        rat-Identifier          RAT-Identifier,
        s-SearchRAT            S-SearchRXLEV,
        s-HCS-RAT              S-SearchRXLEV OPTIONAL,
        s-Limit-SearchRAT     S-SearchRXLEV
    }

RAT-TDD-InfoList ::=
    SEQUENCE (SIZE (1..maxOtherRAT)) OF
        RAT-TDD-Info

ReservedIndicator ::=
    ENUMERATED {
        reserved,
        notReserved }

-- Actual value S-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)
--
-- *****

AccessStratumReleaseIndicator ::=
    ENUMERATED {
        rel-4, rel-5, rel-6, spare13,
        spare12, spare11, spare10, spare9, spare8,
        spare7, spare6, spare5, spare4, spare3,
        spare2, spare1 }

-- TABULAR : for ActivationTime, value 'now' always appear as default, and is encoded
-- by absence of the field
ActivationTime ::=
    INTEGER (0..255)

BackoffControlParams ::=
    SEQUENCE {
        n-AP-RetransMax      N-AP-RetransMax,
        n-AccessFails        N-AccessFails,
        nf-BO-NoAICH         NF-BO-NoAICH,
        ns-BO-Busy           NS-BO-Busy,
        nf-BO-AllBusy        NF-BO-AllBusy,
        nf-BO-Mismatch       NF-BO-Mismatch,
        t-CPCH               T-CPCH
    }

```

```

}

C-RNTI ::=                               BIT STRING (SIZE (16))

CapabilityUpdateRequirement ::=          SEQUENCE {
    ue-RadioCapabilityFDDUpdateRequirement  BOOLEAN,
    -- ue-RadioCapabilityTDDUpdateRequirement is for 3.84Mcps TDD update requirement
    ue-RadioCapabilityTDDUpdateRequirement  BOOLEAN,
    systemSpecificCapUpdateReqList         SystemSpecificCapUpdateReqList     OPTIONAL
}

CapabilityUpdateRequirement-r4-ext ::= SEQUENCE {
    ue-RadioCapabilityUpdateRequirement-TDD128  BOOLEAN
}

CapabilityUpdateRequirement-r4 ::= SEQUENCE {
    ue-RadioCapabilityFDDUpdateRequirement-FDD  BOOLEAN,
    ue-RadioCapabilityTDDUpdateRequirement-TDD384  BOOLEAN,
    ue-RadioCapabilityTDDUpdateRequirement-TDD128  BOOLEAN,
    systemSpecificCapUpdateReqList               SystemSpecificCapUpdateReqList     OPTIONAL
}

CellUpdateCause ::=                     ENUMERATED {
    cellReselection,
    periodicalCellUpdate,
    uplinkDataTransmission,
    utran-pagingResponse,
    re-enteredServiceArea,
    radiolinkFailure,
    rlc-unrecoverableError,
    spare1 }

ChipRateCapability ::=                  ENUMERATED {
    mcps3-84, mcps1-28 }

CipheringAlgorithm ::=                 ENUMERATED {
    uea0, uea1 }

CipheringModeCommand ::=              CHOICE {
    startRestart                          CipheringAlgorithm,
    dummy                                  NULL
}

CipheringModeInfo ::=                 SEQUENCE {
    -- TABULAR: The ciphering algorithm is included in the CipheringModeCommand.
    cipheringModeCommand                  CipheringModeCommand,
    activationTimeForDPCH                  ActivationTime                               OPTIONAL,
    rb-DL-CiphActivationTimeInfo          RB-ActivationTimeInfoList                   OPTIONAL
}

CN-DRX-CycleLengthCoefficient ::=      INTEGER (6..9)

CN-PagedUE-Identity ::=               CHOICE {
    imsi-GSM-MAP                          IMSI-GSM-MAP,
    tmsi-GSM-MAP                          TMSI-GSM-MAP,
    p-TMSI-GSM-MAP                        P-TMSI-GSM-MAP,
    imsi-DS-41                             IMSI-DS-41,
    tmsi-DS-41                             TMSI-DS-41,
    spare3                                  NULL,
    spare2                                  NULL,
    spare1                                  NULL
}

CompressedModeMeasCapability ::=       SEQUENCE {
    fdd-Measurements                       BOOLEAN,
    -- TABULAR: The IEs tdd-Measurements, gsm-Measurements and multiCarrierMeasurements
    -- are made optional since they are conditional based on another information element.
    -- Their absence corresponds to the case where the condition is not true.
    tdd-Measurements                       BOOLEAN                               OPTIONAL,
    gsm-Measurements                       GSM-Measurements                       OPTIONAL,
    multiCarrierMeasurements               BOOLEAN                               OPTIONAL
}

CompressedModeMeasCapability-LCR-r4 ::= SEQUENCE {
    tdd128-Measurements                    BOOLEAN                               OPTIONAL
}

CompressedModeMeasCapabFDDList ::=     SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF

```



```

CompressedModeMeasCapabFDD
CompressedModeMeasCapabFDD ::= SEQUENCE {
    radioFrequencyBandFDD      RadioFrequencyBandFDD    OPTIONAL,
    dl-MeasurementsFDD         BOOLEAN,
    ul-MeasurementsFDD         BOOLEAN
}

CompressedModeMeasCapabTDDList ::= SEQUENCE (SIZE (1..maxFreqBandsTDD)) OF
    CompressedModeMeasCapabTDD

CompressedModeMeasCapabTDD ::= SEQUENCE {
    radioFrequencyBandTDD      RadioFrequencyBandTDD,
    dl-MeasurementsTDD         BOOLEAN,
    ul-MeasurementsTDD         BOOLEAN
}

CompressedModeMeasCapabGSMList ::= SEQUENCE (SIZE (1..maxFreqBandsGSM)) OF
    CompressedModeMeasCapabGSM

CompressedModeMeasCapabGSM ::= SEQUENCE {
    radioFrequencyBandGSM      RadioFrequencyBandGSM,
    dl-MeasurementsGSM         BOOLEAN,
    ul-MeasurementsGSM         BOOLEAN
}

CompressedModeMeasCapabMC ::= SEQUENCE {
    dl-MeasurementsMC          BOOLEAN,
    ul-MeasurementsMC          BOOLEAN
}

CPCH-Parameters ::= SEQUENCE {
    initialPriorityDelayList    InitialPriorityDelayList    OPTIONAL,
    backoffControlParams        BackoffControlParams,
    -- TABULAR: TPC step size nested inside PowerControlAlgorithm
    powerControlAlgorithm       PowerControlAlgorithm,
    dl-DPCCH-BER                DL-DPCCH-BER
}

DL-CapabilityWithSimultaneousHS-DSCHConfig ::= ENUMERATED{kbps32, kbps64, kbps128, kbps384}

DL-DPCCH-BER ::= INTEGER (0..63)

DL-PhysChCapabilityFDD ::= SEQUENCE {
    maxNoDPCH-PDSCH-Codes      INTEGER (1..8),
    maxNoPhysChBitsReceived    MaxNoPhysChBitsReceived,
    supportForSF-512           BOOLEAN,
    supportOfPDSCH              BOOLEAN,
    simultaneousSCCPCH-DPCH-Reception SimultaneousSCCPCH-DPCH-Reception
}

DL-PhysChCapabilityFDD-v380ext ::= SEQUENCE {
    supportOfDedicatedPilotsForChEstimation SupportOfDedicatedPilotsForChEstimation    OPTIONAL
}

SupportOfDedicatedPilotsForChEstimation ::= ENUMERATED { true }

DL-PhysChCapabilityTDD ::= SEQUENCE {
    maxTS-PerFrame             MaxTS-PerFrame,
    maxPhysChPerFrame          MaxPhysChPerFrame,
    minimumSF                  MinimumSF-DL,
    supportOfPDSCH              BOOLEAN,
    maxPhysChPerTS             MaxPhysChPerTS
}

DL-PhysChCapabilityTDD-LCR-r4 ::= SEQUENCE {
    maxTS-PerSubFrame          MaxTS-PerSubFrame-r4,
    maxPhysChPerSubFrame-r4    MaxPhysChPerSubFrame-r4,
    minimumSF                  MinimumSF-DL,
    supportOfPDSCH              BOOLEAN,
    maxPhysChPerTS             MaxPhysChPerTS,
    supportOf8PSK               BOOLEAN
}

DL-TransChCapability ::= SEQUENCE {
    maxNoBitsReceived           MaxNoBits,
    maxConvCodeBitsReceived     MaxNoBits,
    turboDecodingSupport        TurboSupport,

```

```

maxSimultaneousTransChs          MaxSimultaneousTransChsDL,
maxSimultaneousCCTrCH-Count      MaxSimultaneousCCTrCH-Count,
maxReceivedTransportBlocks       MaxTransportBlocksDL,
maxNumberOfTFC                   MaxNumberOfTFC-DL,
maxNumberOfTF                    MaxNumberOfTF
}

DRAC-SysInfo ::=
  transmissionProbability
  maximumBitRate
}

DRAC-SysInfoList ::=
  SEQUENCE (SIZE (1..maxDRACclasses)) OF
    DRAC-SysInfo

DSCH-RNTI ::=
  BIT STRING (SIZE (16))

ESN-DS-41 ::=
  BIT STRING (SIZE (32))

EstablishmentCause ::=
  ENUMERATED {
    originatingConversationalCall,
    originatingStreamingCall,
    originatingInteractiveCall,
    originatingBackgroundCall,
    originatingSubscribedTrafficCall,
    terminatingConversationalCall,
    terminatingStreamingCall,
    terminatingInteractiveCall,
    terminatingBackgroundCall,
    emergencyCall,
    interRAT-CellReselection,
    interRAT-CellChangeOrder,
    registration,
    detach,
    originatingHighPrioritySignalling,
    originatingLowPrioritySignalling,
    callRe-establishment,
    terminatingHighPrioritySignalling,
    terminatingLowPrioritySignalling,
    terminatingCauseUnknown,
    spare12,
    spare11,
    spare10,
    spare9,
    spare8,
    spare7,
    spare6,
    spare5,
    spare4,
    spare3,
    spare2,
    spare1 }

FailureCauseWithProtErr ::=
  CHOICE {
    configurationUnsupported      NULL,
    physicalChannelFailure       NULL,
    incompatibleSimultaneousReconfiguration
                                NULL,
    compressedModeRuntimeError   TGPSI,
    protocolError                ProtocolErrorInformation,
    cellUpdateOccurred           NULL,
    invalidConfiguration         NULL,
    configurationIncomplete      NULL,
    unsupportedMeasurement       NULL,
    spare7                       NULL,
    spare6                       NULL,
    spare5                       NULL,
    spare4                       NULL,
    spare3                       NULL,
    spare2                       NULL,
    spare1                       NULL
  }

FailureCauseWithProtErrTrId ::=
  SEQUENCE {
    rrc-TransactionIdentifier    RRC-TransactionIdentifier,
    failureCause                 FailureCauseWithProtErr
  }

```

```

GroupIdentityWithReleaseInformation ::= SEQUENCE {
    rrc-ConnectionReleaseInformation RRC-ConnectionReleaseInformation,
    groupReleaseInformation           GroupReleaseInformation
}

GroupReleaseInformation ::= SEQUENCE {
    uRNTI-Group U-RNTI-Group
}

GSM-Measurements ::= SEQUENCE {
    gsm900      BOOLEAN,
    dcs1800     BOOLEAN,
    gsm1900     BOOLEAN
}

H-RNTI ::= BIT STRING (SIZE (16))

HSDSCH-physical-layer-category ::= INTEGER (1..64)

UESpecificBehaviourInformationlidle ::= BIT STRING (SIZE (4))

UESpecificBehaviourInformationlinterRAT ::= BIT STRING (SIZE (8))

IMSI-and-ESN-DS-41 ::= SEQUENCE {
    imsi-DS-41    IMSI-DS-41,
    esn-DS-41     ESN-DS-41
}

IMSI-DS-41 ::= OCTET STRING (SIZE (5..7))

InitialPriorityDelayList ::= SEQUENCE (SIZE (1..maxASC)) OF
    NS-IP

InitialUE-Identity ::= CHOICE {
    imsi                IMSI-GSM-MAP,
    tmsi-and-LAI        TMSI-and-LAI-GSM-MAP,
    p-TMSI-and-RAI      P-TMSI-and-RAI-GSM-MAP,
    imei                IMEI,
    esn-DS-41           ESN-DS-41,
    imsi-DS-41          IMSI-DS-41,
    imsi-and-ESN-DS-41  IMSI-and-ESN-DS-41,
    tmsi-DS-41          TMSI-DS-41
}

IntegrityCheckInfo ::= SEQUENCE {
    messageAuthenticationCode MessageAuthenticationCode,
    rrc-MessageSequenceNumber RRC-MessageSequenceNumber
}

IntegrityProtActivationInfo ::= SEQUENCE {
    rrc-MessageSequenceNumberList RRC-MessageSequenceNumberList
}

IntegrityProtectionAlgorithm ::= ENUMERATED {
    uia1 }

IntegrityProtectionModeCommand ::= CHOICE {
    startIntegrityProtection SEQUENCE {
        integrityProtInitNumber IntegrityProtInitNumber
    },
    modify                    SEQUENCE {
        dl-IntegrityProtActivationInfo IntegrityProtActivationInfo
    }
}

IntegrityProtectionModeInfo ::= SEQUENCE {
    -- TABULAR: DL integrity protection activation info and Integrity
    -- protection intialisation number have been nested inside
    -- IntegrityProtectionModeCommand.
    integrityProtectionModeCommand IntegrityProtectionModeCommand,
    integrityProtectionAlgorithm    IntegrityProtectionAlgorithm    OPTIONAL
}

IntegrityProtInitNumber ::= BIT STRING (SIZE (32))

MaxHcContextSpace ::= ENUMERATED {

```

```

by512, by1024, by2048, by4096,
by8192 }

MaxHcContextSpace-r5-ext ::=          ENUMERATED {
                                        by16384, by32768, by65536, by131072 }

MaxROHC-ContextSessions-r4 ::=        ENUMERATED {
                                        s2, s4, s8, s12, s16, s24, s32, s48,
                                        s64, s128, s256, s512, s1024, s16384 }

MaximumAM-EntityNumberRLC-Cap ::=    ENUMERATED {
                                        dummy, am4, am5, am6,
                                        am8, am16, am30 }

-- Actual value MaximumBitRate = IE value * 16
MaximumBitRate ::=                    INTEGER (0..32)

MaximumRLC-WindowSize ::=             ENUMERATED { mws2047, mws4095 }

MaxNoDPDCH-BitsTransmitted ::=        ENUMERATED {
                                        b600, b1200, b2400, b4800,
                                        b9600, b19200, b28800, b38400,
                                        b48000, b57600 }

MaxNoBits ::=                          ENUMERATED {
                                        b640, b1280, b2560, b3840, b5120,
                                        b6400, b7680, b8960, b10240,
                                        b20480, b40960, b81920, b163840 }

MaxNoPhysChBitsReceived ::=           ENUMERATED {
                                        dummy, b1200, b2400, b3600,
                                        b4800, b7200, b9600, b14400,
                                        b19200, b28800, b38400, b48000,
                                        b57600, b67200, b76800 }

MaxNoSCCPCH-RL ::=                    ENUMERATED {
                                        r11 }

MaxNumberOfTF ::=                     ENUMERATED {
                                        tf32, tf64, tf128, tf256,
                                        tf512, tf1024 }

MaxNumberOfTFC-DL ::=                 ENUMERATED {
                                        tfc16, tfc32, tfc48, tfc64, tfc96,
                                        tfc128, tfc256, tfc512, tfc1024 }

MaxNumberOfTFC-UL ::=                 ENUMERATED {
                                        dummy1, dummy2, tfc16, tfc32, tfc48, tfc64,
                                        tfc96, tfc128, tfc256, tfc512, tfc1024 }

-- the values 1 ...4 for MaxPhysChPerFrame are not used in this version of the protocol
MaxPhysChPerFrame ::=                 INTEGER (1..224)

MaxPhysChPerSubFrame-r4 ::=           INTEGER (1..96)

MaxPhysChPerTimeslot ::=              ENUMERATED {
                                        ts1, ts2 }

-- the values 1 ...4 for MaxPhysChPerTS are not used in this version of the protocol
MaxPhysChPerTS ::=                   INTEGER (1..16)

MaxSimultaneousCCTrCH-Count ::=       INTEGER (1..8)

MaxSimultaneousTransChsDL ::=         ENUMERATED {
                                        e4, e8, e16, e32 }

MaxSimultaneousTransChsUL ::=        ENUMERATED {
                                        dummy, e4, e8, e16, e32 }

MaxTransportBlocksDL ::=              ENUMERATED {
                                        tb4, tb8, tb16, tb32, tb48,
                                        tb64, tb96, tb128, tb256, tb512 }

MaxTransportBlocksUL ::=              ENUMERATED {
                                        dummy, tb4, tb8, tb16, tb32, tb48,
                                        tb64, tb96, tb128, tb256, tb512 }

```

```

MaxTS-PerFrame ::= INTEGER (1..14)

MaxTS-PerSubFrame-r4 ::= INTEGER (1..6)

-- TABULAR: MeasurementCapability contains dependencies to UE-MultiModeRAT-Capability,
-- the conditional fields have been left mandatory for now.
MeasurementCapability ::= SEQUENCE {
    downlinkCompressedMode          CompressedModeMeasCapability,
    uplinkCompressedMode            CompressedModeMeasCapability
}

MeasurementCapabilityExt ::= SEQUENCE{
    compressedModeMeasCapabFDDList    CompressedModeMeasCapabFDDList,
    compressedModeMeasCapabTDDList    CompressedModeMeasCapabTDDList  OPTIONAL,
    compressedModeMeasCapabGSMLList   CompressedModeMeasCapabGSMLList  OPTIONAL,
    compressedModeMeasCapabMC         CompressedModeMeasCapabMC      OPTIONAL
}

MeasurementCapability-r4-ext ::= SEQUENCE {
    downlinkCompressedMode-LCR        CompressedModeMeasCapability-LCR-r4,
    uplinkCompressedMode-LCR         CompressedModeMeasCapability-LCR-r4
}

MessageAuthenticationCode ::= BIT STRING (SIZE (32))

MinimumSF-DL ::= ENUMERATED {
    sf1, sf16 }

MinimumSF-UL ::= ENUMERATED {
    sf1, sf2, sf4, sf8, dummy }

MultiModeCapability ::= ENUMERATED {
    tdd, fdd, fdd-tdd }

MultiRAT-Capability ::= SEQUENCE {
    supportOfGSM          BOOLEAN,
    supportOfMulticarrier  BOOLEAN
}

| MultiModeRAT-Capability-v5xyv590ext ::= SEQUENCE {
    supportOfUTRAN-ToGERAN-NACC  BOOLEAN
}

N-300 ::= INTEGER (0..7)

N-301 ::= INTEGER (0..7)

N-302 ::= INTEGER (0..7)

N-304 ::= INTEGER (0..7)

N-308 ::= INTEGER (1..8)

N-310 ::= INTEGER (0..7)

N-312 ::= ENUMERATED {
    s1, s50, s100, s200, s400,
    s600, s800, s1000 }

N-312ext ::= ENUMERATED {
    s2, s4, s10, s20 }

N-312-r5 ::= ENUMERATED {
    s1, s2, s4, s10, s20,
    s50, s100, s200, s400,
    s600, s800, s1000 }

N-313 ::= ENUMERATED {
    s1, s2, s4, s10, s20,
    s50, s100, s200 }

N-315 ::= ENUMERATED {
    s1, s50, s100, s200, s400,
    s600, s800, s1000 }

N-315ext ::= ENUMERATED {
    s2, s4, s10, s20 }

```

```

N-315-r5 ::=
    ENUMERATED {
        s1, s2, s4, s10, s20,
        s50, s100, s200, s400,
        s600, s800, s1000 }

N-AccessFails ::=
    INTEGER (1..64)

N-AP-RetransMax ::=
    INTEGER (1..64)

NetworkAssistedGPS-Supported ::=
    ENUMERATED {
        networkBased,
        ue-Based,
        bothNetworkAndUE-Based,
        noNetworkAssistedGPS }

NF-BO-AllBusy ::=
    INTEGER (0..31)

NF-BO-NoAICH ::=
    INTEGER (0..31)

NF-BO-Mismatch ::=
    INTEGER (0..127)

NS-BO-Busy ::=
    INTEGER (0..63)

NS-IP ::=
    INTEGER (0..28)

P-TMSI-and-RAI-GSM-MAP ::=
    SEQUENCE {
        p-TMSI
        rai
    }

PagingCause ::=
    ENUMERATED {
        terminatingConversationalCall,
        terminatingStreamingCall,
        terminatingInteractiveCall,
        terminatingBackgroundCall,
        terminatingHighPrioritySignalling,
        terminatingLowPrioritySignalling,
        terminatingCauseUnknown,
        spare
    }

PagingRecord ::=
    CHOICE {
        cn-Identity
            SEQUENCE {
                pagingCause
                cn-DomainIdentity
                cn-pagedUE-Identity
            },
        utran-Identity
            SEQUENCE {
                u-RNTI
                cn-OriginatedPage-connectedMode-UE
                pagingCause
                cn-DomainIdentity
                pagingRecordTypeID
            }
    }
    OPTIONAL

PagingRecord2-r5 ::=
    CHOICE {
        utran-SingleUE-Identity
            SEQUENCE {
                u-RNTI
                cn-OriginatedPage-connectedMode-UE
                pagingCause
                cn-DomainIdentity
                pagingRecordTypeID
            }
        rrc-ConnectionReleaseInformation
            RRC-ConnectionReleaseInformation
    },
    utran-GroupIdentity
        SEQUENCE ( SIZE (1 .. maxURNTI-Group) ) OF
        GroupIdentityWithReleaseInformation
    }

PagingRecordList ::=
    SEQUENCE (SIZE (1..maxPage1)) OF
    PagingRecord

PagingRecord2List-r5 ::=
    SEQUENCE (SIZE (1..maxPage1)) OF
    PagingRecord2-r5

```

```

PDCP-Capability ::=
    losslessSRNS-RelocationSupport      BOOLEAN,
    -- If present, the "maxHcContextSpace" in the IE "PDCP-Capability-r5-ext" overrides the
    -- "supported" value in this IE. The value in this IE may be used by a pre-REL-5 UTRAN.
    supportForRfc2507                    CHOICE {
        notSupported                      NULL,
        supported                          MaxHcContextSpace
    }
}

PDCP-Capability-r4-ext ::=
    supportForRfc3095                    CHOICE {
        notSupported                      NULL,
        supported                          SEQUENCE {
            maxROHC-ContextSessions      MaxROHC-ContextSessions-r4  DEFAULT s16,
            reverseCompressionDepth      INTEGER (0..65535)          DEFAULT 0
        }
    }
}

PDCP-Capability-r5-ext ::=
    supportForRfc3095ContextRelocation   BOOLEAN,
    maxHcContextSpace                    MaxHcContextSpace-r5-ext  OPTIONAL
}

PhysicalChannelCapability ::=
    fddPhysChCapability                  SEQUENCE {
        downlinkPhysChCapability         DL-PhysChCapabilityFDD,
        uplinkPhysChCapability           UL-PhysChCapabilityFDD
    }
    -- tddPhysChCapability describes the 3.84Mcps TDD physical channel capability
    tddPhysChCapability                  SEQUENCE {
        downlinkPhysChCapability         DL-PhysChCapabilityTDD,
        uplinkPhysChCapability           UL-PhysChCapabilityTDD
    }
    OPTIONAL
}

-- PhysicalChannelCapability-LCR-r4 describes the 1.28Mcps TDD physical channel capability
PhysicalChannelCapability-LCR-r4 ::=
    tdd128-PhysChCapability              SEQUENCE {
        downlinkPhysChCapability         DL-PhysChCapabilityTDD-LCR-r4,
        uplinkPhysChCapability           UL-PhysChCapabilityTDD-LCR-r4
    }
    OPTIONAL
}

-- PhysicalChannelCapability-hspdsch-r5 describes the HS-PDSCH physical channel capability
PhysicalChannelCapability-hspdsch-r5 ::=
    fdd-hspdsch                          CHOICE {
        supported                        SEQUENCE {
            hsdSCH-physical-layer-category  HSDSCH-physical-layer-category,
            supportOfDedicatedPilotsForChannelEstimationOfHSDSCH  BOOLEAN,
            -- simultaneousSCCPCH-DPCH-HSDSCH-Reception shall be true only if the
            -- IE SimultaneousSCCPCH-DPCH-Reception indicates support of simultaneous
            -- reception of S-CCPCH and DPCH
            simultaneousSCCPCH-DPCH-HSDSCH-Reception  BOOLEAN
        },
        unsupported                      NULL
    },
    tdd384-hspdsch                        CHOICE {
        supported                        HSDSCH-physical-layer-category,
        unsupported                      NULL
    },
    tdd128-hspdsch                        CHOICE {
        supported                        HSDSCH-physical-layer-category,
        unsupported                      NULL
    }
}

PNBSCH-Allocation-r4 ::=
    numberOfRepetitionsPerSFNPeriod      ENUMERATED {
        c2, c3, c4, c5, c6, c7, c8, c9, c10,
        c12, c14, c16, c18, c20, c24, c28, c32,
        c36, c40, c48, c56, c64, c72, c80 }
}

ProtocolErrorCause ::=
    asnl-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,
                                                                IdentificationOfReceivedMessage,
                                                                IdentificationOfReceivedMessage,
                                                                IdentificationOfReceivedMessage,
                        ie-ValueNotComprehended          NULL,
                        conditionalInformationElementError
                                                                NULL,
                        messageExtensionNotComprehended
                                                                NULL,
                        spare1                            NULL,
                        spare2                            NULL
                },
                spare                NULL
        }
}

RadioFrequencyBandFDD ::=          ENUMERATED {
        -- fdd2100, fdd1900, fdd1800 correspond to Band I, Band II and Band III respectively
        fdd2100,
        fdd1900,
        fdd1800,
        bandVI,
        bandIV,
        bandV, spare2, spare1 }

RadioFrequencyBandTDDList ::=     ENUMERATED {
        a, b, c, ab, ac, bc, abc, spare }

RadioFrequencyBandTDD ::=         ENUMERATED {a, b, c, spare}

RadioFrequencyBandGSM ::=         ENUMERATED {
        gsm450,
        gsm480,
        gsm850,
        gsm900P,
        gsm900E,
        gsm1800,
        gsm1900,
        spare9, spare8, spare7, spare6, spare5,
        spare4, spare3, spare2, spare1}

Rb-timer-indicator ::=            SEQUENCE {
        t314-expired           BOOLEAN,
        t315-expired           BOOLEAN }

Re-EstablishmentTimer ::=         ENUMERATED {
        useT314, useT315
}

RedirectionInfo ::=               CHOICE {
        frequencyInfo          FrequencyInfo,
        interRATInfo           InterRATInfo
}

RedirectionInfo-r6 ::=            CHOICE {
        frequencyInfo          FrequencyInfo,
        interRATInfo           InterRATInfo-r6
}

```



```

RejectionCause ::=
    ENUMERATED {
        congestion,
        unspecified }

ReleaseCause ::=
    ENUMERATED {
        normalEvent,
        unspecified,
        pre-emptiveRelease,
        congestion,
        re-establishmentReject,
        directedsignallingconnectionre-establishment,
        userInactivity,
        spare }

RF-Capability ::=
    SEQUENCE {
        fddRF-Capability
            SEQUENCE {
                ue-PowerClass
                TxRxFrequencySeparation
            }
        tddRF-Capability
            SEQUENCE {
                ue-PowerClass
                radioFrequencyTDDBandList
                chipRateCapability
            }
    }

RF-Capability-r4-ext ::=
    SEQUENCE {
        tddRF-Capability
            SEQUENCE {
                ue-PowerClass
                radioFrequencyBandTDDList
                chipRateCapability
            }
    }

RLC-Capability ::=
    SEQUENCE {
        -- If present, the "totalRLC-AM-BufferSize" in the IE "RLC-Capability-r5-ext" overrides the
        -- corresponding value in this IE. The value in this IE may be used by a pre-REL-5 UTRAN.
        totalRLC-AM-BufferSize
            TotalRLC-AM-BufferSize,
        maximumRLC-WindowSize
            MaximumRLC-WindowSize,
        maximumAM-EntityNumber
            MaximumAM-EntityNumberRLC-Cap
    }

RLC-Capability-r5-ext ::=
    SEQUENCE {
        totalRLC-AM-BufferSize
            TotalRLC-AM-BufferSize-r5-ext
    }
    OPTIONAL

RRC-ConnectionReleaseInformation ::=
    CHOICE {
        noRelease
            NULL,
        release
            SEQUENCE {
                releaseCause
                ReleaseCause
            }
    }

RRC-MessageSequenceNumber ::=
    INTEGER (0..15)

RRC-MessageSequenceNumberList ::=
    SEQUENCE (SIZE (4..5)) OF
        RRC-MessageSequenceNumber

RRC-StateIndicator ::=
    ENUMERATED {
        cell-DCH, cell-FACH, cell-PCH, ura-PCH }

RRC-TransactionIdentifier ::=
    INTEGER (0..3)

S-RNTI ::=
    BIT STRING (SIZE (20))

S-RNTI-2 ::=
    BIT STRING (SIZE (10))

SecurityCapability ::=
    SEQUENCE {
        cipheringAlgorithmCap
            BIT STRING {
                -- For each bit value "0" means false/ not supported
                spare15(0),
                spare14(1),
                spare13(2),
                spare12(3),
                spare11(4),
                spare10(5),
                spare9(6),
            }
    }

```

```

        spare8(7),
        spare7(8),
        spare6(9),
        spare5(10),
        spare4(11),
        spare3(12),
        spare2(13),
        ueal(14),
        uea0(15)
    } (SIZE (16)),
integrityProtectionAlgorithmCap BIT STRING {
    -- For each bit value "0" means false/ not supported
    spare15(0),
    spare14(1),
    spare13(2),
    spare12(3),
    spare11(4),
    spare10(5),
    spare9(6),
    spare8(7),
    spare7(8),
    spare6(9),
    spare5(10),
    spare4(11),
    spare3(12),
    spare2(13),
    uial(14),
    spare0(15)
} (SIZE (16))
}

SimultaneousSCCPCH-DPCH-Reception ::= CHOICE {
    notSupported NULL,
    supported SEQUENCE {
        maxNoSCCPCH-RL MaxNoSCCPCH-RL,
        -- simultaneousSCCPCH-DPCH-DPDCH-Reception is applicable only if
        -- the IE Support of PDSCH = TRUE
        -- Note: the reference to DPDCH in the element name below is incorrect (see tabular). The
        -- name is not changed, to keep it aligned with R99.
        simultaneousSCCPCH-DPCH-DPDCH-Reception BOOLEAN
    }
}

SRNC-Identity ::= BIT STRING (SIZE (12))

START-Value ::= BIT STRING (SIZE (20))

STARTList ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    STARTSingle

STARTSingle ::= SEQUENCE {
    cn-DomainIdentity CN-DomainIdentity,
    start-Value START-Value
}

SystemSpecificCapUpdateReq ::= ENUMERATED {
    gsm }

SystemSpecificCapUpdateReqList ::= SEQUENCE (SIZE (1..maxSystemCapability)) OF
    SystemSpecificCapUpdateReq

T-300 ::= ENUMERATED {
    ms100, ms200, ms400, ms600, ms800,
    ms1000, ms1200, ms1400, ms1600,
    ms1800, ms2000, ms3000, ms4000,
    ms6000, ms8000 }

T-301 ::= ENUMERATED {
    ms100, ms200, ms400, ms600, ms800,
    ms1000, ms1200, ms1400, ms1600,
    ms1800, ms2000, ms3000, ms4000,
    ms6000, ms8000, spare }

T-302 ::= ENUMERATED {
    ms100, ms200, ms400, ms600, ms800,
    ms1000, ms1200, ms1400, ms1600,

```

```

ms1800, ms2000, ms3000, ms4000,
ms6000, ms8000, spare }

T-304 ::= ENUMERATED {
    ms100, ms200, ms400,
    ms1000, ms2000, spare3, spare2, spare1 }

T-305 ::= ENUMERATED {
    noUpdate, m5, m10, m30,
    m60, m120, m360, m720 }

T-307 ::= ENUMERATED {
    s5, s10, s15, s20,
    s30, s40, s50, spare }

T-308 ::= ENUMERATED {
    ms40, ms80, ms160, ms320 }

T-309 ::= INTEGER (1..8)

T-310 ::= ENUMERATED {
    ms40, ms80, ms120, ms160,
    ms200, ms240, ms280, ms320 }

T-311 ::= ENUMERATED {
    ms250, ms500, ms750, ms1000,
    ms1250, ms1500, ms1750, ms2000 }

-- The value 0 for T-312 is not used in this version of the specification
T-312 ::= INTEGER (0..15)

T-313 ::= INTEGER (0..15)

T-314 ::= ENUMERATED {
    s0, s2, s4, s6, s8,
    s12, s16, s20 }

T-315 ::= ENUMERATED {
    s0, s10, s30, s60, s180,
    s600, s1200, s1800 }

T-316 ::= ENUMERATED {
    s0, s10, s20, s30, s40,
    s50, s-inf, spare }

-- All the values are changed to "infinity" in Rel-5
T-317 ::= ENUMERATED {
    infinity0, infinity1, infinity2, infinity3, infinity4,
    infinity5, infinity6, infinity7}

T-CPCH ::= ENUMERATED {
    ct0, ct1 }

TMSI-and-LAI-GSM-MAP ::= SEQUENCE {
    tmsi
    lai
}

TMSI-DS-41 ::= OCTET STRING (SIZE (2..17))

TotalRLC-AM-BufferSize ::= ENUMERATED {
    dummy, kb10, kb50, kb100,
    kb150, kb500, kb1000, spare }

TotalRLC-AM-BufferSize-r5-ext ::= ENUMERATED {
    kb200, kb300, kb400, kb750 }

-- Actual value TransmissionProbability = IE value * 0.125
TransmissionProbability ::= INTEGER (1..8)

TransportChannelCapability ::= SEQUENCE {
    dl-TransChCapability
    ul-TransChCapability
}

TurboSupport ::= CHOICE {
    notSupported
    supported
    NULL,
    MaxNoBits
}

```

```

}

TxRxFrequencySeparation ::=          ENUMERATED {
                                        mhz190, mhz174-8-205-2,
                                        mhz134-8-245-2 }

U-RNTI ::=                             SEQUENCE {
    srnc-Identity                      SRNC-Identity,
    s-RNTI                              S-RNTI
}

U-RNTI-Group ::=                       CHOICE {
-- TABULAR: not following the tabular strictly, but this will most likely save bits
    all                                 NULL,
    u-RNTI-BitMaskIndex-b1             BIT STRING (SIZE (31)),
    u-RNTI-BitMaskIndex-b2             BIT STRING (SIZE (30)),
    u-RNTI-BitMaskIndex-b3             BIT STRING (SIZE (29)),
    u-RNTI-BitMaskIndex-b4             BIT STRING (SIZE (28)),
    u-RNTI-BitMaskIndex-b5             BIT STRING (SIZE (27)),
    u-RNTI-BitMaskIndex-b6             BIT STRING (SIZE (26)),
    u-RNTI-BitMaskIndex-b7             BIT STRING (SIZE (25)),
    u-RNTI-BitMaskIndex-b8             BIT STRING (SIZE (24)),
    u-RNTI-BitMaskIndex-b9             BIT STRING (SIZE (23)),
    u-RNTI-BitMaskIndex-b10            BIT STRING (SIZE (22)),
    u-RNTI-BitMaskIndex-b11            BIT STRING (SIZE (21)),
    u-RNTI-BitMaskIndex-b12            BIT STRING (SIZE (20)),
    u-RNTI-BitMaskIndex-b13            BIT STRING (SIZE (19)),
    u-RNTI-BitMaskIndex-b14            BIT STRING (SIZE (18)),
    u-RNTI-BitMaskIndex-b15            BIT STRING (SIZE (17)),
    u-RNTI-BitMaskIndex-b16            BIT STRING (SIZE (16)),
    u-RNTI-BitMaskIndex-b17            BIT STRING (SIZE (15)),
    u-RNTI-BitMaskIndex-b18            BIT STRING (SIZE (14)),
    u-RNTI-BitMaskIndex-b19            BIT STRING (SIZE (13)),
    u-RNTI-BitMaskIndex-b20            BIT STRING (SIZE (12)),
    u-RNTI-BitMaskIndex-b21            BIT STRING (SIZE (11)),
    u-RNTI-BitMaskIndex-b22            BIT STRING (SIZE (10)),
    u-RNTI-BitMaskIndex-b23            BIT STRING (SIZE (9)),
    u-RNTI-BitMaskIndex-b24            BIT STRING (SIZE (8)),
    u-RNTI-BitMaskIndex-b25            BIT STRING (SIZE (7)),
    u-RNTI-BitMaskIndex-b26            BIT STRING (SIZE (6)),
    u-RNTI-BitMaskIndex-b27            BIT STRING (SIZE (5)),
    u-RNTI-BitMaskIndex-b28            BIT STRING (SIZE (4)),
    u-RNTI-BitMaskIndex-b29            BIT STRING (SIZE (3)),
    u-RNTI-BitMaskIndex-b30            BIT STRING (SIZE (2)),
    u-RNTI-BitMaskIndex-b31            BIT STRING (SIZE (1))
}

U-RNTI-Short ::=                       SEQUENCE {
    srnc-Identity                      SRNC-Identity,
    s-RNTI-2                            S-RNTI-2
}

UE-ConnTimersAndConstants ::=          SEQUENCE {
-- Optional is used also for parameters for which the default value is the last one read in SIB1
-- t-301 and n-301 should not be used by the UE in this version of the specification
    t-301                               T-301                               DEFAULT ms2000,
    n-301                               N-301                               DEFAULT 2,
    t-302                               T-302                               DEFAULT ms4000,
    n-302                               N-302                               DEFAULT 3,
    t-304                               T-304                               DEFAULT ms2000,
    n-304                               N-304                               DEFAULT 2,
    t-305                               T-305                               DEFAULT m30,
    t-307                               T-307                               DEFAULT s30,
    t-308                               T-308                               DEFAULT ms160,
    t-309                               T-309                               DEFAULT 5,
    t-310                               T-310                               DEFAULT ms160,
    n-310                               N-310                               DEFAULT 4,
    t-311                               T-311                               DEFAULT ms2000,
    t-312                               T-312                               DEFAULT 1,
    -- n-312 shall be ignored if n-312 in UE-ConnTimersAndConstants-v3a0ext is present, and the
    -- value of that element shall be used instead.
    n-312                               N-312                               DEFAULT s1,
    t-313                               T-313                               DEFAULT 3,
    n-313                               N-313                               DEFAULT s20,
    t-314                               T-314                               DEFAULT s12,
    t-315                               T-315                               DEFAULT s180,
    -- n-315 shall be ignored if n-315 in UE-ConnTimersAndConstants-v3a0ext is present, and the
    -- value of that element shall be used instead.

```

```

n-315          N-315          DEFAULT s1,
t-316          T-316          DEFAULT s30,
t-317          T-317          DEFAULT infinity4
}

UE-ConnTimersAndConstants-v3a0ext ::=          SEQUENCE {
n-312          N-312ext          OPTIONAL,
n-315          N-315ext          OPTIONAL
}

UE-ConnTimersAndConstants-r5 ::=          SEQUENCE {
-- Optional is used also for parameters for which the default value is the last one read in SIB1
-- t-301 and n-301 should not be used by the UE in this version of the specification
t-301          T-301          DEFAULT ms2000,
n-301          N-301          DEFAULT 2,
t-302          T-302          DEFAULT ms4000,
n-302          N-302          DEFAULT 3,
t-304          T-304          DEFAULT ms2000,
n-304          N-304          DEFAULT 2,
t-305          T-305          DEFAULT m30,
t-307          T-307          DEFAULT s30,
t-308          T-308          DEFAULT ms160,
t-309          T-309          DEFAULT 5,
t-310          T-310          DEFAULT ms160,
n-310          N-310          DEFAULT 4,
t-311          T-311          DEFAULT ms2000,
t-312          T-312          DEFAULT 1,
n-312          N-312-r5          DEFAULT s1,
t-313          T-313          DEFAULT 3,
n-313          N-313          DEFAULT s20,
t-314          T-314          DEFAULT s12,
t-315          T-315          DEFAULT s180,
n-315          N-315-r5          DEFAULT s1,
t-316          T-316          DEFAULT s30,
t-317          T-317          DEFAULT infinity4
}

UE-IdleTimersAndConstants ::=          SEQUENCE {
t-300          T-300,
n-300          N-300,
t-312          T-312,
-- n-312 shall be ignored if n-312 in UE-IdleTimersAndConstants-v3a0ext is present, and the
-- value of that element shall be used instead.
n-312          N-312
}

UE-IdleTimersAndConstants-v3a0ext ::=          SEQUENCE {
n-312          N-312ext          OPTIONAL
}

UE-MultiModeRAT-Capability ::=          SEQUENCE {
multiRAT-CapabilityList          MultiRAT-Capability,
multiModeCapability          MultiModeCapability
}

UE-PowerClass ::=          INTEGER (1..4)

UE-PowerClassExt ::=          ENUMERATED {class1, class2, class3, class4,
spare4, spare3, spare2, spare1 }

UE-RadioAccessCapability ::=          SEQUENCE {
-- UE-RadioAccessCapability is compatible with R99, although accessStratumReleaseIndicator
-- is removed from this IE, since its encoding did not does in bits. The
-- accessStratumReleaseIndicator is provided in the relevant REL-4 extension IEs.
pdcp-Capability          PDCP-Capability,
rlc-Capability          RLC-Capability,
transportChannelCapability          TransportChannelCapability,
rf-Capability          RF-Capability,
physicalChannelCapability          PhysicalChannelCapability,
ue-MultiModeRAT-Capability          UE-MultiModeRAT-Capability,
securityCapability          SecurityCapability,
ue-positioning-Capability          UE-Positioning-Capability,
measurementCapability          MeasurementCapability          OPTIONAL
}

UE-RadioAccessCapabilityInfo ::=          SEQUENCE {
ue-RadioAccessCapability          UE-RadioAccessCapability,
ue-RadioAccessCapability-v370ext          UE-RadioAccessCapability-v370ext
}

```

```

}
UE-RadioAccessCapability-v370ext ::= SEQUENCE {
    ue-RadioAccessCapabBandFDDList
}
UE-RadioAccessCapability-v380ext ::= SEQUENCE {
    UE-PositioningCapabilityExt-v380
}
UE-RadioAccessCapability-v3a0ext ::= SEQUENCE {
    UE-PositioningCapabilityExt-v3a0
}
UE-RadioAccessCapability-v3g0ext ::= SEQUENCE {
    UE-PositioningCapabilityExt-v3g0
}
UE-PositioningCapabilityExt-v380 ::= SEQUENCE {
    rx-tx-TimeDifferenceType2Capable
    BOOLEAN
}
UE-PositioningCapabilityExt-v3a0 ::= SEQUENCE {
    validity-CellPCH-UraPCH
    ENUMERATED { true }
}
UE-PositioningCapabilityExt-v3g0 ::= SEQUENCE {
    sfn-sfnType2Capability
    ENUMERATED { true }
}
UE-RadioAccessCapabBandFDDList ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
    UE-RadioAccessCapabBandFDD
UE-RadioAccessCapabBandFDD ::= SEQUENCE{
    radioFrequencyBandFDD          RadioFrequencyBandFDD,
    fddRF-Capability                SEQUENCE {
        ue-PowerClass              UE-PowerClassExt,
        txRxFrequencySeparation    TxRxFrequencySeparation
    }
    measurementCapability           MeasurementCapabilityExt OPTIONAL,
}
UE-RadioAccessCapability-v4b0ext ::= SEQUENCE {
    pdcp-Capability-r4-ext          PDCP-Capability-r4-ext,
    tdd-CapabilityExt              SEQUENCE {
        rf-Capability              RF-Capability-r4-ext,
        physicalChannelCapability-LCR-r4,
        measurementCapability-r4-ext
    }
    -- IE " AccessStratumReleaseIndicator" is not needed in RRC CONNECTION SETUP COMPLETE
    accessStratumReleaseIndicator    AccessStratumReleaseIndicator OPTIONAL
}
UE-RadioAccessCapabilityComp ::= SEQUENCE {
    totalAM-RLCMemoryExceeds10kB    BOOLEAN,
    rf-CapabilityComp               RF-CapabilityComp
}
RF-CapabilityComp ::= SEQUENCE {
    fdd                             CHOICE {
        notSupported                NULL,
        supported                   RF-CapabBandListFDDComp
    },
    tdd384-RF-Capability            CHOICE {
        notSupported                NULL,
        supported                   RadioFrequencyBandTDDList
    },
    tdd128-RF-Capability            CHOICE {
        notSupported                NULL,
        supported                   RadioFrequencyBandTDDList
    }
}
RF-CapabBandFDDComp ::= ENUMERATED { notSupported, mhz190,
    mhz174-8-205-2, mhz134-8-245-2 }
RF-CapabBandListFDDComp ::= SEQUENCE (SIZE (1..maxFreqBandsFDD)) OF
    -- the first entry corresponds with the first value of IE RadioFrequencyBandFDD,

```

```

-- fdd2100, and so on
RF-CapabBandFDDComp

| UE-RadioAccessCapability-v5xyv590ext ::= SEQUENCE {
  dl-CapabilityWithSimultaneousHS-DSCHConfig DL-CapabilityWithSimultaneousHS-DSCHConfig
  OPTIONAL,
  pdcp-Capability-r5-ext                      PDCP-Capability-r5-ext,
  rlc-Capability-r5-ext                      RLC-Capability-r5-ext,
  physicalChannelCapability                  PhysicalChannelCapability-hspdsch-r5,
  multiModeRAT-Capability-v5xyv590ext      MultiModeRAT-Capability-v5xyv590ext
}

UL-PhysChCapabilityFDD ::= SEQUENCE {
  maxNoDPDCH-BitsTransmitted      MaxNoDPDCH-BitsTransmitted,
  supportOfPCPCH                  BOOLEAN
}

UL-PhysChCapabilityTDD ::= SEQUENCE {
  maxTS-PerFrame                  MaxTS-PerFrame,
  maxPhysChPerTimeslot           MaxPhysChPerTimeslot,
  minimumSF                      MinimumSF-UL,
  supportOfPUSCH                 BOOLEAN
}

UL-PhysChCapabilityTDD-LCR-r4 ::= SEQUENCE {
  maxTS-PerSubFrame              MaxTS-PerSubFrame-r4,
  maxPhysChPerTimeslot           MaxPhysChPerTimeslot,
  minimumSF                      MinimumSF-UL,
  supportOfPUSCH                 BOOLEAN,
  supportOf8PSK                 BOOLEAN
}

UL-TransChCapability ::= SEQUENCE {
  maxNoBitsTransmitted           MaxNoBits,
  maxConvCodeBitsTransmitted     MaxNoBits,
  turboEncodingSupport           TurboSupport,
  maxSimultaneousTransChs        MaxSimultaneousTransChsUL,
  modeSpecificInfo               CHOICE {
    fdd                          NULL,
    tdd                          SEQUENCE {
      maxSimultaneousCCTrCH-Count MaxSimultaneousCCTrCH-Count
    }
  },
  maxTransmittedBlocks           MaxTransportBlocksUL,
  maxNumberOfTFC                 MaxNumberOfTFC-UL,
  maxNumberOfTF                  MaxNumberOfTF
}

UE-Positioning-Capability ::= SEQUENCE {
  standaloneLocMethodsSupported  BOOLEAN,
  ue-BasedOTDOA-Supported        BOOLEAN,
  networkAssistedGPS-Supported   NetworkAssistedGPS-Supported,
  supportForUE-GPS-TimingOfCellFrames  BOOLEAN,
  supportForIPDL                 BOOLEAN
}

UE-SecurityInformation ::= SEQUENCE {
  start-CS                       START-Value
}

URA-UpdateCause ::= ENUMERATED {
  changeOfURA,
  periodicURAUpdate,
  dummy,
  spare1 }

UTRAN-DRX-CycleLengthCoefficient ::= INTEGER (3..9)

WaitTime ::= INTEGER (0..15)

-- *****
--
-- RADIO BEARER INFORMATION ELEMENTS (10.3.4)
--
-- *****

AlgorithmSpecificInfo ::= CHOICE {
  rfc2507-Info                RFC2507-Info
}

```

```

}

AlgorithmSpecificInfo-r4 ::= CHOICE {
    rfc2507-Info          RFC2507-Info,
    rfc3095-Info          RFC3095-Info-r4
}

CID-InclusionInfo-r4 ::= ENUMERATED {
    pdcp-Header,
    rfc3095-PacketFormat }

-- Upper limit of COUNT-C is 2^32 - 1
COUNT-C ::= INTEGER (0..4294967295)

-- Upper limit of COUNT-C-MSB is 2^25 - 1
COUNT-C-MSB ::= INTEGER (0..33554431)

DefaultConfigIdentity ::= INTEGER (0..10)

DefaultConfigIdentity-r4 ::= INTEGER (0..12)

DefaultConfigIdentity-r5 ::= INTEGER (0..13)

DefaultConfigMode ::= ENUMERATED {
    fdd,
    tdd }

DL-AM-RLC-Mode ::= SEQUENCE {
    inSequenceDelivery      BOOLEAN,
    receivingWindowSize     ReceivingWindowSize,
    dl-RLC-StatusInfo      DL-RLC-StatusInfo
}

DL-CounterSynchronisationInfo ::= SEQUENCE {
    rb-WithPDCP-InfoList   RB-WithPDCP-InfoList   OPTIONAL
}

DL-CounterSynchronisationInfo-r5 ::= SEQUENCE {
    rb-WithPDCP-InfoList   RB-WithPDCP-InfoList   OPTIONAL,
    rb-PDCPContextRelocationList RB-PDCPContextRelocationList OPTIONAL
}

DL-LogicalChannelMapping ::= SEQUENCE {
    -- TABULAR: DL-TransportChannelType contains TransportChannelIdentity as well.
    dl-TransportChannelType DL-TransportChannelType,
    logicalChannelIdentity  LogicalChannelIdentity   OPTIONAL
}

DL-LogicalChannelMapping-r5 ::= SEQUENCE {
    -- TABULAR: DL-TransportChannelType contains TransportChannelIdentity as well.
    dl-TransportChannelType DL-TransportChannelType-r5,
    logicalChannelIdentity  LogicalChannelIdentity   OPTIONAL
}

DL-LogicalChannelMappingList ::= SEQUENCE (SIZE (1..maxLoCHperRLC)) OF
    DL-LogicalChannelMapping

DL-LogicalChannelMappingList-r5 ::= SEQUENCE (SIZE (1..maxLoCHperRLC)) OF
    DL-LogicalChannelMapping-r5

DL-RFC3095-r4 ::= SEQUENCE {
    cid-InclusionInfo      CID-InclusionInfo-r4,
    max-CID               INTEGER (1..16383)          DEFAULT 15,
    reverseDecompressionDepth INTEGER (0..65535)          DEFAULT 0
}

DL-RLC-Mode ::= CHOICE {
    dl-AM-RLC-Mode      DL-AM-RLC-Mode,
    dl-UM-RLC-Mode      NULL,
    dl-TM-RLC-Mode      DL-TM-RLC-Mode
}

DL-RLC-StatusInfo ::= SEQUENCE {
    timerStatusProhibit TimerStatusProhibit          OPTIONAL,
    -- dummy is not used in this version of the specification, it should not be sent
    -- and if received they should be ignored.
    dummy                TimerEPC                    OPTIONAL,
    missingPDU-Indicator BOOLEAN,
}

```


timerStatusPeriodic	TimerStatusPeriodic	OPTIONAL
}		
DL-TM-RLC-Mode ::=	SEQUENCE {	
segmentationIndication	BOOLEAN	
}		
DL-TransportChannelType ::=	CHOICE {	
dch	TransportChannelIdentity,	
fach	NULL,	
dsch	TransportChannelIdentity,	
dch-and-dsch	TransportChannelIdentityDCHandDSCH	
}		
DL-TransportChannelType-r5 ::=	CHOICE {	
dch	TransportChannelIdentity,	
fach	NULL,	
dsch	TransportChannelIdentity,	
dch-and-dsch	TransportChannelIdentityDCHandDSCH,	
hsdsch	MAC-d-FlowIdentity,	
dch-and-hsdsch	MAC-d-FlowIdentityDCHandHSDSCH	
}		
ExpectReordering ::=	ENUMERATED {	
	reorderingNotExpected,	
	reorderingExpected }	
ExplicitDiscard ::=	SEQUENCE {	
timerMRW	TimerMRW,	
timerDiscard	TimerDiscard,	
maxMRW	MaxMRW	
}		
HeaderCompressionInfo ::=	SEQUENCE {	
algorithmSpecificInfo	AlgorithmSpecificInfo	
}		
HeaderCompressionInfoList ::=	SEQUENCE (SIZE (1..maxPDCPALgoType)) OF	
	HeaderCompressionInfo	
HeaderCompressionInfo-r4 ::=	SEQUENCE {	
algorithmSpecificInfo	AlgorithmSpecificInfo-r4	
}		
HeaderCompressionInfoList-r4 ::=	SEQUENCE (SIZE (1..maxPDCPALgoType)) OF	
	HeaderCompressionInfo-r4	
LogicalChannelIdentity ::=	INTEGER (1..15)	
LosslessSRNS-RelocSupport ::=	CHOICE {	
supported	MaxPDCP-SN-WindowSize,	
notSupported	NULL	
}		
MAC-d-HFN-initial-value ::=	BIT STRING (SIZE (24))	
MAC-LogicalChannelPriority ::=	INTEGER (1..8)	
MaxDAT ::=	ENUMERATED {	
	dat1, dat2, dat3, dat4, dat5, dat6,	
	dat7, dat8, dat9, dat10, dat15, dat20,	
	dat25, dat30, dat35, dat40 }	
MaxDAT-Retransmissions ::=	SEQUENCE {	
maxDAT	MaxDAT,	
timerMRW	TimerMRW,	
maxMRW	MaxMRW	
}		
MaxMRW ::=	ENUMERATED {	
	mm1, mm4, mm6, mm8, mm12, mm16,	
	mm24, mm32 }	
MaxPDCP-SN-WindowSize ::=	ENUMERATED {	
	sn255, sn65535 }	
MaxRST ::=	ENUMERATED {	
	rst1, rst4, rst6, rst8, rst12,	

```

        rst16, rst24, rst32 }

NoExplicitDiscard ::=
    ENUMERATED {
        dt10, dt20, dt30, dt40, dt50,
        dt60, dt70, dt80, dt90, dt100 }

PDCP-Info ::=
    SEQUENCE {
        losslessSRNS-RelocSupport      LosslessSRNS-RelocSupport      OPTIONAL,
        -- TABULAR: pdcP-PDU-Header is MD in the tabular format and it can be encoded
        -- in one bit, so the OPTIONAL is removed for compactness.
        pdcP-PDU-Header                PDCP-PDU-Header,
        headerCompressionInfoList      HeaderCompressionInfoList      OPTIONAL
    }

PDCP-Info-r4 ::=
    SEQUENCE {
        losslessSRNS-RelocSupport      LosslessSRNS-RelocSupport      OPTIONAL,
        -- TABULAR: pdcP-PDU-Header is MD in the tabular format and it can be encoded
        -- in one bit, so the OPTIONAL is removed for compactness.
        pdcP-PDU-Header                PDCP-PDU-Header,
        headerCompressionInfoList-r4   HeaderCompressionInfoList-r4   OPTIONAL
    }

PDCP-InfoReconfig ::=
    SEQUENCE {
        pdcP-Info                      PDCP-Info,
        -- dummy is not used in this version of the specification and
        -- it should be ignored.
        dummy                           INTEGER (0..65535)
    }

PDCP-InfoReconfig-r4 ::=
    SEQUENCE {
        pdcP-Info                      PDCP-Info-r4
    }

PDCP-PDU-Header ::=
    ENUMERATED {
        present, absent }

PDCP-SN-Info ::=
    INTEGER (0..65535)

Poll-PDU ::=
    ENUMERATED {
        pdu1, pdu2, pdu4, pdu8, pdu16,
        pdu32, pdu64, pdu128 }

Poll-SDU ::=
    ENUMERATED {
        sdu1, sdu4, sdu16, sdu64 }

PollingInfo ::=
    SEQUENCE {
        timerPollProhibit              TimerPollProhibit              OPTIONAL,
        timerPoll                      TimerPoll                      OPTIONAL,
        poll-PDU                       Poll-PDU                      OPTIONAL,
        poll-SDU                       Poll-SDU                      OPTIONAL,
        lastTransmissionPDU-Poll       BOOLEAN,
        lastRetransmissionPDU-Poll     BOOLEAN,
        pollWindow                     PollWindow                    OPTIONAL,
        timerPollPeriodic              TimerPollPeriodic             OPTIONAL
    }

PollWindow ::=
    ENUMERATED {
        pw50, pw60, pw70, pw80, pw85,
        pw90, pw95, pw99 }

PredefinedConfigIdentity ::=
    INTEGER (0..15)

PredefinedConfigValueTag ::=
    INTEGER (0..15)

PredefinedRB-Configuration ::=
    SEQUENCE {
        re-EstablishmentTimer          Re-EstablishmentTimer,
        srb-InformationList             SRB-InformationSetupList,
        rb-InformationList              RB-InformationSetupList
    }

PreDefRadioConfiguration ::=
    SEQUENCE {
        -- Radio bearer IEs
        predefinedRB-Configuration      PredefinedRB-Configuration,
        -- Transport channel IEs
        preDefTransChConfiguration      PreDefTransChConfiguration,
        -- Physical channel IEs
        preDefPhyChConfiguration        PreDefPhyChConfiguration
    }

```

```

PredefinedConfigStatusList ::= SEQUENCE (SIZE (maxPredefConfig)) OF
                                PredefinedConfigStatusInfo

PredefinedConfigStatusInfo ::= CHOICE {
    storedWithValueTagSameAsPrevious NULL,
    other CHOICE {
        notStored NULL,
        storedWithDifferentValueTag PredefinedConfigValueTag
    }
}

PredefinedConfigStatusListComp ::= SEQUENCE {
    setsWithDifferentValueTag PredefinedConfigSetsWithDifferentValueTag,
    otherEntries PredefinedConfigStatusListVarSz OPTIONAL
}

PredefinedConfigSetsWithDifferentValueTag ::= SEQUENCE (SIZE (1..2)) OF
                                                PredefinedConfigSetWithDifferentValueTag

PredefinedConfigSetWithDifferentValueTag ::= SEQUENCE {
    startPosition INTEGER (0..10) DEFAULT 0,
    -- numberOfEntries INTEGER (6..16),
    -- numberOfEntries is covered by the size of the list in IE PredefinedConfigValueTagList
    valueTagList PredefinedConfigValueTagList
}

PredefinedConfigValueTagList ::= SEQUENCE (SIZE (1..maxPredefConfig)) OF
                                PredefinedConfigValueTag

PredefinedConfigStatusListVarSz ::= SEQUENCE (SIZE (1..maxPredefConfig)) OF
                                    PredefinedConfigStatusInfo

RAB-Info ::= SEQUENCE {
    rab-Identity RAB-Identity,
    cn-DomainIdentity CN-DomainIdentity,
    nas-Synchronisation-Indicator NAS-Synchronisation-Indicator OPTIONAL,
    re-EstablishmentTimer Re-EstablishmentTimer
}

RAB-InformationList ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
                        RAB-Info

RAB-InformationReconfigList ::= SEQUENCE (SIZE (1.. maxRABsetup)) OF
                                 RAB-InformationReconfig

RAB-InformationReconfig ::= SEQUENCE {
    rab-Identity RAB-Identity,
    cn-DomainIdentity CN-DomainIdentity,
    nas-Synchronisation-Indicator NAS-Synchronisation-Indicator
}

RAB-Info-Post ::= SEQUENCE {
    rab-Identity RAB-Identity,
    cn-DomainIdentity CN-DomainIdentity,
    nas-Synchronisation-Indicator NAS-Synchronisation-Indicator OPTIONAL
}

RAB-InformationSetup ::= SEQUENCE {
    rab-Info RAB-Info,
    rb-InformationSetupList RB-InformationSetupList
}

RAB-InformationSetup-r4 ::= SEQUENCE {
    rab-Info RAB-Info,
    rb-InformationSetupList RB-InformationSetupList-r4
}

RAB-InformationSetup-r5 ::= SEQUENCE {
    rab-Info RAB-Info,
    rb-InformationSetupList RB-InformationSetupList-r5
}

RAB-InformationSetupList ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
                              RAB-InformationSetup

RAB-InformationSetupList-r4 ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
                                RAB-InformationSetup-r4

```

```

RAB-InformationSetupList-r5 ::= SEQUENCE (SIZE (1..maxRABsetup)) OF
                                RAB-InformationSetup-r5

RB-ActivationTimeInfo ::= SEQUENCE {
    rb-Identity                RB-Identity,
    rlc-SequenceNumber         RLC-SequenceNumber
}

RB-ActivationTimeInfoList ::= SEQUENCE (SIZE (1..maxRB)) OF
                                RB-ActivationTimeInfo

RB-COUNT-C-Information ::= SEQUENCE {
    rb-Identity                RB-Identity,
    count-C-UL                 COUNT-C,
    count-C-DL                 COUNT-C
}

RB-COUNT-C-InformationList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
                                RB-COUNT-C-Information

RB-COUNT-C-MSB-Information ::= SEQUENCE {
    rb-Identity                RB-Identity,
    count-C-MSB-UL             COUNT-C-MSB,
    count-C-MSB-DL             COUNT-C-MSB
}

RB-COUNT-C-MSB-InformationList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
                                RB-COUNT-C-MSB-Information

RB-Identity ::= INTEGER (1..32)

RB-IdentityList ::= SEQUENCE (SIZE (1..maxRB)) OF
                    RB-Identity

RB-InformationAffected ::= SEQUENCE {
    rb-Identity                RB-Identity,
    rb-MappingInfo             RB-MappingInfo
}

RB-InformationAffected-r5 ::= SEQUENCE {
    rb-Identity                RB-Identity,
    rb-MappingInfo             RB-MappingInfo-r5
}

RB-InformationAffectedList ::= SEQUENCE (SIZE (1..maxRB)) OF
                                RB-InformationAffected

RB-InformationAffectedList-r5 ::= SEQUENCE (SIZE (1..maxRB)) OF
                                RB-InformationAffected-r5

RB-InformationReconfig ::= SEQUENCE {
    rb-Identity                RB-Identity,
    pdcp-Info                  PDCP-InfoReconfig           OPTIONAL,
    pdcp-SN-Info               PDCP-SN-Info             OPTIONAL,
    rlc-Info                    RLC-Info                 OPTIONAL,
    rb-MappingInfo              RB-MappingInfo           OPTIONAL,
    rb-StopContinue              RB-StopContinue         OPTIONAL
}

RB-InformationReconfig-r4 ::= SEQUENCE {
    rb-Identity                RB-Identity,
    pdcp-Info                  PDCP-InfoReconfig-r4     OPTIONAL,
    pdcp-SN-Info               PDCP-SN-Info             OPTIONAL,
    rlc-Info                    RLC-Info                 OPTIONAL,
    rb-MappingInfo              RB-MappingInfo           OPTIONAL,
    rb-StopContinue              RB-StopContinue         OPTIONAL
}

RB-InformationReconfig-r5 ::= SEQUENCE {
    rb-Identity                RB-Identity,
    pdcp-Info                  PDCP-InfoReconfig-r4     OPTIONAL,
    pdcp-SN-Info               PDCP-SN-Info             OPTIONAL,
    rlc-Info                    RLC-Info                 OPTIONAL,
    rb-MappingInfo              RB-MappingInfo-r5       OPTIONAL,
    rb-StopContinue              RB-StopContinue         OPTIONAL
}

```

```

RB-InformationReconfigList ::= SEQUENCE (SIZE (1..maxRB)) OF
                                RB-InformationReconfig

RB-InformationReconfigList-r4 ::= SEQUENCE (SIZE (1..maxRB)) OF
                                RB-InformationReconfig-r4

RB-InformationReconfigList-r5 ::= SEQUENCE (SIZE (1..maxRB)) OF
                                RB-InformationReconfig-r5

RB-InformationReleaseList ::= SEQUENCE (SIZE (1..maxRB)) OF
                                RB-Identity

RB-InformationSetup ::= SEQUENCE {
    rb-Identity                RB-Identity,
    pdcp-Info                  PDCP-Info                OPTIONAL,
    rlc-InfoChoice             RLC-InfoChoice,
    rb-MappingInfo            RB-MappingInfo
}

RB-InformationSetup-r4 ::= SEQUENCE {
    rb-Identity                RB-Identity,
    pdcp-Info                  PDCP-Info-r4            OPTIONAL,
    rlc-InfoChoice             RLC-InfoChoice,
    rb-MappingInfo            RB-MappingInfo
}

RB-InformationSetup-r5 ::= SEQUENCE {
    rb-Identity                RB-Identity,
    pdcp-Info                  PDCP-Info-r4            OPTIONAL,
    rlc-InfoChoice             RLC-InfoChoice,
    rb-MappingInfo            RB-MappingInfo-r5
}

RB-InformationSetupList ::= SEQUENCE (SIZE (1..maxRBperRAB)) OF
                                RB-InformationSetup

RB-InformationSetupList-r4 ::= SEQUENCE (SIZE (1..maxRBperRAB)) OF
                                RB-InformationSetup-r4

RB-InformationSetupList-r5 ::= SEQUENCE (SIZE (1..maxRBperRAB)) OF
                                RB-InformationSetup-r5

RB-MappingInfo ::= SEQUENCE (SIZE (1..maxRBMuxOptions)) OF
                                RB-MappingOption

RB-MappingInfo-r5 ::= SEQUENCE (SIZE (1..maxRBMuxOptions)) OF
                                RB-MappingOption-r5

RB-MappingOption ::= SEQUENCE {
    ul-LogicalChannelMappings UL-LogicalChannelMappings    OPTIONAL,
    dl-LogicalChannelMappingList DL-LogicalChannelMappingList    OPTIONAL
}

RB-MappingOption-r5 ::= SEQUENCE {
    ul-LogicalChannelMappings UL-LogicalChannelMappings    OPTIONAL,
    dl-LogicalChannelMappingList-r5 DL-LogicalChannelMappingList-r5    OPTIONAL
}

RB-PDCPContextRelocation ::= SEQUENCE {
    rb-Identity                RB-Identity,
    dl-RFC3095-Context-Relocation BOOLEAN,
    ul-RFC3095-Context-Relocation BOOLEAN
}

RB-PDCPContextRelocationList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
                                RB-PDCPContextRelocation

RB-StopContinue ::= ENUMERATED {
    stopRB, continueRB }

RB-WithPDCP-Info ::= SEQUENCE {
    rb-Identity                RB-Identity,
    pdcp-SN-Info              PDCP-SN-Info
}

RB-WithPDCP-InfoList ::= SEQUENCE (SIZE (1..maxRBallRABs)) OF
                                RB-WithPDCP-Info

```

```

ReceivingWindowSize ::=          ENUMERATED {
                                   rw1, rw8, rw16, rw32, rw64, rw128, rw256,
                                   rw512, rw768, rw1024, rw1536, rw2047,
                                   rw2560, rw3072, rw3584, rw4095 }

RFC2507-Info ::=                SEQUENCE {
    f-MAX-PERIOD                  INTEGER (1..65535)           DEFAULT 256,
    f-MAX-TIME                    INTEGER (1..255)             DEFAULT 5,
    max-HEADER                    INTEGER (60..65535)          DEFAULT 168,
    tcp-SPACE                     INTEGER (3..255)             DEFAULT 15,
    non-TCP-SPACE                 INTEGER (3..65535)           DEFAULT 15,
    -- TABULAR: expectReordering has only two possible values, so using Optional or Default
    -- would be wasteful
    expectReordering              ExpectReordering
}

RFC3095-Info-r4 ::=             SEQUENCE {
    rohcProfileList               ROHC-ProfileList-r4,
    ul-RFC3095                    UL-RFC3095-r4               OPTIONAL,
    dl-RFC3095                    DL-RFC3095-r4               OPTIONAL
}

RLC-Info ::=                    SEQUENCE {
    ul-RLC-Mode                  UL-RLC-Mode                  OPTIONAL,
    dl-RLC-Mode                  DL-RLC-Mode                  OPTIONAL
}

RLC-InfoChoice ::=              CHOICE {
    rlc-Info                     RLC-Info,
    same-as-RB                   RB-Identity
}

RLC-SequenceNumber ::=          INTEGER (0..4095)

RLC-SizeInfo ::=                SEQUENCE {
    rlc-SizeIndex                INTEGER (1..maxTF)
}

RLC-SizeExplicitList ::=        SEQUENCE (SIZE (1..maxTF)) OF
    RLC-SizeInfo

ROHC-Profile-r4 ::=             INTEGER (1..3)

ROHC-ProfileList-r4 ::=         SEQUENCE (SIZE (1..maxROHC-Profile-r4)) OF
    ROHC-Profile-r4

ROHC-PacketSize-r4 ::=          INTEGER (2..1500)

ROHC-PacketSizeList-r4 ::=      SEQUENCE (SIZE (1..maxROHC-PacketSizes-r4)) OF
    ROHC-PacketSize-r4

SRB-InformationSetup ::=        SEQUENCE {
    -- The default value for rb-Identity is the smallest value not used yet.
    rb-Identity                  RB-Identity                OPTIONAL,
    rlc-InfoChoice              RLC-InfoChoice,
    rb-MappingInfo              RB-MappingInfo
}

SRB-InformationSetup-r5 ::=      SEQUENCE {
    -- The default value for rb-Identity is the smallest value not used yet.
    rb-Identity                  RB-Identity                OPTIONAL,
    rlc-InfoChoice              RLC-InfoChoice,
    rb-MappingInfo              RB-MappingInfo-r5
}

SRB-InformationSetupList ::=    SEQUENCE (SIZE (1..maxSRBsetup)) OF
    SRB-InformationSetup

SRB-InformationSetupList-r5 ::= SEQUENCE (SIZE (1..maxSRBsetup)) OF
    SRB-InformationSetup-r5

SRB-InformationSetupList2 ::=   SEQUENCE (SIZE (3..4)) OF
    SRB-InformationSetup

TimerDiscard ::=                ENUMERATED {
    td0-1, td0-25, td0-5, td0-75,
    td1, td1-25, td1-5, td1-75,
    td2, td2-5, td3, td3-5, td4,
}

```

```

        td4-5, td5, td7-5 }

TimerEPC ::=
    ENUMERATED {
        te50, te60, te70, te80, te90,
        te100, te120, te140, te160, te180,
        te200, te300, te400, te500, te700,
        te900 }

TimerMRW ::=
    ENUMERATED {
        te50, te60, te70, te80, te90, te100,
        te120, te140, te160, te180, te200,
        te300, te400, te500, te700, te900 }

TimerPoll ::=
    ENUMERATED {
        tp10, tp20, tp30, tp40, tp50,
        tp60, tp70, tp80, tp90, tp100,
        tp110, tp120, tp130, tp140, tp150,
        tp160, tp170, tp180, tp190, tp200,
        tp210, tp220, tp230, tp240, tp250,
        tp260, tp270, tp280, tp290, tp300,
        tp310, tp320, tp330, tp340, tp350,
        tp360, tp370, tp380, tp390, tp400,
        tp410, tp420, tp430, tp440, tp450,
        tp460, tp470, tp480, tp490, tp500,
        tp510, tp520, tp530, tp540, tp550,
        tp600, tp650, tp700, tp750, tp800,
        tp850, tp900, tp950, tp1000 }

TimerPollPeriodic ::=
    ENUMERATED {
        tper100, tper200, tper300, tper400,
        tper500, tper750, tper1000, tper2000 }

TimerPollProhibit ::=
    ENUMERATED {
        tpp10, tpp20, tpp30, tpp40, tpp50,
        tpp60, tpp70, tpp80, tpp90, tpp100,
        tpp110, tpp120, tpp130, tpp140, tpp150,
        tpp160, tpp170, tpp180, tpp190, tpp200,
        tpp210, tpp220, tpp230, tpp240, tpp250,
        tpp260, tpp270, tpp280, tpp290, tpp300,
        tpp310, tpp320, tpp330, tpp340, tpp350,
        tpp360, tpp370, tpp380, tpp390, tpp400,
        tpp410, tpp420, tpp430, tpp440, tpp450,
        tpp460, tpp470, tpp480, tpp490, tpp500,
        tpp510, tpp520, tpp530, tpp540, tpp550,
        tpp600, tpp650, tpp700, tpp750, tpp800,
        tpp850, tpp900, tpp950, tpp1000 }

TimerRST ::=
    ENUMERATED {
        tr50, tr100, tr150, tr200, tr250, tr300,
        tr350, tr400, tr450, tr500, tr550,
        tr600, tr700, tr800, tr900, tr1000 }

TimerStatusPeriodic ::=
    ENUMERATED {
        tsp100, tsp200, tsp300, tsp400, tsp500,
        tsp750, tsp1000, tsp2000 }

TimerStatusProhibit ::=
    ENUMERATED {
        tsp10, tsp20, tsp30, tsp40, tsp50,
        tsp60, tsp70, tsp80, tsp90, tsp100,
        tsp110, tsp120, tsp130, tsp140, tsp150,
        tsp160, tsp170, tsp180, tsp190, tsp200,
        tsp210, tsp220, tsp230, tsp240, tsp250,
        tsp260, tsp270, tsp280, tsp290, tsp300,
        tsp310, tsp320, tsp330, tsp340, tsp350,
        tsp360, tsp370, tsp380, tsp390, tsp400,
        tsp410, tsp420, tsp430, tsp440, tsp450,
        tsp460, tsp470, tsp480, tsp490, tsp500,
        tsp510, tsp520, tsp530, tsp540, tsp550,
        tsp600, tsp650, tsp700, tsp750, tsp800,
        tsp850, tsp900, tsp950, tsp1000 }

TransmissionRLC-Discard ::=
    timerBasedExplicit
    timerBasedNoExplicit
    maxDAT-Retransmissions
    noDiscard
}

CHOICE {
    ExplicitDiscard,
    NoExplicitDiscard,
    MaxDAT-Retransmissions,
    MaxDAT
}

```

```

TransmissionWindowSize ::=          ENUMERATED {
                                        tw1, tw8, tw16, tw32, tw64, tw128, tw256,
                                        tw512, tw768, tw1024, tw1536, tw2047,
                                        tw2560, tw3072, tw3584, tw4095 }

UL-AM-RLC-Mode ::=                  SEQUENCE {
    transmissionRLC-Discard           TransmissionRLC-Discard,
    transmissionWindowSize            TransmissionWindowSize,
    timerRST                          TimerRST,
    max-RST                           MaxRST,
    pollingInfo                       PollingInfo                                OPTIONAL
}

UL-CounterSynchronisationInfo ::=   SEQUENCE {
    rB-WithPDCP-InfoList             RB-WithPDCP-InfoList    OPTIONAL,
    startList                         STARTList
}

UL-LogicalChannelMapping ::=        SEQUENCE {
    -- TABULAR: UL-TransportChannelType contains TransportChannelIdentity as well.
    ul-TransportChannelType           UL-TransportChannelType,
    logicalChannelIdentity            LogicalChannelIdentity    OPTIONAL,
    rlc-SizeList                      CHOICE {
        allSizes                      NULL,
        configured                    NULL,
        explicitList                  RLC-SizeExplicitList
    },
    mac-LogicalChannelPriority         MAC-LogicalChannelPriority
}

UL-LogicalChannelMappingList ::=     SEQUENCE {
    -- rlc-LogicalChannelMappingIndicator shall be set to TRUE in this version
    -- of the specification
    rlc-LogicalChannelMappingIndicator BOOLEAN,
    ul-LogicalChannelMapping          SEQUENCE (SIZE (maxLoChperRLC)) OF
                                        UL-LogicalChannelMapping
}

UL-LogicalChannelMappings ::=        CHOICE {
    oneLogicalChannel                 UL-LogicalChannelMapping,
    twoLogicalChannels                UL-LogicalChannelMappingList
}

UL-RFC3095-r4 ::=                   SEQUENCE {
    cid-InclusionInfo                  CID-InclusionInfo-r4,
    max-CID                           INTEGER (1..16383)          DEFAULT 15,
    rohcPacketSizeList               ROHC-PacketSizeList-r4
}

UL-RLC-Mode ::=                     CHOICE {
    ul-AM-RLC-Mode                   UL-AM-RLC-Mode,
    ul-UM-RLC-Mode                   UL-UM-RLC-Mode,
    ul-TM-RLC-Mode                   UL-TM-RLC-Mode,
    spare                             NULL
}

UL-TM-RLC-Mode ::=                  SEQUENCE {
    transmissionRLC-Discard           TransmissionRLC-Discard    OPTIONAL,
    segmentationIndication           BOOLEAN
}

UL-UM-RLC-Mode ::=                  SEQUENCE {
    transmissionRLC-Discard           TransmissionRLC-Discard    OPTIONAL
}

UL-TransportChannelType ::=          CHOICE {
    dch                               TransportChannelIdentity,
    rach                              NULL,
    cpch                              NULL,
    usch                              TransportChannelIdentity
}

-- *****
--
--     TRANSPORT CHANNEL INFORMATION ELEMENTS (10.3.5)
--
-- *****

```



```

AddOrReconfMAC-dFlow ::=          SEQUENCE {
    mac-hs-AddReconfQueue-List    MAC-hs-AddReconfQueue-List  OPTIONAL,
    mac-hs-DelQueue-List          MAC-hs-DelQueue-List      OPTIONAL
}

AllowedTFC-List ::=                SEQUENCE (SIZE (1..maxTFC)) OF
    TFC-Value

AllowedTFI-List ::=                SEQUENCE (SIZE (1..maxTF)) OF
    INTEGER (0..31)

BitModeRLC-SizeInfo ::=           CHOICE {
    sizeType1                      INTEGER (0..127),
    -- Actual value sizeType2 = (part1 * 8) + 128 + part2
    sizeType2                      SEQUENCE {
        part1                      INTEGER (0..15),
        part2                      INTEGER (1..7)
    },
    -- Actual value sizeType3 = (part1 * 16) + 256 + part2
    sizeType3                      SEQUENCE {
        part1                      INTEGER (0..47),
        part2                      INTEGER (1..15)
    },
    -- Actual value sizeType4 = (part1 * 64) + 1024 + part2
    sizeType4                      SEQUENCE {
        part1                      INTEGER (0..62),
        part2                      INTEGER (1..63)
    }
}

-- Actual value BLER-QualityValue = IE value * 0.1
BLER-QualityValue ::=             INTEGER (-63..0)

ChannelCodingType ::=             CHOICE {
    -- noCoding is only used for TDD in this version of the specification,
    -- otherwise it should be ignored
    noCoding                        NULL,
    convolutional                   CodingRate,
    turbo                           NULL
}

CodingRate ::=                     ENUMERATED {
    half,
    third
}

CommonDynamicTF-Info ::=          SEQUENCE {
    rlc-Size                        CHOICE {
        fdd                        SEQUENCE {
            octetModeRLC-SizeInfoType2  OctetModeRLC-SizeInfoType2
        },
        tdd                        SEQUENCE {
            commonTDD-Choice          CHOICE {
                bitModeRLC-SizeInfo    BitModeRLC-SizeInfo,
                octetModeRLC-SizeInfoType1  OctetModeRLC-SizeInfoType1
            }
        }
    },
    numberOfTbSizeList              SEQUENCE (SIZE (1..maxTF)) OF
        NumberOfTransportBlocks,
    logicalChannelList              LogicalChannelList
}

CommonDynamicTF-Info-DynamicTTI ::= SEQUENCE {
    commonTDD-Choice                CHOICE {
        bitModeRLC-SizeInfo          BitModeRLC-SizeInfo,
        octetModeRLC-SizeInfoType1    OctetModeRLC-SizeInfoType1
    },
    numberOfTbSizeAndTTIList         NumberOfTbSizeAndTTIList,
    logicalChannelList               LogicalChannelList
}

CommonDynamicTF-InfoList ::=      SEQUENCE (SIZE (1..maxTF)) OF
    CommonDynamicTF-Info

CommonDynamicTF-InfoList-DynamicTTI ::= SEQUENCE (SIZE (1..maxTF)) OF
    CommonDynamicTF-Info-DynamicTTI

```

```

CommonTransChTFS ::=
    tti
        tti10
        tti20
        tti40
        tti80
        dynamic
    },
    semistaticTF-Information
}

CommonTransChTFS-LCR ::=
    tti
        tti5
        tti10
        tti20
        tti40
        tti80
        dynamic
    },
    semistaticTF-Information
}

CPCH-SetID ::=
    INTEGER (1..maxCPCHsets)

CRC-Size ::=
    ENUMERATED {
        crc0, crc8, crc12, crc16, crc24 }

DedicatedDynamicTF-Info ::=
    rlc-Size
        bitMode
        octetModeType1
    },
    numberOfTbSizeList
    NumberOfTransportBlocks,
    logicalChannelList
}

DedicatedDynamicTF-Info-DynamicTTI ::= SEQUENCE {
    rlc-Size
        bitMode
        octetModeType1
    },
    numberOfTbSizeAndTTIList
    logicalChannelList
}

DedicatedDynamicTF-InfoList ::= SEQUENCE (SIZE (1..maxTF)) OF
    DedicatedDynamicTF-Info

DedicatedDynamicTF-InfoList-DynamicTTI ::= SEQUENCE (SIZE (1..maxTF)) OF
    DedicatedDynamicTF-Info-DynamicTTI

DedicatedTransChTFS ::=
    tti
        tti10
        tti20
        tti40
        tti80
        dynamic
    },
    semistaticTF-Information
}

-- The maximum allowed size of DL-AddReconfTransChInfo2List sequence is 16
DL-AddReconfTransChInfo2List ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation2

-- The maximum allowed size of DL-AddReconfTransChInfoList sequence is 16
DL-AddReconfTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation

-- The maximum allowed size of DL-AddReconfTransChInfoList-r4 sequence is 16
DL-AddReconfTransChInfoList-r4 ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation-r4

-- The maximum allowed size of DL-AddReconfTransChInfoList-r5 sequence is 16
DL-AddReconfTransChInfoList-r5 ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF

```

DL-AddReconfTransChInformation-r5

```

-- ASN.1 for IE "Added or Reconfigured DL TrCH information"
-- in case of messages other than: Radio Bearer Release message and
-- Radio Bearer Reconfiguration message
DL-AddReconfTransChInformation ::= SEQUENCE {
  dl-TransportChannelType      DL-TrCH-Type,
  dl-transportChannelIdentity  TransportChannelIdentity,
  tfs-SignallingMode          CHOICE {
    explicit-config           TransportFormatSet,
    sameAsULTrCH             UL-TransportChannelIdentity
  },
  dch-QualityTarget           QualityTarget           OPTIONAL,
  -- dummy is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored.
  dummy                       TM-SignallingInfo      OPTIONAL
}

DL-AddReconfTransChInformation-r4 ::= SEQUENCE {
  dl-TransportChannelType      DL-TrCH-Type,
  dl-transportChannelIdentity  TransportChannelIdentity,
  tfs-SignallingMode          CHOICE {
    explicit-config           TransportFormatSet,
    sameAsULTrCH             UL-TransportChannelIdentity
  },
  dch-QualityTarget           QualityTarget           OPTIONAL
}

DL-AddReconfTransChInformation-r5 ::= SEQUENCE {
  dl-TransportChannelType      DL-TrCH-Type-r5,
  tfs-SignallingMode          CHOICE {
    explicit-config           TransportFormatSet,
    sameAsULTrCH             UL-TransportChannelIdentity,
    hsdSCH                    HSDSCH-Info
  },
  dch-QualityTarget           QualityTarget           OPTIONAL
}

-- ASN.1 for IE "Added or Reconfigured DL TrCH information"
-- in case of Radio Bearer Release message and
-- Radio Bearer Reconfiguration message
DL-AddReconfTransChInformation2 ::= SEQUENCE {
  dl-TransportChannelType      DL-TrCH-Type,
  transportChannelIdentity    TransportChannelIdentity,
  tfs-SignallingMode          CHOICE {
    explicit-config           TransportFormatSet,
    sameAsULTrCH             UL-TransportChannelIdentity
  },
  qualityTarget                QualityTarget           OPTIONAL
}

DL-CommonTransChInfo ::= SEQUENCE {
  sccpch-TFCS                  TFCS                   OPTIONAL,
  -- modeSpecificInfo should be optional. A new version of this IE should be defined
  -- to be used in later versions of messages using this IE
  modeSpecificInfo             CHOICE {
    fdd                         SEQUENCE {
      dl-Parameters             CHOICE {
        dl-DCH-TFCS             TFCS,
        sameAsUL                NULL
      }
    },
    tdd                         SEQUENCE {
      individualDL-CCTrCH-InfoList IndividualDL-CCTrCH-InfoList OPTIONAL
    }
  }
}

DL-CommonTransChInfo-r4 ::= SEQUENCE {
  sccpch-TFCS                  TFCS                   OPTIONAL,
  modeSpecificInfo             CHOICE {
    fdd                         SEQUENCE {
      dl-Parameters             CHOICE {
        dl-DCH-TFCS             SEQUENCE {
          tfcs                   TFCS           OPTIONAL
        }
      },
      sameAsUL                  NULL
    }
  }
}

```

```

    }
    },
    tdd
        individualDL-CCTrCH-InfoList
    }
} OPTIONAL
}

DL-DeletedTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    DL-TransportChannelIdentity

DL-DeletedTransChInfoList-r5 ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    DL-TransportChannelIdentity-r5

DL-TransportChannelIdentity ::= SEQUENCE {
    dl-TransportChannelType
    dl-TransportChannelIdentity
}

DL-TransportChannelIdentity-r5 ::= SEQUENCE {
    dl-TransportChannelType
    DL-TrCH-Type-r5
}

DL-TrCH-Type ::= ENUMERATED {dch, dsch}

DL-TrCH-Type-r5 ::= CHOICE {
    dch
    dsch
    hsdSCH
}

DRAC-ClassIdentity ::= INTEGER (1..maxDRACclasses)

DRAC-StaticInformation ::= SEQUENCE {
    transmissionTimeValidity
    timeDurationBeforeRetry
    drac-ClassIdentity
}

DRAC-StaticInformationList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    DRAC-StaticInformation

ExplicitTFCS-Configuration ::= CHOICE {
    complete
    addition
    removal
    replacement
    tfcsRemoval
    tfcsAdd
}

GainFactor ::= INTEGER (0..15)

GainFactorInformation ::= CHOICE {
    signalledGainFactors
    computedGainFactors
}

HSDSCH-Info ::= SEQUENCE {
    harqInfo
    addOrReconfMAC-dFlow
}

HARQ-Info ::= SEQUENCE {
    numberOfProcesses
    memoryPartitioning
    implicit
    explicit
}

HARQMemorySize ::= ENUMERATED {
    hms800, hms1600, hms2400, hms3200, hms4000,
    hms4800, hms5600, hms6400, hms7200, hms8000,
    hms8800, hms9600, hms10400, hms11200, hms12000,
}

```

```

hms12800, hms13600, hms14400, hms15200, hms16000,
hms17600, hms19200, hms20800, hms22400, hms24000,
hms25600, hms27200, hms28800, hms30400, hms32000,
hms36000, hms40000, hms44000, hms48000, hms52000,
hms56000, hms60000, hms64000, hms68000, hms72000,
hms76000, hms80000, hms88000, hms96000, hms104000,
hms112000, hms120000, hms128000, hms136000, hms144000,
hms152000, hms160000, hms176000, hms192000, hms208000,
hms224000, hms240000, hms256000, hms272000, hms288000,
hms304000 }

IndividualDL-CCTrCH-Info ::= SEQUENCE {
    dl-TFCS-Identity          TFCS-Identity,
    tfcs-SignallingMode      CHOICE {
        explicit-config     TFCS,
        sameAsUL            TFCS-Identity
    }
}

IndividualDL-CCTrCH-InfoList ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
    IndividualDL-CCTrCH-Info

IndividualUL-CCTrCH-Info ::= SEQUENCE {
    ul-TFCS-Identity        TFCS-Identity,
    ul-TFCS                 TFCS ,
    tfc-Subset              TFC-Subset
}

IndividualUL-CCTrCH-InfoList ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
    IndividualUL-CCTrCH-Info

LogicalChannelByRB ::= SEQUENCE {
    rb-Identity             RB-Identity,
    logChOfRb              INTEGER (0..1) OPTIONAL
}

LogicalChannelList ::= CHOICE {
    allSizes                NULL,
    configured              NULL,
    explicitList            SEQUENCE (SIZE (1..15)) OF
        LogicalChannelByRB
}

MAC-d-FlowIdentityDCHandHSDSCH ::= SEQUENCE {
    dch-transport-ch-id    TransportChannelIdentity,
    hsdSCH-transport-ch-id MAC-d-FlowIdentity
}

MAC-d-FlowIdentity ::= INTEGER (0..7)

MAC-d-PDU-SizeInfo-List ::= SEQUENCE (SIZE(1.. maxMAC-d-PDU-sizes)) OF
    MAC-d-PDUsizeInfo

--MAC-d-Pdu sizes need to be defined
MAC-d-PDUsizeInfo ::= SEQUENCE{
    mac-d-PDU-Size        INTEGER (1..5000),
    mac-d-PDU-Index      INTEGER(0..7)
}

MAC-hs-AddReconfQueue-List ::= SEQUENCE (SIZE(1..maxQueueIDs)) OF
    MAC-hs-AddReconfQueue

MAC-hs-AddReconfQueue ::= SEQUENCE {
    mac-hsQueueId         INTEGER(0..7),
    mac-dFlowId           MAC-d-FlowIdentity,
    reorderingReleaseTimer T1-ReleaseTimer,
    mac-hsWindowSize      MAC-hs-WindowSize,
    mac-d-PDU-SizeInfo-List MAC-d-PDU-SizeInfo-List OPTIONAL
}

MAC-hs-DelQueue-List ::= SEQUENCE (SIZE(1..maxQueueIDs)) OF
    MAC-hs-DelQueue

MAC-hs-DelQueue ::= SEQUENCE {
    mac-hsQueueId         INTEGER(0..7)
}

MAC-hs-WindowSize ::= ENUMERATED {

```

```

                                mws4, mws6, mws8, mws12, mws16, mws24, mws32 }

NumberOfTbSizeAndTTIList ::=      SEQUENCE (SIZE (1..maxTF)) OF SEQUENCE {
    numberOfTransportBlocks        NumberOfTransportBlocks,
    transmissionTimeInterval       TransmissionTimeInterval
}

MessType ::=                      ENUMERATED {
    transportFormatCombinationControl }

Non-allowedTFC-List ::=          SEQUENCE (SIZE (1..maxTFC)) OF
    TFC-Value

NumberOfTransportBlocks ::=      CHOICE {
    zero                          NULL,
    one                          NULL,
    small                        INTEGER (2..17),
    large                        INTEGER (18..512)
}

OctetModeRLC-SizeInfoType1 ::=  CHOICE {
    -- Actual size = (8 * sizeType1) + 16
    sizeType1                    INTEGER (0..31),
    sizeType2                    SEQUENCE {
        -- Actual size = (32 * part1) + 272 + (part2 * 8)
        part1                    INTEGER (0..23),
        part2                    INTEGER (1..3)
    },
    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 ::=
  modeSpecificInfo
    fdd
      gainFactorBetaC
    },
    tdd
  },
  gainFactorBetaD
  referenceTFC-ID
}

SplitTFCI-Signalling ::=
  splitType
  tfci-Field2-Length
  tfci-Field1-Information
  tfci-Field2-Information
}

SplitType ::=
  ENUMERATED {
    hardSplit, logicalSplit }

T1-ReleaseTimer ::=
  ENUMERATED {
    rt10, rt20, rt30, rt40, rt50,
    rt60, rt70, rt80, rt90, rt100,
    rt120, rt140, rt160, rt200, rt300,
    rt400 }

TFC-Subset ::=
  minimumAllowedTFC-Number
  allowedTFC-List
  non-allowedTFC-List
  restrictedTrChInfoList
  fullTFCS
}

TFC-Subset-ID-With3b ::=
  INTEGER (0..7)

TFC-Subset-ID-With5b ::=
  INTEGER (0..31)

TFC-Subset-ID-With10b ::=
  INTEGER (0..1023)

TFC-SubsetList ::=
  modeSpecificInfo
    fdd
    tdd
      tfcs-ID
    }
  },
  tfc-Subset
}

TFC-Value ::=
  INTEGER (0..1023)

TFCI-Field2-Information ::=
  tfci-Range
  explicit-config
}

TFCI-Range ::=
  maxTFCIField2Value
  tfcs-InfoForDSCH
}

TFCI-RangeList ::=
  SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
    TFCI-Range

TFCS ::=
  normalTFCI-Signalling
  splitTFCI-Signalling
}

TFCS-Identity ::=
  SEQUENCE {

```

```

    tfcs-ID                                TFCS-IdentityPlain                DEFAULT 1,
    sharedChannelIndicator                 BOOLEAN
}

TFCS-IdentityPlain ::=                    INTEGER (1..8)

TFCS-InfoForDSCH ::=                     CHOICE {
    ctfc2bit                               INTEGER (0..3),
    ctfc4bit                               INTEGER (0..15),
    ctfc6bit                               INTEGER (0..63),
    ctfc8bit                               INTEGER (0..255),
    ctfc12bit                              INTEGER (0..4095),
    ctfc16bit                              INTEGER (0..65535),
    ctfc24bit                              INTEGER (0..16777215)
}

TFCS-ReconfAdd ::=                       SEQUENCE {
    ctfcSize                               CHOICE {
        ctfc2Bit                          SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc2                          INTEGER (0..3),
            powerOffsetInformation         PowerOffsetInformation                OPTIONAL
        },
        ctfc4Bit                          SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc4                          INTEGER (0..15),
            powerOffsetInformation         PowerOffsetInformation                OPTIONAL
        },
        ctfc6Bit                          SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc6                          INTEGER (0..63),
            powerOffsetInformation         PowerOffsetInformation                OPTIONAL
        },
        ctfc8Bit                          SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc8                          INTEGER (0..255),
            powerOffsetInformation         PowerOffsetInformation                OPTIONAL
        },
        ctfc12Bit                         SEQUENCE (SIZE(1..maxTFC)) OF SEQUENCE {
            ctfc12                         INTEGER (0..4095),
            powerOffsetInformation         PowerOffsetInformation                OPTIONAL
        },
        ctfc16Bit                         SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc16                         INTEGER(0..65535),
            powerOffsetInformation         PowerOffsetInformation                OPTIONAL
        },
        ctfc24Bit                         SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc24                         INTEGER(0..16777215),
            powerOffsetInformation         PowerOffsetInformation                OPTIONAL
        }
    }
}

TFCS-Removal ::=                         SEQUENCE {
    tfci                                    INTEGER (0..1023)
}

TFCS-RemovalList ::=                     SEQUENCE (SIZE (1..maxTFC)) OF
    TFCS-Removal

TimeDurationBeforeRetry ::=              INTEGER (1..256)

TM-SignallingInfo ::=                   SEQUENCE {
    messType                               MessType,
    tm-SignallingMode                     CHOICE {
        mode1                             NULL,
        mode2                             SEQUENCE {
            -- in ul-controlledTrChList, TrCH-Type is always DCH
            ul-controlledTrChList         UL-ControlledTrChList
        }
    }
}

TransmissionTimeInterval ::=             ENUMERATED {
    tti10, tti20, tti40, tti80 }

TransmissionTimeValidity ::=             INTEGER (1..256)

TransportChannelIdentity ::=             INTEGER (1..32)

TransportChannelIdentityDCHandDSCH ::= SEQUENCE {
    dch-transport-ch-id                    TransportChannelIdentity,

```



```

    dsch-transport-ch-id          TransportChannelIdentity
}

TransportFormatSet ::=          CHOICE {
    dedicatedTransChTFS          DedicatedTransChTFS,
    commonTransChTFS             CommonTransChTFS
}

TransportFormatSet-LCR ::=      CHOICE {
    dedicatedTransChTFS          DedicatedTransChTFS,
    commonTransChTFS-LCR        CommonTransChTFS-LCR
}

-- The maximum allowed size of UL-AddReconfTransChInfoList sequence is 16
UL-AddReconfTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    UL-AddReconfTransChInformation

UL-AddReconfTransChInformation ::= SEQUENCE {
    ul-TransportChannelType      UL-TrCH-Type,
    transportChannelIdentity     TransportChannelIdentity,
    transportFormatSet           TransportFormatSet
}

UL-CommonTransChInfo ::=      SEQUENCE {
    -- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
    -- CCTrCH Info.
    tfc-Subset                   TFC-Subset                      OPTIONAL,
    prach-TFCS                   TFCS                          OPTIONAL,
    modeSpecificInfo             CHOICE {
        fdd                      SEQUENCE {
            ul-TFCS
        },
        tdd                      SEQUENCE {
            individualUL-CCTrCH-InfoList      IndividualUL-CCTrCH-InfoList
                                                OPTIONAL
        }
    }
}

UL-CommonTransChInfo-r4 ::=   SEQUENCE {
    -- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
    -- CCTrCH Info.
    tfc-Subset                   TFC-Subset                      OPTIONAL,
    prach-TFCS                   TFCS                          OPTIONAL,
    modeSpecificInfo             CHOICE {
        fdd                      SEQUENCE {
            ul-TFCS
        },
        tdd                      SEQUENCE {
            individualUL-CCTrCH-InfoList      IndividualUL-CCTrCH-InfoList      OPTIONAL
        }
    }
    tfc-SubsetList               TFC-SubsetList                  OPTIONAL,
}

-- In UL-ControlledTrChList, TrCH-Type is always DCH
UL-ControlledTrChList ::=     SEQUENCE (SIZE (1..maxTrCH)) OF
    TransportChannelIdentity

UL-DeletedTransChInfoList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    UL-TransportChannelIdentity

UL-TransportChannelIdentity ::= SEQUENCE {
    ul-TransportChannelType      UL-TrCH-Type,
    ul-TransportChannelIdentity  TransportChannelIdentity
}

UL-TrCH-Type ::= ENUMERATED {dch, usch}

USCH-TransportChannelsInfo ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    SEQUENCE {
        usch-TransportChannelIdentity  TransportChannelIdentity,
        usch-TFS                       TransportFormatSet
    }
}

-- *****

```

```

--
--     PHYSICAL CHANNEL INFORMATION ELEMENTS (10.3.6)
--
-- *****
ACK-NACK-repetitionFactor ::=      INTEGER(1..4)
AC-To-ASC-Mapping ::=              INTEGER (0..7)
AC-To-ASC-MappingTable ::=         SEQUENCE (SIZE (maxASCmap)) OF
                                   AC-To-ASC-Mapping
AccessServiceClass-FDD ::=         SEQUENCE {
    availableSignatureStartIndex    INTEGER (0..15),
    availableSignatureEndIndex      INTEGER (0..15),
    assignedSubChannelNumber        BIT STRING {
                                   b3(0),
                                   b2(1),
                                   b1(2),
                                   b0(3)
                                   } (SIZE(4))
}
AccessServiceClass-TDD ::=         SEQUENCE {
    channelisationCodeIndices       BIT STRING {
                                   chCodeIndex7(0),
                                   chCodeIndex6(1),
                                   chCodeIndex5(2),
                                   chCodeIndex4(3),
                                   chCodeIndex3(4),
                                   chCodeIndex2(5),
                                   chCodeIndex1(6),
                                   chCodeIndex0(7)
                                   } (SIZE(8))                                OPTIONAL,
    subchannelSize                  CHOICE {
        size1                        NULL,
        size2                        SEQUENCE {
            -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'
            subchannels                ENUMERATED { subch0, subch1 } OPTIONAL
        },
        size4                        SEQUENCE {
            subchannels                BIT STRING {
                                       subCh3(0),
                                       subCh2(1),
                                       subCh1(2),
                                       subCh0(3)
                                       } (SIZE(4))                                OPTIONAL
            },
        size8                        SEQUENCE {
            subchannels                BIT STRING {
                                       subCh7(0),
                                       subCh6(1),
                                       subCh5(2),
                                       subCh4(3),
                                       subCh3(4),
                                       subCh2(5),
                                       subCh1(6),
                                       subCh0(7)
                                       } (SIZE(8))                                OPTIONAL
            }
        }
}
AccessServiceClass-TDD-LCR-r4 ::= SEQUENCE {
    availableSYNC-UlCodesIndics     BIT STRING {
                                   sulCodeIndex7(0),
                                   sulCodeIndex6(1),
                                   sulCodeIndex5(2),
                                   sulCodeIndex4(3),
                                   sulCodeIndex3(4),
                                   sulCodeIndex2(5),
                                   sulCodeIndex1(6),
                                   sulCodeIndex0(7)
                                   } (SIZE(8))                                OPTIONAL,
    subchannelSize                  CHOICE {
        size1                        NULL,
        size2                        SEQUENCE {

```

```

        -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'.
        subchannels          ENUMERATED { subch0, subch1 } OPTIONAL
    },
    size4
        subchannels          SEQUENCE {
                                BIT STRING {
                                    subCh3(0),
                                    subCh2(1),
                                    subCh1(2),
                                    subCh0(3)
                                } (SIZE(4))          OPTIONAL
        },
    size8
        subchannels          SEQUENCE {
                                BIT STRING {
                                    subCh7(0),
                                    subCh6(1),
                                    subCh5(2),
                                    subCh4(3),
                                    subCh3(4),
                                    subCh2(5),
                                    subCh1(6),
                                    subCh0(7)
                                } (SIZE(8))          OPTIONAL
        }
    }
}

AICH-Info ::=
    channelisationCode256    ChannelisationCode256,
    sttd-Indicator           BOOLEAN,
    aich-TransmissionTiming  AICH-TransmissionTiming
}

AICH-PowerOffset ::=
    INTEGER (-22..5)

AICH-TransmissionTiming ::=
    ENUMERATED {
        e0, e1 }

AllocationPeriodInfo ::=
    allocationActivationTime  INTEGER (0..255),
    allocationDuration        INTEGER (1..256)
}

-- Actual value Alpha = IE value * 0.125
Alpha ::=
    INTEGER (0..8)

AP-AICH-ChannelisationCode ::=
    INTEGER (0..255)

AP-PreambleScramblingCode ::=
    INTEGER (0..79)

AP-Signature ::=
    INTEGER (0..15)

AP-Signature-VCAM ::=
    SEQUENCE {
        ap-Signature          AP-Signature,
        availableAP-SubchannelList AvailableAP-SubchannelList OPTIONAL
    }

AP-Subchannel ::=
    INTEGER (0..11)

ASCSetting-FDD ::=
    SEQUENCE {
        -- TABULAR: accessServiceClass-FDD is MD in tabular description
        -- Default value is previous ASC
        -- If this is the first ASC, the default value is all available signature and sub-channels
        accessServiceClass-FDD AccessServiceClass-FDD OPTIONAL
    }

ASCSetting-TDD ::=
    SEQUENCE {
        -- TABULAR: accessServiceClass-TDD is MD in tabular description
        -- Default value is previous ASC
        -- If this is the first ASC, the default value is all available channelisation codes and
        -- all available sub-channels with subchannelSize=size1.
        accessServiceClass-TDD AccessServiceClass-TDD OPTIONAL
    }

ASCSetting-TDD-LCR-r4 ::=
    SEQUENCE {
        -- TABULAR: accessServiceClass-TDD-LCR is MD in tabular description
        -- Default value is previous ASC
        -- If this is the first ASC, the default value is all available SYNC_UL codes and
    }

```

```

-- all available sub-channels with subchannelSize=size1.
accessServiceClass-TDD-LCR                               AccessServiceClass-TDD-LCR-r4   OPTIONAL
}

AvailableAP-Signature-VCAMList ::= SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
    AP-Signature-VCAM

AvailableAP-SignatureList ::= SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
    AP-Signature

AvailableAP-SubchannelList ::= SEQUENCE (SIZE (1..maxPCPCH-APsubCh)) OF
    AP-Subchannel

AvailableMinimumSF-ListVCAM ::= SEQUENCE (SIZE (1..maxPCPCH-SF)) OF
    AvailableMinimumSF-VCAM

AvailableMinimumSF-VCAM ::= SEQUENCE {
    minimumSpreadingFactor      MinimumSpreadingFactor,
    nf-Max                      NF-Max,
    maxAvailablePCPCH-Number    MaxAvailablePCPCH-Number,
    availableAP-Signature-VCAMList AvailableAP-Signature-VCAMList
}

AvailableSignatures ::= BIT STRING {
    signature15(0),
    signature14(1),
    signature13(2),
    signature12(3),
    signature11(4),
    signature10(5),
    signature9(6),
    signature8(7),
    signature7(8),
    signature6(9),
    signature5(10),
    signature4(11),
    signature3(12),
    signature2(13),
    signature1(14),
    signature0(15)
} (SIZE(16))

AvailableSubChannelNumbers ::= BIT STRING {
    subCh11(0),
    subCh10(1),
    subCh9(2),
    subCh8(3),
    subCh7(4),
    subCh6(5),
    subCh5(6),
    subCh4(7),
    subCh3(8),
    subCh2(9),
    subCh1(10),
    subCh0(11)
} (SIZE(12))

BurstType ::= ENUMERATED {
    type1, type2 }

-- Actual value Bler-Target = IE value * 0.05
Bler-Target ::= INTEGER (-63..0)

CCTrCH-PowerControlInfo ::= SEQUENCE {
    tfcs-Identity          TFCS-Identity          OPTIONAL,
    ul-DPCH-PowerControlInfo UL-DPCH-PowerControlInfo
}

CCTrCH-PowerControlInfo-r4 ::= SEQUENCE {
    tfcs-Identity          TFCS-Identity          OPTIONAL,
    ul-DPCH-PowerControlInfo-r4 UL-DPCH-PowerControlInfo-r4
}

CCTrCH-PowerControlInfo-r5 ::= SEQUENCE {
    tfcs-Identity          TFCS-Identity          OPTIONAL,
    ul-DPCH-PowerControlInfo-r5 UL-DPCH-PowerControlInfo-r5
}

```

```

CD-AccessSlotSubchannel ::=          INTEGER (0..11)

CD-AccessSlotSubchannelList ::=      SEQUENCE (SIZE (1..maxPCPCH-CDsubCh)) OF
                                       CD-AccessSlotSubchannel

CD-CA-ICH-ChannelisationCode ::=     INTEGER (0..255)

CD-PreambleScramblingCode ::=        INTEGER (0..79)

CD-SignatureCode ::=                 INTEGER (0..15)

CD-SignatureCodeList ::=              SEQUENCE (SIZE (1..maxPCPCH-CDsig)) OF
                                       CD-SignatureCode

CellAndChannelIdentity ::=            SEQUENCE {
    burstType                          BurstType,
    midambleShift                       MidambleShiftLong,
    timeslot                             TimeslotNumber,
    cellParametersID                     CellParametersID
}

CellParametersID ::=                  INTEGER (0..127)

CfntargetsInframeoffset ::=           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,
  pcpcch-ChannelInfoList                PCPCH-ChannelInfoList
}

CPCH-SetInfoList ::=                    SEQUENCE (SIZE (1..maxCPCHsets)) OF
                                         CPCH-SetInfo

CPCH-StatusIndicationMode ::=           ENUMERATED {
  pa-mode,
  pamsf-mode }

CQI-RepetitionFactor ::=                INTEGER(1..4)

CSICH-PowerOffset ::=                   INTEGER (-10..5)

-- DefaultDPCH-OffsetValueFDD and DefaultDPCH-OffsetValueTDD corresponds to
-- IE "Default DPCH Offset Value" depending on the mode.
-- Actual value DefaultDPCH-OffsetValueFDD = IE value * 512
DefaultDPCH-OffsetValueFDD ::=          INTEGER (0..599)

DefaultDPCH-OffsetValueTDD ::=          INTEGER (0..7)

DeltaPp-m ::=                           INTEGER (-10..10)

DeltaCQI ::=                             INTEGER (0..8)

DeltaNACK ::=                            INTEGER (0..8)

DeltaACK ::=                             INTEGER (0..8)

-- Actual value DeltaSIR = IE value * 0.1
DeltaSIR ::=                             INTEGER (0..30)

DL-CCTrCh ::=                            SEQUENCE {
  tfcs-ID                                TFCS-IdentityPlain                DEFAULT 1,
  timeInfo                               TimeInfo,
  commonTimeslotInfo                     CommonTimeslotInfo                 OPTIONAL,
  dl-CCTrCH-TimeslotsCodes               DownlinkTimeslotsCodes            OPTIONAL,
  ul-CCTrChTPCList                       UL-CCTrChTPCList                  OPTIONAL
}

DL-CCTrCh-r4 ::=                         SEQUENCE {
  tfcs-ID                                TFCS-IdentityPlain                DEFAULT 1,
  timeInfo                               TimeInfo,
  commonTimeslotInfo                     CommonTimeslotInfo                 OPTIONAL,
  tddOption                               CHOICE {
    tdd384                                SEQUENCE {
      dl-CCTrCH-TimeslotsCodes            DownlinkTimeslotsCodes            OPTIONAL
    },
    tdd128                                SEQUENCE {
      dl-CCTrCH-TimeslotsCodes            DownlinkTimeslotsCodes-LCR-r4     OPTIONAL
    }
  },
  ul-CCTrChTPCList                       UL-CCTrChTPCList                  OPTIONAL
}

DL-CCTrChList ::=                        SEQUENCE (SIZE (1..maxCCTrCH)) OF

```

```

DL-CCTrCh
DL-CCTrChList-r4 ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
                    DL-CCTrCh-r4
DL-CCTrChListToRemove ::= SEQUENCE (SIZE (1..maxCCTrCH)) OF
                          TFCS-IdentityPlain
DL-CCTrChTPCList ::= SEQUENCE (SIZE (0..maxCCTrCH)) OF
                    TFCS-Identity
DL-ChannelisationCode ::= SEQUENCE {
    secondaryScramblingCode SecondaryScramblingCode OPTIONAL,
    sf-AndCodeNumber SF512-AndCodeNumber,
    scramblingCodeChange ScramblingCodeChange OPTIONAL
}
DL-ChannelisationCodeList ::= SEQUENCE (SIZE (1..maxDPCH-DLchan)) OF
                              DL-ChannelisationCode
DL-CommonInformation ::= SEQUENCE {
    dl-DPCH-InfoCommon DL-DPCH-InfoCommon OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            defaultDPCH-OffsetValue DefaultDPCH-OffsetValueFDD OPTIONAL,
            dpch-CompressedModeInfo DPCH-CompressedModeInfo OPTIONAL,
            tx-DiversityMode TX-DiversityMode OPTIONAL,
            ssdt-Information SSDT-Information OPTIONAL
        },
        tdd SEQUENCE {
            defaultDPCH-OffsetValue DefaultDPCH-OffsetValueTDD OPTIONAL
        }
    }
}
DL-CommonInformation-r4 ::= SEQUENCE {
    dl-DPCH-InfoCommon DL-DPCH-InfoCommon-r4 OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            defaultDPCH-OffsetValue DefaultDPCH-OffsetValueFDD OPTIONAL,
            dpch-CompressedModeInfo DPCH-CompressedModeInfo OPTIONAL,
            tx-DiversityMode TX-DiversityMode OPTIONAL,
            ssdt-Information-r4 SSDT-Information-r4 OPTIONAL
        },
        tdd SEQUENCE {
            tddOption CHOICE {
                tdd384 NULL,
                tdd128 SEQUENCE {
                    tstd-Indicator BOOLEAN
                }
            },
            defaultDPCH-OffsetValue DefaultDPCH-OffsetValueTDD OPTIONAL
        }
    }
}
DL-CommonInformation-r5 ::= SEQUENCE {
    dl-DPCH-InfoCommon DL-DPCH-InfoCommon-r4 OPTIONAL,
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            defaultDPCH-OffsetValue DefaultDPCH-OffsetValueFDD OPTIONAL,
            dpch-CompressedModeInfo DPCH-CompressedModeInfo OPTIONAL,
            tx-DiversityMode TX-DiversityMode OPTIONAL,
            ssdt-Information-r4 SSDT-Information-r4 OPTIONAL
        },
        tdd SEQUENCE {
            tddOption CHOICE {
                tdd384 NULL,
                tdd128 SEQUENCE {
                    tstd-Indicator BOOLEAN
                }
            },
            defaultDPCH-OffsetValue DefaultDPCH-OffsetValueTDD OPTIONAL
        }
    },
    mac-hsResetIndicator ENUMERATED { true } OPTIONAL
}

```

```

DL-CommonInformationPost ::=          SEQUENCE {
    dl-DPCH-InfoCommon                DL-DPCH-InfoCommonPost
}

DL-CommonInformationPredef ::=        SEQUENCE {
    dl-DPCH-InfoCommon                DL-DPCH-InfoCommonPredef    OPTIONAL
}

DL-CompressedModeMethod ::=           ENUMERATED {
    puncturing, sf-2,
    higherLayerScheduling }

DL-DPCH-InfoCommon ::=                SEQUENCE {
    cfnHandling                        CHOICE {
        maintain                        NULL,
        initialise                       SEQUENCE {
            cfntargetsfnsframeoffset    Cfntargetsfnsframeoffset    OPTIONAL
        }
    },
    modeSpecificInfo                   CHOICE {
        fdd                             SEQUENCE {
            dl-DPCH-PowerControlInfo     DL-DPCH-PowerControlInfo    OPTIONAL,
            powerOffsetPilot-pdpdch       PowerOffsetPilot-pdpdch,
            dl-rate-matching-restriction  Dl-rate-matching-restriction    OPTIONAL,
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot       SF512-AndPilot,
            positionFixedOrFlexible       PositionFixedOrFlexible,
            tfci-Existence                BOOLEAN
        },
        tdd                             SEQUENCE {
            dl-DPCH-PowerControlInfo     DL-DPCH-PowerControlInfo    OPTIONAL
        }
    }
}

DL-DPCH-InfoCommon-r4 ::=             SEQUENCE {
    cfnHandling                        CHOICE {
        maintain                        NULL,
        initialise                       SEQUENCE {
            cfntargetsfnsframeoffset    Cfntargetsfnsframeoffset    OPTIONAL
        }
    },
    modeSpecificInfo                   CHOICE {
        fdd                             SEQUENCE {
            dl-DPCH-PowerControlInfo     DL-DPCH-PowerControlInfo    OPTIONAL,
            powerOffsetPilot-pdpdch       PowerOffsetPilot-pdpdch,
            dl-rate-matching-restriction  Dl-rate-matching-restriction    OPTIONAL,
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot       SF512-AndPilot,
            positionFixedOrFlexible       PositionFixedOrFlexible,
            tfci-Existence                BOOLEAN
        },
        tdd                             SEQUENCE {
            dl-DPCH-PowerControlInfo     DL-DPCH-PowerControlInfo    OPTIONAL
        }
    },
    -- The IE mac-d-HFN-initial-value should be absent in the RRCConnectionSetup-r4-IEs or
    -- RRCConnectionSetup-r5-IEs or HandoverToUTRANCommand-r4-IEs or HandoverToUTRANCommand-r5-IEs and
    -- if the IE is included, the general error handling for conditional IEs applies.
    mac-d-HFN-initial-value            MAC-d-HFN-initial-value    OPTIONAL
}

DL-DPCH-InfoCommonPost ::=            SEQUENCE {
    dl-DPCH-PowerControlInfo           DL-DPCH-PowerControlInfo    OPTIONAL
}

DL-DPCH-InfoCommonPredef ::=          SEQUENCE {
    modeSpecificInfo                   CHOICE {
        fdd                             SEQUENCE {
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot       SF512-AndPilot,
            positionFixedOrFlexible       PositionFixedOrFlexible,
            tfci-Existence                BOOLEAN
        },
        tdd                             SEQUENCE {

```



```

        commonTimeslotInfo
    }
}

DL-DPCH-InfoPerRL ::=
    fdd
        pCPICH-UsageForChannelEst
        dpch-FrameOffset
        secondaryCPICH-Info
        dl-ChannelisationCodeList
        tpc-CombinationIndex
        ssdt-CellIdentity
        closedLoopTimingAdjMode
    },
    tdd
        dl-CCTrChListToEstablish
        dl-CCTrChListToRemove
    }
}

DL-DPCH-InfoPerRL-r4 ::=
    fdd
        pCPICH-UsageForChannelEst
        dpch-FrameOffset
        secondaryCPICH-Info
        dl-ChannelisationCodeList
        tpc-CombinationIndex
        ssdt-CellIdentity
        closedLoopTimingAdjMode
    },
    tdd
        dl-CCTrChListToEstablish
        dl-CCTrChListToRemove
    }
}

DL-DPCH-InfoPerRL-r5 ::=
    fdd
        pCPICH-UsageForChannelEst
        dpch-FrameOffset
        secondaryCPICH-Info
        dl-ChannelisationCodeList
        tpc-CombinationIndex
        powerOffsetTPC-pdpdch
        ssdt-CellIdentity
        closedLoopTimingAdjMode
    },
    tdd
        dl-CCTrChListToEstablish
        dl-CCTrChListToRemove
    }
}

DL-DPCH-InfoPerRL-PostFDD ::=
    pCPICH-UsageForChannelEst
    dl-ChannelisationCode
    tpc-CombinationIndex
}

DL-DPCH-InfoPerRL-PostTDD ::=
    dl-DPCH-TimeslotsCodes
}

DL-DPCH-InfoPerRL-PostTDD-LCR-r4 ::=
    dl-CCTrCH-TimeslotsCodes
}

DL-DPCH-PowerControlInfo ::=
    modeSpecificInfo
    fdd
        dpc-Mode
    },
    tdd
        tpc-StepSizeTDD
    }
}

```

CommonTimeslotInfo

```

CHOICE {
    SEQUENCE {
        PCPICH-UsageForChannelEst,
        DPCH-FrameOffset,
        SecondaryCPICH-Info OPTIONAL,
        DL-ChannelisationCodeList,
        TPC-CombinationIndex,
        SSDT-CellIdentity OPTIONAL,
        ClosedLoopTimingAdjMode OPTIONAL
    },
    SEQUENCE {
        DL-CCTrChList OPTIONAL,
        DL-CCTrChListToRemove OPTIONAL
    }
}

CHOICE {
    SEQUENCE {
        PCPICH-UsageForChannelEst,
        DPCH-FrameOffset,
        SecondaryCPICH-Info OPTIONAL,
        DL-ChannelisationCodeList,
        TPC-CombinationIndex,
        SSDT-CellIdentity OPTIONAL,
        ClosedLoopTimingAdjMode OPTIONAL
    },
    SEQUENCE {
        DL-CCTrChList-r4 OPTIONAL,
        DL-CCTrChListToRemove OPTIONAL
    }
}

CHOICE {
    SEQUENCE {
        PCPICH-UsageForChannelEst,
        DPCH-FrameOffset,
        SecondaryCPICH-Info OPTIONAL,
        DL-ChannelisationCodeList,
        TPC-CombinationIndex,
        PowerOffsetTPC-pdpdch OPTIONAL,
        SSDT-CellIdentity OPTIONAL,
        ClosedLoopTimingAdjMode OPTIONAL
    },
    SEQUENCE {
        DL-CCTrChList-r4 OPTIONAL,
        DL-CCTrChListToRemove OPTIONAL
    }
}

SEQUENCE {
    PCPICH-UsageForChannelEst,
    DL-ChannelisationCode,
    TPC-CombinationIndex
}

SEQUENCE {
    DownlinkTimeslotsCodes
}

SEQUENCE {
    DownlinkTimeslotsCodes-LCR-r4
}

SEQUENCE {
    CHOICE {
        SEQUENCE {
            DPC-Mode
        },
        SEQUENCE {
            TPC-StepSizeTDD OPTIONAL
        }
    }
}

```

```

DL-FrameType ::=
    ENUMERATED {
        dl-FrameTypeA, dl-FrameTypeB }

DL-HSPDSCH-Information ::=
    SEQUENCE {
        hs-scch-Info          HS-SCCH-Info          OPTIONAL,
        measurement-feedback-Info  Measurement-Feedback-Info  OPTIONAL,
        modeSpecificInfo        CHOICE {
            tdd                 CHOICE {
                tdd384          SEQUENCE {
                    dl-HSPDSCH-TS-Configuration DL-HSPDSCH-TS-Configuration  OPTIONAL
                },
                tdd128          SEQUENCE {
                    hs-PDSCH-Midamble-Configuration-TDD128
                    HS-PDSCH-Midamble-Configuration-TDD128  OPTIONAL
                }
            },
            fdd                 NULL
        }
    }

-- The IE 'DL-HSPDSCH-TS-Configuration' applies to tdd-384 REL-5 onward
DL-HSPDSCH-TS-Configuration ::=
    SEQUENCE (SIZE (1..maxTS-2)) OF
        SEQUENCE {
            timeslot            TimeslotNumber,
            midambleShiftAndBurstType  MidambleShiftAndBurstType-DL
        }

DL-InformationPerRL ::=
    SEQUENCE {
        modeSpecificInfo        CHOICE {
            fdd                 SEQUENCE {
                primaryCPICH-Info      PrimaryCPICH-Info,
                pdsch-SHO-DCH-Info      PDSCH-SHO-DCH-Info          OPTIONAL,
                pdsch-CodeMapping        PDSCH-CodeMapping          OPTIONAL
            },
            tdd                 PrimaryCCPCH-Info
        },
        dl-DPCH-InfoPerRL        DL-DPCH-InfoPerRL          OPTIONAL,
        sccpch-InfoForFACH        SCCPCH-InfoForFACH          OPTIONAL
    }

DL-InformationPerRL-r4 ::=
    SEQUENCE {
        modeSpecificInfo        CHOICE {
            fdd                 SEQUENCE {
                primaryCPICH-Info      PrimaryCPICH-Info,
                pdsch-SHO-DCH-Info      PDSCH-SHO-DCH-Info          OPTIONAL,
                pdsch-CodeMapping        PDSCH-CodeMapping          OPTIONAL
            },
            tdd                 PrimaryCCPCH-Info-r4
        },
        dl-DPCH-InfoPerRL        DL-DPCH-InfoPerRL-r4          OPTIONAL,
        sccpch-InfoForFACH        SCCPCH-InfoForFACH-r4          OPTIONAL,
        cell-id                   CellIdentity                  OPTIONAL
    }

DL-InformationPerRL-r5 ::=
    SEQUENCE {
        modeSpecificInfo        CHOICE {
            fdd                 SEQUENCE {
                primaryCPICH-Info      PrimaryCPICH-Info,
                pdsch-SHO-DCH-Info      PDSCH-SHO-DCH-Info          OPTIONAL,
                pdsch-CodeMapping        PDSCH-CodeMapping          OPTIONAL,
                servingHSDSCH-RL-indicator  BOOLEAN
            },
            tdd                 PrimaryCCPCH-Info-r4
        },
        dl-DPCH-InfoPerRL        DL-DPCH-InfoPerRL-r5          OPTIONAL,
        sccpch-InfoForFACH        SCCPCH-InfoForFACH-r4          OPTIONAL,
        cell-id                   CellIdentity                  OPTIONAL
    }

DL-InformationPerRL-r5bis ::=
    SEQUENCE {
        modeSpecificInfo        CHOICE {
            fdd                 SEQUENCE {
                primaryCPICH-Info      PrimaryCPICH-Info,
                pdsch-SHO-DCH-Info      PDSCH-SHO-DCH-Info          OPTIONAL,
                pdsch-CodeMapping        PDSCH-CodeMapping          OPTIONAL
            },
            tdd                 PrimaryCCPCH-Info-r4
    }

```

```

    },
    dl-DPCH-InfoPerRL          DL-DPCH-InfoPerRL-r5          OPTIONAL,
    sccpch-InfoForFACH        SCCPCH-InfoForFACH-r4         OPTIONAL,
    cell-id                   CellIdentity                   OPTIONAL
}

DL-InformationPerRL-List ::= SEQUENCE (SIZE (1..maxRL)) OF
                             DL-InformationPerRL

DL-InformationPerRL-List-r4 ::= SEQUENCE (SIZE (1..maxRL)) OF
                                DL-InformationPerRL-r4

DL-InformationPerRL-List-r5 ::= SEQUENCE (SIZE (1..maxRL)) OF
                                DL-InformationPerRL-r5

DL-InformationPerRL-List-r5bis ::= SEQUENCE (SIZE (1..maxRL)) OF
                                    DL-InformationPerRL-r5bis

DL-InformationPerRL-ListPostFDD ::= SEQUENCE (SIZE (1..maxRL)) OF
                                    DL-InformationPerRL-PostFDD

DL-InformationPerRL-PostFDD ::= SEQUENCE {
    primaryCPICH-Info          PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL         DL-DPCH-InfoPerRL-PostFDD
}

DL-InformationPerRL-PostTDD ::= SEQUENCE {
    primaryCCPCH-Info          PrimaryCCPCH-InfoPost,
    dl-DPCH-InfoPerRL         DL-DPCH-InfoPerRL-PostTDD
}

DL-InformationPerRL-PostTDD-LCR-r4 ::= SEQUENCE {
    primaryCCPCH-Info          PrimaryCCPCH-InfoPostTDD-LCR-r4,
    dl-DPCH-InfoPerRL         DL-DPCH-InfoPerRL-PostTDD-LCR-r4
}

DL-PDSCH-Information ::= SEQUENCE {
    pdsch-SHO-DCH-Info        PDSCH-SHO-DCH-Info          OPTIONAL,
    pdsch-CodeMapping         PDSCH-CodeMapping           OPTIONAL
}

DL-rate-matching-restriction ::= SEQUENCE {
    restrictedTrCH-InfoList    RestrictedTrCH-InfoList      OPTIONAL
}

DL-TPC-PowerOffsetPerRL ::= SEQUENCE {
    powerOffsetTPC-pdpdch     PowerOffsetTPC-pdpdch        OPTIONAL
}

-- NOTE: The radio links in the following list have a one-to-one mapping with the
-- radio links in the message.
DL-TPC-PowerOffsetPerRL-List ::= SEQUENCE (SIZE (1..maxRL)) OF
                                  DL-TPC-PowerOffsetPerRL

DL-TS-ChannelisationCode ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

DL-TS-ChannelisationCodesShort ::= SEQUENCE {
    codesRepresentation        CHOICE {
        consecutive            SEQUENCE {
            firstChannelisationCode DL-TS-ChannelisationCode,
            lastChannelisationCode  DL-TS-ChannelisationCode
        },
        bitmap                 BIT STRING {
            chCode16-SF16(0),
            chCode15-SF16(1),
            chCode14-SF16(2),
            chCode13-SF16(3),
            chCode12-SF16(4),
            chCode11-SF16(5),
            chCode10-SF16(6),
            chCode9-SF16(7),
            chCode8-SF16(8),
            chCode7-SF16(9),
            chCode6-SF16(10),
        }
    }
}

```

```

        chCode5-SF16(11),
        chCode4-SF16(12),
        chCode3-SF16(13),
        chCode2-SF16(14),
        chCode1-SF16(15)
    } (SIZE (16))
}
}

DownlinkAdditionalTimeslots ::= SEQUENCE {
    parameters CHOICE {
        sameAsLast SEQUENCE {
            timeslotNumber TimeslotNumber
        },
        newParameters SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo,
            dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort
        }
    }
}

DownlinkAdditionalTimeslots-LCR-r4 ::= SEQUENCE {
    parameters CHOICE {
        sameAsLast SEQUENCE {
            timeslotNumber TimeslotNumber-LCR-r4
        },
        newParameters SEQUENCE {
            individualTimeslotInfo IndividualTimeslotInfo-LCR-r4,
            dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort
        }
    }
}

DownlinkTimeslotsCodes ::= SEQUENCE {
    firstIndividualTimeslotInfo IndividualTimeslotInfo,
    dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort,
    moreTimeslots CHOICE {
        noMore NULL,
        additionalTimeslots CHOICE {
            consecutive INTEGER (1..maxTS-1),
            timeslotList SEQUENCE (SIZE (1..maxTS-1)) OF
                DownlinkAdditionalTimeslots
        }
    }
}

DownlinkTimeslotsCodes-LCR-r4 ::= SEQUENCE {
    firstIndividualTimeslotInfo IndividualTimeslotInfo-LCR-r4,
    dl-TS-ChannelisationCodesShort DL-TS-ChannelisationCodesShort,
    moreTimeslots CHOICE {
        noMore NULL,
        additionalTimeslots CHOICE {
            consecutive INTEGER (1..maxTS-LCR-1),
            timeslotList SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                DownlinkAdditionalTimeslots-LCR-r4
        }
    }
}

DPC-Mode ::= ENUMERATED {
    singleTPC,
    tpcTripletInSoft }

-- Actual value DPCCH-PowerOffset = IE value * 2
DPCCH-PowerOffset ::= INTEGER (-82..-3)

-- Actual value DPCCH-PowerOffset2 = 2 + (IE value * 4)
DPCCH-PowerOffset2 ::= INTEGER (-28..-13)

DPCH-CompressedModeInfo ::= SEQUENCE {
    tgp-SequenceList TGP-SequenceList
}

DPCH-CompressedModeStatusInfo ::= SEQUENCE {
    tgps-Reconfiguration-CFN TGPS-Reconfiguration-CFN,
    tgp-SequenceShortList SEQUENCE (SIZE (1..maxTGPS)) OF
        TGP-SequenceShort
}

```

```

-- Actual value DPCH-FrameOffset = IE value * 256
DPCH-FrameOffset ::= INTEGER (0..149)

DSCH-Mapping ::= SEQUENCE {
    maxTFCI-Field2Value MaxTFCI-Field2Value,
    spreadingFactor SF-PDSCH,
    codeNumber CodeNumberDSCH,
    multiCodeInfo MultiCodeInfo
}

DSCH-MappingList ::= SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
    DSCH-Mapping

DSCH-RadioLinkIdentifier ::= INTEGER (0..511)

DSCH-TransportChannelsInfo ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    SEQUENCE {
        dsch-transport-channel-identity TransportChannelIdentity,
        dsch-TFS TransportFormatSet
    }

DurationTimeInfo ::= INTEGER (1..4096)

DynamicPersistenceLevel ::= INTEGER (1..8)

DynamicPersistenceLevelList ::= SEQUENCE (SIZE (1..maxPRACH)) OF
    DynamicPersistenceLevel

DynamicPersistenceLevelTF-List ::= SEQUENCE (SIZE (1..maxTF-CPCH)) OF
    DynamicPersistenceLevel

FACH-PCH-Information ::= SEQUENCE {
    transportFormatSet TransportFormatSet,
    transportChannelIdentity TransportChannelIdentity,
    ctch-Indicator BOOLEAN
}

FACH-PCH-InformationList ::= SEQUENCE (SIZE (1..maxFACHPCH)) OF
    FACH-PCH-Information

Feedback-cycle ::= ENUMERATED {
    fc0, fc2, fc4, fc8, fc10, fc20, fc40, fc80, fc160}

FPACH-Info-r4 ::= SEQUENCE {
    timeslot TimeslotNumber-LCR-r4,
    channelisationCode TDD-FPACH-CCode16-r4,
    midambleShiftAndBurstType MidambleShiftAndBurstType-LCR-r4,
    wi Wi-LCR
}

FrequencyInfo ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd FrequencyInfoFDD,
        tdd FrequencyInfoTDD
    }
}

FrequencyInfoFDD ::= SEQUENCE {
    uarfcn-UL UARFCN OPTIONAL,
    uarfcn-DL UARFCN
}

FrequencyInfoTDD ::= SEQUENCE {
    uarfcn-Nt UARFCN
}

HS-ChannelisationCode-LCR ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

HS-PDSCH-Midamble-Configuration-TDD128 ::= SEQUENCE {
    midambleAllocationMode CHOICE {
        defaultMidamble NULL,
        commonMidamble NULL,
        ueSpecificMidamble INTEGER (0..15)
    },

```

```

-- Actual value midambleConfiguration = IE value * 2
midambleConfiguration          INTEGER (1..8)
}

HS-SCCH-Info ::=
modeSpecificInfo              SEQUENCE {
  fdd                          CHOICE {
    HS-SCCHChannelisationCodeInfo SEQUENCE (SIZE (1..maxHSSCCHs)) OF
      HS-SCCH-Codes,
    dl-ScramblingCode           SecondaryScramblingCode OPTIONAL
  },
  tdd                          CHOICE {
    tdd384                      SEQUENCE {
      nack-ack-power-offset      INTEGER (-7..8),
      hs-SICH-PowerControl-Info  HS-SICH-Power-Control-Info-TDD384,
      HS-SCCH-SetConfiguration   SEQUENCE (SIZE (1..maxHSSCCHs)) OF
        HS-SCCH-TDD384
    },
    tdd128                      SEQUENCE (SIZE (1..maxHSSCCHs)) OF
      HS-SCCH-TDD128
  }
}

HS-SCCH-Codes ::=
INTEGER (0..127)

HS-SCCH-TDD128 ::=
SEQUENCE {
  timeslotNumber              TimeslotNumber-LCR-r4,
  firstChannelisationCode     HS-ChannelisationCode-LCR,
  secondChannelisationCode    HS-ChannelisationCode-LCR,
  midambleAllocationMode     CHOICE {
    defaultMidamble           NULL,
    commonMidamble            NULL,
    ueSpecificMidamble        INTEGER(0..15)
  },
  -- Actual value midambleConfiguration = IE value * 2
  midambleConfiguration      INTEGER (1..8),
  bler-target                 Bler-Target,
  hs-sich-configuration       HS-SICH-Configuration-TDD128
}

HS-SICH-Configuration-TDD128 ::=
SEQUENCE {
  timeslotNumber              TimeslotNumber-LCR-r4,
  channelisationCode          HS-ChannelisationCode-LCR,
  midambleAllocationMode     CHOICE {
    defaultMidamble           NULL,
    ueSpecificMidamble        SEQUENCE {
      midambleShift           MidambleShiftLong
    }
  },
  -- Actual value midambleConfiguration = IE value * 2
  midambleConfiguration      INTEGER (1..8),
  nack-ack-power-offset      INTEGER (-7..8),
  power-level-HSSICH         INTEGER (-120..-58),
  tpc-step-size              ENUMERATED { s1, s2, s3 , spare1}
}

HS-SCCH-TDD384 ::=
SEQUENCE {
  timeslotNumber              TimeslotNumber,
  channelisationCode          DL-TS-ChannelisationCode,
  midambleAllocationMode     CHOICE {
    defaultMidamble           NULL,
    commonMidamble            NULL,
    ueSpecificMidamble        SEQUENCE {
      midambleShift           MidambleShiftLong
    }
  },
  midambleconfiguration      MidambleConfigurationBurstTypeland3,
  bler-target                 Bler-Target,
  hs-sich-configuration       HS-SICH-Configuration-TDD384
}

HS-SICH-Configuration-TDD384 ::=
SEQUENCE {
  timeslotNumber              TimeslotNumber,
  channelisationCode          DL-TS-ChannelisationCode,
  midambleAllocationMode     CHOICE {

```

```

        defaultMidamble                NULL,
        ueSpecificMidamble              SEQUENCE {
            midambleShift                MidambleShiftLong
        },
    },
    midambleconfiguration               MidambleConfigurationBurstTypeand3
}

HS-SICH-Power-Control-Info-TDD384 ::= SEQUENCE {
    -- Actual value ul-target-SIR = IE value * 0.5
    ul-target-SIR                       INTEGER (-22..40),
    hs-sich-ConstantValue                ConstantValue
}

IndividualTimeslotInfo ::= SEQUENCE {
    timeslotNumber                       TimeslotNumber,
    tfci-Existence                       BOOLEAN,
    midambleShiftAndBurstType            MidambleShiftAndBurstType
}

IndividualTimeslotInfo-LCR-r4 ::= SEQUENCE {
    timeslotNumber                       TimeslotNumber-LCR-r4,
    tfci-Existence                       BOOLEAN,
    midambleShiftAndBurstType            MidambleShiftAndBurstType-LCR-r4,
    modulation                           ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols                       ENUMERATED { zero, one, sixteenOverSF },
    additionalSS-TPC-Symbols              INTEGER(1..15) OPTIONAL
}

IndividualTimeslotInfo-LCR-r4-ext ::= SEQUENCE {
    -- timeslotNumber and tfci-Existence is taken from IndividualTimeslotInfo.
    -- midambleShiftAndBurstType in IndividualTimeslotInfo shall be ignored.
    midambleShiftAndBurstType            MidambleShiftAndBurstType-LCR-r4,
    modulation                           ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols                       ENUMERATED { zero, one, sixteenOverSF }
}

IndividualTS-Interference ::= SEQUENCE {
    timeslot                             TimeslotNumber,
    ul-TimeslotInterference                TDD-UL-Interference
}

IndividualTS-InterferenceList ::= SEQUENCE (SIZE (1..maxTS)) OF
    IndividualTS-Interference

ITP ::= ENUMERATED {
    mode0, mode1 }

NidentifyAbort ::= INTEGER (1..128)

MaxAllowedUL-TX-Power ::= INTEGER (-50..33)

MaxAvailablePCPCH-Number ::= INTEGER (1..64)

MaxPowerIncrease-r4 ::= INTEGER (0..3)

MaxTFCI-Field2Value ::= INTEGER (1..1023)

Measurement-Feedback-Info ::= SEQUENCE {
    modeSpecificInfo                     CHOICE {
        fdd                               SEQUENCE {
            pohsdsch                       Po-hsdsch,
            feedback-cycle                 Feedback-cycle,
            cqi-RepetitionFactor            CQI-RepetitionFactor,
            deltaCQI                        DeltaCQI
        },
        tdd                                NULL
    }
}

MidambleConfigurationBurstTypeand3 ::= ENUMERATED {ms4, ms8, ms16}

MidambleConfigurationBurstType2 ::= ENUMERATED {ms3, ms6}

MidambleShiftAndBurstType ::= SEQUENCE {
    burstType                             CHOICE {

```

```

type1
midambleConfigurationBurstTypeand3 MidambleConfigurationBurstTypeand3,
midambleAllocationMode CHOICE {
  defaultMidamble NULL,
  commonMidamble NULL,
  ueSpecificMidamble SEQUENCE {
    midambleShift MidambleShiftLong
  }
}
},
type2
midambleConfigurationBurstType2 MidambleConfigurationBurstType2,
midambleAllocationMode CHOICE {
  defaultMidamble NULL,
  commonMidamble NULL,
  ueSpecificMidamble SEQUENCE {
    midambleShift MidambleShiftShort
  }
}
},
type3
midambleConfigurationBurstTypeand3 MidambleConfigurationBurstTypeand3,
midambleAllocationMode CHOICE {
  defaultMidamble NULL,
  ueSpecificMidamble SEQUENCE {
    midambleShift MidambleShiftLong
  }
}
}
}
}

MidambleShiftAndBurstType-DL ::= SEQUENCE {
  burstType CHOICE {
    type1 SEQUENCE {
      midambleConfigurationBurstTypeand3 MidambleConfigurationBurstTypeand3,
      midambleAllocationMode CHOICE {
        defaultMidamble NULL,
        commonMidamble NULL,
        ueSpecificMidamble SEQUENCE {
          midambleShift MidambleShiftLong
        }
      }
    },
    type2 SEQUENCE {
      midambleConfigurationBurstType2 MidambleConfigurationBurstType2,
      midambleAllocationMode CHOICE {
        defaultMidamble NULL,
        commonMidamble NULL,
        ueSpecificMidamble SEQUENCE {
          midambleShift MidambleShiftShort
        }
      }
    }
  }
}

MidambleShiftAndBurstType-LCR-r4 ::= SEQUENCE {
  midambleAllocationMode CHOICE {
    defaultMidamble NULL,
    commonMidamble NULL,
    ueSpecificMidamble SEQUENCE {
      midambleShift INTEGER (0..15)
    }
  },
  -- Actual value midambleConfiguration = IE value * 2
  midambleConfiguration INTEGER (1..8)
}

MidambleShiftLong ::= INTEGER (0..15)

MidambleShiftShort ::= INTEGER (0..5)

MinimumSpreadingFactor ::= ENUMERATED {
  sf4, sf8, sf16, sf32,
  sf64, sf128, sf256 }

```



```

MultiCodeInfo ::=                               INTEGER (1..16)

N-EOT ::=                                       INTEGER (0..7)

N-GAP ::=                                       ENUMERATED {
                                                f2, f4, f8 }

N-PCH ::=                                       INTEGER (1..8)

N-StartMessage ::=                             INTEGER (1..8)

NB01 ::=                                       INTEGER (0..50)

NF-Max ::=                                       INTEGER (1..64)

NumberOfDPDCH ::=                              INTEGER (1..maxDPDCH-UL)

NumberOfFBI-Bits ::=                            INTEGER (1..2)

OpenLoopPowerControl-TDD ::=                   SEQUENCE {
  primaryCCPCH-TX-Power                        PrimaryCCPCH-TX-Power,
  -- alpha, prach-ConstantValue, dpch-ConstantValue and pusch-ConstantValue
  -- shall be ignored in 1.28Mcps TDD mode.
  alpha                                         Alpha                                     OPTIONAL,
  prach-ConstantValue                          ConstantValueTdd,
  dpch-ConstantValue                          ConstantValueTdd,
  pusch-ConstantValue                          ConstantValueTdd                         OPTIONAL
}

OpenLoopPowerControl-IPDL-TDD-r4 ::=           SEQUENCE {
  ipdl-alpha                                   Alpha,
  maxPowerIncrease                            MaxPowerIncrease-r4
}

PagingIndicatorLength ::=                      ENUMERATED {
                                                pi4, pi8, pi16 }

PC-Preamble ::=                                INTEGER (0..7)

PCP-Length ::=                                 ENUMERATED {
                                                as0, as8 }

PCPCH-ChannelInfo ::=                          SEQUENCE {
  pcpch-UL-ScramblingCode                     INTEGER (0..79),
  pcpch-DL-ChannelisationCode                 INTEGER (0..511),
  pcpch-DL-ScramblingCode                     SecondaryScramblingCode                 OPTIONAL,
  pcp-Length                                   PCP-Length,
  ucsM-Info                                    UCSM-Info                               OPTIONAL
}

PCPCH-ChannelInfoList ::=                     SEQUENCE (SIZE (1..maxPCPCHs)) OF
  PCPCH-ChannelInfo

PCPICH-UsageForChannelEst ::=                 ENUMERATED {
  mayBeUsed,
  shallNotBeUsed }

PDSCH-CapacityAllocationInfo ::=              SEQUENCE {
  -- pdsch-PowerControlInfo is conditional on new-configuration branch below, if this
  -- selected the IE is OPTIONAL otherwise it should not be sent
  pdsch-PowerControlInfo                      PDSCH-PowerControlInfo                 OPTIONAL,
  pdsch-AllocationPeriodInfo                 AllocationPeriodInfo,
  configuration                                CHOICE {
    old-Configuration                          SEQUENCE {
      tfcs-ID                                  TFCS-IdentityPlain                     DEFAULT 1,
      pdsch-Identity                          PDSCH-Identity
    },
    new-Configuration                          SEQUENCE {
      pdsch-Info                              PDSCH-Info,
      pdsch-Identity                          PDSCH-Identity                         OPTIONAL
    }
  }
}

PDSCH-CapacityAllocationInfo-r4 ::=           SEQUENCE {
  pdsch-AllocationPeriodInfo                 AllocationPeriodInfo,
  configuration                                CHOICE {

```

```

old-Configuration          SEQUENCE {
    tfcs-ID                 TFCS-IdentityPlain          DEFAULT 1,
    pdsch-Identity         PDSCH-Identity
},
new-Configuration         SEQUENCE {
    pdsch-Info             PDSCH-Info-r4,
    pdsch-Identity         PDSCH-Identity          OPTIONAL,
    pdsch-PowerControlInfo PDSCH-PowerControlInfo  OPTIONAL
}
}
}

PDSCH-CodeInfo ::=
    spreadingFactor
    codeNumber
    multiCodeInfo
}

PDSCH-CodeInfoList ::=
    SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
        PDSCH-CodeInfo

PDSCH-CodeMap ::=
    SEQUENCE {
        spreadingFactor
        multiCodeInfo
        codeNumberStart
        codeNumberStop
    }

PDSCH-CodeMapList ::=
    SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
        PDSCH-CodeMap

PDSCH-CodeMapping ::=
    dl-ScramblingCode
    signallingMethod
    codeRange
    tfci-Range
    explicit-config
    replace
}

PDSCH-Identity ::=
    INTEGER (1..hiPDSCHidentities)

PDSCH-Info ::=
    tfcs-ID
    commonTimeslotInfo
    pdsch-TimeslotsCodes
}

PDSCH-Info-r4 ::=
    tfcs-ID
    commonTimeslotInfo
    tddOption
    tdd384
        pdsch-TimeslotsCodes
    },
    tdd128
        pdsch-TimeslotsCodes
}

PDSCH-Info-LCR-r4 ::=
    tfcs-ID
    commonTimeslotInfo
    pdsch-TimeslotsCodes
}

PDSCH-PowerControlInfo ::=
    tpc-StepSizeTDD
    ul-CCTrChTPCList
}

PDSCH-SHO-DCH-Info ::=
    dsch-RadioLinkIdentifier
    rl-IdentifierList
}

```

```

PDSCH-SysInfo ::=
  pdsch-Identity
  pdsch-Info
  dsch-TFS
  dsch-TFCS
}
SEQUENCE {
  PDSCH-Identity,
  PDSCH-Info,
  TransportFormatSet
  TFCS
  OPTIONAL,
  OPTIONAL
}

PDSCH-SysInfo-HCR-r5 ::=
  pdsch-Identity
  pdsch-Info
  dsch-TransportChannelsInfo
  dsch-TFCS
}
SEQUENCE {
  PDSCH-Identity,
  PDSCH-Info,
  DSCH-TransportChannelsInfo
  TFCS
  OPTIONAL,
  OPTIONAL
}

PDSCH-SysInfo-LCR-r4 ::=
  pdsch-Identity
  pdsch-Info
  dsch-TFS
  dsch-TFCS
}
SEQUENCE {
  PDSCH-Identity,
  PDSCH-Info-LCR-r4,
  TransportFormatSet
  TFCS
  OPTIONAL,
  OPTIONAL
}

PDSCH-SysInfoList ::=
SEQUENCE (SIZE (1..maxPDSCH)) OF
  PDSCH-SysInfo

PDSCH-SysInfoList-HCR-r5 ::=
SEQUENCE (SIZE (1..maxPDSCH)) OF PDSCH-SysInfo-HCR-r5

PDSCH-SysInfoList-LCR-r4 ::=
SEQUENCE (SIZE (1..maxPDSCH)) OF
  PDSCH-SysInfo-LCR-r4

PDSCH-SysInfoList-SFN ::=
  pdsch-SysInfo
  sfn-TimeInfo
}
SEQUENCE (SIZE (1..maxPDSCH)) OF
  SEQUENCE {
    PDSCH-SysInfo,
    SFN-TimeInfo
    OPTIONAL
  }

PDSCH-SysInfoList-SFN-HCR-r5 ::=
  pdsch-SysInfo
  sfn-TimeInfo
}
SEQUENCE (SIZE (1..maxPDSCH)) OF
  SEQUENCE {
    PDSCH-SysInfo-HCR-r5,
    SFN-TimeInfo
    OPTIONAL
  }

PDSCH-SysInfoList-SFN-LCR-r4 ::=
  pdsch-SysInfo
  sfn-TimeInfo
}
SEQUENCE (SIZE (1..maxPDSCH)) OF
  SEQUENCE {
    PDSCH-SysInfo-LCR-r4,
    SFN-TimeInfo
    OPTIONAL
  }

PersistenceScalingFactor ::=
  psf0-9, psf0-8, psf0-7, psf0-6,
  psf0-5, psf0-4, psf0-3, psf0-2 }
ENUMERATED {

PersistenceScalingFactorList ::=
SEQUENCE (SIZE (1..maxASCPersist)) OF
  PersistenceScalingFactor

PI-CountPerFrame ::=
  e18, e36, e72, e144 }
ENUMERATED {

PichChannelisationCodeList-LCR-r4 ::=
SEQUENCE (SIZE (1..2)) OF
  DL-TS-ChannelisationCode

PICH-Info ::=
  fdd
  channelisationCode256
  pi-CountPerFrame
  sttd-Indicator
},
  tdd
  channelisationCode
  timeslot
  midambleShiftAndBurstType
  repetitionPeriodLengthOffset
  pagingIndicatorLength
  n-GAP
  n-PCH
}
CHOICE {
  SEQUENCE {
    ChannelisationCode256,
    PI-CountPerFrame,
    BOOLEAN
  },
  SEQUENCE {
    TDD-PICH-CCode
    TimeslotNumber
    MidambleShiftAndBurstType,
    RepPerLengthOffset-PICH
    PagingIndicatorLength
    N-GAP
    N-PCH
    OPTIONAL,
    OPTIONAL,
    OPTIONAL,
    DEFAULT pi4,
    DEFAULT f4,
    DEFAULT 2
  }
}

```

```

PICH-Info-LCR-r4 ::= SEQUENCE {
    timeslot TimeslotNumber-LCR-r4 OPTIONAL,
    pichChannelisationCodeList-LCR-r4 PichChannelisationCodeList-LCR-r4,
    midambleShiftAndBurstType MidambleShiftAndBurstType-LCR-r4,
    repetitionPeriodLengthOffset RepPerLengthOffset-PICH OPTIONAL,
    pagingIndicatorLength PagingIndicatorLength DEFAULT pi4,
    n-GAP N-GAP DEFAULT f4,
    n-PCH N-PCH DEFAULT 2
}

PICH-PowerOffset ::= INTEGER (-10..5)

PilotBits128 ::= ENUMERATED {
    pb4, pb8 }

PilotBits256 ::= ENUMERATED {
    pb2, pb4, pb8 }

-- Actual value Po-hsdsch = IE value * 0.5
Po-hsdsch ::= INTEGER (-12..26)

PositionFixedOrFlexible ::= ENUMERATED {
    fixed,
    flexible }

PowerControlAlgorithm ::= CHOICE {
    algorithm1 TPC-StepSizeFDD,
    algorithm2 NULL
}

PowerOffsetPilot-pdpdch ::= INTEGER (0..24)

PowerOffsetTPC-pdpdch ::= INTEGER (0..24)

PowerRampStep ::= INTEGER (1..8)

PRACH-ChanCodes-LCR-r4 ::= SEQUENCE (SIZE (1..4)) OF
    TDD-PRACH-CCode-LCR-r4

PRACH-Definition-LCR-r4 ::= SEQUENCE {
    timeslot TimeslotNumber-PRACH-LCR-r4,
    prach-ChanCodes-LCR prach-ChanCodes-LCR-r4,
    midambleShiftAndBurstType MidambleShiftAndBurstType-LCR-r4,
    fpach-Info FPACH-Info-r4
}

PRACH-Midamble ::= ENUMERATED {
    direct,
    direct-Inverted }

PRACH-Partitioning ::= CHOICE {
    fdd SEQUENCE (SIZE (1..maxASC)) OF
        -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-FDD are listed,
        -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
        ASCSetting-FDD,
    tdd SEQUENCE (SIZE (1..maxASC)) OF
        -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-TDD are listed,
        -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
        ASCSetting-TDD
}

PRACH-Partitioning-LCR-r4 ::= SEQUENCE (SIZE (1..maxASC)) OF
    -- TABULAR: If only "NumASC+1" (with, NumASC+1 < maxASC) ASCSetting-TDD-LCR-r4 are listed,
    -- the remaining (NumASC+2 through maxASC) ASCs are unspecified.
    ASCSetting-TDD-LCR-r4

PRACH-PowerOffset ::= SEQUENCE {
    powerRampStep PowerRampStep,
    preambleRetransMax PreambleRetransMax
}

PRACH-RACH-Info ::= SEQUENCE {
    modeSpecificInfo CHOICE {
        fdd SEQUENCE {
            availableSignatures AvailableSignatures,
            availableSF SF-PRACH,
            preambleScramblingCodeWordNumber PreambleScramblingCodeWordNumber,
            puncturingLimit PuncturingLimit,
        }
    }
}

```

```

        availableSubChannelNumbers      AvailableSubChannelNumbers
    },
    tdd                                  SEQUENCE {
        timeslot                         TimeslotNumber,
        channelisationCodeList          TDD-PRACH-CCodeList,
        prach-Midamble                   PRACH-Midamble
    }
}

PRACH-RACH-Info-LCR-r4 ::=             SEQUENCE {
    sync-UL-Info                         SYNC-UL-Info-r4,
    prach-DefinitionList                 SEQUENCE (SIZE (1..maxPRACH-FPACH)) OF
                                        PRACH-Definition-LCR-r4
}

PRACH-SystemInformation ::=           SEQUENCE {
    prach-RACH-Info                     PRACH-RACH-Info,
    transportChannelIdentity            TransportChannelIdentity,
    rach-TransportFormatSet             TransportFormatSet                OPTIONAL,
    rach-TFCS                           TFCS                            OPTIONAL,
    prach-Partitioning                  PRACH-Partitioning                OPTIONAL,
    persistenceScalingFactorList        PersistenceScalingFactorList      OPTIONAL,
    ac-To-ASC-MappingTable              AC-To-ASC-MappingTable            OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                               SEQUENCE {
            primaryCPICH-TX-Power        PrimaryCPICH-TX-Power            OPTIONAL,
            constantValue                 ConstantValue                     OPTIONAL,
            prach-PowerOffset             PRACH-PowerOffset               OPTIONAL,
            rach-TransmissionParameters  RACH-TransmissionParameters    OPTIONAL,
            aich-Info                     AICH-Info                       OPTIONAL
        },
        tdd                               NULL
    }
}

PRACH-SystemInformation-LCR-r4 ::=     SEQUENCE {
    prach-RACH-Info-LCR                  PRACH-RACH-Info-LCR-r4,
    rach-TransportFormatSet-LCR          TransportFormatSet-LCR            OPTIONAL,
    prach-Partitioning-LCR               PRACH-Partitioning-LCR-r4       OPTIONAL
}

PRACH-SystemInformationList ::=        SEQUENCE (SIZE (1..maxPRACH)) OF
                                        PRACH-SystemInformation

PRACH-SystemInformationList-LCR-r4 ::= SEQUENCE (SIZE (1..maxPRACH)) OF
                                        PRACH-SystemInformation-LCR-r4

PreambleRetransMax ::=                 INTEGER (1..64)

PreambleScramblingCodeWordNumber ::=   INTEGER (0..15)

PreDefPhyChConfiguration ::=           SEQUENCE {
    ul-DPCH-InfoPredef                  UL-DPCH-InfoPredef,
    dl-CommonInformationPredef           DL-CommonInformationPredef      OPTIONAL
}

PrimaryCCPCH-Info ::=                  CHOICE {
    fdd                                  SEQUENCE {
        tx-DiversityIndicator            BOOLEAN
    },
    tdd                                  SEQUENCE {
        -- syncCase should be ignored for 1.28Mcps TDD mode
        syncCase                         CHOICE {
            syncCase1                     SEQUENCE {
                timeslot                   TimeslotNumber
            },
            syncCase2                     SEQUENCE {
                timeslotSync2              TimeslotSync2
            }
        }
    }
}
cellParametersID                       CellParametersID                OPTIONAL,
sctd-Indicator                           BOOLEAN
}

PrimaryCCPCH-Info-r4 ::=                CHOICE {
    fdd                                  SEQUENCE {

```

```

        tx-DiversityIndicator          BOOLEAN
    },
    tdd                                SEQUENCE {
        tddOption                      CHOICE {
            tdd384                     SEQUENCE {
                syncCase                CHOICE {
                    syncCase1           SEQUENCE {
                        timeslot         TimeslotNumber
                    },
                    syncCase2           SEQUENCE {
                        timeslotSync2    TimeslotSync2
                    }
                }
            },
            tddl28                      SEQUENCE {
                tstd-Indicator          BOOLEAN
            }
        },
        cellParametersID              CellParametersID          OPTIONAL,
        sctd-Indicator                BOOLEAN
    }
}

PrimaryCCPCH-Info-LCR-r4 ::=          SEQUENCE {
    tstd-Indicator                    BOOLEAN,
    cellParametersID                 CellParametersID          OPTIONAL,
    sctd-Indicator                    BOOLEAN
}

-- For 1.28Mcps TDD, the following IE includes elements for the PCCPCH Info additional to those
-- in PrimaryCCPCH-Info
PrimaryCCPCH-Info-LCR-r4-ext ::=     SEQUENCE {
    tstd-Indicator                    BOOLEAN
}

PrimaryCCPCH-InfoPost ::=            SEQUENCE {
    syncCase                          CHOICE {
        syncCase1                     SEQUENCE {
            timeslot                   TimeslotNumber
        },
        syncCase2                     SEQUENCE {
            timeslotSync2              TimeslotSync2
        }
    },
    cellParametersID                 CellParametersID,
    sctd-Indicator                    BOOLEAN
}

PrimaryCCPCH-InfoPostTDD-LCR-r4 ::= SEQUENCE {
    tstd-Indicator                    BOOLEAN,
    cellParametersID                 CellParametersID,
    sctd-Indicator                    BOOLEAN
}

PrimaryCCPCH-TX-Power ::=            INTEGER (6..43)

PrimaryCPICH-Info ::=                SEQUENCE {
    primaryScramblingCode             PrimaryScramblingCode
}

PrimaryCPICH-TX-Power ::=            INTEGER (-10..50)

PrimaryScramblingCode ::=            INTEGER (0..511)

PuncturingLimit ::=                  ENUMERATED {
    p10-40, p10-44, p10-48, p10-52, p10-56,
    p10-60, p10-64, p10-68, p10-72, p10-76,
    p10-80, p10-84, p10-88, p10-92, p10-96, p11 }

PUSCH-CapacityAllocationInfo ::=     SEQUENCE {
    pusch-Allocation                  CHOICE {
        pusch-AllocationPending       NULL,
        pusch-AllocationAssignment    SEQUENCE {
            pusch-AllocationPeriodInfo AllocationPeriodInfo,
            pusch-PowerControlInfo     UL-TargetSIR          OPTIONAL,
            configuration               CHOICE {
                old-Configuration      SEQUENCE {
                    tfcs-ID             TFCS-IdentityPlain      DEFAULT 1,

```



```

PUSCH-SysInfo-HCR-r5 ::=
    pusch-Identity
    pusch-Info
    usch-TransportChannelsInfo
    usch-TFCS
}
SEQUENCE {
    PUSCH-Identity,
    PUSCH-Info,
    USCH-TransportChannelsInfo
    TFCS
OPTIONAL,
OPTIONAL
}

PUSCH-SysInfo-LCR-r4 ::=
    pusch-Identity
    pusch-Info
    usch-TFS
    usch-TFCS
}
SEQUENCE {
    PUSCH-Identity,
    PUSCH-Info-LCR-r4,
    TransportFormatSet
    TFCS
OPTIONAL,
OPTIONAL
}

PUSCH-SysInfoList ::=
SEQUENCE (SIZE (1..maxPUSCH)) OF
PUSCH-SysInfo

PUSCH-SysInfoList-HCR-r5 ::=
SEQUENCE (SIZE (1..maxPUSCH)) OF PUSCH-SysInfo-HCR-r5

PUSCH-SysInfoList-LCR-r4 ::=
SEQUENCE (SIZE (1..maxPUSCH)) OF
PUSCH-SysInfo-LCR-r4

PUSCH-SysInfoList-SFN ::=
SEQUENCE (SIZE (1..maxPUSCH)) OF
SEQUENCE {
    pusch-SysInfo
    sfn-TimeInfo
}
PUSCH-SysInfo,
SFN-TimeInfo
OPTIONAL
}

PUSCH-SysInfoList-SFN-HCR-r5 ::=
SEQUENCE (SIZE (1..maxPUSCH)) OF
SEQUENCE {
    pusch-SysInfo
    sfn-TimeInfo
}
PUSCH-SysInfo-HCR-r5,
SFN-TimeInfo
OPTIONAL
}

PUSCH-SysInfoList-SFN-LCR-r4 ::=
SEQUENCE (SIZE (1..maxPUSCH)) OF
SEQUENCE {
    pusch-SysInfo
    sfn-TimeInfo
}
PUSCH-SysInfo-LCR-r4,
SFN-TimeInfo
OPTIONAL
}

RACH-TransmissionParameters ::=
    mmax
    nb01Min
    nb01Max
}
SEQUENCE {
    INTEGER (1..32),
    NB01,
    NB01
}

ReducedScramblingCodeNumber ::=
INTEGER (0..8191)

RepetitionPeriodAndLength ::=
    repetitionPeriod1
    -- repetitionPeriod2 could just as well be NULL also.
    repetitionPeriod2
    repetitionPeriod4
    repetitionPeriod8
    repetitionPeriod16
    repetitionPeriod32
    repetitionPeriod64
}
CHOICE {
    NULL,
    INTEGER (1..1),
    INTEGER (1..3),
    INTEGER (1..7),
    INTEGER (1..15),
    INTEGER (1..31),
    INTEGER (1..63)
}

RepetitionPeriodLengthAndOffset ::=
    repetitionPeriod1
    repetitionPeriod2
    length
    offset
},
    repetitionPeriod4
    length
    offset
},
    repetitionPeriod8
    length
    offset
},
    repetitionPeriod16
    length
    offset
},
    repetitionPeriod32
}
CHOICE {
    NULL,
    SEQUENCE {
        NULL,
        INTEGER (0..1)
    },
    SEQUENCE {
        INTEGER (1..3),
        INTEGER (0..3)
    },
    SEQUENCE {
        INTEGER (1..7),
        INTEGER (0..7)
    },
    SEQUENCE {
        INTEGER (1..15),
        INTEGER (0..15)
    },
    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
        fach-PCH-InformationList
    }
}

SCCPCH-InfoForFACH-r4 ::=
    secondaryCCPCH-Info
    tfcs
    fach-PCH-InformationList
    modeSpecificInfo
    fdd
        sib-ReferenceListFACH
    },
    tdd
}

SCCPCH-SystemInformation ::=
    secondaryCCPCH-Info
    tfcs
    fach-PCH-InformationList
    pich-Info
}

SCCPCH-SystemInformation-LCR-r4-ext ::= SEQUENCE {
    secondaryCCPCH-LCR-Extensions
    -- pich-Info in the SCCPCH-SystemInformation IE shall be absent,
    -- and instead the following used.
    pich-Info
}

SCCPCH-SystemInformationList ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
    SCCPCH-SystemInformation

-- SCCPCH-SystemInformationList-LCR-r4-ext includes elements additional to those in
-- SCCPCH-SystemInformationList for the 1.28Mcps TDD. The order of the IEs
-- indicates which SCCPCH-SystemInformation-LCR-r4-ext IE extends which
-- SCCPCH-SystemInformation IE.
SCCPCH-SystemInformationList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
    SCCPCH-SystemInformation-LCR-r4-ext

ScramblingCodeChange ::=
    ENUMERATED {
        codeChange, noCodeChange
    }

ScramblingCodeType ::=
    ENUMERATED {
        shortSC,
        longSC
    }

SecondaryCCPCH-Info ::=
    modeSpecificInfo
    fdd
        -- dummy1 is not used in this version of the specification and should be ignored.
        dummy1
        -- dummy2 is not used in this version of the specification. It should not
        -- be sent and if received it should be ignored.
        dummy2
        secondaryScramblingCode
        sttd-Indicator
        sf-AndCodeNumber
        pilotSymbolExistence
        tfci-Existence
        positionFixedOrFlexible
        timingOffset
    },
    tdd
        -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
        commonTimeslotInfo
        individualTimeslotInfo
        channelisationCode
    }
}

SecondaryCCPCH-Info-r4 ::=
    modeSpecificInfo
    fdd
        SEQUENCE {
            CHOICE {
                SEQUENCE {

```

```

        secondaryScramblingCode      SecondaryScramblingCode      OPTIONAL,
        sttd-Indicator                BOOLEAN,
        sf-AndCodeNumber              SF256-AndCodeNumber,
        pilotSymbolExistence          BOOLEAN,
        tfci-Existence                BOOLEAN,
        positionFixedOrFlexible        PositionFixedOrFlexible,
        timingOffset                   TimingOffset                   DEFAULT 0
    },
    tdd                                SEQUENCE {
        -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
        commonTimeslotInfo             CommonTimeslotInfoSCCPCH,
        tddOption                      CHOICE {
            tdd384                     SEQUENCE {
                individualTimeslotInfo  IndividualTimeslotInfo
            },
            tdd128                     SEQUENCE {
                individualTimeslotInfo  IndividualTimeslotInfo-LCR-r4
            }
        },
        channelisationCode             SCCPCH-ChannelisationCodeList
    }
}

SecondaryCCPCH-Info-LCR-r4-ext ::= SEQUENCE {
    individualTimeslotLCR-Ext         IndividualTimeslotInfo-LCR-r4-ext
}

SecondaryCPICH-Info ::= SEQUENCE {
    secondaryDL-ScramblingCode        SecondaryScramblingCode      OPTIONAL,
    channelisationCode                ChannelisationCode256
}

SecondaryScramblingCode ::= INTEGER (1..15)

SecondInterleavingMode ::= ENUMERATED {
    frameRelated, timeslotRelated }

-- SF256-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF256-AndCodeNumber ::= CHOICE {
    sf4                                INTEGER (0..3),
    sf8                                INTEGER (0..7),
    sf16                               INTEGER (0..15),
    sf32                               INTEGER (0..31),
    sf64                               INTEGER (0..63),
    sf128                              INTEGER (0..127),
    sf256                              INTEGER (0..255)
}

-- SF512-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF512-AndCodeNumber ::= CHOICE {
    sf4                                INTEGER (0..3),
    sf8                                INTEGER (0..7),
    sf16                               INTEGER (0..15),
    sf32                               INTEGER (0..31),
    sf64                               INTEGER (0..63),
    sf128                              INTEGER (0..127),
    sf256                              INTEGER (0..255),
    sf512                              INTEGER (0..511)
}

-- SF512-AndPilot encodes both "Spreading factor" and "Number of bits for Pilot bits"
SF512-AndPilot ::= CHOICE {
    sfd4                                NULL,
    sfd8                                NULL,
    sfd16                               NULL,
    sfd32                               NULL,
    sfd64                               NULL,
    sfd128                             PilotBits128,
    sfd256                             PilotBits256,
    sfd512                             NULL
}

SF-PDSCH ::= ENUMERATED {
    sfp4, sfp8, sfp16, sfp32,
    sfp64, sfp128, sfp256 }

SF-PRACH ::= ENUMERATED {
    sfpr32, sfpr64, sfpr128, sfpr256 }

```

```

SFN-TimeInfo ::=
    activationTimeSFN
    physChDuration
}
SEQUENCE {
    INTEGER (0..4095),
    DurationTimeInfo
}

SpecialBurstScheduling ::=
    INTEGER (0..7)

SpreadingFactor ::=
    ENUMERATED {
        sf4, sf8, sf16, sf32,
        sf64, sf128, sf256 }

SRB-delay ::=
    INTEGER (0..7)

SSDT-CellIdentity ::=
    ENUMERATED {
        ssdt-id-a, ssdt-id-b, ssdt-id-c,
        ssdt-id-d, ssdt-id-e, ssdt-id-f,
        ssdt-id-g, ssdt-id-h }

SSDT-Information ::=
    s-Field
    codeWordSet
}
SEQUENCE {
    S-Field,
    CodeWordSet
}

SSDT-Information-r4 ::=
    s-Field
    codeWordSet
    ssdt-UL-r4
}
SEQUENCE {
    S-Field,
    CodeWordSet,
    SSDT-UL
}
OPTIONAL

SSDT-UL ::=
    ENUMERATED {
        ul, ul-AndDL }

SynchronisationParameters-r4 ::=
    sync-UL-CodesBitmap
    fpach-Info
    -- Actual value prxUpPCHdes = IE value - 120
    prxUpPCHdes
    sync-UL-Procedure
}
SEQUENCE {
    BIT STRING {
        code7(0),
        code6(1),
        code5(2),
        code4(3),
        code3(4),
        code2(5),
        code1(6),
        code0(7)
    } (SIZE (8)),
    FPACH-Info-r4,
    INTEGER (0..62),
    SYNC-UL-Procedure-r4
}
OPTIONAL

SYNC-UL-Procedure-r4 ::=
    max-SYNC-UL-Transmissions
    powerRampStep
}
SEQUENCE {
    ENUMERATED { tr1, tr2, tr4, tr8 },
    INTEGER (0..3)
}

SYNC-UL-Info-r4 ::=
    sync-UL-Codes-Bitmap
    -- Actual value prxUpPCHdes = IE value - 120
    prxUpPCHdes
    powerRampStep
    max-SYNC-UL-Transmissions
    mmax
}
SEQUENCE {
    BIT STRING {
        code7(0),
        code6(1),
        code5(2),
        code4(3),
        code3(4),
        code2(5),
        code1(6),
        code0(7)
    } (SIZE (8)),
    INTEGER (0..62),
    INTEGER (0..3),
    ENUMERATED { tr1, tr2, tr4, tr8 } ,
    INTEGER(1..32)
}

TDD-FPACH-CCCode16-r4 ::=
    ENUMERATED {
        cc16-1, cc16-2, cc16-3, cc16-4,
        cc16-5, cc16-6, cc16-7, cc16-8,
        cc16-9, cc16-10, cc16-11, cc16-12,
        cc16-13, cc16-14, cc16-15, cc16-16 }

```

```

TDD-UL-Interference ::= INTEGER (-110..-52)

TDD-PICH-CCode ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode8 ::= ENUMERATED {
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8 }

TDD-PRACH-CCode16 ::= ENUMERATED {
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode-LCR-r4 ::= ENUMERATED {
    cc4-1, cc4-2, cc4-3, cc4-4,
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8,
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCodeList ::= CHOICE {
    sf8 SEQUENCE (SIZE (1..8)) OF
        TDD-PRACH-CCode8,
    -- Channelisation codes cc16-9, cc16-10, cc16-11, cc16-12, cc16-13, cc16-14,
    -- cc16-15 and cc16-16 shall not be used
    sf16 SEQUENCE (SIZE (1..8)) OF
        TDD-PRACH-CCode16
}

TFC-ControlDuration ::= ENUMERATED {
    tfc-cd1, tfc-cd2, tfc-cd4, tfc-cd8,
    tfc-cd16, tfc-cd24, tfc-cd32,
    tfc-cd48, tfc-cd64, tfc-cd128,
    tfc-cd192, tfc-cd256, tfc-cd512 }

TFCI-Coding ::= ENUMERATED {
    tfci-bits-4, tfci-bits-8,
    tfci-bits-16, tfci-bits-32 }

TGCFN ::= INTEGER (0..255)

-- In TGD, value 270 represents "undefined" in the tabular description.
TGD ::= INTEGER (15..270)

TGL ::= INTEGER (1..14)

TGMP ::= ENUMERATED {
    tdd-Measurement, fdd-Measurement,
    gsm-CarrierRSSIMeasurement,
    gsm-initialBSICIdentification, gsmBSICReconfirmation,
    multi-carrier }

TGP-Sequence ::= SEQUENCE {
    tgpsi TGPSI,
    tgps-Status CHOICE {
        activate SEQUENCE {
            tgcfn
        },
        deactivate NULL
    },
    tgps-ConfigurationParams TGPS-ConfigurationParams OPTIONAL
}

TGPS-Reconfiguration-CFN ::= INTEGER (0..255)

TGP-SequenceList ::= SEQUENCE (SIZE (1..maxTGPS)) OF
    TGP-Sequence

TGP-SequenceShort ::= SEQUENCE {
    tgpsi

```

```

    tgps-Status
        activate
            tgcfm
        },
        deactivate
    }
}

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,
        tgd
            TGD,
        tgpl1
            TGPL,
        tgpl2
            TGPL,
        rpp
            RPP,
        itp
            ITP,
        -- TABULAR: Compressed mode method is nested inside UL-DL-Mode
        ul-DL-Mode
            UL-DL-Mode,
        dl-FrameType
            DL-FrameType,
        deltaSIR1
            DeltaSIR,
        deltaSIRAfter1
            DeltaSIR,
        deltaSIR2
            DeltaSIR,
        deltaSIRAfter2
            DeltaSIR,
        nidentifyAbort
            NidentifyAbort,
        treconfirmAbort
            TreconfirmAbort
    }

TGPSI ::=
    INTEGER (1..maxTGPS)

TGSN ::=
    INTEGER (0..14)

TimeInfo ::=
    SEQUENCE {
        activationTime
            ActivationTime,
        durationTimeInfo
            DurationTimeInfo
    }

TimeslotList ::=
    SEQUENCE (SIZE (1..maxTS)) OF
        TimeslotNumber

TimeslotList-r4 ::=
    CHOICE {
        tdd384
            SEQUENCE (SIZE (1..maxTS)) OF
                TimeslotNumber,
        tdd128
            SEQUENCE (SIZE (1..maxTS-LCR)) OF
                TimeslotNumber-LCR-r4
    }

-- If TimeslotNumber is included for a 1.28Mcps TDD description, it shall take values from 0..6
TimeslotNumber ::=
    INTEGER (0..14)

TimeslotNumber-LCR-r4 ::=
    INTEGER (0..6)

TimeslotNumber-PRACH-LCR-r4 ::=
    INTEGER (1..6)

TimeslotSync2 ::=
    INTEGER (0..6)

-- Actual value TimingOffset = IE value * 256
TimingOffset ::=
    INTEGER (0..149)

TPC-CombinationIndex ::=
    INTEGER (0..5)

-- Actual value TPC-StepSizeFDD = IE value + 1
TPC-StepSizeFDD ::=
    INTEGER (0..1)

TPC-StepSizeTDD ::=
    INTEGER (1..3)

-- Actual value TreconfirmAbort = IE value * 0.5 seconds
TreconfirmAbort ::=
    INTEGER (1..20)

TX-DiversityMode ::=
    ENUMERATED {
        noDiversity,

```

```

        sttd,
        closedLoopModel,
        closedLoopMode2 }

UARFCN ::=                               INTEGER (0..16383)

UCSM-Info ::=                             SEQUENCE {
    minimumSpreadingFactor                MinimumSpreadingFactor,
    nf-Max                                NF-Max,
    channelReqParamsForUCSM              ChannelReqParamsForUCSM
}

UL-CCTrCH ::=                             SEQUENCE {
    tfcs-ID                               TFCS-IdentityPlain                DEFAULT 1,
    ul-TargetSIR                          UL-TargetSIR,
    timeInfo                               TimeInfo,
    commonTimeslotInfo                    CommonTimeslotInfo                OPTIONAL,
    ul-CCTrCH-TimeslotsCodes              UplinkTimeslotsCodes              OPTIONAL
}

UL-CCTrCH-r4 ::=                          SEQUENCE {
    tfcs-ID                               TFCS-IdentityPlain                DEFAULT 1,
    -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
    -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
    ul-TargetSIR                          UL-TargetSIR,
    timeInfo                               TimeInfo,
    commonTimeslotInfo                    CommonTimeslotInfo                OPTIONAL,
    tddOption                             CHOICE {
        tdd384                             SEQUENCE {
            ul-CCTrCH-TimeslotsCodes        UplinkTimeslotsCodes              OPTIONAL
        },
        tdd128                             SEQUENCE {
            ul-CCTrCH-TimeslotsCodes        UplinkTimeslotsCodes-LCR-r4      OPTIONAL
        }
    }
}

UL-CCTrCHList ::=                         SEQUENCE (SIZE (1..maxCCTrCH)) OF
    UL-CCTrCH

UL-CCTrCHList-r4 ::=                      SEQUENCE (SIZE (1..maxCCTrCH)) OF
    UL-CCTrCH-r4

UL-CCTrCHListToRemove ::=                 SEQUENCE (SIZE (1..maxCCTrCH)) OF
    TFCS-IdentityPlain

UL-CCTrChTPCList ::=                      SEQUENCE (SIZE (0..maxCCTrCH)) OF
    TFCS-Identity

UL-ChannelRequirement ::=                 CHOICE {
    ul-DPCH-Info                          UL-DPCH-Info,
    cpch-SetInfo                           CPCH-SetInfo
}

UL-ChannelRequirement-r4 ::=              CHOICE {
    ul-DPCH-Info                          UL-DPCH-Info-r4,
    cpch-SetInfo                           CPCH-SetInfo
}

UL-ChannelRequirement-r5 ::=              CHOICE {
    ul-DPCH-Info                          UL-DPCH-Info-r5,
    cpch-SetInfo                           CPCH-SetInfo
}

UL-ChannelRequirementWithCPCH-SetID ::=   CHOICE {
    ul-DPCH-Info                          UL-DPCH-Info,
    cpch-SetInfo                           CPCH-SetInfo,
    cpch-SetID                             CPCH-SetID
}

UL-ChannelRequirementWithCPCH-SetID-r4 ::= CHOICE {
    ul-DPCH-Info                          UL-DPCH-Info-r4,
    cpch-SetInfo                           CPCH-SetInfo,
    cpch-SetID                             CPCH-SetID
}

UL-ChannelRequirementWithCPCH-SetID-r5 ::= CHOICE {
    ul-DPCH-Info                          UL-DPCH-Info-r5,

```

```

    cpch-SetInfo          CPCH-SetInfo,
    cpch-SetID           CPCH-SetID
}

UL-CompressedModeMethod ::=          ENUMERATED {
                                        sf-2,
                                        higherLayerScheduling }

UL-DL-Mode ::=                      CHOICE {
    ul                               UL-CompressedModeMethod,
    dl                               DL-CompressedModeMethod,
    ul-and-dl                        SEQUENCE {
        ul                           UL-CompressedModeMethod,
        dl                           DL-CompressedModeMethod
    }
}

UL-DPCCH-SlotFormat ::=             ENUMERATED {
                                        slf0, slf1, slf2 }

UL-DPCH-Info ::=                   SEQUENCE {
    ul-DPCH-PowerControlInfo         UL-DPCH-PowerControlInfo          OPTIONAL,
    modeSpecificInfo                 CHOICE {
        fdd                          SEQUENCE {
            scramblingCodeType        ScramblingCodeType,
            scramblingCode            UL-ScramblingCode,
            numberOfDPDCH             NumberOfDPDCH                DEFAULT 1,
            spreadingFactor           SpreadingFactor,
            tfci-Existence            BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits         NumberOfFBI-Bits            OPTIONAL,
            puncturingLimit          PuncturingLimit
        },
        tdd                          SEQUENCE {
            ul-TimingAdvance          UL-TimingAdvanceControl    OPTIONAL,
            ul-CCTrCHList             UL-CCTrCHList              OPTIONAL,
            ul-CCTrCHListToRemove     UL-CCTrCHListToRemove     OPTIONAL
        }
    }
}

UL-DPCH-Info-r4 ::=                SEQUENCE {
    ul-DPCH-PowerControlInfo         UL-DPCH-PowerControlInfo-r4      OPTIONAL,
    modeSpecificInfo                 CHOICE {
        fdd                          SEQUENCE {
            scramblingCodeType        ScramblingCodeType,
            scramblingCode            UL-ScramblingCode,
            numberOfDPDCH             NumberOfDPDCH                DEFAULT 1,
            spreadingFactor           SpreadingFactor,
            tfci-Existence            BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits         NumberOfFBI-Bits            OPTIONAL,
            puncturingLimit          PuncturingLimit
        },
        tdd                          SEQUENCE {
            ul-TimingAdvance          UL-TimingAdvanceControl-r4  OPTIONAL,
            ul-CCTrCHList             UL-CCTrCHList-r4            OPTIONAL,
            ul-CCTrCHListToRemove     UL-CCTrCHListToRemove     OPTIONAL
        }
    }
}

UL-DPCH-Info-r5 ::=                SEQUENCE {
    ul-DPCH-PowerControlInfo         UL-DPCH-PowerControlInfo-r5      OPTIONAL,
    modeSpecificInfo                 CHOICE {
        fdd                          SEQUENCE {
            scramblingCodeType        ScramblingCodeType,
            scramblingCode            UL-ScramblingCode,
            numberOfDPDCH             NumberOfDPDCH                DEFAULT 1,
            spreadingFactor           SpreadingFactor,
            tfci-Existence            BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits         NumberOfFBI-Bits            OPTIONAL,
            puncturingLimit          PuncturingLimit
        },
        tdd                          SEQUENCE {
            ul-TimingAdvance          UL-TimingAdvanceControl-r4  OPTIONAL,
            ul-CCTrCHList             UL-CCTrCHList-r4            OPTIONAL,
            ul-CCTrCHListToRemove     UL-CCTrCHListToRemove     OPTIONAL
        }
    }
}

```



```

    }
  }
}

UL-DPCH-InfoPostFDD ::= SEQUENCE {
    ul-DPCH-PowerControlInfo      UL-DPCH-PowerControlInfoPostFDD,
    scramblingCodeType             ScramblingCodeType,
    reducedScramblingCodeNumber    ReducedScramblingCodeNumber,
    spreadingFactor                SpreadingFactor
}

UL-DPCH-InfoPostTDD ::= SEQUENCE {
    ul-DPCH-PowerControlInfo      UL-DPCH-PowerControlInfoPostTDD,
    ul-TimingAdvance              UL-TimingAdvanceControl                OPTIONAL,
    ul-CCTrCH-TimeslotsCodes      UplinkTimeslotsCodes
}

UL-DPCH-InfoPostTDD-LCR-r4 ::= SEQUENCE {
    ul-DPCH-PowerControlInfo      UL-DPCH-PowerControlInfoPostTDD-LCR-r4,
    ul-TimingAdvance              UL-TimingAdvanceControl-LCR-r4        OPTIONAL,
    ul-CCTrCH-TimeslotsCodes      UplinkTimeslotsCodes-LCR-r4
}

UL-DPCH-InfoPredef ::= SEQUENCE {
    ul-DPCH-PowerControlInfo      UL-DPCH-PowerControlInfoPredef,
    modeSpecificInfo              CHOICE {
        fdd                        SEQUENCE {
            tfci-Existence         BOOLEAN,
            puncturingLimit        PuncturingLimit
        },
        tdd                        SEQUENCE {
            commonTimeslotInfo     CommonTimeslotInfo
        }
    }
}

UL-DPCH-PowerControlInfo ::= CHOICE {
    fdd                            SEQUENCE {
        dpcch-PowerOffset          DPCCH-PowerOffset,
        pc-Preamble                PC-Preamble,
        srb-delay                  SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm      PowerControlAlgorithm
    },
    tdd                            SEQUENCE {
        ul-TargetSIR               UL-TargetSIR                OPTIONAL,
        ul-OL-PC-Signalling        CHOICE {
            broadcast-UL-OL-PC-info NULL,
            individuallySignalled   SEQUENCE {
                individualTS-InterferenceList IndividualTS-InterferenceList,
                dpch-ConstantValue   ConstantValueTdd,
                primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power
            }
        }
    }
}

UL-DPCH-PowerControlInfo-r4 ::= CHOICE {
    fdd                            SEQUENCE {
        dpcch-PowerOffset          DPCCH-PowerOffset,
        pc-Preamble                PC-Preamble,
        srb-delay                  SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm      PowerControlAlgorithm
    },
    tdd                            SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
        -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
        ul-TargetSIR               UL-TargetSIR                OPTIONAL,
        ul-OL-PC-Signalling        CHOICE {
            broadcast-UL-OL-PC-info NULL,
            individuallySignalled   SEQUENCE {
                tddOption           CHOICE {
                    tdd384          SEQUENCE {
                        individualTS-InterferenceList IndividualTS-InterferenceList,
                        dpch-ConstantValue   ConstantValue
                    }
                }
            }
        }
    }
}

```



```

    stepSize                INTEGER (1..8),
    frequency                INTEGER (1..8)
}

-- Actual value UL-TargetSIR = (IE value * 0.5) - 11
UL-TargetSIR ::=          INTEGER (0..62)

UL-TimingAdvance ::=      INTEGER (0..63)

UL-TimingAdvanceControl ::= CHOICE {
    disabled                NULL,
    enabled                 SEQUENCE {
        ul-TimingAdvance    UL-TimingAdvance          OPTIONAL,
        activationTime       ActivationTime             OPTIONAL
    }
}

UL-TimingAdvanceControl-r4 ::= CHOICE {
    disabled                NULL,
    enabled                 SEQUENCE {
        tddOption           CHOICE {
            tdd384          SEQUENCE {
                ul-TimingAdvance    UL-TimingAdvance          OPTIONAL,
                activationTime       ActivationTime             OPTIONAL
            },
            tdd128          SEQUENCE {
                ul-SynchronisationParameters    UL-SynchronisationParameters-r4 OPTIONAL,
                synchronisationParameters       SynchronisationParameters-r4  OPTIONAL
            }
        }
    }
}

UL-TimingAdvanceControl-LCR-r4 ::= CHOICE {
    disabled                NULL,
    enabled                 SEQUENCE {
        ul-SynchronisationParameters    UL-SynchronisationParameters-r4 OPTIONAL,
        synchronisationParameters       SynchronisationParameters-r4  OPTIONAL
    }
}

UL-TS-ChannelisationCode ::= ENUMERATED {
    cc1-1, cc2-1, cc2-2,
    cc4-1, cc4-2, cc4-3, cc4-4,
    cc8-1, cc8-2, cc8-3, cc8-4,
    cc8-5, cc8-6, cc8-7, cc8-8,
    cc16-1, cc16-2, cc16-3, cc16-4,
    cc16-5, cc16-6, cc16-7, cc16-8,
    cc16-9, cc16-10, cc16-11, cc16-12,
    cc16-13, cc16-14, cc16-15, cc16-16 }

UL-TS-ChannelisationCodeList ::= SEQUENCE (SIZE (1..2)) OF
    UL-TS-ChannelisationCode

UplinkAdditionalTimeslots ::= SEQUENCE {
    parameters              CHOICE {
        sameAsLast          SEQUENCE {
            timeslotNumber  TimeslotNumber
        },
        newParameters       SEQUENCE {
            individualTimeslotInfo    IndividualTimeslotInfo,
            ul-TS-ChannelisationCodeList    UL-TS-ChannelisationCodeList
        }
    }
}

UplinkAdditionalTimeslots-LCR-r4 ::= SEQUENCE {
    parameters              CHOICE {
        sameAsLast          SEQUENCE {
            timeslotNumber  TimeslotNumber
        },
        newParameters       SEQUENCE {
            individualTimeslotInfo    IndividualTimeslotInfo-LCR-r4,
            ul-TS-ChannelisationCodeList    UL-TS-ChannelisationCodeList
        }
    }
}

```

```

UplinkTimeslotsCodes ::=          SEQUENCE {
    dynamicSFusage                 BOOLEAN,
    firstIndividualTimeslotInfo    IndividualTimeslotInfo,
    ul-TS-ChannelisationCodeList  UL-TS-ChannelisationCodeList,
    moreTimeslots                  CHOICE {
        noMore                     NULL,
        additionalTimeslots        CHOICE {
            consecutive             SEQUENCE {
                numAdditionalTimeslots  INTEGER (1..maxTS-1)
            },
            timeslotList           SEQUENCE (SIZE (1..maxTS-1)) OF
                UplinkAdditionalTimeslots
        }
    }
}

UplinkTimeslotsCodes-LCR-r4 ::=   SEQUENCE {
    dynamicSFusage                 BOOLEAN,
    firstIndividualTimeslotInfo    IndividualTimeslotInfo-LCR-r4,
    ul-TS-ChannelisationCodeList  UL-TS-ChannelisationCodeList,
    moreTimeslots                  CHOICE {
        noMore                     NULL,
        additionalTimeslots        CHOICE {
            consecutive             SEQUENCE {
                numAdditionalTimeslots  INTEGER (1..maxTS-LCR-1)
            },
            timeslotList           SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                UplinkAdditionalTimeslots-LCR-r4
        }
    }
}

Wi-LCR ::=                        INTEGER(1..4)

-- *****
--
--     MEASUREMENT INFORMATION ELEMENTS (10.3.7)
--
-- *****

AcquisitionSatInfo ::=           SEQUENCE {
    satID                          SatID,
    -- Actual value dopplerOthOrder = IE value * 2.5
    dopplerOthOrder                 INTEGER (-2048..2047),
    extraDopplerInfo                ExtraDopplerInfo                OPTIONAL,
    codePhase                       INTEGER (0..1022),
    integerCodePhase                INTEGER (0..19),
    gps-BitNumber                   INTEGER (0..3),
    codePhaseSearchWindow           CodePhaseSearchWindow,
    azimuthAndElevation             AzimuthAndElevation             OPTIONAL
}

AcquisitionSatInfoList ::=       SEQUENCE (SIZE (1..maxSat)) OF
    AcquisitionSatInfo

AdditionalMeasurementID-List ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
    MeasurementIdentity

AlmanacSatInfo ::=              SEQUENCE {
    dataID                          INTEGER (0..3),
    satID                            SatID,
    e                                BIT STRING (SIZE (16)),
    t-oa                             BIT STRING (SIZE (8)),
    deltaI                           BIT STRING (SIZE (16)),
    omegaDot                         BIT STRING (SIZE (16)),
    satHealth                        BIT STRING (SIZE (8)),
    a-Sqrt                           BIT STRING (SIZE (24)),
    omega0                           BIT STRING (SIZE (24)),
    m0                               BIT STRING (SIZE (24)),
    omega                            BIT STRING (SIZE (24)),
    af0                              BIT STRING (SIZE (11)),
    af1                              BIT STRING (SIZE (11))
}

AlmanacSatInfoList ::=          SEQUENCE (SIZE (1..maxSat)) OF
    AlmanacSatInfo

```

```

AverageRLC-BufferPayload ::=          ENUMERATED {
                                        pla0, pla4, pla8, pla16, pla32,
                                        pla64, pla128, pla256, pla512,
                                        pla1024, pla2k, pla4k, pla8k, pla16k,
                                        pla32k, pla64k, pla128k, pla256k,
                                        pla512k, pla1024k, spare12, spare11,
                                        spare10, spare9, spare8, spare7, spare6,
                                        spare5, spare4, spare3, spare2, spare1 }

AzimuthAndElevation ::=              SEQUENCE {
    -- Actual value azimuth = IE value * 11.25
    azimuth                          INTEGER (0..31),
    -- Actual value elevation = IE value * 11.25
    elevation                          INTEGER (0..7)
}

BadSatList ::=                       SEQUENCE (SIZE (1..maxSat)) OF
                                        INTEGER (0..63)

Frequency-Band ::=                   ENUMERATED {
                                        dcs1800BandUsed, pcs1900BandUsed }

BCCH-ARFCN ::=                       INTEGER (0..1023)

BLER-MeasurementResults ::=          SEQUENCE {
    transportChannelIdentity          TransportChannelIdentity,
    dl-TransportChannelBLER           DL-TransportChannelBLER           OPTIONAL
}

BLER-MeasurementResultsList ::=       SEQUENCE (SIZE (1..maxTrCH)) OF
                                        BLER-MeasurementResults

BLER-TransChIdList ::=               SEQUENCE (SIZE (1..maxTrCH)) OF
                                        TransportChannelIdentity

BSIC-VerificationRequired ::=         ENUMERATED {
                                        required, notRequired }

BSICReported ::=                     CHOICE {
    -- Value maxCellMeas is not allowed for verifiedBSIC
    verifiedBSIC                      INTEGER (0..maxCellMeas),
    nonVerifiedBSIC                   BCCH-ARFCN
}

BurstModeParameters ::=              SEQUENCE {
    burstStart                         INTEGER (0..15),
    burstLength                       INTEGER (10..25),
    burstFreq                         INTEGER (1..16)
}

CellDCH-ReportCriteria ::=           CHOICE {
    intraFreqReportingCriteria         IntraFreqReportingCriteria,
    periodicalReportingCriteria        PeriodicalReportingCriteria
}

CellDCH-ReportCriteria-LCR-r4 ::=     CHOICE {
    intraFreqReportingCriteria         IntraFreqReportingCriteria-LCR-r4,
    periodicalReportingCriteria        PeriodicalReportingCriteria
}

-- Actual value CellIndividualOffset = IE value * 0.5
CellIndividualOffset ::=              INTEGER (-20..20)

CellInfo ::=                          SEQUENCE {
    cellIndividualOffset               CellIndividualOffset           DEFAULT 0,
    referenceTimeDifferenceToCell      ReferenceTimeDifferenceToCell   OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                            SEQUENCE {
            primaryCPICH-Info           PrimaryCPICH-Info           OPTIONAL,
            primaryCPICH-TX-Power       PrimaryCPICH-TX-Power       OPTIONAL,
            readSFN-Indicator           BOOLEAN,
            tx-DiversityIndicator       BOOLEAN
        },
        tdd                            SEQUENCE {
            primaryCCPCH-Info           PrimaryCCPCH-Info,
            primaryCCPCH-TX-Power       PrimaryCCPCH-TX-Power       OPTIONAL,
            timeslotInfoList            TimeslotInfoList           OPTIONAL,

```

```

        readSFN-Indicator          BOOLEAN
    }
}

CellInfo-r4 ::=
    cellIndividualOffset          SEQUENCE {
        CellIndividualOffset      DEFAULT 0,
        referenceTimeDifferenceToCell OPTIONAL,
        modeSpecificInfo          CHOICE {
            fdd                    SEQUENCE {
                primaryCPICH-Info  OPTIONAL,
                primaryCPICH-TX-Power OPTIONAL,
                readSFN-Indicator  BOOLEAN,
                tx-DiversityIndicator BOOLEAN
            },
            tdd                    SEQUENCE {
                primaryCCPCH-Info  PrimaryCCPCH-Info-r4,
                primaryCCPCH-TX-Power OPTIONAL,
                timeslotInfoList   TimeslotInfoList-r4  OPTIONAL,
                readSFN-Indicator  BOOLEAN
            }
        }
    }

CellInfoSI-RSCP ::=
    cellIndividualOffset          SEQUENCE {
        CellIndividualOffset      DEFAULT 0,
        referenceTimeDifferenceToCell OPTIONAL,
        modeSpecificInfo          CHOICE {
            fdd                    SEQUENCE {
                primaryCPICH-Info  OPTIONAL,
                primaryCPICH-TX-Power OPTIONAL,
                readSFN-Indicator  BOOLEAN,
                tx-DiversityIndicator BOOLEAN
            },
            tdd                    SEQUENCE {
                primaryCCPCH-Info  PrimaryCCPCH-Info,
                primaryCCPCH-TX-Power OPTIONAL,
                timeslotInfoList   TimeslotInfoList  OPTIONAL,
                readSFN-Indicator  BOOLEAN
            }
        },
    cellSelectionReselectionInfo  CellSelectReselectInfoSIB-11-12-RSCP  OPTIONAL
}

CellInfoSI-RSCP-LCR-r4 ::=
    cellIndividualOffset          SEQUENCE {
        CellIndividualOffset      DEFAULT 0,
        referenceTimeDifferenceToCell OPTIONAL,
        primaryCCPCH-Info         PrimaryCCPCH-Info-LCR-r4,
        primaryCCPCH-TX-Power     PrimaryCCPCH-TX-Power          OPTIONAL,
        timeslotInfoList          TimeslotInfoList-LCR-r4          OPTIONAL,
        readSFN-Indicator         BOOLEAN,
        cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12-RSCP  OPTIONAL
    }

CellInfoSI-ECN0 ::=
    cellIndividualOffset          SEQUENCE {
        CellIndividualOffset      DEFAULT 0,
        referenceTimeDifferenceToCell OPTIONAL,
        modeSpecificInfo          CHOICE {
            fdd                    SEQUENCE {
                primaryCPICH-Info  OPTIONAL,
                primaryCPICH-TX-Power OPTIONAL,
                readSFN-Indicator  BOOLEAN,
                tx-DiversityIndicator BOOLEAN
            },
            tdd                    SEQUENCE {
                primaryCCPCH-Info  PrimaryCCPCH-Info,
                primaryCCPCH-TX-Power OPTIONAL,
                timeslotInfoList   TimeslotInfoList          OPTIONAL,
                readSFN-Indicator  BOOLEAN
            }
        },
    cellSelectionReselectionInfo  CellSelectReselectInfoSIB-11-12-ECN0  OPTIONAL
}

CellInfoSI-ECN0-LCR-r4 ::=
    cellIndividualOffset          SEQUENCE {
        CellIndividualOffset      DEFAULT 0,
        referenceTimeDifferenceToCell OPTIONAL,

```

```

primaryCCPCH-Info          PrimaryCCPCH-Info-LCR-r4,
primaryCCPCH-TX-Power      PrimaryCCPCH-TX-Power      OPTIONAL,
timeslotInfoList          TimeslotInfoList-LCR-r4    OPTIONAL,
readSFN-Indicator         BOOLEAN,
cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12-ECN0  OPTIONAL
}

CellInfoSI-HCS-RSCP ::= SEQUENCE {
  cellIndividualOffset      CellIndividualOffset      DEFAULT 0,
  referenceTimeDifferenceToCell ReferenceTimeDifferenceToCell  OPTIONAL,
  modeSpecificInfo         CHOICE {
    fdd                     SEQUENCE {
      primaryCPICH-Info     PrimaryCPICH-Info        OPTIONAL,
      primaryCPICH-TX-Power PrimaryCPICH-TX-Power   OPTIONAL,
      readSFN-Indicator     BOOLEAN,
      tx-DiversityIndicator BOOLEAN
    },
    tdd                     SEQUENCE {
      primaryCCPCH-Info     PrimaryCCPCH-Info,
      primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power   OPTIONAL,
      timeslotInfoList      TimeslotInfoList         OPTIONAL,
      readSFN-Indicator     BOOLEAN
    }
  },
  cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12-HCS-RSCP  OPTIONAL
}

CellInfoSI-HCS-RSCP-LCR-r4 ::= SEQUENCE {
  cellIndividualOffset      CellIndividualOffset      DEFAULT 0,
  referenceTimeDifferenceToCell ReferenceTimeDifferenceToCell  OPTIONAL,
  primaryCCPCH-Info         PrimaryCCPCH-Info-LCR-r4,
  primaryCCPCH-TX-Power     PrimaryCCPCH-TX-Power     OPTIONAL,
  timeslotInfoList          TimeslotInfoList-LCR-r4    OPTIONAL,
  readSFN-Indicator         BOOLEAN,
  cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12-HCS-RSCP  OPTIONAL
}

CellInfoSI-HCS-ECN0 ::= SEQUENCE {
  cellIndividualOffset      CellIndividualOffset      DEFAULT 0,
  referenceTimeDifferenceToCell ReferenceTimeDifferenceToCell  OPTIONAL,
  modeSpecificInfo         CHOICE {
    fdd                     SEQUENCE {
      primaryCPICH-Info     PrimaryCPICH-Info        OPTIONAL,
      primaryCPICH-TX-Power PrimaryCPICH-TX-Power   OPTIONAL,
      readSFN-Indicator     BOOLEAN,
      tx-DiversityIndicator BOOLEAN
    },
    tdd                     SEQUENCE {
      primaryCCPCH-Info     PrimaryCCPCH-Info,
      primaryCCPCH-TX-Power PrimaryCCPCH-TX-Power   OPTIONAL,
      timeslotInfoList      TimeslotInfoList         OPTIONAL,
      readSFN-Indicator     BOOLEAN
    }
  },
  cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12-HCS-ECN0  OPTIONAL
}

CellInfoSI-HCS-ECN0-LCR-r4 ::= SEQUENCE {
  cellIndividualOffset      CellIndividualOffset      DEFAULT 0,
  referenceTimeDifferenceToCell ReferenceTimeDifferenceToCell  OPTIONAL,
  primaryCCPCH-Info         PrimaryCCPCH-Info-LCR-r4,
  primaryCCPCH-TX-Power     PrimaryCCPCH-TX-Power     OPTIONAL,
  timeslotInfoList          TimeslotInfoList-LCR-r4    OPTIONAL,
  readSFN-Indicator         BOOLEAN,
  cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12-HCS-ECN0  OPTIONAL
}

CellMeasuredResults ::= SEQUENCE {
  cellIdentity              CellIdentity              OPTIONAL,
  -- dummy is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored.
  dummy                    SFN-SFN-ObsTimeDifference  OPTIONAL,
  cellSynchronisationInfo  CellSynchronisationInfo  OPTIONAL,
  modeSpecificInfo         CHOICE {
    fdd                     SEQUENCE {
      primaryCPICH-Info     PrimaryCPICH-Info,
      cpich-Ec-N0           CPICH-Ec-N0              OPTIONAL,
      cpich-RSCP            CPICH-RSCP              OPTIONAL,
    }
  }
}

```

```

    pathloss                Pathloss                OPTIONAL
  },
  tdd                      SEQUENCE {
    cellParametersID       CellParametersID,
    proposedTGSN           TGSN                  OPTIONAL,
    primaryCCPCH-RSCP      PrimaryCCPCH-RSCP    OPTIONAL,
    pathloss               Pathloss              OPTIONAL,
    timeslotISCP-List      TimeslotISCP-List    OPTIONAL
  }
}

CellMeasurementEventResults ::= CHOICE {
  fdd                      SEQUENCE (SIZE (1..maxCellMeas)) OF
    PrimaryCPICH-Info,
  tdd                      SEQUENCE (SIZE (1..maxCellMeas)) OF
    PrimaryCCPCH-Info
}

CellMeasurementEventResults-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  PrimaryCCPCH-Info-LCR-r4

CellReportingQuantities ::= SEQUENCE {
  -- dummy is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored.
  dummy                    SFN-SFN-OTD-Type,
  cellIdentity-reportingIndicator    BOOLEAN,
  cellSynchronisationInfoReportingIndicator    BOOLEAN,
  modeSpecificInfo                CHOICE {
    fdd                            SEQUENCE {
      cpich-Ec-N0-reportingIndicator    BOOLEAN,
      cpich-RSCP-reportingIndicator     BOOLEAN,
      pathloss-reportingIndicator       BOOLEAN
    },
    tdd                            SEQUENCE {
      timeslotISCP-reportingIndicator    BOOLEAN,
      proposedTGSN-ReportingRequired    BOOLEAN,
      primaryCCPCH-RSCP-reportingIndicator    BOOLEAN,
      pathloss-reportingIndicator        BOOLEAN
    }
  }
}

CellSelectReselectInfoSIB-11-12 ::= SEQUENCE {
  q-Offset1S-N              Q-OffsetS-N              DEFAULT 0,
  q-Offset2S-N              Q-OffsetS-N              OPTIONAL,
  maxAllowedUL-TX-Power     MaxAllowedUL-TX-Power    OPTIONAL,
  hcs-NeighbouringCellInformation-RSCP    HCS-NeighbouringCellInformation-RSCP
  OPTIONAL,
  modeSpecificInfo          CHOICE {
    fdd                      SEQUENCE {
      q-QualMin              Q-QualMin              OPTIONAL,
      q-RxlevMin             Q-RxlevMin             OPTIONAL
    },
    tdd                      SEQUENCE {
      q-RxlevMin             Q-RxlevMin             OPTIONAL
    },
    gsm                      SEQUENCE {
      q-RxlevMin             Q-RxlevMin             OPTIONAL
    }
  }
}

CellSelectReselectInfoSIB-11-12-RSCP ::= SEQUENCE {
  q-OffsetS-N              Q-OffsetS-N              DEFAULT 0,
  maxAllowedUL-TX-Power     MaxAllowedUL-TX-Power    OPTIONAL,
  modeSpecificInfo          CHOICE {
    fdd                      SEQUENCE {
      q-QualMin              Q-QualMin              OPTIONAL,
      q-RxlevMin             Q-RxlevMin             OPTIONAL
    },
    tdd                      SEQUENCE {
      q-RxlevMin             Q-RxlevMin             OPTIONAL
    },
    gsm                      SEQUENCE {
      q-RxlevMin             Q-RxlevMin             OPTIONAL
    }
  }
}

```


}

```

CellSelectReselectInfoSIB-11-12-ECNO ::= SEQUENCE {
  q-Offset1S-N          Q-OffsetS-N          DEFAULT 0,
  q-Offset2S-N          Q-OffsetS-N          DEFAULT 0,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
  modeSpecificInfo     CHOICE {
    fdd                 SEQUENCE {
      q-QualMin          Q-QualMin          OPTIONAL,
      q-RxlevMin         Q-RxlevMin         OPTIONAL
    },
    tdd                 SEQUENCE {
      q-RxlevMin         Q-RxlevMin         OPTIONAL
    },
    gsm                 SEQUENCE {
      q-RxlevMin         Q-RxlevMin         OPTIONAL
    }
  }
}

```

```

CellSelectReselectInfoSIB-11-12-HCS-RSCP ::= SEQUENCE {
  q-OffsetS-N          Q-OffsetS-N          DEFAULT 0,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
  hcs-NeighbouringCellInformation-RSCP HCS-NeighbouringCellInformation-RSCP
  OPTIONAL,
  modeSpecificInfo     CHOICE {
    fdd                 SEQUENCE {
      q-QualMin          Q-QualMin          OPTIONAL,
      q-RxlevMin         Q-RxlevMin         OPTIONAL
    },
    tdd                 SEQUENCE {
      q-RxlevMin         Q-RxlevMin         OPTIONAL
    },
    gsm                 SEQUENCE {
      q-RxlevMin         Q-RxlevMin         OPTIONAL
    }
  }
}

```

```

CellSelectReselectInfoSIB-11-12-HCS-ECNO ::= SEQUENCE {
  q-Offset1S-N          Q-OffsetS-N          DEFAULT 0,
  q-Offset2S-N          Q-OffsetS-N          DEFAULT 0,
  maxAllowedUL-TX-Power MaxAllowedUL-TX-Power OPTIONAL,
  hcs-NeighbouringCellInformation-ECNO HCS-NeighbouringCellInformation-ECNO
  OPTIONAL,
  modeSpecificInfo     CHOICE {
    fdd                 SEQUENCE {
      q-QualMin          Q-QualMin          OPTIONAL,
      q-RxlevMin         Q-RxlevMin         OPTIONAL
    },
    tdd                 SEQUENCE {
      q-RxlevMin         Q-RxlevMin         OPTIONAL
    },
    gsm                 SEQUENCE {
      q-RxlevMin         Q-RxlevMin         OPTIONAL
    }
  }
}

```

```

CellSelectReselectInfo-v5xyExtv590ext ::= SEQUENCE {
  deltaQrxlevmin       DeltaQrxlevmin       OPTIONAL,
  deltaQhcs            DeltaRSCP            OPTIONAL
}

```

```

CellsForInterFreqMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  InterFreqCellID

```

```

CellsForInterRATMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  InterRATCellID

```

```

CellsForIntraFreqMeasList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
  IntraFreqCellID

```

```

CellSynchronisationInfo ::= SEQUENCE {
  modeSpecificInfo     CHOICE {
    fdd                 SEQUENCE {
      countC-SFN-Frame-difference CountC-SFN-Frame-difference OPTIONAL,
      tm                 INTEGER(0..38399)
    },
    tdd                 SEQUENCE {

```

```

        countC-SFN-Frame-difference      CountC-SFN-Frame-difference      OPTIONAL
    }
}
CellToReport ::= SEQUENCE {
    bsicReported
}
CellToReportList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellToReport
CodePhaseSearchWindow ::= ENUMERATED {
    w1023, w1, w2, w3, w4, w6, w8,
    w12, w16, w24, w32, w48, w64,
    w96, w128, w192 }
CountC-SFN-Frame-difference ::= SEQUENCE {
    -- Actual value countC-SFN-High = IE value * 256
    countC-SFN-High      INTEGER(0..15),
    off                  INTEGER(0..255)
}
-- SPARE: CPICH-Ec-No, Max = 49
-- Values above Max are spare
CPICH-Ec-N0 ::= INTEGER (0..63)
-- SPARE: CPICH-RSCP, Max = 91
-- Values above Max are spare
CPICH-RSCP ::= INTEGER (0..127)
DeltaPRC ::= INTEGER (-127..127)
--Actual value DeltaQrxlevmin = IE value * 2
DeltaQrxlevmin ::= INTEGER (-2..-1)
DeltaRSCP ::= INTEGER (-5..-1)
DeltaRSCPPerCell ::= SEQUENCE {
    deltaRSCP      DeltaRSCP      OPTIONAL
}
-- Actual value DeltaRRC = IE value * 0.032
DeltaRRC ::= INTEGER (-7..7)
DGPS-CorrectionSatInfo ::= SEQUENCE {
    satID      SatID,
    iode       IODE,
    udre       UDRE,
    prc        PRC,
    rrc        RRC,
    -- dummy1 and dummy2 are not used in this version of the specification and should be ignored.
    dummy1     DeltaPRC,
    dummy2     DeltaRRC,
    -- dummy3 and dummy4 are not used in this version of the specification. They should not
    -- be sent and if received they should be ignored.
    dummy3     DeltaPRC      OPTIONAL,
    dummy4     DeltaRRC      OPTIONAL
}
DGPS-CorrectionSatInfoList ::= SEQUENCE (SIZE (1..maxSat)) OF
    DGPS-CorrectionSatInfo
DiffCorrectionStatus ::= ENUMERATED {
    udre-1-0, udre-0-75, udre-0-5, udre-0-3,
    udre-0-2, udre-0-1, noData, invalidData }
DL-TransportChannelBLER ::= INTEGER (0..63)
DopplerUncertainty ::= ENUMERATED {
    hz12-5, hz25, hz50, hz100, hz200,
    spare3, spare2, spare1 }
EllipsoidPoint ::= SEQUENCE {
    latitudeSign      ENUMERATED { north, south },
    latitude          INTEGER (0..8388607),
    longitude         INTEGER (-8388608..8388607)
}

```

```

}

EllipsoidPointAltitude ::=          SEQUENCE {
  latitudeSign      ENUMERATED { north, south },
  latitude          INTEGER (0..8388607),
  longitude         INTEGER (-8388608..8388607),
  altitudeDirection ENUMERATED {height, depth},
  altitude          INTEGER (0..32767)
}

EllipsoidPointAltitudeEllipsoide ::= SEQUENCE {
  latitudeSign      ENUMERATED { north, south },
  latitude          INTEGER (0..8388607),
  longitude         INTEGER (-8388608..8388607),
  altitudeDirection ENUMERATED {height, depth},
  altitude          INTEGER (0..32767),
  uncertaintySemiMajor    INTEGER (0..127),
  uncertaintySemiMinor    INTEGER (0..127),
  -- Actual value orientationMajorAxis = IE value * 2
  orientationMajorAxis    INTEGER (0..89),
  uncertaintyAltitude     INTEGER (0..127),
  confidence              INTEGER (0..100)
}

EllipsoidPointUncertCircle ::=      SEQUENCE {
  latitudeSign      ENUMERATED { north, south },
  latitude          INTEGER (0..8388607),
  longitude         INTEGER (-8388608..8388607),
  uncertaintyCode    INTEGER (0..127)
}

EllipsoidPointUncertEllipse ::=     SEQUENCE {
  latitudeSign      ENUMERATED { north, south },
  latitude          INTEGER (0..8388607),
  longitude         INTEGER (-8388608..8388607),
  uncertaintySemiMajor    INTEGER (0..127),
  uncertaintySemiMinor    INTEGER (0..127),
  -- Actual value orientationMajorAxis = IE value * 2
  orientationMajorAxis    INTEGER (0..89),
  confidence          INTEGER (0..100)
}

EnvironmentCharacterisation ::=     ENUMERATED {
  possibleHeavyMultipathNLOS,
  lightMultipathLOS,
  notDefined,
  spare }

Event1a ::=                          SEQUENCE {
  triggeringCondition    TriggeringCondition2,
  reportingRange        ReportingRange,
  forbiddenAffectCellList  ForbiddenAffectCellList          OPTIONAL,
  w                     W,
  reportDeactivationThreshold  ReportDeactivationThreshold,
  reportingAmount        ReportingAmount,
  reportingInterval      ReportingInterval
}

Event1a-r4 ::=                       SEQUENCE {
  triggeringCondition    TriggeringCondition2,
  reportingRange        ReportingRange,
  forbiddenAffectCellList  ForbiddenAffectCellList-r4        OPTIONAL,
  w                     W,
  reportDeactivationThreshold  ReportDeactivationThreshold,
  reportingAmount        ReportingAmount,
  reportingInterval      ReportingInterval
}

Event1a-LCR-r4 ::=                  SEQUENCE {
  triggeringCondition    TriggeringCondition2,
  reportingRange        ReportingRange,
  forbiddenAffectCellList  ForbiddenAffectCellList-LCR-r4    OPTIONAL,
  w                     W,

```

```

reportDeactivationThreshold      ReportDeactivationThreshold,
reportingAmount                  ReportingAmount,
reportingInterval                ReportingInterval
}

Event1b ::=
  triggeringCondition            SEQUENCE {
    triggeringCondition1,
    reportingRange,
    forbiddenAffectCellList     OPTIONAL,
    w                            W
  }

Event1b-r4 ::=
  triggeringCondition            SEQUENCE {
    triggeringCondition1,
    reportingRange,
    forbiddenAffectCellList-r4  OPTIONAL,
    w                            W
  }

Event1b-LCR-r4 ::=
  triggeringCondition            SEQUENCE {
    triggeringCondition1,
    reportingRange,
    forbiddenAffectCellList-LCR-r4  OPTIONAL,
    w                            W
  }

Event1c ::=
  replacementActivationThreshold ReplacementActivationThreshold,
  reportingAmount                ReportingAmount,
  reportingInterval              ReportingInterval
}

Event1e ::=
  triggeringCondition            SEQUENCE {
    triggeringCondition2,
    thresholdUsedFrequency
  }

Event1f ::=
  triggeringCondition            SEQUENCE {
    triggeringCondition1,
    thresholdUsedFrequency
  }

Event2a ::=
  -- 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 ::=
  usedFreqThreshold               Threshold,
  usedFreqW                       W,
  hysteresis                       HysteresisInterFreq,
  timeToTrigger                    TimeToTrigger,
  reportingCellStatus              ReportingCellStatus          OPTIONAL,
  nonUsedFreqParameterList        NonUsedFreqParameterList    OPTIONAL
}

Event2c ::=
  hysteresis                       HysteresisInterFreq,
  timeToTrigger                    TimeToTrigger,
  reportingCellStatus              ReportingCellStatus          OPTIONAL,
  nonUsedFreqParameterList        NonUsedFreqParameterList    OPTIONAL
}

Event2d ::=
  usedFreqThreshold               Threshold,
  usedFreqW                       W,
  hysteresis                       HysteresisInterFreq,
  timeToTrigger                    TimeToTrigger,
  reportingCellStatus              ReportingCellStatus          OPTIONAL
}

Event2e ::=
  hysteresis                       SEQUENCE {
    HysteresisInterFreq,

```

```

    timeToTrigger                TimeToTrigger,
    reportingCellStatus          ReportingCellStatus          OPTIONAL,
    nonUsedFreqParameterList    NonUsedFreqParameterList    OPTIONAL
}

Event2f ::=
    usedFreqThreshold            SEQUENCE {
        usedFreqW                Threshold,
        hysteresis                W,
        timeToTrigger            HysteresisInterFreq,
        reportingCellStatus      TimeToTrigger,
                                ReportingCellStatus          OPTIONAL
    }

Event3a ::=
    thresholdOwnSystem           SEQUENCE {
        w                         Threshold,
        thresholdOtherSystem     W,
        hysteresis                Hysteresis,
        timeToTrigger            TimeToTrigger,
        reportingCellStatus      ReportingCellStatus          OPTIONAL
    }

Event3b ::=
    thresholdOtherSystem         SEQUENCE {
        hysteresis                Hysteresis,
        timeToTrigger            TimeToTrigger,
        reportingCellStatus      ReportingCellStatus          OPTIONAL
    }

Event3c ::=
    thresholdOtherSystem         SEQUENCE {
        hysteresis                Hysteresis,
        timeToTrigger            TimeToTrigger,
        reportingCellStatus      ReportingCellStatus          OPTIONAL
    }

Event3d ::=
    hysteresis                   SEQUENCE {
        timeToTrigger            TimeToTrigger,
        reportingCellStatus      ReportingCellStatus          OPTIONAL
    }

EventIDInterFreq ::=
    ENUMERATED {
        e2a, e2b, e2c, e2d, e2e, e2f, spare2, spare1 }

EventIDInterRAT ::=
    ENUMERATED {
        e3a, e3b, e3c, e3d }

EventIDIntraFreq ::=
    ENUMERATED {
        e1a, e1b, e1c, e1d, e1e,
        e1f, e1g, e1h, e1i, spare7,
        spare6, spare5, spare4, spare3, spare2,
        spare1 }

EventResults ::=
    CHOICE {
        intraFreqEventResults    IntraFreqEventResults,
        interFreqEventResults    InterFreqEventResults,
        interRATEventResults     InterRATEventResults,
        trafficVolumeEventResults TrafficVolumeEventResults,
        qualityEventResults       QualityEventResults,
        ue-InternalEventResults   UE-InternalEventResults,
        ue-positioning-MeasurementEventResults UE-Positioning-MeasurementEventResults,
        spare                     NULL
    }

ExtraDopplerInfo ::=
    SEQUENCE {
        -- Actual value doppler1stOrder = IE value * 0.023
        doppler1stOrder           INTEGER (-42..21),
        dopplerUncertainty        DopplerUncertainty
    }

FACH-MeasurementOccasionInfo ::=
    SEQUENCE {
        fACH-meas-occasion-coeff  INTEGER (1..12)          OPTIONAL,
        inter-freq-FDD-meas-ind   BOOLEAN,
        -- inter-freq-TDD-meas-ind is for 3.84Mcps TDD. For 1.28Mcps TDD, the IE in
        -- FACH-MeasurementOccasionInfo-LCR-r4-ext is used.
        inter-freq-TDD-meas-ind  BOOLEAN,
    }

```

```

inter-RAT-meas-ind                SEQUENCE (SIZE (1..maxOtherRAT)) OF
                                   RAT-Type                                OPTIONAL
}

FACH-MeasurementOccasionInfo-LCR-r4-ext ::= SEQUENCE {
  inter-freq-TDD128-meas-ind      BOOLEAN
}

FilterCoefficient ::=              ENUMERATED {
  fc0, fc1, fc2, fc3, fc4, fc5,
  fc6, fc7, fc8, fc9, fc11, fc13,
  fc15, fc17, fc19, spare1 }

-- Actual value FineSFN-SFN = IE value * 0.0625
FineSFN-SFN ::=                   INTEGER (0..15)

ForbiddenAffectCell ::=            CHOICE {
  fdd                               PrimaryCPICH-Info,
  tdd                               PrimaryCCPCH-Info
}

ForbiddenAffectCell-r4 ::=         CHOICE {
  fdd                               PrimaryCPICH-Info,
  tdd                               PrimaryCCPCH-Info-r4
}

ForbiddenAffectCell-LCR-r4 ::=     SEQUENCE {
  tdd                               PrimaryCCPCH-Info-LCR-r4
}

ForbiddenAffectCellList ::=        SEQUENCE (SIZE (1..maxCellMeas)) OF
                                   ForbiddenAffectCell

ForbiddenAffectCellList-r4 ::=     SEQUENCE (SIZE (1..maxCellMeas)) OF
                                   ForbiddenAffectCell-r4

ForbiddenAffectCellList-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                   ForbiddenAffectCell-LCR-r4

FreqQualityEstimateQuantity-FDD ::= ENUMERATED {
  cpich-Ec-N0,
  cpich-RSCP }

FreqQualityEstimateQuantity-TDD ::= ENUMERATED {
  primaryCCPCH-RSCP }

GPS-MeasurementParam ::=          SEQUENCE {
  satelliteID                       INTEGER (0..63),
  c-N0                               INTEGER (0..63),
  doppler                           INTEGER (-32768..32768),
  wholeGPS-Chips                     INTEGER (0..1022),
  fractionalGPS-Chips                INTEGER (0..1023),
  multipathIndicator                 MultipathIndicator,
  pseudorangeRMS-Error               INTEGER (0..63)
}

GPS-MeasurementParamList ::=       SEQUENCE (SIZE (1..maxSat)) OF
                                   GPS-MeasurementParam

GSM-CarrierRSSI ::=               BIT STRING (SIZE (6))

GSM-MeasuredResults ::=           SEQUENCE {
  gsm-CarrierRSSI                    GSM-CarrierRSSI                    OPTIONAL,
  -- dummy is not used in this version of the specification, it should
  -- not be sent and if received it should be ignored.
  dummy                              INTEGER (46..173)                    OPTIONAL,
  bsicReported                       BSICReported,
  observedTimeDifferenceToGSM          ObservedTimeDifferenceToGSM      OPTIONAL
}

GSM-MeasuredResultsList ::=        SEQUENCE (SIZE (1..maxReportedGSMCells)) OF
                                   GSM-MeasuredResults

GPS-TOW-1msec ::=                  INTEGER (0..604799999)

GPS-TOW-Assist ::=                 SEQUENCE {
  satID                               SatID,

```

```

    tlm-Message          BIT STRING (SIZE (14)),
    tlm-Reserved         BIT STRING (SIZE (2)),
    alert                BOOLEAN,
    antiSpooF           BOOLEAN
}

GPS-TOW-AssistList ::= SEQUENCE (SIZE (1..maxSat)) OF
    GPS-TOW-Assist

HCS-CellReselectInformation-RSCP ::= SEQUENCE {
    -- TABULAR: The default value for penaltyTime is "notUsed"
    -- Temporary offset is nested inside PenaltyTime-RSCP
    penaltyTime          PenaltyTime-RSCP
}

HCS-CellReselectInformation-ECNO ::= SEQUENCE {
    -- TABULAR: The default value for penaltyTime is "notUsed"
    -- Temporary offset is nested inside PenaltyTime-ECNO
    penaltyTime          PenaltyTime-ECNO
}

HCS-NeighbouringCellInformation-RSCP ::= SEQUENCE {
    hcs-PRIO             HCS-PRIO                DEFAULT 0,
    q-HCS                Q-HCS                  DEFAULT 0,
    hcs-CellReselectInformation HCS-CellReselectInformation-RSCP
}

HCS-NeighbouringCellInformation-ECNO ::= SEQUENCE {
    hcs-PRIO             HCS-PRIO                DEFAULT 0,
    q-HCS                Q-HCS                  DEFAULT 0,
    hcs-CellReselectInformation HCS-CellReselectInformation-ECNO
}

HCS-PRIO ::= INTEGER (0..7)

HCS-ServingCellInformation ::= SEQUENCE {
    hcs-PRIO             HCS-PRIO                DEFAULT 0,
    q-HCS                Q-HCS                  DEFAULT 0,
    t-CR-Max            T-CRMax                 OPTIONAL
}

-- Actual value Hysteresis = IE value * 0.5
Hysteresis ::= INTEGER (0..15)

-- Actual value HysteresisInterFreq = IE value * 0.5
HysteresisInterFreq ::= INTEGER (0..29)

InterFreqCell ::= SEQUENCE {
    frequencyInfo        FrequencyInfo,
    nonFreqRelatedEventResults CellMeasurementEventResults
}

InterFreqCell-LCR-r4 ::= SEQUENCE {
    frequencyInfo        FrequencyInfo,
    nonFreqRelatedEventResults CellMeasurementEventResults-LCR-r4
}

InterFreqCellID ::= INTEGER (0..maxCellMeas-1)

InterFreqCellInfoList ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList    NewInterFreqCellList    OPTIONAL,
    cellsForInterFreqMeasList CellsForInterFreqMeasList    OPTIONAL
}

InterFreqCellInfoList-r4 ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList-r4 NewInterFreqCellList-r4    OPTIONAL,
    cellsForInterFreqMeasList CellsForInterFreqMeasList    OPTIONAL
}

InterFreqCellInfoSI-List-RSCP ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,
    newInterFreqCellList    NewInterFreqCellSI-List-RSCP    OPTIONAL
}

InterFreqCellInfoSI-List-ECNO ::= SEQUENCE {
    removedInterFreqCellList RemovedInterFreqCellList    OPTIONAL,

```

```

    newInterFreqCellList                NewInterFreqCellSI-List-ECNO                OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP ::= SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-HCS-RSCP    OPTIONAL
}

InterFreqCellInfoSI-List-HCS-ECNO ::= SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-HCS-ECNO    OPTIONAL
}

InterFreqCellInfoSI-List-RSCP-LCR ::= SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-RSCP-LCR-r4 OPTIONAL
}

InterFreqCellInfoSI-List-ECNO-LCR ::= SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-ECNO-LCR-r4 OPTIONAL
}

InterFreqCellInfoSI-List-HCS-RSCP-LCR ::= SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 OPTIONAL
}

InterFreqCellInfoSI-List-HCS-ECNO-LCR ::= SEQUENCE {
    removedInterFreqCellList            RemovedInterFreqCellList            OPTIONAL,
    newInterFreqCellList                NewInterFreqCellSI-List-HCS-ECNO-LCR-r4 OPTIONAL
}

InterFreqCellList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqCell

InterFreqCellList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqCell-LCR-r4

InterFreqCellMeasuredResultsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellMeasuredResults

InterFreqEvent ::= CHOICE {
    event2a          Event2a,
    event2b          Event2b,
    event2c          Event2c,
    event2d          Event2d,
    event2e          Event2e,
    event2f          Event2f
}

InterFreqEventList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    InterFreqEvent

--Following IE shall be used regardless of CPICH RSCP(FDD) or Primary CCPCH RSCP(TDD)
--The order of the list corresponds to the order of the cells in Inter-FrequencyMeasuredResultsList
InterFrequencyMeasuredResultsList-v5xyv590ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    DeltaRSCPPerCell

Inter-FreqEventCriteria-v5xyv590ext ::= SEQUENCE {
    thresholdUsedFrequency-delta          DeltaRSCP,
    thresholdNonUsedFrequency-deltaList    ThresholdNonUsedFrequency-deltaList    OPTIONAL
}

--The order of the list corresponds to the order of the events in Inter-FreqEventList
Inter-FreqEventCriteriaList-v5xyv590ext ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    Inter-FreqEventCriteria-v5xyv590ext

--The order of the list corresponds to the order of relevant events in Intra-FreqEventCriteriaList
--i.e. the first element of the list corresponds to the first occurrence of event 1e, 1f, 1h, 1i,
--the second element of the list corresponds to the second occurrence of event 1e, 1f, 1h, 1i
Intra-FreqEventCriteriaList-v5xyv590ext ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    DeltaRSCP

--Following IE shall be used regardless of CPICH RSCP(FDD) or Primary CCPCH RSCP(TDD)
--The order of the list corresponds to the order of the cells in Intra-FrequencyMeasuredResultsList
IntraFrequencyMeasuredResultsList-v5xyv590ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    DeltaRSCPPerCell

IntraFreqReportingCriteria-1b-r5 ::= SEQUENCE {

```



```

    periodicReportingInfo-1b          PeriodicReportingInfo-1b
}

PeriodicReportingInfo-1b ::= SEQUENCE {
    reportingAmount          ReportingAmount,
    reportingInterval        ReportingInterval
}

InterFreqEventResults ::= SEQUENCE {
    eventID                  EventIDInterFreq,
    interFreqCellList        InterFreqCellList          OPTIONAL
}

InterFreqEventResults-LCR-r4-ext ::= SEQUENCE {
    eventID                  EventIDInterFreq,
    interFreqCellList        InterFreqCellList-LCR-r4-ext  OPTIONAL
}

InterFreqMeasQuantity ::= SEQUENCE {
    reportingCriteria        CHOICE {
        intraFreqReportingCriteria SEQUENCE {
            intraFreqMeasQuantity IntraFreqMeasQuantity
        },
        interFreqReportingCriteria SEQUENCE {
            filterCoefficient        FilterCoefficient          DEFAULT fc0,
            modeSpecificInfo         CHOICE {
                fdd                   SEQUENCE {
                    freqQualityEstimateQuantity-FDD FreqQualityEstimateQuantity-FDD
                },
                tdd                   SEQUENCE {
                    freqQualityEstimateQuantity-TDD FreqQualityEstimateQuantity-TDD
                }
            }
        }
    }
}

InterFreqMeasuredResults ::= SEQUENCE {
    frequencyInfo            FrequencyInfo          OPTIONAL,
    ultra-CarrierRSSI        UTRA-CarrierRSSI        OPTIONAL,
    interFreqCellMeasuredResultsList InterFreqCellMeasuredResultsList  OPTIONAL
}

InterFreqMeasuredResultsList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    InterFreqMeasuredResults

InterFreqMeasurementSysInfo-RSCP ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-RSCP  OPTIONAL
}

InterFreqMeasurementSysInfo-ECN0 ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-ECN0  OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-HCS-RSCP  OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-ECN0 ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-HCS-ECN0  OPTIONAL
}

InterFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-RSCP-LCR  OPTIONAL
}

InterFreqMeasurementSysInfo-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-ECN0-LCR  OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-HCS-RSCP-LCR  OPTIONAL
}

InterFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    interFreqCellInfoSI-List InterFreqCellInfoSI-List-HCS-ECN0-LCR  OPTIONAL
}

```

```

InterFreqReportCriteria ::=
    intraFreqReportingCriteria
    interFreqReportingCriteria
    periodicalReportingCriteria
    noReporting
}
CHOICE {
    IntraFreqReportingCriteria,
    InterFreqReportingCriteria,
    PeriodicalWithReportingCellStatus,
    ReportingCellStatusOpt
}

InterFreqReportCriteria-r4 ::=
    intraFreqReportingCriteria
    interFreqReportingCriteria
    periodicalReportingCriteria
    noReporting
}
CHOICE {
    IntraFreqReportingCriteria-r4,
    InterFreqReportingCriteria,
    PeriodicalWithReportingCellStatus,
    ReportingCellStatusOpt
}

InterFreqReportingCriteria ::=
    interFreqEventList
}
SEQUENCE {
    InterFreqEventList OPTIONAL
}

InterFreqReportingQuantity ::=
    ultra-Carrier-RSSI
    frequencyQualityEstimate
    nonFreqRelatedQuantities
}
SEQUENCE {
    BOOLEAN,
    BOOLEAN,
    CellReportingQuantities
}

InterFrequencyMeasurement ::=
    interFreqCellInfoList
    interFreqMeasQuantity
    interFreqReportingQuantity
    measurementValidity
    interFreqSetUpdate
    reportCriteria
}
SEQUENCE {
    InterFreqCellInfoList,
    InterFreqMeasQuantity OPTIONAL,
    InterFreqReportingQuantity OPTIONAL,
    MeasurementValidity OPTIONAL,
    UE-AutonomousUpdateMode OPTIONAL,
    InterFreqReportCriteria
}

InterFrequencyMeasurement-r4 ::=
    interFreqCellInfoList
    interFreqMeasQuantity
    interFreqReportingQuantity
    measurementValidity
    interFreqSetUpdate
    reportCriteria
}
SEQUENCE {
    InterFreqCellInfoList-r4,
    InterFreqMeasQuantity OPTIONAL,
    InterFreqReportingQuantity OPTIONAL,
    MeasurementValidity OPTIONAL,
    UE-AutonomousUpdateMode OPTIONAL,
    InterFreqReportCriteria-r4
}

InterRAT-TargetCellDescription ::=
    technologySpecificInfo
    gsm
        bsic
        frequency-band
        bcch-ARFCN
        ncMode
    },
    is-2000
    spare2
    spare1
}
SEQUENCE {
    CHOICE {
        SEQUENCE {
            BSIC,
            Frequency-Band,
            BCCH-ARFCN,
            NC-Mode OPTIONAL
        },
        NULL,
        NULL,
        NULL
    }
}

InterRATCellID ::=
    INTEGER (0..maxCellMeas-1)

InterRATCellInfoList ::=
    removedInterRATCellList
    -- NOTE: Future revisions of dedicated messages including IE newInterRATCellList
    -- should use a corrected version of this IE
    newInterRATCellList
    cellsForInterRATMeasList
}
SEQUENCE {
    RemovedInterRATCellList,
    NewInterRATCellList,
    CellsForInterRATMeasList OPTIONAL
}

InterRATCellInfoList-B ::=
    removedInterRATCellList
    -- NOTE: IE newInterRATCellList should be optional. However, system information
    -- does not support message versions. Hence, this can not be corrected
    newInterRATCellList
}
SEQUENCE {
    RemovedInterRATCellList,
    NewInterRATCellList-B
}

InterRATCellInfoList-r4 ::=
    removedInterRATCellList
    newInterRATCellList
    cellsForInterRATMeasList
}
SEQUENCE {
    RemovedInterRATCellList,
    NewInterRATCellList OPTIONAL,
    CellsForInterRATMeasList OPTIONAL
}

```

```

}

InterRATCellIndividualOffset ::=          INTEGER (-50..50)

InterRATEvent ::=          CHOICE {
    event3a                Event3a,
    event3b                Event3b,
    event3c                Event3c,
    event3d                Event3d
}

InterRATEventList ::=          SEQUENCE (SIZE (1..maxMeasEvent)) OF
                                InterRATEvent

InterRATEventResults ::=          SEQUENCE {
    eventID                EventIDInterRAT,
    cellToReportList      CellToReportList
}

InterRATInfo ::=          ENUMERATED {
    gsm }

InterRATInfo-r6 ::=          SEQUENCE {
    rat                    InterRATInfo,
    gsm-TargetCellInfoList GSM-TargetCellInfoList          OPTIONAL
}

InterRATMeasQuantity ::=          SEQUENCE {
    measQuantityUTRAN-QualityEstimate IntraFreqMeasQuantity          OPTIONAL,
    ratSpecificInfo          CHOICE {
        gsm                  SEQUENCE {
            measurementQuantity MeasurementQuantityGSM,
            filterCoefficient  FilterCoefficient          DEFAULT fc0,
            bsic-VerificationRequired BSIC-VerificationRequired
        },
        is-2000              SEQUENCE {
            tadd-EcIo          INTEGER (0..63),
            tcomp-EcIo         INTEGER (0..15),
            softSlope          INTEGER (0..63)          OPTIONAL,
            addIntercept       INTEGER (0..63)          OPTIONAL
        }
    }
}

InterRATMeasuredResults ::=          CHOICE {
    gsm                    GSM-MeasuredResultsList,
    spare                  NULL
}

InterRATMeasuredResultsList ::= SEQUENCE (SIZE (1..maxOtherRAT-16)) OF
                                InterRATMeasuredResults

InterRATMeasurement ::=          SEQUENCE {
    interRATCellInfoList   InterRATCellInfoList          OPTIONAL,
    interRATMeasQuantity   InterRATMeasQuantity          OPTIONAL,
    interRATReportingQuantity InterRATReportingQuantity  OPTIONAL,
    reportCriteria         InterRATReportCriteria
}

InterRATMeasurement-r4 ::=          SEQUENCE {
    interRATCellInfoList   InterRATCellInfoList-r4          OPTIONAL,
    interRATMeasQuantity   InterRATMeasQuantity          OPTIONAL,
    interRATReportingQuantity InterRATReportingQuantity  OPTIONAL,
    reportCriteria         InterRATReportCriteria
}

InterRATMeasurementSysInfo ::=          SEQUENCE {
    interRATCellInfoList   InterRATCellInfoList          OPTIONAL
}

InterRATMeasurementSysInfo-B ::=          SEQUENCE {
    interRATCellInfoList   InterRATCellInfoList-B          OPTIONAL
}

InterRATReportCriteria ::=          CHOICE {
    interRATReportingCriteria InterRATReportingCriteria,
    periodicalReportingCriteria PeriodicalWithReportingCellStatus,
    noReporting              ReportingCellStatusOpt
}

```

```

}

InterRATReportingCriteria ::= SEQUENCE {
    interRATEventList          InterRATEventList          OPTIONAL
}

InterRATReportingQuantity ::= SEQUENCE {
    utran-EstimatedQuality      BOOLEAN,
    ratSpecificInfo             CHOICE {
        gsm                     SEQUENCE {
            dummy                BOOLEAN,
            observedTimeDifferenceGSM  BOOLEAN,
            gsm-Carrier-RSSI      BOOLEAN
        }
    }
}

IntraFreqCellID ::= INTEGER (0..maxCellMeas-1)

IntraFreqCellInfoList ::= SEQUENCE {
    removedIntraFreqCellList    RemovedIntraFreqCellList    OPTIONAL,
    newIntraFreqCellList        NewIntraFreqCellList        OPTIONAL,
    cellsForIntraFreqMeasList    CellsForIntraFreqMeasList    OPTIONAL
}

IntraFreqCellInfoList-r4 ::= SEQUENCE {
    removedIntraFreqCellList    RemovedIntraFreqCellList    OPTIONAL,
    newIntraFreqCellList        NewIntraFreqCellList-r4    OPTIONAL,
    cellsForIntraFreqMeasList    CellsForIntraFreqMeasList    OPTIONAL
}

IntraFreqCellInfoSI-List-RSCP ::= SEQUENCE {
    removedIntraFreqCellList    RemovedIntraFreqCellList    OPTIONAL,
    newIntraFreqCellList        NewIntraFreqCellSI-List-RSCP
}

IntraFreqCellInfoSI-List-ECNO ::= SEQUENCE {
    removedIntraFreqCellList    RemovedIntraFreqCellList    OPTIONAL,
    newIntraFreqCellList        NewIntraFreqCellSI-List-ECNO
}

IntraFreqCellInfoSI-List-HCS-RSCP ::= SEQUENCE {
    removedIntraFreqCellList    RemovedIntraFreqCellList    OPTIONAL,
    newIntraFreqCellList        NewIntraFreqCellSI-List-HCS-RSCP
}

IntraFreqCellInfoSI-List-HCS-ECNO ::= SEQUENCE {
    removedIntraFreqCellList    RemovedIntraFreqCellList    OPTIONAL,
    newIntraFreqCellList        NewIntraFreqCellSI-List-HCS-ECNO
}

IntraFreqCellInfoSI-List-RSCP-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList    RemovedIntraFreqCellList    OPTIONAL,
    newIntraFreqCellList        NewIntraFreqCellSI-List-RSCP-LCR-r4
}

IntraFreqCellInfoSI-List-ECNO-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList    RemovedIntraFreqCellList    OPTIONAL,
    newIntraFreqCellList        NewIntraFreqCellSI-List-ECNO-LCR-r4
}

IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList    RemovedIntraFreqCellList    OPTIONAL,
    newIntraFreqCellList        NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4
}

IntraFreqCellInfoSI-List-HCS-ECNO-LCR-r4 ::= SEQUENCE {
    removedIntraFreqCellList    RemovedIntraFreqCellList    OPTIONAL,
    newIntraFreqCellList        NewIntraFreqCellSI-List-HCS-ECNO-LCR-r4
}

IntraFreqEvent ::= CHOICE {
    e1a          Event1a,
    e1b          Event1b,
    e1c          Event1c,
    e1d          NULL,
    e1e          Event1e,
    e1f          Event1f,
}

```

```

    e1g          NULL,
    e1h          ThresholdUsedFrequency,
    e1i          ThresholdUsedFrequency
}

IntraFreqEvent-r4 ::= CHOICE {
    e1a          Event1a-r4,
    e1b          Event1b-r4,
    e1c          Event1c,
    e1d          NULL,
    e1e          Event1e,
    e1f          Event1f,
    e1g          NULL,
    e1h          ThresholdUsedFrequency,
    e1i          ThresholdUsedFrequency
}

IntraFreqEvent-LCR-r4 ::= CHOICE {
    e1a          Event1a-LCR-r4,
    e1b          Event1b-LCR-r4,
    e1c          Event1c,
    e1d          NULL,
    e1e          Event1e,
    e1f          Event1f,
    e1g          NULL,
    e1h          ThresholdUsedFrequency,
    e1i          ThresholdUsedFrequency
}

IntraFreqEvent-ld-r5 ::= SEQUENCE {
    triggeringCondition2  OPTIONAL,
    useCIO                BOOLEAN OPTIONAL
}

IntraFreqEventCriteria ::= SEQUENCE {
    event                IntraFreqEvent,
    hysteresis           Hysteresis,
    timeToTrigger       TimeToTrigger,
    reportingCellStatus ReportingCellStatus OPTIONAL
}

IntraFreqEventCriteria-r4 ::= SEQUENCE {
    event                IntraFreqEvent-r4,
    hysteresis           Hysteresis,
    timeToTrigger       TimeToTrigger,
    reportingCellStatus ReportingCellStatus OPTIONAL
}

IntraFreqEventCriteria-LCR-r4 ::= SEQUENCE {
    event                IntraFreqEvent-LCR-r4,
    hysteresis           Hysteresis,
    timeToTrigger       TimeToTrigger,
    reportingCellStatus ReportingCellStatus OPTIONAL
}

IntraFreqEventCriteriaList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria

IntraFreqEventCriteriaList-r4 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria-r4

IntraFreqEventCriteriaList-LCR-r4 ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    IntraFreqEventCriteria-LCR-r4

IntraFreqEventResults ::= SEQUENCE {
    eventID             EventIDIntraFreq,
    cellMeasurementEventResults CellMeasurementEventResults
}

IntraFreqMeasQuantity ::= SEQUENCE {
    filterCoefficient  FilterCoefficient DEFAULT fc0,
    modeSpecificInfo   CHOICE {
        fdd             SEQUENCE {
            intraFreqMeasQuantity-FDD IntraFreqMeasQuantity-FDD
        },
        tdd             SEQUENCE {
            intraFreqMeasQuantity-TDDList IntraFreqMeasQuantity-TDDList
        }
    }
}

```

```

}
}

-- If IntraFreqMeasQuantity-FDD is used in InterRATMeasQuantity, then only
-- cpich-Ec-N0 and cpich-RSCP are allowed.
-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
IntraFreqMeasQuantity-FDD ::=      ENUMERATED {
    cpich-Ec-N0,
    cpich-RSCP,
    pathloss,
    dummy }

-- dummy is not used in this version of the specification, it should
-- not be sent and if received it should be ignored.
IntraFreqMeasQuantity-TDD ::=      ENUMERATED {
    primaryCCPCH-RSCP,
    pathloss,
    timeslotISCP,
    dummy }

IntraFreqMeasQuantity-TDDList ::= SEQUENCE (SIZE (1..4)) OF
    IntraFreqMeasQuantity-TDD

IntraFreqMeasuredResultsList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    CellMeasuredResults

IntraFreqMeasurementSysInfo-RSCP ::= SEQUENCE {
    intraFreqMeasurementID      MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List     IntraFreqCellInfoSI-List-RSCP  OPTIONAL,
    intraFreqMeasQuantity        IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH       MaxReportedCellsOnRACH          OPTIONAL,
    reportingInfoForCellDCH       ReportingInfoForCellDCH          OPTIONAL
}

IntraFreqMeasurementSysInfo-ECN0 ::= SEQUENCE {
    intraFreqMeasurementID      MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List     IntraFreqCellInfoSI-List-ECN0  OPTIONAL,
    intraFreqMeasQuantity        IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH       MaxReportedCellsOnRACH          OPTIONAL,
    reportingInfoForCellDCH       ReportingInfoForCellDCH          OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP ::= SEQUENCE {
    intraFreqMeasurementID      MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List     IntraFreqCellInfoSI-List-HCS-RSCP  OPTIONAL,
    intraFreqMeasQuantity        IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH       MaxReportedCellsOnRACH          OPTIONAL,
    reportingInfoForCellDCH       ReportingInfoForCellDCH          OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-ECN0 ::= SEQUENCE {
    intraFreqMeasurementID      MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List     IntraFreqCellInfoSI-List-HCS-ECN0  OPTIONAL,
    intraFreqMeasQuantity        IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH       MaxReportedCellsOnRACH          OPTIONAL,
    reportingInfoForCellDCH       ReportingInfoForCellDCH          OPTIONAL
}

IntraFreqMeasurementSysInfo-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID      MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List     IntraFreqCellInfoSI-List-RSCP-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity        IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH       MaxReportedCellsOnRACH          OPTIONAL,
    reportingInfoForCellDCH       ReportingInfoForCellDCH-LCR-r4  OPTIONAL
}

IntraFreqMeasurementSysInfo-ECN0-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID      MeasurementIdentity          DEFAULT 1,
    intraFreqCellInfoSI-List     IntraFreqCellInfoSI-List-ECN0-LCR-r4  OPTIONAL,
    intraFreqMeasQuantity        IntraFreqMeasQuantity          OPTIONAL,
    intraFreqReportingQuantityForRACH IntraFreqReportingQuantityForRACH  OPTIONAL,
    maxReportedCellsOnRACH       MaxReportedCellsOnRACH          OPTIONAL,
}

```

```

    reportingInfoForCellDCH                ReportingInfoForCellDCH-LCR-r4    OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID                MeasurementIdentity            DEFAULT 1,
    intraFreqCellInfoSI-List              IntraFreqCellInfoSI-List-HCS-RSCP-LCR-r4    OPTIONAL,
    intraFreqMeasQuantity                  IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH      IntraFreqReportingQuantityForRACH    OPTIONAL,
    maxReportedCellsOnRACH                 MaxReportedCellsOnRACH         OPTIONAL,
    reportingInfoForCellDCH                ReportingInfoForCellDCH-LCR-r4    OPTIONAL
}

IntraFreqMeasurementSysInfo-HCS-ECNO-LCR-r4 ::= SEQUENCE {
    intraFreqMeasurementID                MeasurementIdentity            DEFAULT 1,
    intraFreqCellInfoSI-List              IntraFreqCellInfoSI-List-HCS-ECNO-LCR-r4    OPTIONAL,
    intraFreqMeasQuantity                  IntraFreqMeasQuantity         OPTIONAL,
    intraFreqReportingQuantityForRACH      IntraFreqReportingQuantityForRACH    OPTIONAL,
    maxReportedCellsOnRACH                 MaxReportedCellsOnRACH         OPTIONAL,
    reportingInfoForCellDCH                ReportingInfoForCellDCH-LCR-r4    OPTIONAL
}

IntraFreqReportCriteria ::= CHOICE {
    intraFreqReportingCriteria            IntraFreqReportingCriteria,
    periodicalReportingCriteria           PeriodicalWithReportingCellStatus,
    noReporting                            ReportingCellStatusOpt
}

IntraFreqReportCriteria-r4 ::= CHOICE {
    intraFreqReportingCriteria-r4         IntraFreqReportingCriteria-r4,
    periodicalReportingCriteria           PeriodicalWithReportingCellStatus,
    noReporting                            ReportingCellStatusOpt
}

IntraFreqReportingCriteria ::= SEQUENCE {
    eventCriteriaList                    IntraFreqEventCriteriaList    OPTIONAL
}

IntraFreqReportingCriteria-r4 ::= SEQUENCE {
    eventCriteriaList-r4                  IntraFreqEventCriteriaList-r4    OPTIONAL
}

IntraFreqReportingCriteria-LCR-r4 ::= SEQUENCE {
    eventCriteriaList-LCR-r4              IntraFreqEventCriteriaList-LCR-r4    OPTIONAL
}

IntraFreqReportingQuantity ::= SEQUENCE {
    activeSetReportingQuantities          CellReportingQuantities,
    monitoredSetReportingQuantities        CellReportingQuantities,
    detectedSetReportingQuantities         CellReportingQuantities        OPTIONAL
}

IntraFreqReportingQuantityForRACH ::= SEQUENCE {
    sfn-SFN-OTD-Type                      SFN-SFN-OTD-Type,
    modeSpecificInfo                       CHOICE {
        fdd                                 SEQUENCE {
            intraFreqRepQuantityRACH-FDD    IntraFreqRepQuantityRACH-FDD
        },
        tdd                                 SEQUENCE {
            intraFreqRepQuantityRACH-TDDList IntraFreqRepQuantityRACH-TDDList
        }
    }
}

IntraFreqRepQuantityRACH-FDD ::= ENUMERATED {
    cpich-EcN0, cpich-RSCP,
    pathloss, noReport }

IntraFreqRepQuantityRACH-TDD ::= ENUMERATED {
    timeslotISCP,
    primaryCCPCH-RSCP,
    noReport }

IntraFreqRepQuantityRACH-TDDList ::= SEQUENCE (SIZE (1..2)) OF
    IntraFreqRepQuantityRACH-TDD

IntraFrequencyMeasurement ::= SEQUENCE {
    intraFreqCellInfoList                 IntraFreqCellInfoList         OPTIONAL,
    intraFreqMeasQuantity                  IntraFreqMeasQuantity         OPTIONAL,

```

```

    intraFreqReportingQuantity      IntraFreqReportingQuantity      OPTIONAL,
    measurementValidity              MeasurementValidity               OPTIONAL,
    reportCriteria                    IntraFreqReportCriteria         OPTIONAL
}

IntraFrequencyMeasurement-r4 ::= SEQUENCE {
    intraFreqCellInfoList           IntraFreqCellInfoList-r4        OPTIONAL,
    intraFreqMeasQuantity            IntraFreqMeasQuantity           OPTIONAL,
    intraFreqReportingQuantity       IntraFreqReportingQuantity      OPTIONAL,
    measurementValidity              MeasurementValidity               OPTIONAL,
    reportCriteria                    IntraFreqReportCriteria-r4     OPTIONAL
}

IODE ::= INTEGER (0..255)

IP-Length ::= ENUMERATED {
    ip15, ip110 }

IP-PCCPCH-r4 ::= BOOLEAN

IP-Spacing ::= ENUMERATED {
    e5, e7, e10, e15, e20,
    e30, e40, e50 }

IP-Spacing-TDD ::= ENUMERATED {
    e30, e40, e50, e70, e100}

IS-2000SpecificMeasInfo ::= ENUMERATED {
    frequency, timeslot, colourcode,
    outputpower, pn-Offset }

MaxNumberOfReportingCellsType1 ::= ENUMERATED {
    e1, e2, e3, e4, e5, e6}

MaxNumberOfReportingCellsType2 ::= ENUMERATED {
    e1, e2, e3, e4, e5, e6, e7, e8, e9, e10, e11, e12}

MaxNumberOfReportingCellsType3 ::= ENUMERATED {
    viactCellsPlus1,
    viactCellsPlus2,
    viactCellsPlus3,
    viactCellsPlus4,
    viactCellsPlus5,
    viactCellsPlus6 }

MaxReportedCellsOnRACH ::= ENUMERATED {
    noReport,
    currentCell,
    currentAnd-1-BestNeighbour,
    currentAnd-2-BestNeighbour,
    currentAnd-3-BestNeighbour,
    currentAnd-4-BestNeighbour,
    currentAnd-5-BestNeighbour,
    currentAnd-6-BestNeighbour }

MeasuredResults ::= CHOICE {
    intraFreqMeasuredResultsList    IntraFreqMeasuredResultsList,
    interFreqMeasuredResultsList     InterFreqMeasuredResultsList,
    interRATMeasuredResultsList      InterRATMeasuredResultsList,
    trafficVolumeMeasuredResultsList TrafficVolumeMeasuredResultsList,
    qualityMeasuredResults            QualityMeasuredResults,
    ue-InternalMeasuredResults        UE-InternalMeasuredResults,
    ue-positioning-MeasuredResults    UE-Positioning-MeasuredResults,
    spare                             NULL
}

MeasuredResults-v390ext ::= SEQUENCE {
    ue-positioning-MeasuredResults-v390ext    UE-Positioning-MeasuredResults-v390ext
}

MeasuredResults-v5xyv590ext ::= CHOICE {
    intraFrequencyMeasuredResultsList    IntraFrequencyMeasuredResultsList-v5xyv590ext,
    interFrequencyMeasuredResultsList     InterFrequencyMeasuredResultsList-v5xyv590ext
}

MeasuredResults-LCR-r4 ::= CHOICE {
    intraFreqMeasuredResultsList    IntraFreqMeasuredResultsList,

```



```

interFreqMeasuredResultsList      InterFreqMeasuredResultsList,
interRATMeasuredResultsList      InterRATMeasuredResultsList,
trafficVolumeMeasuredResultsList  TrafficVolumeMeasuredResultsList,
qualityMeasuredResults            QualityMeasuredResults,
ue-InternalMeasuredResults        UE-InternalMeasuredResults-LCR-r4,
ue-positioning-MeasuredResults    UE-Positioning-MeasuredResults,
spare                             NULL
}

MeasuredResultsList ::=          SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
                                  MeasuredResults

MeasuredResultsList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxAdditionalMeas)) OF
                                  MeasuredResults-LCR-r4

MeasuredResultsOnRACH ::=        SEQUENCE {
  currentCell                    SEQUENCE {
    modeSpecificInfo            CHOICE {
      fdd                       SEQUENCE {
        measurementQuantity     CHOICE {
          cpich-Ec-N0           CPICH-Ec-N0,
          cpich-RSCP            CPICH-RSCP,
          pathloss              Pathloss,
          spare                  NULL
        }
      },
      tdd                       SEQUENCE {
        timeslotISCP            TimeslotISCP-List      OPTIONAL,
        primaryCCPCH-RSCP      PrimaryCCPCH-RSCP    OPTIONAL
      }
    }
  },
  monitoredCells                 MonitoredCellRACH-List      OPTIONAL
}

MeasurementCommand ::=          CHOICE {
  setup                          MeasurementType,
  modify                          SEQUENCE {
    measurementType              MeasurementType      OPTIONAL
  },
  release                         NULL
}

MeasurementCommand-r4 ::=       CHOICE {
  setup                          MeasurementType-r4,
  modify                          SEQUENCE {
    measurementType              MeasurementType-r4  OPTIONAL
  },
  release                         NULL
}

MeasurementControlSysInfo ::=   SEQUENCE {
  use-of-HCS                     CHOICE {
    hcs-not-used                 SEQUENCE {
      cellSelectQualityMeasure   CHOICE {
        cpich-RSCP              SEQUENCE {
          intraFreqMeasurementSysInfo  IntraFreqMeasurementSysInfo-RSCP
        }
        interFreqMeasurementSysInfo  InterFreqMeasurementSysInfo-RSCP  OPTIONAL
      },
      cpich-Ec-N0                SEQUENCE {
        intraFreqMeasurementSysInfo  IntraFreqMeasurementSysInfo-ECNO
      }
      interFreqMeasurementSysInfo  InterFreqMeasurementSysInfo-ECNO  OPTIONAL
    }
  },
  interRATMeasurementSysInfo     InterRATMeasurementSysInfo-B      OPTIONAL
},
  hcs-used                       SEQUENCE {
    cellSelectQualityMeasure     CHOICE {
      cpich-RSCP                SEQUENCE {
        intraFreqMeasurementSysInfo  IntraFreqMeasurementSysInfo-HCS-RSCP
      }
      interFreqMeasurementSysInfo  InterFreqMeasurementSysInfo-HCS-RSCP
    }
  },
  cpich-Ec-N0                   SEQUENCE {

```

```

        intraFreqMeasurementSysInfo      IntraFreqMeasurementSysInfo-HCS-ECN0
OPTIONAL,
        interFreqMeasurementSysInfo      InterFreqMeasurementSysInfo-HCS-ECN0
OPTIONAL
    },
    interRATMeasurementSysInfo           InterRATMeasurementSysInfo           OPTIONAL
},
},
trafficVolumeMeasSysInfo                TrafficVolumeMeasSysInfo                OPTIONAL,
-- dummy is not used in this version of specification and it shall be ignored by the UE.
dummy      UE-InternalMeasurementSysInfo      OPTIONAL
}

MeasurementControlSysInfo-LCR-r4-ext ::= SEQUENCE {
-- CHOICE use-of-HCS shall have the same value as the use-of-HCS
-- in MeasurementControlSysInfo
use-of-HCS                                CHOICE {
    hcs-not-used                            SEQUENCE {
-- CHOICE cellSelectQualityMeasure shall have the same value as the
-- cellSelectQualityMeasure in MeasurementControlSysInfo
cellSelectQualityMeasure                   CHOICE {
    cpich-RSCP                              SEQUENCE {
        intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-RSCP-LCR-r4 OPTIONAL,
        interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-RSCP-LCR-r4 OPTIONAL
    },
    cpich-Ec-N0                             SEQUENCE {
        intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-ECN0-LCR-r4 OPTIONAL,
        interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-ECN0-LCR-r4 OPTIONAL
    }
    },
    hcs-used                                SEQUENCE {
-- CHOICE cellSelectQualityMeasure shall have the same value as the
-- cellSelectQualityMeasure in MeasurementControlSysInfo
cellSelectQualityMeasure                   CHOICE {
    cpich-RSCP                              SEQUENCE {
        intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-RSCP-LCR-r4
OPTIONAL,
        interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-HCS-RSCP-LCR-r4 OPTIONAL
    },
    cpich-Ec-N0                             SEQUENCE {
        intraFreqMeasurementSysInfo IntraFreqMeasurementSysInfo-HCS-ECN0-LCR-r4
OPTIONAL,
        interFreqMeasurementSysInfo InterFreqMeasurementSysInfo-HCS-ECN0-LCR-r4 OPTIONAL
    }
    }
    }
}

MeasurementIdentity ::= INTEGER (1..16)

MeasurementQuantityGSM ::= ENUMERATED {
    gsm-CarrierRSSI,
    dummy }

MeasurementReportingMode ::= SEQUENCE {
    measurementReportTransferMode          TransferMode,
    periodicalOrEventTrigger              PeriodicalOrEventTrigger
}

MeasurementType ::= CHOICE {
    intraFrequencyMeasurement              IntraFrequencyMeasurement,
    interFrequencyMeasurement              InterFrequencyMeasurement,
    interRATMeasurement                    InterRATMeasurement,
    ue-positioning-Measurement              UE-Positioning-Measurement,
    trafficVolumeMeasurement                TrafficVolumeMeasurement,
    qualityMeasurement                      QualityMeasurement,
    ue-InternalMeasurement                  UE-InternalMeasurement
}

MeasurementType-r4 ::= CHOICE {
    intraFrequencyMeasurement              IntraFrequencyMeasurement-r4,
    interFrequencyMeasurement              InterFrequencyMeasurement-r4,
    interRATMeasurement                    InterRATMeasurement-r4,
    up-Measurement                          UE-Positioning-Measurement-r4,
    trafficVolumeMeasurement                TrafficVolumeMeasurement,
}

```

```

    qualityMeasurement          QualityMeasurement,
    ue-InternalMeasurement      UE-InternalMeasurement-r4
}

MeasurementValidity ::=
    ue-State
}

MonitoredCellRACH-List ::=
    SEQUENCE (SIZE (1..8)) OF
        MonitoredCellRACH-Result

MonitoredCellRACH-Result ::=
    sfm-SFM-ObsTimeDifference    OPTIONAL,
    modeSpecificInfo            CHOICE {
        fdd                      SEQUENCE {
            primaryCPICH-Info    PrimaryCPICH-Info,
            measurementQuantity  CHOICE {
                cpich-Ec-NO      CPICH-Ec-NO,
                cpich-RSCP        CPICH-RSCP,
                pathloss          Pathloss,
                spare             NULL
            }
        },
        tdd                      SEQUENCE {
            cellParametersID     CellParametersID,
            primaryCCPCH-RSCP    PrimaryCCPCH-RSCP
        }
    }
}

MultipathIndicator ::=
    ENUMERATED {
        nm,
        low,
        medium,
        high
    }

N-CR-T-CRMaxHyst ::=
    n-CR                        INTEGER (1..16)    DEFAULT 8,
    t-CRMaxHyst                T-CRMaxHyst
}

NavigationModelSatInfo ::=
    satID                      SatID,
    satelliteStatus            SatelliteStatus,
    ephemerisParameter        EphemerisParameter    OPTIONAL
}

NavigationModelSatInfoList ::=
    SEQUENCE (SIZE (1..maxSat)) OF
        NavigationModelSatInfo

EphemerisParameter ::=
    codeOnL2                   BIT STRING (SIZE (2)),
    uraIndex                   BIT STRING (SIZE (4)),
    satHealth                  BIT STRING (SIZE (6)),
    iodc                       BIT STRING (SIZE (10)),
    l2Pflag                   BIT STRING (SIZE (1)),
    sflRevd                   SubFrame1Reserved,
    t-GD                       BIT STRING (SIZE (8)),
    t-oc                      BIT STRING (SIZE (16)),
    af2                        BIT STRING (SIZE (8)),
    af1                        BIT STRING (SIZE (16)),
    af0                        BIT STRING (SIZE (22)),
    c-rs                       BIT STRING (SIZE (16)),
    delta-n                   BIT STRING (SIZE (16)),
    m0                         BIT STRING (SIZE (32)),
    c-uc                       BIT STRING (SIZE (16)),
    e                          BIT STRING (SIZE (32)),
    c-us                       BIT STRING (SIZE (16)),
    a-Sqrt                    BIT STRING (SIZE (32)),
    t-oe                      BIT STRING (SIZE (16)),
    fitInterval                BIT STRING (SIZE (1)),
    aodo                       BIT STRING (SIZE (5)),
    c-ic                       BIT STRING (SIZE (16)),
    omega0                    BIT STRING (SIZE (32)),
    c-is                       BIT STRING (SIZE (16)),
    i0                        BIT STRING (SIZE (32)),
    c-rc                      BIT STRING (SIZE (16)),

```

```

    omega                BIT STRING (SIZE (32)),
    omegaDot             BIT STRING (SIZE (24)),
    iDot                BIT STRING (SIZE (14))
}
NC-Mode ::=              BIT STRING (SIZE (3))

Neighbour ::=            SEQUENCE {
    modeSpecificInfo     CHOICE {
        fdd              SEQUENCE {
            neighbourIdentity      PrimaryCPICH-Info      OPTIONAL,
            ue-RX-TX-TimeDifferenceType2Info  UE-RX-TX-TimeDifferenceType2Info  OPTIONAL
        },
        tdd              SEQUENCE {
            neighbourAndChannelIdentity      CellAndChannelIdentity      OPTIONAL
        }
    },
    neighbourQuality     NeighbourQuality,
    sfn-SFN-ObsTimeDifference2      SFN-SFN-ObsTimeDifference2}

Neighbour-v390ext ::=    SEQUENCE {
    modeSpecificInfo     CHOICE {
        fdd              SEQUENCE {
            frequencyInfo          FrequencyInfo
        },
        tdd              NULL
    }
}

NeighbourList ::=        SEQUENCE (SIZE (1..maxCellMeas)) OF
    Neighbour

-- The order of the cells in IE NeighbourList-v390ext shall be the
-- same as the order in IE NeighbourList
NeighbourList-v390ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    Neighbour-v390ext

NeighbourQuality ::=     SEQUENCE {
    ue-Positioning-OTDOA-Quality    UE-Positioning-OTDOA-Quality
}

NewInterFreqCell ::=     SEQUENCE {
    interFreqCellID      InterFreqCellID      OPTIONAL,
    frequencyInfo        FrequencyInfo          OPTIONAL,
    cellInfo             CellInfo
}

NewInterFreqCell-r4 ::=  SEQUENCE {
    interFreqCellID      InterFreqCellID      OPTIONAL,
    frequencyInfo        FrequencyInfo          OPTIONAL,
    cellInfo             CellInfo-r4
}

NewInterFreqCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCell

NewInterFreqCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCell-r4

NewInterFreqCellSI-RSCP ::= SEQUENCE {
    interFreqCellID      InterFreqCellID      OPTIONAL,
    frequencyInfo        FrequencyInfo          OPTIONAL,
    cellInfo             CellInfoSI-RSCP
}

NewInterFreqCellSI-ECN0 ::= SEQUENCE {
    interFreqCellID      InterFreqCellID      OPTIONAL,
    frequencyInfo        FrequencyInfo          OPTIONAL,
    cellInfo             CellInfoSI-ECN0
}

NewInterFreqCellSI-HCS-RSCP ::= SEQUENCE {
    interFreqCellID      InterFreqCellID      OPTIONAL,
    frequencyInfo        FrequencyInfo          OPTIONAL,
    cellInfo             CellInfoSI-HCS-RSCP
}

NewInterFreqCellSI-HCS-ECN0 ::= SEQUENCE {
    interFreqCellID      InterFreqCellID      OPTIONAL,

```

```

    frequencyInfo      FrequencyInfo      OPTIONAL,
    cellInfo           CellInfoSI-HCS-ECN0
}

NewInterFreqCellSI-RSCP-LCR-r4 ::=
    interFreqCellID   InterFreqCellID   OPTIONAL,
    frequencyInfo     FrequencyInfo     OPTIONAL,
    cellInfo           CellInfoSI-RSCP-LCR-r4
}

NewInterFreqCellSI-ECN0-LCR-r4 ::=
    interFreqCellID   InterFreqCellID   OPTIONAL,
    frequencyInfo     FrequencyInfo     OPTIONAL,
    cellInfo           CellInfoSI-ECN0-LCR-r4
}

NewInterFreqCellSI-HCS-RSCP-LCR-r4 ::=
    interFreqCellID   InterFreqCellID   OPTIONAL,
    frequencyInfo     FrequencyInfo     OPTIONAL,
    cellInfo           CellInfoSI-HCS-RSCP-LCR-r4
}

NewInterFreqCellSI-HCS-ECN0-LCR-r4 ::=
    interFreqCellID   InterFreqCellID   OPTIONAL,
    frequencyInfo     FrequencyInfo     OPTIONAL,
    cellInfo           CellInfoSI-HCS-ECN0-LCR-r4
}

NewInterFreqCellSI-List-ECN0 ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-ECN0

NewInterFreqCellSI-List-HCS-RSCP ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-RSCP

NewInterFreqCellSI-List-HCS-ECN0 ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-ECN0

NewInterFreqCellSI-List-RSCP ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-RSCP

NewInterFreqCellSI-List-ECN0-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-ECN0-LCR-r4

NewInterFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-RSCP-LCR-r4

NewInterFreqCellSI-List-HCS-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-HCS-ECN0-LCR-r4

NewInterFreqCellSI-List-RSCP-LCR-r4 ::=
    SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewInterFreqCellSI-RSCP-LCR-r4

NewInterRATCell ::=
    interRATCellID     InterRATCellID     OPTIONAL,
    technologySpecificInfo CHOICE {
        gsm             SEQUENCE {
            cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12 OPTIONAL,
            interRATCellIndividualOffset InterRATCellIndividualOffset,
            bsic         BSIC,
            frequency-band Frequency-Band,
            bcch-ARFCN   BCCH-ARFCN,
            -- dummy is not used in this version of the specification, it should
            -- not be sent and if received it should be ignored.
            dummy        NULL                OPTIONAL
        },
        is-2000         SEQUENCE {
            is-2000SpecificMeasInfo IS-2000SpecificMeasInfo
        },
        -- ASN.1 inconsistency: NewInterRATCellList should be optional within
        -- InterRATCellInfoList. The UE shall consider IE NewInterRATCell with
        -- technologySpecificInfo set to "absent" as valid and handle the
        -- message as if the IE NewInterRATCell was absent
        absent          NULL,
        spare1          NULL
    }
}

NewInterRATCell-B ::=
    SEQUENCE {

```

```

interRATCellID          InterRATCellID          OPTIONAL,
technologySpecificInfo CHOICE {
  gsm                   SEQUENCE {
    cellSelectionReselectionInfo CellSelectReselectInfoSIB-11-12 OPTIONAL,
    interRATCellIndividualOffset InterRATCellIndividualOffset,
    bsic                 BSIC,
    frequency-band      Frequency-Band,
    bcch-ARFCN          BCCH-ARFCN,
    -- dummy is not used in this version of the specification, it should
    -- not be sent and if received it should be ignored.
    dummy               NULL                OPTIONAL
  },
  is-2000               SEQUENCE {
    is-2000SpecificMeasInfo      IS-2000SpecificMeasInfo
  },
  -- ASN.1 inconsistency: NewInterRATCellList-B should be optional within
  -- InterRATCellInfoList-B. The UE shall consider IE NewInterRATCell-B with
  -- technologySpecificInfo set to "absent" as valid and handle the
  -- message as if the IE NewInterRATCell-B was absent
  absent                NULL,
  spare1                NULL
}
}

NewInterRATCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                        NewInterRATCell

NewInterRATCellList-B ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                          NewInterRATCell-B

NewIntraFreqCell ::= SEQUENCE {
  intraFreqCellID      IntraFreqCellID          OPTIONAL,
  cellInfo             CellInfo
}

NewIntraFreqCell-r4 ::= SEQUENCE {
  intraFreqCellID      IntraFreqCellID          OPTIONAL,
  cellInfo             CellInfo-r4
}

NewIntraFreqCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                          NewIntraFreqCell

NewIntraFreqCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                             NewIntraFreqCell-r4

NewIntraFreqCellSI-RSCP ::= SEQUENCE {
  intraFreqCellID      IntraFreqCellID          OPTIONAL,
  cellInfo             CellInfoSI-RSCP
}

NewIntraFreqCellSI-ECN0 ::= SEQUENCE {
  intraFreqCellID      IntraFreqCellID          OPTIONAL,
  cellInfo             CellInfoSI-ECN0
}

NewIntraFreqCellSI-HCS-RSCP ::= SEQUENCE {
  intraFreqCellID      IntraFreqCellID          OPTIONAL,
  cellInfo             CellInfoSI-HCS-RSCP
}

NewIntraFreqCellSI-HCS-ECN0 ::= SEQUENCE {
  intraFreqCellID      IntraFreqCellID          OPTIONAL,
  cellInfo             CellInfoSI-HCS-ECN0
}

NewIntraFreqCellSI-RSCP-LCR-r4 ::= SEQUENCE {
  intraFreqCellID      IntraFreqCellID          OPTIONAL,
  cellInfo             CellInfoSI-RSCP-LCR-r4
}

NewIntraFreqCellSI-ECN0-LCR-r4 ::= SEQUENCE {
  intraFreqCellID      IntraFreqCellID          OPTIONAL,
  cellInfo             CellInfoSI-ECN0-LCR-r4
}

NewIntraFreqCellSI-HCS-RSCP-LCR-r4 ::= SEQUENCE {
  intraFreqCellID      IntraFreqCellID          OPTIONAL,
  cellInfo             CellInfoSI-HCS-RSCP-LCR-r4
}

```

```

NewIntraFreqCellSI-HCS-ECN0-LCR-r4 ::= SEQUENCE {
    intraFreqCellID          IntraFreqCellID          OPTIONAL,
    cellInfo                  CellInfoSI-HCS-ECN0-LCR-r4
}

NewIntraFreqCellSI-List-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-RSCP

NewIntraFreqCellSI-List-ECN0 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-ECN0

NewIntraFreqCellSI-List-HCS-RSCP ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-RSCP

NewIntraFreqCellSI-List-HCS-ECN0 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-ECN0

NewIntraFreqCellSI-List-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-RSCP-LCR-r4

NewIntraFreqCellSI-List-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-ECN0-LCR-r4

NewIntraFreqCellSI-List-HCS-RSCP-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-RSCP-LCR-r4

NewIntraFreqCellSI-List-HCS-ECN0-LCR-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    NewIntraFreqCellSI-HCS-ECN0-LCR-r4

-- IE "nonUsedFreqThreshold" is not needed in case of event 2a
-- In case of event 2a UTRAN should include value 0 within IE "nonUsedFreqThreshold"
-- In case of event 2a, the UE shall be ignore IE "nonUsedFreqThreshold"
-- In later versions of the message including this IE, a special version of
-- IE "NonUsedFreqParameterList" may be defined for event 2a, namely a
-- version not including IE "nonUsedFreqThreshold"
NonUsedFreqParameter ::= SEQUENCE {
    nonUsedFreqThreshold    Threshold,
    nonUsedFreqW            W
}

NonUsedFreqParameterList ::= SEQUENCE (SIZE (1..maxFreq)) OF
    NonUsedFreqParameter

ObservedTimeDifferenceToGSM ::= INTEGER (0..4095)

OTDOA-SearchWindowSize ::= ENUMERATED {
    c20, c40, c80, c160, c320,
    c640, c1280, moreThan1280 }

-- SPARE: Pathloss, Max = 158
-- Values above Max are spare
Pathloss ::= INTEGER (46..173)

PenaltyTime-RSCP ::= CHOICE {
    notUsed          NULL,
    pt10             TemporaryOffset1,
    pt20             TemporaryOffset1,
    pt30             TemporaryOffset1,
    pt40             TemporaryOffset1,
    pt50             TemporaryOffset1,
    pt60             TemporaryOffset1
}

PenaltyTime-ECN0 ::= CHOICE {
    notUsed          NULL,
    pt10             TemporaryOffsetList,
    pt20             TemporaryOffsetList,
    pt30             TemporaryOffsetList,
    pt40             TemporaryOffsetList,
    pt50             TemporaryOffsetList,
    pt60             TemporaryOffsetList
}

PendingTimeAfterTrigger ::= ENUMERATED {
    ptat0-25, ptat0-5, ptat1,
    ptat2, ptat4, ptat8, ptat16 }

```

```

PeriodicalOrEventTrigger ::=          ENUMERATED {
                                        periodical,
                                        eventTrigger }

PeriodicalReportingCriteria ::=        SEQUENCE {
    reportingAmount                    ReportingAmount           DEFAULT ra-Infinity,
    reportingInterval                  ReportingIntervalLong
}

PeriodicalWithReportingCellStatus ::= SEQUENCE {
    periodicalReportingCriteria        PeriodicalReportingCriteria,
    reportingCellStatus                ReportingCellStatus           OPTIONAL
}

PLMNIdentitiesOfNeighbourCells ::=    SEQUENCE {
    plmnsOfIntraFreqCellsList         PLMNsOfIntraFreqCellsList    OPTIONAL,
    plmnsOfInterFreqCellsList         PLMNsOfInterFreqCellsList    OPTIONAL,
    plmnsOfInterRATCellsList          PLMNsOfInterRATCellsList     OPTIONAL
}

PLMNsOfInterFreqCellsList ::=        SEQUENCE (SIZE (1..maxCellMeas)) OF
    SEQUENCE {
        plmn-Identity                 PLMN-Identity                OPTIONAL
    }

PLMNsOfIntraFreqCellsList ::=        SEQUENCE (SIZE (1..maxCellMeas)) OF
    SEQUENCE {
        plmn-Identity                 PLMN-Identity                OPTIONAL
    }

PLMNsOfInterRATCellsList ::=         SEQUENCE (SIZE (1..maxCellMeas)) OF
    SEQUENCE {
        plmn-Identity                 PLMN-Identity                OPTIONAL
    }

PositionEstimate ::=                 CHOICE {
    ellipsoidPoint                     EllipsoidPoint,
    ellipsoidPointUncertCircle         EllipsoidPointUncertCircle,
    ellipsoidPointUncertEllipse       EllipsoidPointUncertEllipse,
    ellipsoidPointAltitude            EllipsoidPointAltitude,
    ellipsoidPointAltitudeEllipse     EllipsoidPointAltitudeEllipsoide
}

PositioningMethod ::=                ENUMERATED {
    otdoa,
    gps,
    otdoaOrGPS, cellID }

-- Actual value PRC = IE value * 0.32
PRC ::=                              INTEGER (-2047..2047)

-- SPARE: PrimaryCCPCH-RSCP, Max = 91
-- Values above Max are spare
PrimaryCCPCH-RSCP ::=                INTEGER (0..127)

Q-HCS ::=                            INTEGER (0..99)

Q-OffsetS-N ::=                      INTEGER (-50..50)

Q-QualMin ::=                         INTEGER (-24..0)

-- Actual value Q-RxlevMin = (IE value * 2) + 1
Q-RxlevMin ::=                       INTEGER (-58..-13)

QualityEventResults ::=              SEQUENCE (SIZE (1..maxTrCH)) OF
    TransportChannelIdentity

QualityMeasuredResults ::=           SEQUENCE {
    blerMeasurementResultsList         BLER-MeasurementResultsList  OPTIONAL,
    modeSpecificInfo                  CHOICE {
        fdd                            NULL,
        tdd                            SEQUENCE {
            sir-MeasurementResults      SIR-MeasurementList          OPTIONAL
        }
    }
}

QualityMeasurement ::=               SEQUENCE {

```



```

    qualityReportingQuantity          QualityReportingQuantity          OPTIONAL,
    reportCriteria                    QualityReportCriteria
}

QualityReportCriteria ::=          CHOICE {
    qualityReportingCriteria          QualityReportingCriteria,
    periodicalReportingCriteria      PeriodicalReportingCriteria,
    noReporting                       NULL
}

QualityReportingCriteria ::=       SEQUENCE (SIZE (1..maxTrCH)) OF
    QualityReportingCriteriaSingle

QualityReportingCriteriaSingle ::= SEQUENCE {
    transportChannelIdentity          TransportChannelIdentity,
    totalCRC                          INTEGER (1..512),
    badCRC                             INTEGER (1..512),
    pendingAfterTrigger               INTEGER (1..512)
}

QualityReportingQuantity ::=       SEQUENCE {
    dl-TransChBLER                    BOOLEAN,
    bler-dl-TransChIdList             BLER-TransChIdList          OPTIONAL,
    modeSpecificInfo                  CHOICE {
        fdd                            NULL,
        tdd                            SEQUENCE {
            sir-TFCS-List              SIR-TFCS-List          OPTIONAL
        }
    }
}

RAT-Type ::=                       ENUMERATED {
    gsm, is2000 }

ReferenceCellPosition ::=          CHOICE {
    ellipsoidPoint                    EllipsoidPoint,
    ellipsoidPointWithAltitude        EllipsoidPointAltitude
}

-- ReferenceLocation, as defined in 23.032
ReferenceLocation ::=              SEQUENCE {
    ellipsoidPointAltitudeEllipsoide EllipsoidPointAltitudeEllipsoide
}

ReferenceTimeDifferenceToCell ::=  CHOICE {
    -- Actual value accuracy40 = IE value * 40
    accuracy40                        INTEGER (0..960),
    -- Actual value accuracy256 = IE value * 256
    accuracy256                       INTEGER (0..150),
    -- Actual value accuracy2560 = IE value * 2560
    accuracy2560                      INTEGER (0..15)
}

RemovedInterFreqCellList ::=      CHOICE {
    removeAllInterFreqCells           NULL,
    removeSomeInterFreqCells          SEQUENCE (SIZE (1..maxCellMeas)) OF
        InterFreqCellID,
    removeNoInterFreqCells            NULL
}

RemovedInterRATCellList ::=       CHOICE {
    removeAllInterRATCells            NULL,
    removeSomeInterRATCells           SEQUENCE (SIZE (1..maxCellMeas)) OF
        InterRATCellID,
    removeNoInterRATCells             NULL
}

RemovedIntraFreqCellList ::=      CHOICE {
    removeAllIntraFreqCells           NULL,
    removeSomeIntraFreqCells          SEQUENCE (SIZE (1..maxCellMeas)) OF
        IntraFreqCellID,
    removeNoIntraFreqCells            NULL
}

ReplacementActivationThreshold ::= ENUMERATED {
    notApplicable, t1, t2,
    t3, t4, t5, t6, t7 }

```

```

ReportDeactivationThreshold ::=      ENUMERATED {
                                        notApplicable, t1, t2,
                                        t3, t4, t5, t6, t7 }

ReportingAmount ::=                  ENUMERATED {
                                        ra1, ra2, ra4, ra8, ra16, ra32,
                                        ra64, ra-Infinity }

ReportingCellStatus ::=              CHOICE{
    withinActiveSet                    MaxNumberOfReportingCellsType1,
    withinMonitoredSetUsedFreq          MaxNumberOfReportingCellsType1,
    withinActiveAndOrMonitoredUsedFreq  MaxNumberOfReportingCellsType1,
    withinDetectedSetUsedFreq           MaxNumberOfReportingCellsType1,
    withinMonitoredAndOrDetectedUsedFreq MaxNumberOfReportingCellsType1,

    allActiveplusMonitoredSet           MaxNumberOfReportingCellsType3,
    allActivePlusDetectedSet            MaxNumberOfReportingCellsType3,
    allActivePlusMonitoredAndOrDetectedSet MaxNumberOfReportingCellsType3,

    withinVirtualActSet                 MaxNumberOfReportingCellsType1,
    withinMonitoredSetNonUsedFreq       MaxNumberOfReportingCellsType1,
    withinMonitoredAndOrVirtualActiveSetNonUsedFreq
                                        MaxNumberOfReportingCellsType1,
    allVirtualActSetplusMonitoredSetNonUsedFreq
                                        MaxNumberOfReportingCellsType3,
    withinActSetOrVirtualActSet-InterRATcells
                                        MaxNumberOfReportingCellsType2,
    withinActSetAndOrMonitoredUsedFreqOrVirtualActSetAndOrMonitoredNonUsedFreq
                                        MaxNumberOfReportingCellsType2
}

ReportingCellStatusOpt ::=           SEQUENCE {
    reportingCellStatus                 ReportingCellStatus           OPTIONAL
}

ReportingInfoForCellDCH ::=          SEQUENCE {
    intraFreqReportingQuantity          IntraFreqReportingQuantity,
    measurementReportingMode            MeasurementReportingMode,
    reportCriteria                      CellDCH-ReportCriteria
}

ReportingInfoForCellDCH-LCR-r4 ::=   SEQUENCE {
    intraFreqReportingQuantity          IntraFreqReportingQuantity,
    measurementReportingMode            MeasurementReportingMode,
    reportCriteria                      CellDCH-ReportCriteria-LCR-r4
}

ReportingInterval ::=                ENUMERATED {
                                        noPeriodicalreporting, ri0-25,
                                        ri0-5, ri1, ri2, ri4, ri8, ri16 }

ReportingIntervalLong ::=            ENUMERATED {
                                        ril0, ril0-25, ril0-5, ril1,
                                        ril2, ril3, ril4, ril6, ril8,
                                        ril12, ril16, ril20, ril24,
                                        ril28, ril32, ril64 }
-- When the value "ril0" is used, the UE behaviour is not
-- defined.

-- Actual value ReportingRange = IE value * 0.5
ReportingRange ::=                   INTEGER (0..29)

RL-AdditionInfoList ::=              SEQUENCE (SIZE (1..maxRL)) OF
                                        PrimaryCPICH-Info

RL-InformationLists ::=              SEQUENCE {
    r1-AdditionInfoList                 RL-AdditionInfoList           OPTIONAL,
    rL-RemovalInformationList            RL-RemovalInformationList     OPTIONAL
}

RLC-BuffersPayload ::=               ENUMERATED {
                                        pl0, pl4, pl8, pl16, pl32,
                                        pl64, pl128, pl256, pl512, pl1024,
                                        pl2k, pl4k, pl8k, pl16k, pl32k,
                                        pl64k, pl128k, pl256k, pl512k, pl1024k,
                                        spare12, spare11, spare10, spare9, spare8,
                                        spare7, spare6, spare5, spare4, spare3,

```

```

        spare2, spare1 }

-- Actual value RRC = IE value * 0.032
RRC ::=
    INTEGER (-127..127)

SatData ::=
    SEQUENCE{
        satID          SatID,
        iode           IODE
    }

SatDataList ::=
    SEQUENCE (SIZE (0..maxSat)) OF
        SatData

SatelliteStatus ::=
    ENUMERATED {
        ns-NN-U,
        es-SN,
        es-NN-U,
        rev2,
        rev }

-- Identifies the satellite and is equal to (SV ID No - 1) where SV ID No is defined in [12].
SatID ::=
    INTEGER (0..63)

SFN-Offset-Validity ::=
    ENUMERATED { false }

SFN-SFN-Drift ::=
    ENUMERATED {
        sfnsfndrift0, sfnsfndrift1, sfnsfndrift2,
        sfnsfndrift3, sfnsfndrift4, sfnsfndrift5,
        sfnsfndrift8, sfnsfndrift10, sfnsfndrift15,
        sfnsfndrift25, sfnsfndrift35, sfnsfndrift50,
        sfnsfndrift65, sfnsfndrift80, sfnsfndrift100,
        sfnsfndrift-1, sfnsfndrift-2, sfnsfndrift-3,
        sfnsfndrift-4, sfnsfndrift-5, sfnsfndrift-8,
        sfnsfndrift-10, sfnsfndrift-15, sfnsfndrift-25,
        sfnsfndrift-35, sfnsfndrift-50, sfnsfndrift-65,
        sfnsfndrift-80, sfnsfndrift-100}

SFN-SFN-ObsTimeDifference ::=
    CHOICE {
        type1          SFN-SFN-ObsTimeDifference1,
        type2          SFN-SFN-ObsTimeDifference2
    }

-- SPARE: SFN-SFN-ObsTimeDifference1, Max = 9830399
-- For 1.28Mcps TDD, Max value of SFN-SFN-ObsTimeDifference1 is 3276799.
-- Values above Max are spare
SFN-SFN-ObsTimeDifference1 ::=
    INTEGER (0..16777215)

-- SPARE: SFN-SFN-ObsTimeDifference2, Max = 40961
-- Values above Max are spare
SFN-SFN-ObsTimeDifference2 ::=
    INTEGER (0..65535)

SFN-SFN-OTD-Type ::=
    ENUMERATED {
        noReport,
        type1,
        type2 }

SFN-SFN-RelTimeDifference1 ::=
    SEQUENCE {
        sfn-Offset          INTEGER (0 .. 4095),
        sfn-sfn-Reltimedifference
                           INTEGER (0.. 38399)
    }

SFN-TOW-Uncertainty ::=
    ENUMERATED {
        lessThan10,
        moreThan10 }

SIR ::=
    INTEGER (0..63)

SIR-MeasurementList ::=
    SEQUENCE (SIZE (1..maxCCTrCH)) OF
        SIR-MeasurementResults

SIR-MeasurementResults ::=
    SEQUENCE {
        tfcs-ID            TFCS-IdentityPlain,
        sir-TimeslotList   SIR-TimeslotList
    }

```

```

SIR-TFCS ::=                                TFCS-IdentityPlain

SIR-TFCS-List ::=                           SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                             SIR-TFCS

SIR-TimeslotList ::=                        SEQUENCE (SIZE (1..maxTS)) OF
                                             SIR

-- SubFrame1Reserved, reserved bits in subframe 1 of the GPS navigation message
SubFrame1Reserved ::=                      SEQUENCE {
    reserved1                                BIT STRING (SIZE (23)),
    reserved2                                BIT STRING (SIZE (24)),
    reserved3                                BIT STRING (SIZE (24)),
    reserved4                                BIT STRING (SIZE (16))
}

T-ADVinfo ::=                               SEQUENCE {
    t-ADV                                     INTEGER(0..2047),
    sfn                                       INTEGER(0..4095)
}

T-CRMax ::=                                CHOICE {
    notUsed                                   NULL,
    t30                                       N-CR-T-CRMaxHyst,
    t60                                       N-CR-T-CRMaxHyst,
    t120                                      N-CR-T-CRMaxHyst,
    t180                                      N-CR-T-CRMaxHyst,
    t240                                      N-CR-T-CRMaxHyst
}

T-CRMaxHyst ::=                            ENUMERATED {
    notUsed, t10, t20, t30,
    t40, t50, t60, t70 }

TemporaryOffset1 ::=                       ENUMERATED {
    to3, to6, to9, to12, to15,
    to18, to21, infinite }

TemporaryOffset2 ::=                       ENUMERATED {
    to2, to3, to4, to6, to8,
    to10, to12, infinite }

TemporaryOffsetList ::=                    SEQUENCE {
    temporaryOffset1                          TemporaryOffset1,
    temporaryOffset2                          TemporaryOffset2
}

Threshold ::=                              INTEGER (-115..0)

-- The order of the list corresponds to the order of frequency defined in Inter-FreqEventCriteria
ThresholdNonUsedFrequency-deltaList ::= SEQUENCE (SIZE (1..maxFreq)) OF
                                         DeltaRSCPPerCell

ThresholdPositionChange ::=                ENUMERATED {
    pc10, pc20, pc30, pc40, pc50,
    pc100, pc200, pc300, pc500,
    pc1000, pc2000, pc5000, pc10000,
    pc20000, pc50000, pc100000 }

ThresholdSFN-GPS-TOW ::=                   ENUMERATED {
    ms1, ms2, ms3, ms5, ms10,
    ms20, ms50, ms100 }

ThresholdSFN-SFN-Change ::=                ENUMERATED {
    c0-25, c0-5, c1, c2, c3, c4, c5,
    c10, c20, c50, c100, c200, c500,
    c1000, c2000, c5000 }

ThresholdUsedFrequency ::=                  INTEGER (-115..165)

-- Actual value TimeInterval = IE value * 20.
TimeInterval ::=                           INTEGER (1..13)

TimeslotInfo ::=                           SEQUENCE {
    timeslotNumber                             TimeslotNumber,

```

```

    burstType                               BurstType
}

TimeslotInfo-LCR-r4 ::=                     SEQUENCE {
    timeslotNumber                           TimeslotNumber-LCR-r4
}

TimeslotInfoList ::=                       SEQUENCE (SIZE (1..maxTS)) OF
    TimeslotInfo

TimeslotInfoList-LCR-r4 ::=                SEQUENCE (SIZE (1..maxTS-LCR)) OF
    TimeslotInfo-LCR-r4

TimeslotInfoList-r4 ::=                   CHOICE {
    tdd384                                    SEQUENCE (SIZE (1..maxTS)) OF
        TimeslotInfo,
    tdd128                                    SEQUENCE (SIZE (1..maxTS-LCR)) OF
        TimeslotInfo-LCR-r4
}

-- SPARE: TimeslotISCP, Max = 91
-- Values above Max are spare
TimeslotISCP ::=                           INTEGER (0..127)

-- TimeslotISCP-List shall not include more than 6 elements in 1.28Mcps TDD mode.
TimeslotISCP-List ::=                     SEQUENCE (SIZE (1..maxTS)) OF
    TimeslotISCP

TimeslotListWithISCP ::=                  SEQUENCE (SIZE (1..maxTS)) OF
    TimeslotWithISCP

TimeslotWithISCP ::=                      SEQUENCE {
    timeslot                                  TimeslotNumber,
    timeslotISCP                              TimeslotISCP
}

TimeToTrigger ::=                         ENUMERATED {
    ttt0, ttt10, ttt20, ttt40, ttt60,
    ttt80, ttt100, ttt120, ttt160,
    ttt200, ttt240, tt320, ttt640,
    ttt1280, ttt2560, ttt5000 }

TrafficVolumeEventParam ::=               SEQUENCE {
    eventID                                    TrafficVolumeEventType,
    reportingThreshold                       TrafficVolumeThreshold,
    timeToTrigger                             TimeToTrigger                               OPTIONAL,
    pendingTimeAfterTrigger                  PendingTimeAfterTrigger                   OPTIONAL,
    tx-InterruptionAfterTrigger              TX-InterruptionAfterTrigger               OPTIONAL
}

TrafficVolumeEventResults ::=             SEQUENCE {
    ul-transportChannelCausingEvent          UL-TrCH-Identity,
    trafficVolumeEventIdentity              TrafficVolumeEventType
}

TrafficVolumeEventType ::=               ENUMERATED {
    e4a,
    e4b }

TrafficVolumeMeasQuantity ::=            CHOICE {
    rlc-BufferPayload                        NULL,
    averageRLC-BufferPayload                TimeInterval,
    varianceOfRLC-BufferPayload              TimeInterval
}

TrafficVolumeMeasSysInfo ::=             SEQUENCE {
    trafficVolumeMeasurementID               MeasurementIdentity                        DEFAULT 4,
    trafficVolumeMeasurementObjectList      TrafficVolumeMeasurementObjectList        OPTIONAL,
    trafficVolumeMeasQuantity               TrafficVolumeMeasQuantity                  OPTIONAL,
    trafficVolumeReportingQuantity          TrafficVolumeReportingQuantity             OPTIONAL,
    -- dummy is not used in this version of specification, it should
    -- not be sent and if received it should be ignored.
    dummy                                    TrafficVolumeReportingCriteria             OPTIONAL,
    measurementValidity                     MeasurementValidity                         OPTIONAL,
    measurementReportingMode                MeasurementReportingMode,
    reportCriteriaSysInf                    TrafficVolumeReportCriteriaSysInfo
}

```

```

}

TrafficVolumeMeasuredResults ::= SEQUENCE {
    rb-Identity                RB-Identity,
    rlc-BuffersPayload         RLC-BuffersPayload           OPTIONAL,
    averageRLC-BufferPayload   AverageRLC-BufferPayload   OPTIONAL,
    varianceOfRLC-BufferPayload VarianceOfRLC-BufferPayload   OPTIONAL
}

TrafficVolumeMeasuredResultsList ::= SEQUENCE (SIZE (1..maxRB)) OF
    TrafficVolumeMeasuredResults

TrafficVolumeMeasurement ::= SEQUENCE {
    trafficVolumeMeasurementObjectList TrafficVolumeMeasurementObjectList OPTIONAL,
    trafficVolumeMeasQuantity         TrafficVolumeMeasQuantity   OPTIONAL,
    trafficVolumeReportingQuantity    TrafficVolumeReportingQuantity OPTIONAL,
    measurementValidity              MeasurementValidity         OPTIONAL,
    reportCriteria                   TrafficVolumeReportCriteria
}

TrafficVolumeMeasurementObjectList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    UL-TrCH-Identity

TrafficVolumeReportCriteria ::= CHOICE {
    trafficVolumeReportingCriteria    TrafficVolumeReportingCriteria,
    periodicalReportingCriteria       PeriodicalReportingCriteria,
    noReporting                       NULL
}

TrafficVolumeReportCriteriaSysInfo ::= CHOICE {
    trafficVolumeReportingCriteria    TrafficVolumeReportingCriteria,
    periodicalReportingCriteria       PeriodicalReportingCriteria
}

TrafficVolumeReportingCriteria ::= SEQUENCE {
    -- NOTE: transChCriteriaList should be mandatory in later versions of this message
    transChCriteriaList              TransChCriteriaList         OPTIONAL
}

TrafficVolumeReportingQuantity ::= SEQUENCE {
    rlc-RB-BufferPayload             BOOLEAN,
    rlc-RB-BufferPayloadAverage      BOOLEAN,
    rlc-RB-BufferPayloadVariance     BOOLEAN
}

TrafficVolumeThreshold ::= ENUMERATED {
    th8, th16, th32, th64, th128,
    th256, th512, th1024, th2k, th3k,
    th4k, th6k, th8k, th12k, th16k,
    th24k, th32k, th48k, th64k, th96k,
    th128k, th192k, th256k, th384k,
    th512k, th768k }

TransChCriteria ::= SEQUENCE {
    ul-transportChannelID            UL-TrCH-Identity           OPTIONAL,
    eventSpecificParameters          SEQUENCE (SIZE (1..maxMeasParEvent)) OF
        TrafficVolumeEventParam     OPTIONAL
}

TransChCriteriaList ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    TransChCriteria

TransferMode ::= ENUMERATED {
    acknowledgedModeRLC,
    unacknowledgedModeRLC }

TransmittedPowerThreshold ::= INTEGER (-50..33)

TriggeringCondition1 ::= ENUMERATED {
    activeSetCellsOnly,
    monitoredSetCellsOnly,
    activeSetAndMonitoredSetCells }

TriggeringCondition2 ::= ENUMERATED {
    activeSetCellsOnly,
    monitoredSetCellsOnly,
    activeSetAndMonitoredSetCells,
    detectedSetCellsOnly,
}

```

```

detectedSetAndMonitoredSetCells }

TX-InterruptionAfterTrigger ::=      ENUMERATED {
    txiat0-25, txiat0-5, txiat1,
    txiat2, txiat4, txiat8, txiat16 }

UDRE ::=                              ENUMERATED {
    lessThan1,
    between1-and-4,
    between4-and-8,
    over8 }

UE-6AB-Event ::=                     SEQUENCE {
    timeToTrigger                      TimeToTrigger,
    transmittedPowerThreshold          TransmittedPowerThreshold
}

UE-6FG-Event ::=                     SEQUENCE {
    timeToTrigger                      TimeToTrigger,
    -- in 1.28 Mcps TDD ue-RX-TX-TimeDifferenceThreshold corresponds to TADV Threshold
    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-InternalMeasuredResults-LCR-r4 ::= SEQUENCE {
    ue-TransmittedPowerTDD-List        UE-TransmittedPowerTDD-List    OPTIONAL,
    t-ADVinfo                          T-ADVinfo                       OPTIONAL
}

UE-InternalMeasurement ::=            SEQUENCE {
    ue-InternalMeasQuantity             UE-InternalMeasQuantity        OPTIONAL,

```

```

    ue-InternalReportingQuantity
    reportCriteria
}
UE-InternalMeasurement-r4 ::= SEQUENCE {
    ue-InternalMeasQuantity          UE-InternalMeasQuantity          OPTIONAL,
    ue-InternalReportingQuantity    UE-InternalReportingQuantity-r4  OPTIONAL,
    reportCriteria                   UE-InternalReportCriteria
}
UE-InternalMeasurementSysInfo ::= SEQUENCE {
    ue-InternalMeasurementID        MeasurementIdentity          DEFAULT 5,
    ue-InternalMeasQuantity         UE-InternalMeasQuantity
}
UE-InternalReportCriteria ::= CHOICE {
    ue-InternalReportingCriteria    UE-InternalReportingCriteria,
    periodicalReportingCriteria     PeriodicalReportingCriteria,
    noReporting                      NULL
}
UE-InternalReportingCriteria ::= SEQUENCE {
    ue-InternalEventParamList       UE-InternalEventParamList      OPTIONAL
}
UE-InternalReportingQuantity ::= SEQUENCE {
    ue-TransmittedPower              BOOLEAN,
    modeSpecificInfo                 CHOICE {
        fdd                           SEQUENCE {
            ue-RX-TX-TimeDifference    BOOLEAN
        },
        tdd                           SEQUENCE {
            appliedTA                  BOOLEAN
        }
    }
}
UE-InternalReportingQuantity-r4 ::= SEQUENCE {
    ue-TransmittedPower              BOOLEAN,
    modeSpecificInfo                 CHOICE {
        fdd                           SEQUENCE {
            ue-RX-TX-TimeDifference    BOOLEAN
        },
        tdd                           SEQUENCE {
            tddOption                  CHOICE {
                tdd384                 SEQUENCE {
                    appliedTA           BOOLEAN
                },
                tdd128                 SEQUENCE {
                    t-ADVinfo           BOOLEAN
                }
            }
        }
    }
}
-- TABULAR: UE-MeasurementQuantity, for 3.84 Mcps TDD only the first two values
-- ue-TransmittedPower and ultra-Carrier-RSSI are used.
-- For 1.28 Mcps TDD ue-RX-TX-TimeDifference corresponds to T-ADV in the tabular
UE-MeasurementQuantity ::= ENUMERATED {
    ue-TransmittedPower,
    ultra-Carrier-RSSI,
    ue-RX-TX-TimeDifference }
UE-RX-TX-ReportEntry ::= SEQUENCE {
    primaryCPICH-Info                PrimaryCPICH-Info,
    ue-RX-TX-TimeDifferenceType1     UE-RX-TX-TimeDifferenceType1
}
UE-RX-TX-ReportEntryList ::= SEQUENCE (SIZE (1..maxRL)) OF
    UE-RX-TX-ReportEntry
-- SPARE: UE-RX-TX-TimeDifferenceType1, Max = 1280
-- Values above Max are spare
UE-RX-TX-TimeDifferenceType1 ::= INTEGER (768..1791)
UE-RX-TX-TimeDifferenceType2 ::= INTEGER (0..8191)

```



```

UE-RX-TX-TimeDifferenceType2Info ::= SEQUENCE {
    ue-RX-TX-TimeDifferenceType2    UE-RX-TX-TimeDifferenceType2,
    neighbourQuality                 NeighbourQuality
}

-- In 1.28 Mcps TDD, actual value for
-- T-ADV Threshold = (UE-RX-TX-TimeDifferenceThreshold - 768) * 0.125
UE-RX-TX-TimeDifferenceThreshold ::= INTEGER (768..1280)

UE-TransmittedPower ::= INTEGER (0..104)

UE-TransmittedPowerTDD-List ::= SEQUENCE (SIZE (1..maxTS)) OF
    UE-TransmittedPower

UL-TrCH-Identity ::= CHOICE{
    dch                TransportChannelIdentity,
    -- Default transport channel in the UL is either RACH or CPCH, but not both.
    rachorcpch        NULL,
    usch              TransportChannelIdentity
}

UE-Positioning-Accuracy ::= BIT STRING (SIZE (7))

UE-Positioning-CipherParameters ::= SEQUENCE {
    cipheringKeyFlag    BIT STRING (SIZE (1)),
    cipheringSerialNumber INTEGER (0..65535)
}

UE-Positioning-Error ::= SEQUENCE {
    errorReason        UE-Positioning-ErrorCause,
    ue-positioning-GPS-additionalAssistanceDataRequest    UE-Positioning-GPS-
AdditionalAssistanceDataRequest OPTIONAL
}

UE-Positioning-ErrorCause ::= ENUMERATED {
    notEnoughOTDOA-Cells,
    notEnoughGPS-Satellites,
    assistanceDataMissing,
    notAccomplishedGPS-TimingOfCellFrames,
    undefinedError,
    requestDeniedByUser,
    notProcessedAndTimeout,
    referenceCellNotServingCell }

UE-Positioning-EventParam ::= SEQUENCE {
    reportingAmount    ReportingAmount,
    reportFirstFix     BOOLEAN,
    measurementInterval    UE-Positioning-MeasurementInterval,
    eventSpecificInfo  UE-Positioning-EventSpecificInfo
}

UE-Positioning-EventParamList ::= SEQUENCE (SIZE (1..maxMeasEvent)) OF
    UE-Positioning-EventParam

UE-Positioning-EventSpecificInfo ::= CHOICE {
    e7a                ThresholdPositionChange,
    e7b                ThresholdSFN-SFN-Change,
    e7c                ThresholdSFN-GPS-TOW
}

UE-Positioning-GPS-AcquisitionAssistance ::= SEQUENCE {
    gps-ReferenceTime    INTEGER (0..604799999),
    utran-GPSReferenceTime    UTRAN-GPSReferenceTime    OPTIONAL,
    satelliteInformationList    AcquisitionSatInfoList
}

UE-Positioning-GPS-AdditionalAssistanceDataRequest ::= SEQUENCE {
    almanacRequest        BOOLEAN,
    utcModelRequest       BOOLEAN,
    ionosphericModelRequest    BOOLEAN,
    navigationModelRequest    BOOLEAN,
    dgpsCorrectionsRequest    BOOLEAN,
    referenceLocationRequest    BOOLEAN,
    referenceTimeRequest       BOOLEAN,
    aquisitionAssistanceRequest    BOOLEAN,
    realTimeIntegrityRequest    BOOLEAN,

```

```

    navModelAddDataRequest          UE-Positioning-GPS-NavModelAddDataReq  OPTIONAL
}

UE-Positioning-GPS-Almanac ::=
    wn-a                            BIT STRING (SIZE (8)),
    almanacSatInfoList              AlmanacSatInfoList,
    sv-GlobalHealth                  BIT STRING (SIZE (364))          OPTIONAL
}

UE-Positioning-GPS-AssistanceData ::=
    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 ::=
    gps-TOW          INTEGER (0..604799),
    statusHealth     DiffCorrectionStatus,
    dgps-CorrectionSatInfoList DGPS-CorrectionSatInfoList
}

UE-Positioning-GPS-IonosphericModel ::=
    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 ::=
    referenceTime          CHOICE {
        utran-GPSReferenceTimeResult    UTRAN-GPSReferenceTimeResult,
        gps-ReferenceTimeOnly           INTEGER (0..604799999)
    },
    gps-MeasurementParamList          GPS-MeasurementParamList
}

UE-Positioning-GPS-NavigationModel ::=
    navigationModelSatInfoList          NavigationModelSatInfoList
}

UE-Positioning-GPS-NavModelAddDataReq ::=
    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 ::=
    modeSpecificInfo          CHOICE {
        fdd          SEQUENCE {
            referenceIdentity          PrimaryCPICH-Info
        },
        tdd          SEQUENCE {
            referenceIdentity          CellParametersID
        }
    }

```

```

    }
  }
}

UE-Positioning-GPS-ReferenceTime ::= SEQUENCE {
  gps-Week INTEGER (0..1023),
  gps-tow-lmsec GPS-TOW-lmsec, utran-GPSReferenceTime UTRAN-
GPSReferenceTime OPTIONAL,
  sfn-tow-Uncertainty SFN-TOW-Uncertainty OPTIONAL,
  utran-GPS-DriftRate UTRAN-GPS-DriftRate OPTIONAL,
  gps-TOW-AssistList GPS-TOW-AssistList OPTIONAL
}

UE-Positioning-GPS-UTC-Model ::= SEQUENCE {
  a1 BIT STRING (SIZE (24)),
  a0 BIT STRING (SIZE (32)),
  t-ot BIT STRING (SIZE (8)),
  wn-t BIT STRING (SIZE (8)),
  delta-t-LS BIT STRING (SIZE (8)),
  wn-lsf BIT STRING (SIZE (8)),
  dn BIT STRING (SIZE (8)),
  delta-t-LSF BIT STRING (SIZE (8))
}

UE-Positioning-IPDL-Parameters ::= SEQUENCE {
  ip-Spacing IP-Spacing,
  ip-Length IP-Length,
  ip-Offset INTEGER (0..9),
  seed INTEGER (0..63),
  burstModeParameters BurstModeParameters OPTIONAL
}

UE-Positioning-IPDL-Parameters-r4 ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      ip-Spacing IP-Spacing,
      ip-Length IP-Length,
      ip-Offset INTEGER (0..9),
      seed INTEGER (0..63)
    },
    tdd SEQUENCE {
      ip-Spacing-TDD IP-Spacing-TDD,
      ip-slot INTEGER (0..14),
      ip-Start INTEGER (0..4095),
      ip-PCCPCG IP-PCCPCH-r4 OPTIONAL
    }
  },
  burstModeParameters BurstModeParameters OPTIONAL
}

UE-Positioning-IPDL-Parameters-TDD-r4-ext ::= SEQUENCE {
  ip-Spacing IP-Spacing-TDD,
  ip-slot INTEGER (0..14),
  ip-Start INTEGER (0..4095),
  ip-PCCPCG IP-PCCPCH-r4 OPTIONAL,
  burstModeParameters BurstModeParameters
}

UE-Positioning-MeasuredResults ::= SEQUENCE {
  ue-positioning-OTDOA-Measurement UE-Positioning-OTDOA-Measurement
OPTIONAL,
  ue-positioning-PositionEstimateInfo UE-Positioning-PositionEstimateInfo
OPTIONAL,
  ue-positioning-GPS-Measurement UE-Positioning-GPS-MeasurementResults
OPTIONAL,
  ue-positioning-Error UE-Positioning-Error
OPTIONAL
}

UE-Positioning-MeasuredResults-v390ext ::= SEQUENCE {
  ue-Positioning-OTDOA-Measurement-v390ext UE-Positioning-OTDOA-Measurement-v390ext
}

UE-Positioning-Measurement ::= SEQUENCE {
  ue-positioning-ReportingQuantity UE-Positioning-ReportingQuantity,
  reportCriteria UE-Positioning-ReportCriteria,
  ue-positioning-OTDOA-AssistanceData UE-Positioning-OTDOA-AssistanceData
OPTIONAL,

```

```

    ue-positioning-GPS-AssistanceData
    OPTIONAL
}

UE-Positioning-Measurement-v390ext ::= SEQUENCE {
    ue-positioning-ReportingQuantity-v390ext
    OPTIONAL,
    measurementValidity MeasurementValidity OPTIONAL,
    ue-positioning-OTDOA-AssistanceData-UEB
    OPTIONAL
}

UE-Positioning-Measurement-r4 ::= SEQUENCE {
    ue-positioning-ReportingQuantity
    measurementValidity
    OPTIONAL,
    reportCriteria UE-Positioning-ReportCriteria,
    ue-positioning-OTDOA-AssistanceData
    OPTIONAL,
    ue-positioning-GPS-AssistanceData
    OPTIONAL
}

UE-Positioning-MeasurementEventResults ::= CHOICE {
    event7a UE-Positioning-PositionEstimateInfo,
    event7b UE-Positioning-OTDOA-Measurement,
    event7c UE-Positioning-GPS-MeasurementResults,
    spare NULL
}

UE-Positioning-MeasurementInterval ::= ENUMERATED {
    e5, e15, e60, e300,
    e900, e1800, e3600, e7200 }

UE-Positioning-MethodType ::= ENUMERATED {
    ue-Assisted,
    ue-Based,
    ue-BasedPreferred,
    ue-AssistedPreferred }

UE-Positioning-OTDOA-AssistanceData ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-r4 ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-r4ext ::= SEQUENCE {
    -- In case of TDD these IPDL parameters shall be used for the reference cell instead of
    -- IPDL Parameters in IE UE-Positioning-OTDOA-ReferenceCellInfo
    ue-Positioning-IPDL-Parameters-TDD-r4-ext
    OPTIONAL,
    -- These IPDL parameters shall be used for the neighbour cells in case of TDD instead of
    -- IPDL Parameters in IE UE-Positioning-OTDOA-NeighbourCellInfoList. The cells shall be
    -- listed in the same order as in IE UE-Positioning-OTDOA-NeighbourCellInfoList
    ue-Positioning-IPDL-Parameters-TDDList-r4-ext
    OPTIONAL
}

UE-Positioning-OTDOA-AssistanceData-UEB ::= SEQUENCE {
    ue-positioning-OTDOA-ReferenceCellInfo-UEB
    OPTIONAL,
    ue-positioning-OTDOA-NeighbourCellList-UEB
    OPTIONAL
}

UE-Positioning-IPDL-Parameters-TDDList-r4-ext ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
    UE-Positioning-IPDL-Parameters-TDD-r4-ext

UE-Positioning-OTDOA-Measurement ::= SEQUENCE {
    sfn INTEGER (0..4095),

```

```

modeSpecificInfo CHOICE {
  fdd SEQUENCE {
    referenceCellIdentity PrimaryCPICH-Info,
    ue-RX-TX-TimeDifferenceType2Info UE-RX-TX-TimeDifferenceType2Info
  },
  tdd SEQUENCE {
    referenceCellIdentity CellParametersID
  }
},
neighbourList NeighbourList OPTIONAL
}

UE-Positioning-OTDOA-Measurement-v390ext ::= SEQUENCE {
  neighbourList-v390ext NeighbourList-v390ext
}

UE-Positioning-OTDOA-NeighbourCellInfo ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      primaryCPICH-Info PrimaryCPICH-Info
    },
    tdd SEQUENCE {
      cellAndChannelIdentity CellAndChannelIdentity
    }
  },
  frequencyInfo FrequencyInfo OPTIONAL,
  ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters OPTIONAL,
  sfn-SFN-RelTimeDifference SFN-SFN-RelTimeDifference1,
  sfn-SFN-Drift SFN-SFN-Drift OPTIONAL,
  searchWindowSize OTDOA-SearchWindowSize,
  positioningMode CHOICE {
    ueBased SEQUENCE {},
    ueAssisted SEQUENCE {}
  }
}

UE-Positioning-OTDOA-NeighbourCellInfo-r4 ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      primaryCPICH-Info PrimaryCPICH-Info
    },
    tdd SEQUENCE {
      cellAndChannelIdentity CellAndChannelIdentity
    }
  },
  frequencyInfo FrequencyInfo OPTIONAL,
  ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters-r4 OPTIONAL,
  sfn-SFN-RelTimeDifference SFN-SFN-RelTimeDifference1,
  sfn-Offset-Validity SFN-Offset-Validity OPTIONAL,
  sfn-SFN-Drift SFN-SFN-Drift OPTIONAL,
  searchWindowSize OTDOA-SearchWindowSize,
  positioningMode CHOICE {
    ueBased SEQUENCE {
      relativeNorth INTEGER (-20000..20000) OPTIONAL,
      relativeEast INTEGER (-20000..20000) OPTIONAL,
      relativeAltitude INTEGER (-4000..4000) OPTIONAL,
      fineSFN-SFN FineSFN-SFN OPTIONAL,
      -- actual value roundTripTime = (IE value * 0.0625) + 876
      roundTripTime INTEGER (0.. 32766) OPTIONAL
    },
    ueAssisted SEQUENCE {}
  }
}

UE-Positioning-OTDOA-NeighbourCellInfo-UEB ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      primaryCPICH-Info PrimaryCPICH-Info
    },
    tdd SEQUENCE {
      cellAndChannelIdentity CellAndChannelIdentity
    }
  },
  frequencyInfo FrequencyInfo OPTIONAL,
  ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters OPTIONAL,
  sfn-SFN-RelTimeDifference SFN-SFN-RelTimeDifference1,
  sfn-SFN-Drift SFN-SFN-Drift OPTIONAL,

```

```

searchWindowSize          OTDOA-SearchWindowSize,
relativeNorth             INTEGER (-20000..20000)          OPTIONAL,
relativeEast              INTEGER (-20000..20000)          OPTIONAL,
relativeAltitude          INTEGER (-4000..4000)            OPTIONAL,
fineSFN-SFN              FineSFN-SFN,
-- actual value roundTripTime = (IE value * 0.0625) + 876
roundTripTime             INTEGER (0..32766)                OPTIONAL
}

UE-Positioning-OTDOA-NeighbourCellList ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                           UE-Positioning-OTDOA-NeighbourCellInfo

UE-Positioning-OTDOA-NeighbourCellList-r4 ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                               UE-Positioning-OTDOA-NeighbourCellInfo-r4

UE-Positioning-OTDOA-NeighbourCellList-UEB ::= SEQUENCE (SIZE (1..maxCellMeas)) OF
                                                UE-Positioning-OTDOA-NeighbourCellInfo-UEB

UE-Positioning-OTDOA-Quality ::=          SEQUENCE {
  stdResolution              BIT STRING (SIZE (2)),
  numberOfOTDOA-Measurements BIT STRING (SIZE (3)),
  stdOfOTDOA-Measurements   BIT STRING (SIZE (5))
}

UE-Positioning-OTDOA-ReferenceCellInfo ::=          SEQUENCE {
  sfn                       INTEGER (0..4095)
  OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd                      SEQUENCE {
      primaryCPICH-Info     PrimaryCPICH-Info
    },
    tdd                      SEQUENCE {
      cellAndChannelIdentity CellAndChannelIdentity
    }
  },
  frequencyInfo             FrequencyInfo            OPTIONAL,
  positioningMode CHOICE {
    ueBased                  SEQUENCE {},
    ueAssisted               SEQUENCE {}
  },
  ue-positioning-IPDL-Paremters UE-Positioning-IPDL-Parameters OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-r4 ::= SEQUENCE {
  sfn                       INTEGER (0..4095)
  OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd                      SEQUENCE {
      primaryCPICH-Info     PrimaryCPICH-Info
    },
    tdd                      SEQUENCE {
      cellAndChannelIdentity CellAndChannelIdentity
    }
  },
  frequencyInfo             FrequencyInfo            OPTIONAL,
  positioningMode CHOICE {
    ueBased                  SEQUENCE {
      cellPosition          ReferenceCellPosition OPTIONAL,
      -- actual value roundTripTime = (IE value * 0.0625) + 876
      roundTripTime         INTEGER (0..32766)      OPTIONAL
    },
    ueAssisted               SEQUENCE {}
  },
  ue-positioning-IPDL-Paremters UE-Positioning-IPDL-Parameters-r4 OPTIONAL
}

UE-Positioning-OTDOA-ReferenceCellInfo-UEB ::=          SEQUENCE {
  sfn                       INTEGER (0..4095)          OPTIONAL,
  modeSpecificInfo CHOICE {
    fdd                      SEQUENCE {
      primaryCPICH-Info     PrimaryCPICH-Info
    },
    tdd                      SEQUENCE {
      cellAndChannelIdentity CellAndChannelIdentity
    }
  },
  frequencyInfo             FrequencyInfo            OPTIONAL,
  cellPosition              ReferenceCellPosition    OPTIONAL,
}

```

```

-- actual value roundTripTime = (IE value * 0.0625) + 876
roundTripTime                INTEGER (0..32766)                OPTIONAL,
ue-positioning-IPDL-Parameters UE-Positioning-IPDL-Parameters OPTIONAL
}

UE-Positioning-PositionEstimateInfo ::=                SEQUENCE {
  referenceTime                CHOICE {
    utran-GPSReferenceTimeResult UTRAN-GPSReferenceTimeResult,
    gps-ReferenceTimeOnly        INTEGER (0..604799999),
    cell-Timing                  SEQUENCE {
      sfn                        INTEGER (0..4095),
      modeSpecificInfo          CHOICE {
        fdd                      SEQUENCE {
          primaryCPICH-Info      PrimaryCPICH-Info
        },
        tdd                      SEQUENCE {
          cellAndChannelIdentity CellAndChannelIdentity
        }
      }
    }
  },
  positionEstimate             PositionEstimate
}

UE-Positioning-ReportCriteria ::=                CHOICE {
  ue-positioning-ReportingCriteria UE-Positioning-EventParamList,
  periodicalReportingCriteria      PeriodicalReportingCriteria,
  noReporting                      NULL
}

UE-Positioning-ReportingQuantity ::=                SEQUENCE {
  methodType                    UE-Positioning-MethodType,
  positioningMethod              PositioningMethod,
  -- dummy1 is not used in this version of specification and it should
  -- be ignored.
  dummy1                        UE-Positioning-ResponseTime,
  horizontal-Accuracy            UE-Positioning-Accuracy                OPTIONAL,
  gps-TimingOfCellWanted         BOOLEAN,
  -- dummy2 is not used in this version of specification and it should
  -- be ignored.
  dummy2                        BOOLEAN,
  additionalAssistanceDataRequest BOOLEAN,
  environmentCharacterisation     EnvironmentCharacterisation        OPTIONAL
}

UE-Positioning-ReportingQuantity-v390ext ::=                SEQUENCE {
  vertical-Accuracy              UE-Positioning-Accuracy
}

UE-Positioning-ReportingQuantity-r4 ::=                SEQUENCE {
  methodType                    UE-Positioning-MethodType,
  positioningMethod              PositioningMethod,
  horizontalAccuracy             UE-Positioning-Accuracy                OPTIONAL,
  verticalAccuracy               UE-Positioning-Accuracy                OPTIONAL,
  gps-TimingOfCellWanted         BOOLEAN,
  additionalAssistanceDataReq     BOOLEAN,
  environmentCharacterisation     EnvironmentCharacterisation        OPTIONAL
}

UE-Positioning-ResponseTime ::=                ENUMERATED {
  s1, s2, s4, s8, s16,
  s32, s64, s128 }

-- SPARE: UTRA-CarrierRSSI, Max = 76
-- Values above Max are spare
UTRA-CarrierRSSI ::=                INTEGER (0..127)

UTRAN-GPS-DriftRate ::=                ENUMERATED {
  utran-GPSDrift0, utran-GPSDrift1, utran-GPSDrift2,
  utran-GPSDrift5, utran-GPSDrift10, utran-GPSDrift15,
  utran-GPSDrift25, utran-GPSDrift50, utran-GPSDrift-1,
  utran-GPSDrift-2, utran-GPSDrift-5, utran-GPSDrift-10,
  utran-GPSDrift-15, utran-GPSDrift-25, utran-GPSDrift-50}

UTRAN-GPSReferenceTime ::=                SEQUENCE {
  -- For utran-GPSTimingOfCell values above 2322431999999 are not
  -- used in this version of the specification
  -- Actual value utran-GPSTimingOfCell = (ms-part * 4294967296) + ls-part

```

```

    utran-GPSTimingOfCell          SEQUENCE {
        ms-part                    INTEGER (0..1023),
        ls-part                    INTEGER (0..4294967295)
    },
    modeSpecificInfo              CHOICE {
        fdd                        SEQUENCE {
            referenceIdentity      PrimaryCPICH-Info
        },
        tdd                        SEQUENCE {
            referenceIdentity      CellParametersID
        }
    }
    sfm                            OPTIONAL,
    sfm                            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
        }
    },
    sfm                          INTEGER (0..4095)
}

VarianceOfRLC-BufferPayload ::= ENUMERATED {
    plv0, plv4, plv8, plv16, plv32, plv64,
    plv128, plv256, plv512, plv1024,
    plv2k, plv4k, plv8k, plv16k, spare2, spare1 }

-- Actual value W = IE value * 0.1
W ::= INTEGER (0..20)

-- *****
--
-- OTHER INFORMATION ELEMENTS (10.3.8)
--
-- *****

BCC ::= INTEGER (0..7)

BCCH-ModificationInfo ::= SEQUENCE {
    mib-ValueTag                MIB-ValueTag,
    bcch-ModificationTime       BCCH-ModificationTime OPTIONAL
}

-- Actual value BCCH-ModificationTime = IE value * 8
BCCH-ModificationTime ::= INTEGER (0..511)

BSIC ::= SEQUENCE {
    ncc                          NCC,
    bcc                          BCC
}

CBS-DRX-Level1Information ::= SEQUENCE {
    ctch-AllocationPeriod       INTEGER (1..256),
    cbs-FrameOffset            INTEGER (0..255)
}

CDMA2000-Message ::= SEQUENCE {
    msg-Type                    BIT STRING (SIZE (8)),
    payload                    BIT STRING (SIZE (1..512))
}

CDMA2000-MessageList ::= SEQUENCE (SIZE (1..maxInterSysMessages)) OF
    CDMA2000-Message

CDMA2000-UMTS-Frequency-List ::= SEQUENCE (SIZE (1..maxNumCDMA2000Freqs)) OF
    FrequencyInfoCDMA2000

```



```

CellValueTag ::=                               INTEGER (1..4)

--Actual value = 2^(IE value)
ExpirationTimeFactor ::=                       INTEGER (1..8)

FDD-UMTS-Frequency-List ::=                   SEQUENCE (SIZE (1..maxNumFDDFreqs)) OF
                                                FrequencyInfoFDD

FrequencyInfoCDMA2000 ::=                      SEQUENCE {
                                                band-Class      BIT STRING (SIZE (5)),
                                                cdma-Freq        BIT STRING (SIZE(11))
}

GERAN-SystemInfoBlock ::=                     OCTET STRING (SIZE (1..23))

GERAN-SystemInformation ::=                   SEQUENCE (SIZE (1..maxGERAN-SI)) OF GERAN-SystemInfoBlock

GSM-BA-Range ::=                              SEQUENCE {
                                                gsmLowRangeUARFCN    UARFCN,
                                                gsmUpRangeUARFCN    UARFCN
}

GSM-BA-Range-List ::=                         SEQUENCE (SIZE (1..maxNumGSMFreqRanges)) OF
                                                GSM-BA-Range

-- This IE is formatted as 'TLV' and is coded in the same way as the Mobile Station Classmark 2
-- information element in [5]. The first octet is the Mobile station classmark 2 IEI and its value
-- shall be set to 33H. The second octet is the Length of mobile station classmark 2 and its value
-- shall be set to 3. The octet 3 contains the first octet of the value part of the Mobile Station
-- Classmark 2 information element, the octet 4 contains the second octet of the value part of the
-- Mobile Station Classmark 2 information element and so on. For each of these octets, the first/
-- leftmost/ most significant bit of the octet contains b8 of the corresponding octet of the Mobile
-- Station Classmark 2.
GSM-Classmark2 ::=                            OCTET STRING (SIZE (5))

-- This IE is formatted as 'V' and is coded in the same way as the value part in the Mobile station
-- classmark 3 information element in [5]
-- The value part is specified by means of CSN.1, which encoding results in a bit string, to which
-- final padding may be appended upto the next octet boundary [5]. The first/ leftmost bit of the
-- CSN.1 bit string is placed in the first/ leftmost/ most significant bit of the first
-- octet. This continues until the last bit of the CSN.1 bit string, which is placed in the last/
-- rightmost/ least significant bit of the last octet.
GSM-Classmark3 ::=                            OCTET STRING (SIZE (1..32))

GSM-MessageList ::=                           SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                                                BIT STRING (SIZE (1..512))

GsmSecurityCapability ::=                      BIT STRING {
                                                -- For each bit value "0" means false/ not supported
                                                a5-7(0),
                                                a5-6(1),
                                                a5-5(2),
                                                a5-4(3),
                                                a5-3(4),
                                                a5-2(5),
                                                a5-1(6)
                                                } (SIZE (7))

GSM-TargetCellInfoList ::=                    SEQUENCE (SIZE (1..maxGSMTargetCells)) OF
                                                GSM-TargetCellInfo

GSM-TargetCellInfo ::=                        SEQUENCE {
        bcch-ARFCN          BCCH-ARFCN,
        frequency-band      Frequency-Band,
        bsic                 BSIC          OPTIONAL
}

IdentificationOfReceivedMessage ::= SEQUENCE {
        rrc-TransactionIdentifier  RRC-TransactionIdentifier,
        receivedMessageType        ReceivedMessageType
}

InterRAT-ChangeFailureCause ::=              CHOICE {
        configurationUnacceptable    NULL,

```

```

    physicalChannelFailure          NULL,
    protocolError                   ProtocolErrorInformation,
    unspecified                      NULL,
    spare4                          NULL,
    spare3                          NULL,
    spare2                          NULL,
    spare1                          NULL
}

GERANIu-MessageList ::=          SEQUENCE (SIZE (1..maxInterSysMessages)) OF
                                BIT STRING (SIZE (1..32768))

GERANIu-RadioAccessCapability ::= BIT STRING (SIZE (1..170))

InterRAT-UE-RadioAccessCapability ::= CHOICE {
    gsm                             SEQUENCE {
        gsm-Classmark2              GSM-Classmark2,
        gsm-Classmark3              GSM-Classmark3
    },
    cdma2000                        SEQUENCE {
        cdma2000-MessageList        CDMA2000-MessageList
    }
}

InterRAT-UE-RadioAccessCapabilityList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
InterRAT-UE-RadioAccessCapability

InterRAT-UE-RadioAccessCapability-ext ::= SEQUENCE {
    geraniu-RadioAccessCapability    GERANIu-RadioAccessCapability
}

InterRAT-UE-SecurityCapability ::= CHOICE {
    gsm                             SEQUENCE {
        gsmSecurityCapability        GsmSecurityCapability
    }
}

InterRAT-UE-SecurityCapList ::= SEQUENCE (SIZE(1..maxInterSysMessages)) OF
InterRAT-UE-SecurityCapability

InterRAT-HO-FailureCause ::= CHOICE {
    configurationUnacceptable        NULL,
    physicalChannelFailure           NULL,
    protocolError                    ProtocolErrorInformation,
    interRAT-ProtocolError          NULL,
    unspecified                      NULL,
    spare11                          NULL,
    spare10                          NULL,
    spare9                           NULL,
    spare8                           NULL,
    spare7                           NULL,
    spare6                           NULL,
    spare5                           NULL,
    spare4                           NULL,
    spare3                           NULL,
    spare2                           NULL,
    spare1                           NULL
}

MasterInformationBlock ::= SEQUENCE {
    mib-ValueTag                    MIB-ValueTag,
    -- TABULAR: The PLMN identity and ANSI-41 core network information
    -- are included in PLMN-Type.
    plmn-Type                       PLMN-Type,
    sibSb-ReferenceList              SIBSb-ReferenceList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions            SEQUENCE {} OPTIONAL
}

MIB-ValueTag ::= INTEGER (1..8)

NCC ::= INTEGER (0..7)

PLMN-ValueTag ::= INTEGER (1..256)

PredefinedConfigIdentityAndValueTag ::= SEQUENCE {
    predefinedConfigIdentity         PredefinedConfigIdentity,

```

```

    predefinedConfigValueTag          PredefinedConfigValueTag
}

ProtocolErrorInformation ::=
    diagnosticsType
        type1
            protocolErrorCause
        },
        spare
    }
}

ReceivedMessageType ::=
    ENUMERATED {
        activeSetUpdate,
        cellChangeOrderFromUTRAN,
        cellUpdateConfirm,
        counterCheck,
        downlinkDirectTransfer,
        interRATHandoverCommand,
        measurementControl,
        pagingType2,
        physicalChannelReconfiguration,
        physicalSharedChannelAllocation,
        radioBearerReconfiguration,
        radioBearerRelease,
        radioBearerSetup,
        rrcConnectionRelease,
        rrcConnectionReject,
        rrcConnectionSetup,
        securityModeCommand,
        signallingConnectionRelease,
        transportChannelReconfiguration,
        transportFormatCombinationControl,
        ueCapabilityEnquiry,
        ueCapabilityInformationConfirm,
        uplinkPhysicalChannelControl,
        uraUpdateConfirm,
        utranMobilityInformation,
        assistanceDataDelivery,
        spare6, spare5, spare4, spare3, spare2,
        spare1
    }

Rplmn-Information ::=
    OPTIONAL,
    OPTIONAL,
    List OPTIONAL
}

Rplmn-Information-r4 ::=
    gsm-BA-Range-List          GSM-BA-Range-List          OPTIONAL,
    fdd-UMTS-Frequency-List    FDD-UMTS-Frequency-List
    tdd-UMTS-Frequency-List    TDD-UMTS-Frequency-List
    cdma2000-UMTS-Frequency-List    CDMA2000-UMTS-Frequency-
}

SchedulingInformation ::=
    scheduling
        seqCount                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
  }
}

SchedulingInformationSIB ::=
  sib-Type
  scheduling
}

SchedulingInformationSIBSb ::=
  sibSb-Type
  scheduling
}

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 ::=
  sibOccurIdentity
  sibOccurValueTag
}

SIBOccurValueTag ::=
  INTEGER (0..15)

SIB-ReferenceList ::=
  SEQUENCE (SIZE (1..maxSIB)) OF
  SchedulingInformationSIB

SIBSb-ReferenceList ::=
  SEQUENCE (SIZE (1..maxSIB)) OF
  SchedulingInformationSIBSb

SIB-ReferenceListFACH ::=
  SEQUENCE (SIZE (1..maxSIB-FACH)) OF
  SchedulingInformationSIB

SIB-Type ::=
  ENUMERATED {
    masterInformationBlock,
    systemInformationBlockType1,
    systemInformationBlockType2,
    systemInformationBlockType3,
    systemInformationBlockType4,
    systemInformationBlockType5,
    systemInformationBlockType6,
    systemInformationBlockType7,
    systemInformationBlockType8,
    systemInformationBlockType9,
    systemInformationBlockType10,
    systemInformationBlockType11,
    systemInformationBlockType12,
    systemInformationBlockType13,
    systemInformationBlockType13-1,
    systemInformationBlockType13-2,
    systemInformationBlockType13-3,
    systemInformationBlockType13-4,
    systemInformationBlockType14,
    systemInformationBlockType15,
    systemInformationBlockType15-1,
    systemInformationBlockType15-2,
    systemInformationBlockType15-3,
    systemInformationBlockType16,
    systemInformationBlockType17,
    systemInformationBlockType15-4,
    systemInformationBlockType18,
    schedulingBlock1,
    schedulingBlock2,
    systemInformationBlockType15-5,
    systemInformationBlockType5bis,
  }

```



```

SibOFF-List ::=                               SEQUENCE (SIZE (1..15)) OF
                                              SibOFF

SysInfoType1 ::=                             SEQUENCE {
  -- Core network IEs
  cn-CommonGSM-MAP-NAS-SysInfo              NAS-SystemInformationGSM-MAP,
  cn-DomainSysInfoList                      CN-DomainSysInfoList,
  -- User equipment IEs
  ue-ConnTimersAndConstants                 UE-ConnTimersAndConstants           OPTIONAL,
  ue-IdleTimersAndConstants                 UE-IdleTimersAndConstants           OPTIONAL,
  -- Extension mechanism for non- release99 information
  v3a0NonCriticalExtensions                 SEQUENCE {
    sysInfoType1-v3a0ext                   SysInfoType1-v3a0ext-IEs,
    nonCriticalExtensions                   SEQUENCE {} OPTIONAL
  }
}

SysInfoType1-v3a0ext-IEs ::= SEQUENCE {
  ue-ConnTimersAndConstants-v3a0ext        UE-ConnTimersAndConstants-v3a0ext,
  ue-IdleTimersAndConstants-v3a0ext        UE-IdleTimersAndConstants-v3a0ext
}

SysInfoType2 ::=                             SEQUENCE {
  -- UTRAN mobility IEs
  ura-IdentityList                         URA-IdentityList,
  -- Extension mechanism for non- release99 information
  nonCriticalExtensions                     SEQUENCE {}                               OPTIONAL
}

SysInfoType3 ::=                             SEQUENCE {
  sib4indicator                             BOOLEAN,
  -- UTRAN mobility IEs
  cellIdentity                             CellIdentity,
  cellSelectReselectInfo                   CellSelectReselectInfoSIB-3-4,
  cellAccessRestriction                    CellAccessRestriction,
  -- Extension mechanism for non- release99 information
  v4b0NonCriticalExtensions                 SEQUENCE {
    sysInfoType3-v4b0ext                   SysInfoType3-v4b0ext-IEs,
    v5xyv590NonCriticalExtension           SEQUENCE {
      sysInfoType3-v5xyv590ext             SysInfoType3-v5xyv590ext,
      nonCriticalExtensions                 SEQUENCE {}                               OPTIONAL
    }
  }
}

SysInfoType3-v4b0ext-IEs ::= SEQUENCE {
  mapping-LCR                              Mapping-LCR-r4                               OPTIONAL
}

SysInfoType3-v5xyv590ext ::= SEQUENCE {
  cellSelectReselectInfo-v5xyv590ext       CellSelectReselectInfo-v5xyv590ext         OPTIONAL
}

SysInfoType4 ::=                             SEQUENCE {
  -- UTRAN mobility IEs
  cellIdentity                             CellIdentity,
  cellSelectReselectInfo                   CellSelectReselectInfoSIB-3-4,
  cellAccessRestriction                    CellAccessRestriction,
  -- Extension mechanism for non- release99 information
  v4b0NonCriticalExtensions                 SEQUENCE {
    sysInfoType4-v4b0ext                   SysInfoType4-v4b0ext-IEs,
    v5xyv590NonCriticalExtension           SEQUENCE {
      sysInfoType4-v5xyv590ext             SysInfoType4-v5xyv590ext,
      nonCriticalExtensions                 SEQUENCE {}                               OPTIONAL
    }
  }
}

SysInfoType4-v4b0ext-IEs ::= SEQUENCE {
  mapping-LCR                              Mapping-LCR-r4                               OPTIONAL
}

SysInfoType4-v5xyv590ext ::= SEQUENCE {
  cellSelectReselectInfo-v5xyv590ext       CellSelectReselectInfo-v5xyv590ext         OPTIONAL
}

-- SysInfoType5bis uses the same structure as SysInfoType5

```

```

SysInfoType5 ::=
    sib6indicator                               SEQUENCE {
        -- Physical channel IEs
        pich-PowerOffset                       PICH-PowerOffset,
        modeSpecificInfo                       CHOICE {
            fdd                                 SEQUENCE {
                aich-PowerOffset                AICH-PowerOffset
            },
            tdd                                 SEQUENCE {
                -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, the following IEs should be absent
                -- and the info included in the tdd128SpecificInfo instead.
                -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
                -- included.
                pusch-SysInfoList-SFN          PUSCH-SysInfoList-SFN          OPTIONAL,
                pdsch-SysInfoList-SFN          PDSCH-SysInfoList-SFN          OPTIONAL,
                openLoopPowerControl-TDD       OpenLoopPowerControl-TDD
            }
        },
        primaryCCPCH-Info                      PrimaryCCPCH-Info                      OPTIONAL,
        prach-SystemInformationList            PRACH-SystemInformationList,
        sCCPCH-SystemInformationList           SCCPCH-SystemInformationList,
        -- cbs-DRX-Level1Information is conditional on any of the CTCH indicator IEs in
        -- sCCPCH-SystemInformationList
        cbs-DRX-Level1Information              CBS-DRX-Level1Information              OPTIONAL,
        -- Extension mechanism for non- release99 information
        v4b0NonCriticalExtensions              SEQUENCE {
            sysInfoType5-v4b0ext               SysInfoType5-v4b0ext-IEs              OPTIONAL,
            -- Extension mechanism for non- rel-4 information
            v5xyv590NonCriticalExtensions      SEQUENCE {
                sysInfoType5-v5xyv590ext       SysInfoType5-v5xyv590ext-IEs          OPTIONAL,
                nonCriticalExtensions           SEQUENCE {}                          OPTIONAL
            }
        }
    }
    OPTIONAL

SysInfoType5-v4b0ext-IEs ::= SEQUENCE {
    --The following IE PNBSCH-Allocation-r4 shall be used for 3.84Mcps TDD only.
    pnBSCH-Allocation-r4                      PNBSCH-Allocation-r4                  OPTIONAL,
    -- In case of TDD, the following IE is included instead of the
    -- IE up-IPDL-Parameter in up-OTDOA-AssistanceData.
    openLoopPowerControl-IPDL-TDD             OpenLoopPowerControl-IPDL-TDD-r4      OPTIONAL,
    -- If SysInfoType5 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included in
    -- PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
    -- IE rach-TransportFormatSet shall be absent and the corresponding IE in the following
    -- PRACH-SystemInformationList-LCR-r4 shall be used
    prach-SystemInformationList-LCR-r4         PRACH-SystemInformationList-LCR-r4    OPTIONAL,
    tdd128SpecificInfo                        SEQUENCE {
        pusch-SysInfoList-SFN                  PUSCH-SysInfoList-SFN-LCR-r4         OPTIONAL,
        pdsch-SysInfoList-SFN                  PDSCH-SysInfoList-SFN-LCR-r4         OPTIONAL,
        pCCPCH-LCR-Extensions                  PrimaryCCPCH-Info-LCR-r4-ext          OPTIONAL,
        sCCPCH-LCR-ExtensionsList              SCCPCH-SystemInformationList-LCR-r4-ext
    }
    frequencyBandIndicator                    RadioFrequencyBandFDD                  OPTIONAL
}

SysInfoType5-v5xyv590ext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo                       SEQUENCE {
        pusch-SysInfoList-SFN                  PUSCH-SysInfoList-SFN-HCR-r5         OPTIONAL,
        pdsch-SysInfoList-SFN                  PDSCH-SysInfoList-SFN-HCR-r5         OPTIONAL
    }
}

SysInfoType6 ::=
    -- Physical channel IEs
    pich-PowerOffset                       PICH-PowerOffset,
    modeSpecificInfo                       CHOICE {
        fdd                                 SEQUENCE {
            aich-PowerOffset                AICH-PowerOffset,
            -- dummy is not used in this version of specification, it should
            -- not be sent and if received it should be ignored.
            dummy                            CSICH-PowerOffset                    OPTIONAL
        },
        tdd                                 SEQUENCE {
            -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList-SFN,
            -- pdsch-SysInfoList-SFN and openLoopPowerControl-TDD should be absent
            -- and the info included in the tdd128SpecificInfo instead.
            -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should
            -- also be included.

```

```

        pusch-SysInfoList-SFN          PUSCH-SysInfoList-SFN          OPTIONAL,
        pdsch-SysInfoList-SFN          PDSCH-SysInfoList-SFN          OPTIONAL,
        openLoopPowerControl-TDD       OpenLoopPowerControl-TDD
    },
    primaryCCPCH-Info                  PrimaryCCPCH-Info              OPTIONAL,
    prach-SystemInformationList         PRACH-SystemInformationList    OPTIONAL,
    sCCPCH-SystemInformationList        SCCPCH-SystemInformationList   OPTIONAL,
    cbs-DRX-Level1Information           CBS-DRX-Level1Information      OPTIONAL,
    -- Conditional on any of the CTCH indicator IEs in
    -- sCCPCH-SystemInformationList
-- Extension mechanism for non- release99 information
v4b0NonCriticalExtensions             SEQUENCE {
    sysInfoType6-v4b0ext               SysInfoType6-v4b0ext-IEs      OPTIONAL,
    -- Extension mechanism for non- rel-4 information
    v5xyv590NonCriticalExtensions      SEQUENCE {
        sysInfoType6-v5xyv590ext       SysInfoType6-v5xyv590ext-IEs  OPTIONAL,
        nonCriticalExtensions           SEQUENCE {}                   OPTIONAL
    }
}
OPTIONAL
}

SysInfoType6-v4b0ext-IEs ::= SEQUENCE {
    -- openLoopPowerControl-IPDL-TDD is present only if IPDLs are applied for TDD
    openLoopPowerControl-IPDL-TDD      OpenLoopPowerControl-IPDL-TDD-r4  OPTIONAL,
    -- If SysInfoType6 is sent to describe a 1.28Mcps TDD cell, the IE PRACH-RACH-Info included
    -- in PRACH-SystemInformationList shall be ignored, the IE PRACH-Partitioning and the
    -- IE rach-TransportFormatSet shall be absent and the corresponding IEs in the following
    -- PRACH-SystemInformationList-LCR-r4 shall be used
    prach-SystemInformationList-LCR-r4  PRACH-SystemInformationList-LCR-r4  OPTIONAL,
    tdd128SpecificInfo                 SEQUENCE {
        pusch-SysInfoList-SFN          PUSCH-SysInfoList-SFN-LCR-r4     OPTIONAL,
        pdsch-SysInfoList-SFN          PDSCH-SysInfoList-SFN-LCR-r4     OPTIONAL,
        pCCPCH-LCR-Extensions          PrimaryCCPCH-Info-LCR-r4-ext      OPTIONAL,
        sCCPCH-LCR-ExtensionsList      SCCPCH-SystemInformationList-LCR-r4-ext  OPTIONAL
    }
    frequencyBandIndicator              RadioFrequencyBandFDD            OPTIONAL
}

SysInfoType6-v5xyv590ext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo                SEQUENCE {
        pusch-SysInfoList-SFN          PUSCH-SysInfoList-SFN-HCR-r5     OPTIONAL,
        pdsch-SysInfoList-SFN          PDSCH-SysInfoList-SFN-HCR-r5     OPTIONAL
    }
}

SysInfoType7 ::= SEQUENCE {
    -- Physical channel IEs
    modeSpecificInfo                   CHOICE {
        fdd                             SEQUENCE {
            ul-Interference              UL-Interference
        },
        tdd                             NULL
    },
    prach-Information-SIB5-List         DynamicPersistenceLevelList,
    prach-Information-SIB6-List         DynamicPersistenceLevelList      OPTIONAL,
    expirationTimeFactor                ExpirationTimeFactor              OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions                SEQUENCE {}                       OPTIONAL
}

SysInfoType8 ::= SEQUENCE {
    -- User equipment IEs
    cpch-Parameters                     CPCH-Parameters,
    -- Physical channel IEs
    cpch-SetInfoList                    CPCH-SetInfoList,
    csich-PowerOffset                   CSICH-PowerOffset,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions                SEQUENCE {}                       OPTIONAL
}

SysInfoType9 ::= SEQUENCE {
    -- Physical channel IEs
    cpch-PersistenceLevelsList          CPCH-PersistenceLevelsList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions                SEQUENCE {}                       OPTIONAL
}

```



```

SysInfoType10 ::=
    -- User equipment IEs
    drac-SysInfoList          DRAC-SysInfoList,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions    SEQUENCE {}
    OPTIONAL
}

SysInfoType11 ::=
    sib12indicator          BOOLEAN,
    -- Measurement IEs
    fach-MeasurementOccasionInfo  FACH-MeasurementOccasionInfo    OPTIONAL,
    measurementControlSysInfo    MeasurementControlSysInfo,
    -- Extension mechanism for non- release99 information
    v4b0NonCriticalExtensions    SEQUENCE {
        sysInfoType11-v4b0ext    SysInfoType11-v4b0ext-IEs    OPTIONAL,
        v5xyv590NonCriticalExtension SEQUENCE {
            sysInfoType11-v5xyv590ext SysInfoType11-v5xyv590ext-IEs,
            nonCriticalExtensions    SEQUENCE {}
            OPTIONAL
        }
    }
    OPTIONAL
}

SysInfoType11-v4b0ext-IEs ::= SEQUENCE {
    fach-MeasurementOccasionInfo-LCR-Ext  FACH-MeasurementOccasionInfo-LCR-r4-ext  OPTIONAL,
    measurementControlSysInfo-LCR        MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType11-v5xyv590ext-IEs ::= SEQUENCE {
    --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
    newIntraFrequencyCellInfoList-v5xyv590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellSelectReselectInfo-v5xyExtv590ext  OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
    newInterFrequencyCellInfoList-v5xyv590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellSelectReselectInfo-v5xyExtv590ext  OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterRATCellInfoList
    newInterRATCellInfoList-v5xyv590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellSelectReselectInfo-v5xyExtv590ext  OPTIONAL,
    intraFreqEventCriteriaList-v5xyv590ext  Intra-FreqEventCriteriaList-v5xyv590ext
    OPTIONAL,
    intraFreqReportingCriteria-lb-r5        IntraFreqReportingCriteria-lb-r5    OPTIONAL,
    intraFreqEvent-lb-r5                    IntraFreqEvent-lb-r5              OPTIONAL
}

SysInfoType12 ::=
    -- Measurement IEs
    fach-MeasurementOccasionInfo  FACH-MeasurementOccasionInfo    OPTIONAL,
    measurementControlSysInfo    MeasurementControlSysInfo,
    -- Extension mechanism for non- release99 information
    v4b0NonCriticalExtensions    SEQUENCE {
        sysInfoType12-v4b0ext    SysInfoType12-v4b0ext-IEs    OPTIONAL,
        v5xyv590NonCriticalExtension SEQUENCE {
            sysInfoType12-v5xyv590ext SysInfoType12-v5xyv590ext-IEs,
            nonCriticalExtensions    SEQUENCE {}
            OPTIONAL
        }
    }
    OPTIONAL
}

SysInfoType12-v4b0ext-IEs ::= SEQUENCE {
    fach-MeasurementOccasionInfo-LCR-Ext  FACH-MeasurementOccasionInfo-LCR-r4-ext  OPTIONAL,
    measurementControlSysInfo-LCR        MeasurementControlSysInfo-LCR-r4-ext
}

SysInfoType12-v5xyv590ext-IEs ::= SEQUENCE {
    --The order of the list corresponds to the order of cell in newIntraFrequencyCellInfoList
    newIntraFrequencyCellInfoList-v5xyv590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellSelectReselectInfo-v5xyExtv590ext  OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterFrequencyCellInfoList
    newInterFrequencyCellInfoList-v5xyv590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellSelectReselectInfo-v5xyExtv590ext  OPTIONAL,
    --The order of the list corresponds to the order of cell in newInterRATCellInfoList
    newInterRATCellInfoList-v5xyv590ext SEQUENCE (SIZE (1..maxCellMeas)) OF
        CellSelectReselectInfo-v5xyExtv590ext  OPTIONAL,
    intraFreqEventCriteriaList-v5xyv590ext  Intra-FreqEventCriteriaList-v5xyv590ext
    OPTIONAL,
    intraFreqReportingCriteria-lb-r5        IntraFreqReportingCriteria-lb-r5    OPTIONAL,
    intraFreqEvent-lb-r5                    IntraFreqEvent-lb-r5              OPTIONAL
}

```

```

SysInfoType13 ::=
    -- Core network IEs
    cn-DomainSysInfoList          CN-DomainSysInfoList,
    -- User equipment IEs
    ue-IdleTimersAndConstants      UE-IdleTimersAndConstants          OPTIONAL,
    capabilityUpdateRequirement    CapabilityUpdateRequirement        OPTIONAL,
    -- Extension mechanism for non- release99 information
    v3a0NonCriticalExtensions      SEQUENCE {
        sysInfoType13-v3a0ext      SysInfoType13-v3a0ext-IEs,
        v4b0NonCriticalExtensions  SEQUENCE {
            sysInfoType13-v4b0ext  SysInfoType13-v4b0ext-IEs,
            -- Extension mechanism for non- release99 information
            nonCriticalExtensions  SEQUENCE {}                                OPTIONAL
        }
    }
    OPTIONAL
}

SysInfoType13-v3a0ext-IEs ::= SEQUENCE {
    ue-IdleTimersAndConstants-v3a0ext  UE-IdleTimersAndConstants-v3a0ext
}

SysInfoType13-v4b0ext-IEs ::= SEQUENCE {
    capabilityUpdateRequirement-r4Ext  CapabilityUpdateRequirement-r4-ext  OPTIONAL
}

SysInfoType13-1 ::=
    -- ANSI-41 IEs
    ansi-41-RAND-Information          ANSI-41-RAND-Information,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {}                                OPTIONAL
}

SysInfoType13-2 ::=
    -- ANSI-41 IEs
    ansi-41-UserZoneID-Information    ANSI-41-UserZoneID-Information,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {}                                OPTIONAL
}

SysInfoType13-3 ::=
    -- ANSI-41 IEs
    ansi-41-PrivateNeighbourListInfo  ANSI-41-PrivateNeighbourListInfo,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {}                                OPTIONAL
}

SysInfoType13-4 ::=
    -- ANSI-41 IEs
    ansi-41-GlobalServiceRedirectInfo ANSI-41-GlobalServiceRedirectInfo,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {}                                OPTIONAL
}

SysInfoType14 ::=
    -- Physical channel IEs
    individualTS-InterferenceList     IndividualTS-InterferenceList,
    expirationTimeFactor               ExpirationTimeFactor          OPTIONAL,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions              SEQUENCE {}                                OPTIONAL
}

SysInfoType15 ::=
    -- Measurement IEs

    ue-positioning-GPS-CipherParameters  UE-Positioning-CipherParameters  OPTIONAL,
    ue-positioning-GPS-ReferenceLocation  ReferenceLocation,
    ue-positioning-GPS-ReferenceTime      UE-Positioning-GPS-ReferenceTime,

    ue-positioning-GPS-Real-timeIntegrity  BadSatList                      OPTIONAL,
    -- Extension mechanism for non- release99 information
    v4b0NonCriticalExtensions            SEQUENCE {
        sysInfoType15-v4b0ext            SysInfoType15-v4b0ext-IEs,
        -- Extension mechanism for non- release4 information
        nonCriticalExtensions              SEQUENCE {}                                OPTIONAL
    }
    OPTIONAL
}

```

```

SysInfoType15-v4b0ext-IEs ::= SEQUENCE {
    up-Ipdl-Parameters-TDD          UE-Positioning-IPDL-Parameters-TDD-r4-ext    OPTIONAL
}

SysInfoType15-1 ::=
    -- DGPS corrections
    ue-positioning-GPS-DGPS-Corrections          UE-Positioning-GPS-DGPS-Corrections,

    -- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {}          OPTIONAL
}

SysInfoType15-2 ::=
    -- Ephemeris and clock corrections
    transmissionTOW          INTEGER (0..604799),
    satID                    SatID,
    ephemerisParameter      EphemerisParameter,

    -- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {}          OPTIONAL
}

SysInfoType15-3 ::=
    -- 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 ::=
    -- Measurement IEs
    ue-positioning-OTDOA-CipherParameters          UE-Positioning-CipherParameters          OPTIONAL,
    ue-positioning-OTDOA-AssistanceData          UE-Positioning-OTDOA-AssistanceData,
    v3a0NonCriticalExtensions          SEQUENCE {
        sysInfoType15-4-v3a0ext          SysInfoType15-4-v3a0ext,
        -- Extension mechanism for non- release99 information
        v4b0NonCriticalExtensions          SEQUENCE {
            sysInfoType15-4-v4b0ext          SysInfoType15-4-v4b0ext,
            nonCriticalExtensions          SEQUENCE {}          OPTIONAL
        }
    }
    OPTIONAL
}

SysInfoType15-4-v3a0ext ::= SEQUENCE {
    sfn-Offset-Validity          SFN-Offset-Validity          OPTIONAL
}

SysInfoType15-4-v4b0ext ::= SEQUENCE {
    ue-Positioning-OTDOA-AssistanceData-r4ext          UE-Positioning-OTDOA-AssistanceData-r4ext    OPTIONAL
}

SysInfoType15-5 ::=
    -- 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 ::=
    -- Radio bearer IEs
    preDefinedRadioConfiguration          PreDefRadioConfiguration,
    -- Extension mechanism for non- release99 information
    nonCriticalExtensions          SEQUENCE {}          OPTIONAL

```

```

}

SysInfoType17 ::=
    SEQUENCE {
        -- Physical channel IEs
        -- If PDSCH/PUSCH is configured for 1.28Mcps TDD, pusch-SysInfoList and
        -- pdsch-SysInfoList should be absent and the info included in the
        -- tddl28SpecificInfo instead.
        -- If PDSCH/PUSCH is configured for 3.84Mcps TDD in R5, HCR-r5-SpecificInfo should also be
        -- included.
        pusch-SysInfoList          PUSCH-SysInfoList          OPTIONAL,
        pdsch-SysInfoList          PDSCH-SysInfoList          OPTIONAL,
        -- Extension mechanism for non- release99 information
        v4b0NonCriticalExtensions SEQUENCE {
            sysInfoType17-v4b0ext SysInfoType17-v4b0ext-IEs,
            v5xyv590NonCriticalExtensions SEQUENCE {
                sysInfoType17-v5xyv590ext SysInfoType17-v5xyv590ext-IEs OPTIONAL,
                nonCriticalExtensions SEQUENCE {} OPTIONAL
            }
        } OPTIONAL
    }

SysInfoType17-v4b0ext-IEs ::= SEQUENCE {
    tddl28SpecificInfo SEQUENCE {
        pusch-SysInfoList PUSCH-SysInfoList-LCR-r4 OPTIONAL,
        pdsch-SysInfoList PDSCH-SysInfoList-LCR-r4 OPTIONAL
    }
}

SysInfoType17-v5xyv590ext-IEs ::= SEQUENCE {
    hcr-r5-SpecificInfo SEQUENCE {
        pusch-SysInfoList PUSCH-SysInfoList-HCR-r5 OPTIONAL,
        pdsch-SysInfoList PDSCH-SysInfoList-HCR-r5 OPTIONAL
    }
}

SysInfoType18 ::=
    SEQUENCE {
        idleModePLMNIdentities PLMNIdentitiesOfNeighbourCells OPTIONAL,
        connectedModePLMNIdentities PLMNIdentitiesOfNeighbourCells OPTIONAL,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    }

SysInfoTypeSB1 ::=
    SEQUENCE {
        -- Other IEs
        sib-ReferenceList SIB-ReferenceList,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    }

SysInfoTypeSB2 ::=
    SEQUENCE {
        -- Other IEs
        sib-ReferenceList SIB-ReferenceList,
        -- Extension mechanism for non- release99 information
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    }

TDD-UMTS-Frequency-List ::=
    SEQUENCE (SIZE (1..maxNumTDDFreqs)) OF
        FrequencyInfoTDD

-- *****
--
-- ANSI-41 INFORMATION ELEMENTS (10.3.9)
--
-- *****

ANSI-41-GlobalServiceRedirectInfo ::= ANSI-41-NAS-Parameter
ANSI-41-PrivateNeighbourListInfo ::= ANSI-41-NAS-Parameter
ANSI-41-RAND-Information ::= ANSI-41-NAS-Parameter
ANSI-41-UserZoneID-Information ::= ANSI-41-NAS-Parameter
ANSI-41-NAS-Parameter ::= BIT STRING (SIZE (1..2048))

Min-P-REV ::= BIT STRING (SIZE (8))

NAS-SystemInformationANSI-41 ::= ANSI-41-NAS-Parameter
NID ::= BIT STRING (SIZE (16))

P-REV ::= BIT STRING (SIZE (8))

```

```
SID ::= BIT STRING (SIZE (15))

END
```

11.4 Constant definitions

```
Constant-definitions DEFINITIONS AUTOMATIC TAGS ::=
```

```
BEGIN
```

```
hiPDSCHidentities INTEGER ::= 64
hiPUSCHidentities INTEGER ::= 64
hiRM INTEGER ::= 256
maxAC INTEGER ::= 16
maxAdditionalMeas INTEGER ::= 4
maxASC INTEGER ::= 8
maxASCmap INTEGER ::= 7
maxASCpersist INTEGER ::= 6
maxCCTrCH INTEGER ::= 8
maxCellMeas INTEGER ::= 32
maxCellMeas-1 INTEGER ::= 31
maxCNdomains INTEGER ::= 4
maxCPCHsets INTEGER ::= 16
maxDPCH-DLchan INTEGER ::= 8
maxDPDCH-UL INTEGER ::= 6
maxDRACclasses INTEGER ::= 8
maxFACHPCH INTEGER ::= 8
maxFreq INTEGER ::= 8
maxFreqBandsFDD INTEGER ::= 8
maxFreqBandsTDD INTEGER ::= 4
maxFreqBandsGSM INTEGER ::= 16
maxGERAN-SI INTEGER ::= 8
maxGSMTargetCells INTEGER ::= 32
maxHProcesses INTEGER ::= 8
maxHSDSCHTBIIndex INTEGER ::= 64
maxHSDSCHTBIIndex-tdd384 INTEGER ::= 512
maxHSSCCHs INTEGER ::= 4
maxInterSysMessages INTEGER ::= 4
maxLoCHperRLC INTEGER ::= 2
maxMAC-d-PDUsizes INTEGER ::= 8
maxMeasEvent INTEGER ::= 8
maxMeasIntervals INTEGER ::= 3
maxMeasParEvent INTEGER ::= 2
maxNumCDMA2000Freqs INTEGER ::= 8
maxNumGSMFreqRanges INTEGER ::= 32
maxNumFDDFreqs INTEGER ::= 8
maxNumTDDFreqs INTEGER ::= 8
maxNoOfMeas INTEGER ::= 16
maxOtherRAT INTEGER ::= 15
maxOtherRAT-16 INTEGER ::= 16
maxPage1 INTEGER ::= 8
maxPCPCH-APsig INTEGER ::= 16
maxPCPCH-APsubCh INTEGER ::= 12
maxPCPCH-CDsig INTEGER ::= 16
maxPCPCH-CDsubCh INTEGER ::= 12
maxPCPCH-SF INTEGER ::= 7
maxPCPCHs INTEGER ::= 64
maxPDCPAlgoType INTEGER ::= 8
maxPDSCH INTEGER ::= 8
maxPDSCH-TFCIgroups INTEGER ::= 256
maxPRACH INTEGER ::= 16
maxPRACH-FPACH INTEGER ::= 8
maxPredefConfig INTEGER ::= 16
maxPUSCH INTEGER ::= 8
maxQueueIDs INTEGER ::= 8
maxRABsetup INTEGER ::= 16
maxRAT INTEGER ::= 16
maxRB INTEGER ::= 32
maxRBallRABs INTEGER ::= 27
maxRBMuxOptions INTEGER ::= 8
maxRBperRAB INTEGER ::= 8
maxReportedGSMCells INTEGER ::= 8
maxRL INTEGER ::= 8
maxRL-1 INTEGER ::= 7
maxRFC3095-CID INTEGER ::= 16384
maxROHC-PacketSizes-r4 INTEGER ::= 16
maxROHC-Profile-r4 INTEGER ::= 8
```

```

maxSat                INTEGER ::= 16
maxSCCPCH             INTEGER ::= 16
maxSIB                INTEGER ::= 32
maxSIB-FACH           INTEGER ::= 8
maxSIBperMsg          INTEGER ::= 16
maxSRBsetup           INTEGER ::= 8
maxSystemCapability   INTEGER ::= 16
maxTF                 INTEGER ::= 32
maxTF-CPCH           INTEGER ::= 16
maxTFC                INTEGER ::= 1024
maxTFCsub             INTEGER ::= 1024
maxTF-CI-2-Combs     INTEGER ::= 512
maxTGPS              INTEGER ::= 6
maxTrCH              INTEGER ::= 32
-- maxTrCHpreconf should be 16 but has been set to 32 for compatibility
maxTrCHpreconf        INTEGER ::= 32
maxTS                 INTEGER ::= 14
maxTS-1               INTEGER ::= 13
maxTS-2               INTEGER ::= 12
maxTS-LCR             INTEGER ::= 6
maxTS-LCR-1           INTEGER ::= 5
maxURA                INTEGER ::= 8
maxURN-TI-Group       INTEGER ::= 8

END

```

11.5 RRC information between network nodes

```
Internode-definitions DEFINITIONS AUTOMATIC TAGS ::=
```

```
BEGIN
```

```
IMPORTS
```

```

    HandoverToUTRANCommand,
    MeasurementReport,
    PhysicalChannelReconfiguration,
    RadioBearerReconfiguration,
    RadioBearerRelease,
    RadioBearerSetup,
    RRC-FailureInfo,
    TransportChannelReconfiguration
FROM PDU-definitions

-- Core Network IEs :
    CN-DomainIdentity,
    CN-DomainInformationList,
    CN-DomainInformationListFull,
    CN-DRX-CycleLengthCoefficient,
    NAS-SystemInformationGSM-MAP,
-- UTRAN Mobility IEs :
    CellIdentity,
    URA-Identity,
-- User Equipment IEs :
    AccessStratumReleaseIndicator,
    C-RNTI,
    ChipRateCapability,
    DL-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-PowerClassExt,
UE-RadioAccessCapabBandFDDList,
UE-RadioAccessCapability,
UE-RadioAccessCapability-v370ext,
UE-RadioAccessCapability-v380ext,
UE-RadioAccessCapability-v3a0ext,
UE-RadioAccessCapability-v3g0ext,
UE-RadioAccessCapability-v4b0ext,
UE-RadioAccessCapability-v5xyv590ext,
UL-PhysChCapabilityFDD,
UL-PhysChCapabilityTDD,
UL-PhysChCapabilityTDD-LCR-r4,
-- Radio Bearer IEs :
  PredefinedConfigStatusList,
  PredefinedConfigValueTag,
  RAB-InformationSetupList,
  RAB-InformationSetupList-r4,
  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,
-- Physical Channel IEs :
  PrimaryCPICH-Info,
  TPC-CombinationIndex,
-- Measurement IEs :
  MeasurementIdentity,
  MeasurementReportingMode,
  MeasurementType,
  MeasurementType-r4,
  AdditionalMeasurementID-List,
  PositionEstimate,
-- Other IEs :
  InterRAT-UE-RadioAccessCapabilityList,
  InterRAT-UE-RadioAccessCapability-v5xyv590ext,
  UESpecificBehaviourInformationIdle,
  UESpecificBehaviourInformationInterRAT

FROM InformationElements

  maxCNdomains,
  maxNoOfMeas,

  maxRB,
  maxRBallRABs,
  maxRFC3095-CID,
  maxSRBsetup,
  maxRL

FROM Constant-definitions
;

-- Part 1: Class definitions similar to what has been defined in 11.1 for RRC messages
-- Information that is tranferred in the same direction and across the same path is grouped

-- *****
--
-- RRC information, to target RNC
--
-- *****
-- RRC Information to target RNC sent either from source RNC or from another RAT

ToTargetRNC-Container ::= CHOICE {
  interRATHandoverInfo          InterRATHandoverInfoWithInterRATCapabilities-r3,
  srncRelocation                SRNC-RelocationInfo-r3,
  rfc3095-ContextInfo           RFC3095-ContextInfo-r5,
  extension                     NULL
}

-- *****

```

```

--
-- RRC information, target RNC to source RNC
--
-- *****

TargetRNC-ToSourceRNC-Container ::= CHOICE {
    radioBearerSetup          RadioBearerSetup,
    radioBearerReconfiguration RadioBearerReconfiguration,
    radioBearerRelease        RadioBearerRelease,
    transportChannelReconfiguration TransportChannelReconfiguration,
    physicalChannelReconfiguration PhysicalChannelReconfiguration,
    rrc-FailureInfo           RRC-FailureInfo,
    -- IE dl-DCCHmessage consists of an octet string that includes the IE DL-DCCH-Message
    dl-DCCHmessage            OCTET STRING,
    extension                  NULL
}

-- Part 2: Container definitions, similar to the PDU definitions in 11.2 for RRC messages
-- In alphabetical order

-- *****
--
-- Handover to UTRAN information
--
-- *****

InterRATHandoverInfoWithInterRATCapabilities-r3 ::= CHOICE {
    r3 SEQUENCE {
        -- IE InterRATHandoverInfoWithInterRATCapabilities-r3-IEs also
        -- includes non critical extensions
        interRATHandoverInfo-r3 InterRATHandoverInfoWithInterRATCapabilities-r3-IEs,
        v390NonCriticalExtensions SEQUENCE {
            interRATHandoverInfoWithInterRATCapabilities-v390ext
        }
        InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs,
        -- Reserved for future non critical extension
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
    criticalExtensions SEQUENCE {}
}

InterRATHandoverInfoWithInterRATCapabilities-r3-IEs ::= SEQUENCE {
    -- The order of the IEs may not reflect the tabular format
    -- but has been chosen to simplify the handling of the information in the BSC
    -- Other IEs
    ue-RATSpecificCapability InterRAT-UE-RadioAccessCapabilityList OPTIONAL,
    -- interRATHandoverInfo, Octet string is used to obtain 8 bit length field prior to
    -- actual information. This makes it possible for BSS to transparently handle information
    -- received via GSM air interface even when it includes non critical extensions.
    -- The octet string shall include the InterRATHandoverInfo information
    -- The BSS can re-use the 04.18 length field received from the MS
    interRATHandoverInfo OCTET STRING (SIZE (0..255))
}

InterRATHandoverInfoWithInterRATCapabilities-v390ext-IEs ::= SEQUENCE {
    -- User equipment IEs
    failureCauseWithProtErr FailureCauseWithProtErr OPTIONAL
}

-- *****
--
-- RFC3095 context, source RNC to target RNC
--
-- *****

RFC3095-ContextInfo-r5 ::= CHOICE {
    r5 SEQUENCE {
        rFC3095-ContextInfoList-r5 RFC3095-ContextInfoList-r5,
        -- Reserved for future non critical extension
        nonCriticalExtensions SEQUENCE {} OPTIONAL
    },
    criticalExtensions SEQUENCE {}
}

RFC3095-ContextInfoList-r5 ::= SEQUENCE (SIZE (1..maxRBallRABS)) OF
    RFC3095-ContextInfo

```



```

-- *****
--
-- SRNC Relocation information
--
-- *****

SRNC-RelocationInfo-r3 ::= CHOICE {
  r3
    SEQUENCE {
      SRNC-RelocationInfo-r3
      SRNC-RelocationInfo-r3-IEs,
      v380NonCriticalExtensions
      SEQUENCE {
        SRNC-RelocationInfo-v380ext
        SRNC-RelocationInfo-v380ext-IEs,
        -- Reserved for future non critical extension
        v390NonCriticalExtensions
        SEQUENCE {
          SRNC-RelocationInfo-v390ext
          SRNC-RelocationInfo-v390ext-IEs,
          v3a0NonCriticalExtensions
          SEQUENCE {
            SRNC-RelocationInfo-v3a0ext
            SRNC-RelocationInfo-v3a0ext-IEs,
            v3b0NonCriticalExtensions
            SEQUENCE {
              SRNC-RelocationInfo-v3b0ext
              SRNC-RelocationInfo-v3b0ext-IEs,
              v3c0NonCriticalExtensions
              SEQUENCE {
                SRNC-RelocationInfo-v3c0ext
                SRNC-RelocationInfo-v3c0ext-IEs,
                laterNonCriticalExtensions
                SEQUENCE {
                  SRNC-RelocationInfo-v3d0ext
                  SRNC-RelocationInfo-v3d0ext-
IEs,
                  -- Container for additional R99 extensions
                  SRNC-RelocationInfo-r3-add-ext
                  BIT STRING
                  (CONTAINING SRNC-RelocationInfo-v3h0ext-IEs)
                  OPTIONAL,
                  v3g0NonCriticalExtensions
                  SEQUENCE {
                    SRNC-RelocationInfo-v3g0ext
                    SRNC-RelocationInfo-v3g0ext-IEs,
                    v4b0NonCriticalExtensions
                    SEQUENCE {
                      SRNC-RelocationInfo-v4b0ext
                      SRNC-RelocationInfo-v4b0ext-IEs,
                      v5xyv590NonCriticalExtensions
                      SEQUENCE {
                        SRNC-RelocationInfo-v5xyv590ext
                        SRNC-
RelocationInfo-v5xyv590ext-IEs,
                        -- Reserved for future non critical extension
                        nonCriticalExtensions
                        SEQUENCE {} OPTIONAL
                      }
                    } OPTIONAL
                  } OPTIONAL
                } OPTIONAL
              } OPTIONAL
            } OPTIONAL
          } OPTIONAL
        } OPTIONAL
      } OPTIONAL
    },
    later-than-r3
    CHOICE {
      r4
        SEQUENCE {
          SRNC-RelocationInfo-r4
          SRNC-RelocationInfo-r4-IEs,
          v4d0NonCriticalExtensions
          SEQUENCE {
            SRNC-RelocationInfo-v4c0ext
            SRNC-RelocationInfo-v4c0ext-IEs,
            -- Container for adding non critical extensions after freezing REL-5
            SRNC-RelocationInfo-r4-add-ext
            BIT STRING
            OPTIONAL,
            v5xyv590NonCriticalExtensions
            SEQUENCE {
              SRNC-RelocationInfo-v5xyv590ext
              SRNC-RelocationInfo-v5xyv590ext-IEs,
              nonCriticalExtensions
              SEQUENCE {} OPTIONAL
            } OPTIONAL
          } OPTIONAL
        } OPTIONAL
      },
      criticalExtensions
      SEQUENCE {}
    }
  }
}

SRNC-RelocationInfo-r3-IEs ::= SEQUENCE {
  -- Non-RRC IEs
  stateOfRRC
  StateOfRRC,
  stateOfRRC-Procedure
  StateOfRRC-Procedure,
  -- Ciphering related information IEs
  -- If the extension v380 is included use the extension for the ciphering status per CN domain
  cipheringStatus
  CipheringStatus,
  calculationTimeForCiphering
  CalculationTimeForCiphering
  OPTIONAL,
  -- The order of occurrence in the IE cipheringInfoPerRB-List is the
  -- same as the RBs in SRB-InformationSetupList in RAB-InformationSetupList.
  -- The signalling RBs are supposed to be listed
  -- first. Only UM and AM RBs that are ciphered are listed here
  cipheringInfoPerRB-List
  CipheringInfoPerRB-List
  OPTIONAL,
  count-C-List
  COUNT-C-List
  OPTIONAL,
}

```

```

integrityProtectionStatus      IntegrityProtectionStatus,
-- In the IE srb-SpecificIntegrityProtInfo, the first information listed corresponds to
-- signalling radio bearer RB0 and after the order of occurrence is the same as the SRBs in
-- SRB-InformationSetupList
srb-SpecificIntegrityProtInfo  SRB-SpecificIntegrityProtInfoList,
implementationSpecificParams  ImplementationSpecificParams      OPTIONAL,
-- User equipment IES
u-RNTI                          U-RNTI,
c-RNTI                          C-RNTI                                OPTIONAL,
ue-RadioAccessCapability        UE-RadioAccessCapability,
ue-Positioning-LastKnownPos    UE-Positioning-LastKnownPos        OPTIONAL,
-- Other IES
ue-RATSpecificCapability        InterRAT-UE-RadioAccessCapabilityList  OPTIONAL,
-- UTRAN mobility IES
ura-Identity                    URA-Identity                        OPTIONAL,
-- Core network IES
cn-CommonGSM-MAP-NAS-SysInfo   NAS-SystemInformationGSM-MAP,
cn-DomainInformationList       CN-DomainInformationList            OPTIONAL,
-- Measurement IES
ongoingMeasRepList             OngoingMeasRepList                 OPTIONAL,
-- Radio bearer IES
predefinedConfigStatusList     PredefinedConfigStatusList,
srb-InformationList            SRB-InformationSetupList,
rab-InformationList            RAB-InformationSetupList            OPTIONAL,
-- Transport channel IES
ul-CommonTransChInfo           UL-CommonTransChInfo               OPTIONAL,
ul-TransChInfoList            UL-AddReconfTransChInfoList        OPTIONAL,
modeSpecificInfo               CHOICE {
    fdd                          SEQUENCE {
        cpch-SetID              CPCH-SetID                        OPTIONAL,
        transChDRAC-Info        DRAC-StaticInformationList        OPTIONAL
    },
    tdd                          NULL
},
dl-CommonTransChInfo           DL-CommonTransChInfo               OPTIONAL,
dl-TransChInfoList            DL-AddReconfTransChInfoList        OPTIONAL,
-- Measurement report
measurementReport              MeasurementReport                   OPTIONAL
}

SRNC-RelocationInfo-v380ext-IEs ::= SEQUENCE {
-- Ciphering related information IES
cn-DomainIdentity              CN-DomainIdentity,
cipheringStatusList            CipheringStatusList
}

SRNC-RelocationInfo-v390ext-IEs ::= SEQUENCE {
cn-DomainInformationList-v390ext  CN-DomainInformationList-v390ext    OPTIONAL,
ue-RadioAccessCapability-v370ext  UE-RadioAccessCapability-v370ext    OPTIONAL,
ue-RadioAccessCapability-v380ext  UE-RadioAccessCapability-v380ext    OPTIONAL,
dl-PhysChCapabilityFDD-v380ext    DL-PhysChCapabilityFDD-v380ext,
failureCauseWithProtErr          FailureCauseWithProtErr             OPTIONAL
}

SRNC-RelocationInfo-v3a0ext-IEs ::= SEQUENCE {
cipheringInfoForSRB1-v3a0ext     CipheringInfoPerRB-List-v3a0ext,
ue-RadioAccessCapability-v3a0ext  UE-RadioAccessCapability-v3a0ext    OPTIONAL,
-- cn-domain identity for IE startValueForCiphering-v3a0ext is specified
-- in subsequent extension (SRNC-RelocationInfo-v3b0ext-IEs)
startValueForCiphering-v3a0ext    START-Value
}

SRNC-RelocationInfo-v3b0ext-IEs ::= SEQUENCE {
-- cn-domain identity for IE startValueForCiphering-v3a0ext included in previous extension
cn-DomainIdentity              CN-DomainIdentity,
-- the IE startValueForCiphering-v3b0ext contains the start values for each CN Domain. The
-- value of start indicated by the IE startValueForCiphering-v3a0ext should be set to the
-- same value as the start-Value for the corresponding cn-DomainIdentity in the IE
-- startValueForCiphering-v3b0ext
startValueForCiphering-v3b0ext    STARTList2                          OPTIONAL
}

SRNC-RelocationInfo-v3c0ext-IEs ::= SEQUENCE {
-- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
-- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
-- Only included if type is "UE involved"
rb-IdentityForHOMessage         RB-Identity                          OPTIONAL
}

```

```

SRNC-RelocationInfo-v3d0ext-IEs ::= SEQUENCE {
  -- User equipment IEs
  ueSpecificBehaviourInformationIdle      UESpecificBehaviourInformationIdle      OPTIONAL,
  ueSpecificBehaviourInformationInterRAT  UESpecificBehaviourInformationInterRAT
  OPTIONAL
}

SRNC-RelocationInfo-v3g0ext-IEs ::= SEQUENCE {
  ue-RadioAccessCapability-v3g0ext      UE-RadioAccessCapability-v3g0ext      OPTIONAL
}

SRNC-RelocationInfo-v3h0ext-IEs ::= SEQUENCE {
  tpc-CombinationInfoList                TPC-CombinationInfoList                OPTIONAL,
  nonCriticalExtension                    SEQUENCE {}                            OPTIONAL
}

SRNC-RelocationInfo-v4c0ext-IEs ::= SEQUENCE {
  tpc-CombinationInfoList                TPC-CombinationInfoList                OPTIONAL
}

TPC-CombinationInfoList ::= SEQUENCE (SIZE (1..maxRL)) OF
  TPC-Combination-Info

STARTList2 ::=
  SEQUENCE (SIZE (2..maxCNdomains)) OF
  STARTSingle

SRNC-RelocationInfo-v4b0ext-IEs ::= SEQUENCE {
  ue-RadioAccessCapability-v4b0ext      UE-RadioAccessCapability-v4b0ext
}

SRNC-RelocationInfo-v5xyv590ext-IEs ::= SEQUENCE {
  ue-RadioAccessCapability-v5xyv590ext  UE-RadioAccessCapability-v5xyv590ext,
  ue-RATSpecificCapability-v5xyv590ext  InterRAT-UE-RadioAccessCapability-v5xyv590ext
  OPTIONAL
}

CipheringInfoPerRB-List-v3a0ext ::= SEQUENCE {
  dl-UM-SN                               BIT STRING (SIZE (7))
}

CipheringStatusList ::=
  SEQUENCE (SIZE (1..maxCNdomains)) OF
  CipheringStatusCNDomain

CipheringStatusCNDomain ::=
  SEQUENCE {
  cn-DomainIdentity                      CN-DomainIdentity,
  cipheringStatus                        CipheringStatus
}

SRNC-RelocationInfo-r4-IEs ::=
  SEQUENCE {
  -- Non-RRC IEs
  -- IE rb-IdentityForHOMessage includes the identity of the RB used by the source SRNC
  -- to send the message contained in the IE "TargetRNC-ToSourceRNC-Container".
  -- Only included if type is "UE involved"
  rb-IdentityForHOMessage                RB-Identity                            OPTIONAL,
  stateOfRRC                             StateOfRRC,
  stateOfRRC-Procedure                   StateOfRRC-Procedure,
  -- Ciphering related information IEs
  cipheringStatusList                    CipheringStatusList-r4,
  latestConfiguredCN-Domain              CN-DomainIdentity,
  calculationTimeForCiphering             CalculationTimeForCiphering              OPTIONAL,
  count-C-List                            COUNT-C-List                            OPTIONAL,
  cipheringInfoPerRB-List                 CipheringInfoPerRB-List-r4              OPTIONAL,
  -- Integrity protection related information IEs
  integrityProtectionStatus               IntegrityProtectionStatus,
  srb-SpecificIntegrityProtInfo           SRB-SpecificIntegrityProtInfoList,
  implementationSpecificParams            ImplementationSpecificParams            OPTIONAL,
  -- User equipment IEs
  u-RNTI                                  U-RNTI,
  c-RNTI                                  C-RNTI                                  OPTIONAL,
  ue-RadioAccessCapability                UE-RadioAccessCapability-r4,
  ue-RadioAccessCapability-ext            UE-RadioAccessCapabBandFDDList         OPTIONAL,
  ue-Positioning-LastKnownPos             UE-Positioning-LastKnownPos             OPTIONAL,
  ueSpecificBehaviourInformationIdle      UESpecificBehaviourInformationIdle      OPTIONAL,
  ueSpecificBehaviourInformationInterRAT  UESpecificBehaviourInformationInterRAT
  OPTIONAL,
  -- Other IEs
  ue-RATSpecificCapability                InterRAT-UE-RadioAccessCapabilityList    OPTIONAL,

```

```

-- UTRAN mobility IEs
ura-Identity                                URA-Identity                                OPTIONAL,
-- Core network IEs
cn-CommonGSM-MAP-NAS-SysInfo               NAS-SystemInformationGSM-MAP,
cn-DomainInformationList                   CN-DomainInformationListFull                OPTIONAL,
-- Measurement IEs
ongoingMeasRepList                         OngoingMeasRepList-r4                      OPTIONAL,
-- Radio bearer IEs
predefinedConfigStatusList                 PredefinedConfigStatusList,
srb-InformationList                         SRB-InformationSetupList,
rab-InformationList                         RAB-InformationSetupList-r4                OPTIONAL,
-- Transport channel IEs
ul-CommonTransChInfo                       UL-CommonTransChInfo-r4                    OPTIONAL,
ul-TransChInfoList                         UL-AddReconfTransChInfoList               OPTIONAL,
modeSpecificInfo                           CHOICE {
    fdd                                     SEQUENCE {
        cpch-SetID                         CPCH-SetID                                OPTIONAL,
        transChDRAC-Info                   DRAC-StaticInformationList                OPTIONAL
    },
    tdd                                     NULL
}
dl-CommonTransChInfo                       DL-CommonTransChInfo-r4                    OPTIONAL,
dl-TransChInfoList                         DL-AddReconfTransChInfoList-r4            OPTIONAL,
-- Measurement report
measurementReport                           MeasurementReport                           OPTIONAL,
failureCause                               FailureCauseWithProtErr                     OPTIONAL
}

-- IE definitions

CalculationTimeForCipherring ::= SEQUENCE {
    cell-Id                                  CellIdentity,
    sfn                                       INTEGER (0..4095)
}

CipherringInfoPerRB ::= SEQUENCE {
    dl-HFN                                    BIT STRING (SIZE (20..25)),
    ul-HFN                                    BIT STRING (SIZE (20..25))
}

CipherringInfoPerRB-r4 ::= SEQUENCE {
    rb-Identity                              RB-Identity,
    dl-HFN                                    BIT STRING (SIZE (20..25)),
    dl-UM-SN                                 BIT STRING (SIZE (7))                      OPTIONAL,
    ul-HFN                                    BIT STRING (SIZE (20..25))
}

-- TABULAR: CipherringInfoPerRB-List, multiplicity value numberOfRadioBearers
-- has been replaced with maxRB.
CipherringInfoPerRB-List ::= SEQUENCE (SIZE (1..maxRB)) OF
    CipherringInfoPerRB

CipherringInfoPerRB-List-r4 ::= SEQUENCE (SIZE (1..maxRB)) OF
    CipherringInfoPerRB-r4

CipherringStatus ::= ENUMERATED {
    started, notStarted }

CipherringStatusList-r4 ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CipherringStatusCNdomain-r4

CipherringStatusCNdomain-r4 ::= SEQUENCE {
    cn-DomainIdentity                       CN-DomainIdentity,
    cipherringStatus                         CipherringStatus,
    start-Value                              START-Value
}

CN-DomainInformation-v390ext ::= SEQUENCE {
    cn-DRX-CycleLengthCoeff                 CN-DRX-CycleLengthCoefficient
}

CN-DomainInformationList-v390ext ::= SEQUENCE (SIZE (1..maxCNdomains)) OF
    CN-DomainInformation-v390ext

CompressedModeMeasCapability-r4 ::= SEQUENCE {
    fdd-Measurements                         BOOLEAN,
    -- TABULAR: The IEs tdd-Measurements, gsm-Measurements and multiCarrierMeasurements
}

```



```

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-PowerClassExt,
        txRxFrequencySeparation        TxRxFrequencySeparation
    } OPTIONAL,
    tdd384-RF-Capability                SEQUENCE {
        ue-PowerClass                  UE-PowerClassExt,
        radioFrequencyBandTDDList      RadioFrequencyBandTDDList,
        chipRateCapability              ChipRateCapability
    } OPTIONAL,
    tdd128-RF-Capability                SEQUENCE {
        ue-PowerClass                  UE-PowerClassExt,
        radioFrequencyBandTDDList      RadioFrequencyBandTDDList,
        chipRateCapability              ChipRateCapability
    } OPTIONAL
}

RFC3095-ContextInfo ::= SEQUENCE {
    rb-Identity                        RB-Identity,
    rfc3095-Context-List               RFC3095-Context-List
}

RFC3095-Context-List ::= SEQUENCE (SIZE (1..maxRFC3095-CID)) OF SEQUENCE {
    dl-RFC3095-Context                DL-RFC3095-Context    OPTIONAL,
    ul-RFC3095-Context                UL-RFC3095-Context    OPTIONAL
}

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
    }
}

TPC-Combination-Info ::= SEQUENCE {
    primaryCPICH-Info          PrimaryCPICH-Info,
    tpc-CombinationIndex      TPC-CombinationIndex
}

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
}

UL-RFC3095-Context ::= SEQUENCE {
    rfc3095-Context-Identity         INTEGER ( 0..16383 ),
    ul-mode                          ENUMERATED { u, o, r },
    ul-ref-ir                         OCTET STRING ( SIZE ( 1..3000 ) ),
    ul-ref-time                       INTEGER ( 0..4294967295 )    OPTIONAL,
    ul-curr-time                      INTEGER ( 0..4294967295 )    OPTIONAL,
    ul-syn-offset-id                 INTEGER ( 0..65535 )          OPTIONAL,
    ul-syn-slope-ts                  INTEGER ( 0..4294967295 )    OPTIONAL,
    ul-ref-sn-l                      INTEGER ( 0..65535 )          OPTIONAL
}
}

END

```

CHANGE REQUEST

⌘ **25.331 CR 2317** ⌘ rev **-** ⌘ Current version: **5.8.0** ⌘

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Unnecessary MAC-d flow identity in the IE "DL-TrCH-Type-r5"		
Source:	⌘ RAN WG2		
Work item code:	⌘ HSDPA-L23	Date:	⌘ 12/05/2004
Category:	⌘ F	Release:	⌘ REL-5
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	⌘ When the IE "DL-TrCH-Type-r5" is used to indicate the TrCH type 'hsdsch' in the IE "DL-AddReconfTransChInfoList-r5", the MAC-d flow identity associated with the 'hsdsch' choice in the IE "DL-TrCH-Type-r5" is not needed. This is clear from the procedures where these IEs are used and also from the corresponding tabular representation in 25.331 subclause 10.3.5.1. However, the IE "DL-TrCH-Type-r5" is used also in the IE "DL-DeletedTransChInfoList-r5", where the MAC-d flow identity is needed.
Summary of change:	⌘ The IE "DL-TrCH-Type-r5" is replaced by two different IEs, where one is unchanged and may be used when the MAC-d flow identity is needed, and the other one is modified. In the modified version of the IE, the MAC-d flow identity is removed.
Consequences if not approved:	⌘ An inconsistency between the procedure requirements, the tabular representation and the ASN.1 representation of this IE remains. The expected UE behaviour based on the unnecessary information is unclear. Isolated impact analysis: The requested correction impacts on the transport syntax of the protocol. The correction needs to be implemented by both the UE and the UTRAN in order not to cause interoperability problems between REL-5 compatible entities.

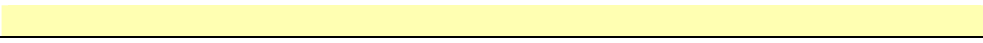
Clauses affected:	⌘ 11.3						
Other specs	⌘	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications	Y	N		X	⌘
Y	N						
	X						

affected:

<input checked="" type="checkbox"/>	Test specifications
<input checked="" type="checkbox"/>	O&M Specifications



Other comments: ☞



11.3 Information element definitions

```

:

-- The maximum allowed size of DL-AddReconfTransChInfoList-r5 sequence is 16
DL-AddReconfTransChInfoList-r5 ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation-r5

:

DL-AddReconfTransChInformation-r5 ::= SEQUENCE {
|   dl-TransportChannelType          DL-TrCH-TypeId1-r5,
|   tfs-SignallingMode               CHOICE {
|       explicit-config              TransportFormatSet,
|       sameAsULTrCH                 UL-TransportChannelIdentity,
|       hsdSCH                       HSDSCH-Info
|   },
|   dch-QualityTarget                QualityTarget                               OPTIONAL
| }

:

DL-DeletedTransChInfoList-r5 ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    DL-TransportChannelIdentity-r5

:

DL-TransportChannelIdentity-r5 ::= SEQUENCE {
|   dl-TransportChannelType          DL-TrCH-TypeId2-r5
| }

:

| DL-TrCH-TypeId1-r5 ::= CHOICE {
|   dch                             TransportChannelIdentity,
|   dsch                             TransportChannelIdentity,
|   hsdSCH                           NULLMAC-d-FlowIdentity
| }

| DL-TrCH-TypeId2-r5 ::= CHOICE {
|    dch                             TransportChannelIdentity,
|    dsch                             TransportChannelIdentity,
|    hsdSCH                           MAC-d-FlowIdentity
| }

:

MAC-d-FlowIdentity ::= INTEGER (0..7)

```

CHANGE REQUEST

⌘ **25.331 CR 2318** ⌘ rev **-** ⌘ Current version: **6.1.0** ⌘

Proposed change affects: UICC apps ME Radio Access Network Core Network

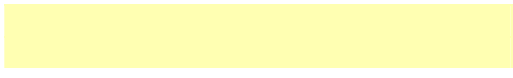
Title:	⌘ Unnecessary MAC-d flow identity in the IE "DL-TrCH-Type-r5"		
Source:	⌘ RAN WG2		
Work item code:	⌘ HSDPA-L23	Date:	⌘ 12/05/2004
Category:	⌘ A	Release:	⌘ REL-6
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	⌘ When the IE "DL-TrCH-Type-r5" is used to indicate the TrCH type 'hsdsch' in the IE "DL-AddReconfTransChInfoList-r5", the MAC-d flow identity associated with the 'hsdsch' choice in the IE "DL-TrCH-Type-r5" is not needed. This is clear from the procedures where these IEs are used and also from the corresponding tabular representation in 25.331 subclause 10.3.5.1. However, the IE "DL-TrCH-Type-r5" is used also in the IE "DL-DeletedTransChInfoList-r5", where the MAC-d flow identity is needed.
Summary of change:	⌘ The IE "DL-TrCH-Type-r5" is replaced by two different IEs, where one is unchanged and may be used when the MAC-d flow identity is needed, and the other one is modified. In the modified version of the IE, the MAC-d flow identity is removed.
Consequences if not approved:	⌘ An inconsistency between the procedure requirements, the tabular representation and the ASN.1 representation of this IE remains. The expected UE behaviour based on the unnecessary information is unclear. Isolated impact analysis: The requested correction impacts on the transport syntax of the protocol. The correction needs to be implemented by both the UE and the UTRAN in order not to cause interoperability problems between REL-5 compatible entities.

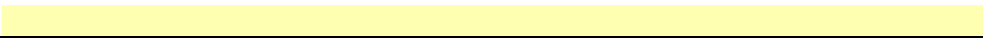
Clauses affected:	⌘ 11.3						
Other specs	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="width: 20px; text-align: center;"> </td> <td style="width: 20px; text-align: center;">X</td> </tr> </table>	Y	N		X	Other core specifications	⌘
Y	N						
	X						

affected:

<input checked="" type="checkbox"/>	Test specifications
<input checked="" type="checkbox"/>	O&M Specifications



Other comments: ☼



11.3 Information element definitions

```

:

-- The maximum allowed size of DL-AddReconfTransChInfoList-r5 sequence is 16
DL-AddReconfTransChInfoList-r5 ::= SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
    DL-AddReconfTransChInformation-r5

:

DL-AddReconfTransChInformation-r5 ::= SEQUENCE {
|   dl-TransportChannelType          DL-TrCH-TypeId1-r5,
|   tfs-SignallingMode               CHOICE {
|       explicit-config              TransportFormatSet,
|       sameAsULTrCH                 UL-TransportChannelIdentity,
|       hsdSCH                        HSDSCH-Info
|   },
|   dch-QualityTarget                 QualityTarget                               OPTIONAL
| }

:

DL-DeletedTransChInfoList-r5 ::= SEQUENCE (SIZE (1..maxTrCH)) OF
    DL-TransportChannelIdentity-r5

:

DL-TransportChannelIdentity-r5 ::= SEQUENCE {
|   dl-TransportChannelType          DL-TrCH-TypeId2-r5
| }

:

| DL-TrCH-TypeId1-r5 ::= CHOICE {
|   dch                             TransportChannelIdentity,
|   dsch                             TransportChannelIdentity,
|   hsdSCH                            NULLMAC-d-FlowIdentity
| }

| DL-TrCH-TypeId2-r5 ::= CHOICE {
|    dch                             TransportChannelIdentity,
|    dsch                             TransportChannelIdentity,
|    hsdSCH                            MAC-d-FlowIdentity
| }

:

MAC-d-FlowIdentity ::= INTEGER (0..7)

```

CHANGE REQUEST

25.331 CR 2324 # rev - # Current version: 5.8.0

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:	# Tabular correction for RADIO BEARER RELEASE message		
Source:	# RAN WG2		
Work item code:	# TEI5	Date:	# 13/May/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# Some IEs and the 'Version' column are missing in tabular description of RADIO BEARER RELEASE message. [NOTE] This error seems to be introduced at December '03 release (Version 5.7.1).
Summary of change:	# The 'Version' column is added and the message format is corrected according to the corresponding ASN.1 format.
Consequences if not approved:	# Inconsistency between tabular and ASN.1 remains in the specification. Impact on test specifications: No impact.

Clauses affected:	# 10.2.30										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	#	X	#	X	#	X	Other core specifications	#
Y	N										
#	X										
#	X										
#	X										
		Test specifications	#								
		O&M Specifications	#								
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.

10.2.30 RADIO BEARER RELEASE

This message is used by UTRAN to release a radio bearer. It can also include modifications to the configurations of transport channels and/or physical channels. It can simultaneously indicate release of a signalling connection when UE is connected to more than one CN domain.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE Information Elements					
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36		
Integrity check info	CH		Integrity check info 10.3.3.16		
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing an SRNS relocation.	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	The UTRAN should not include this IE unless it is performing an SRNS relocation and a change in ciphering algorithm.	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"	
New U-RNTI	OP		U-RNTI 10.3.3.47		
New C-RNTI	OP		C-RNTI 10.3.3.8		
New DSCH-RNTI	OP		DSCH-RNTI 10.3.3.9a		
New H-RNTI	OP		H-RNTI 10.3.3.14a		REL-5
RRC State Indicator	MP		RRC State Indicator 10.3.3.35a		
UTRAN DRX cycle length coefficient	OP		UTRAN DRX cycle length coefficient 10.3.3.49		
CN Information Elements					
CN Information info	OP		CN Information info 10.3.1.3		
Signalling Connection release indication	OP		CN domain identity 10.3.1.1		
UTRAN mobility information elements					
URA identity	OP		URA identity 10.3.2.6		
RB Information Elements					

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
RAB information to reconfigure list	OP	1 to <maxRABsetup >			
>RAB information to reconfigure	MP		RAB information to reconfigure 10.3.4.11		
RB information to release list	MP	1 to <maxRB>			
>RB information to release	MP		RB information to release 10.3.4.19		
RB information to be affected list	OP	1 to <maxRB>			
>RB information to be affected	MP		RB information to be affected 10.3.4.17		
Downlink counter synchronisation info	OP				
>RB with PDCP information list	OP	1 to <maxRBall RABs>		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation	
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	<u>This IE is needed for each RB having PDCP in the case of lossless SRNS relocation</u>	
	OP				REL-5
<u>>RB with PDCP context relocation info list</u>	OP	1 to <maxRBall RABs>			REL-5
<u>>>PDCP context relocation info</u>	MP		<u>PDCP context relocation info 10.3.4.1a</u>	<u>This IE is needed for each RB having PDCP and performing PDCP context relocation</u>	REL-5
TrCH Information Elements					
Uplink transport channels					
UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24		
Deleted TrCH information list	OP	1 to <maxTrCH >			
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5		
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >			
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			information 10.3.5.2		
CHOICE <i>mode</i>	OP				
>FDD					
>>CPCH set ID	OP		CPCH set ID 10.3.5.3		
>>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxTrCH >			
>>>DRAC static information	MP		DRAC static information 10.3.5.7		
>TDD				(no data)	
Downlink transport channels					
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6		
Deleted TrCH information list	OP	1 to <maxTrCH >			
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4		
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >			
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1		
PhyCH information elements					
Frequency info	OP		Frequency info 10.3.6.36		
Uplink radio resources					
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power	
CHOICE <i>channel requirement</i>	OP				
>Uplink DPCH info			Uplink DPCH info 10.3.6.88		
>CPCH SET Info			CPCH SET Info 10.3.6.13		
Downlink radio resources					
CHOICE <i>mode</i>	MP				
>FDD					
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30		
>TDD				(no data)	
Downlink HS-PDSCH Information	OP		Downlink HS-PDSCH Information 10.3.6.23a		REL-5
Downlink information common	OP		Downlink		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
for all radio links			information common for all radio links 10.3.6.24		
Downlink information per radio link list	OP	1 to <maxRL>		Send downlink information for each radio link to be set-up	
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27		

CHANGE REQUEST

25.331 CR 2325 # rev - # Current version: 6.1.0

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:	# Tabular correction for RADIO BEARER RELEASE message		
Source:	# RAN WG2		
Work item code:	# TEI5	Date:	# 13/May/2004
Category:	# A	Release:	# Rel-6
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	# Some IEs and the 'Version' column are missing in tabular description of RADIO BEARER RELEASE message. [NOTE] This error seems to be introduced at December '03 release (Version 5.7.1).
Summary of change:	# The 'Version' column is added and the message format is corrected according to the corresponding ASN.1 format.
Consequences if not approved:	# Inconsistency between tabular and ASN.1 remains in the specification. Impact on test specifications: No impact.

Clauses affected:	# 10.2.30								
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">#</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications # Test specifications # O&M Specifications #	Y	N	#	X	#	X	#	X
Y	N								
#	X								
#	X								
#	X								
Other comments:	#								

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ☒ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

10.2.30 RADIO BEARER RELEASE

This message is used by UTRAN to release a radio bearer. It can also include modifications to the configurations of transport channels and/or physical channels. It can simultaneously indicate release of a signalling connection when UE is connected to more than one CN domain.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN → UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE Information Elements					
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36		
Integrity check info	CH		Integrity check info 10.3.3.16		
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing an SRNS relocation.	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	The UTRAN should not include this IE unless it is performing an SRNS relocation and a change in ciphering algorithm.	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"	
New U-RNTI	OP		U-RNTI 10.3.3.47		
New C-RNTI	OP		C-RNTI 10.3.3.8		
New DSCH-RNTI	OP		DSCH-RNTI 10.3.3.9a		
New H-RNTI	OP		H-RNTI 10.3.3.14a		REL-5
RRC State Indicator	MP		RRC State Indicator 10.3.3.35a		
UTRAN DRX cycle length coefficient	OP		UTRAN DRX cycle length coefficient 10.3.3.49		
CN Information Elements					
CN Information info	OP		CN Information info 10.3.1.3		
Signalling Connection release indication	OP		CN domain identity 10.3.1.1		
UTRAN mobility information elements					
URA identity	OP		URA identity 10.3.2.6		
RB Information Elements					

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
RAB information to reconfigure list	OP	1 to <maxRABsetup >			
>RAB information to reconfigure	MP		RAB information to reconfigure 10.3.4.11		
RB information to release list	MP	1 to <maxRB>			
>RB information to release	MP		RB information to release 10.3.4.19		
RB information to be affected list	OP	1 to <maxRB>			
>RB information to be affected	MP		RB information to be affected 10.3.4.17		
Downlink counter synchronisation info	OP				
>RB with PDCP information list	OP	1 to <maxRBall RABs>		This IE is needed for each RB having PDCP in the case of lossless SRNS relocation	
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	<u>This IE is needed for each RB having PDCP in the case of lossless SRNS relocation</u>	
	<u>OP</u>				<u>REL-5</u>
<u>>RB with PDCP context relocation info list</u>	<u>OP</u>	<u>1 to <maxRBall RABs></u>			<u>REL-5</u>
<u>>>PDCP context relocation info</u>	<u>MP</u>		<u>PDCP context relocation info 10.3.4.1a</u>	<u>This IE is needed for each RB having PDCP and performing PDCP context relocation</u>	<u>REL-5</u>
TrCH Information Elements					
Uplink transport channels					
UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24		
Deleted TrCH information list	OP	1 to <maxTrCH >			
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5		
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >			
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			information 10.3.5.2		
CHOICE <i>mode</i>	OP				
>FDD					
>>CPCH set ID	OP		CPCH set ID 10.3.5.3		
>>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxTrCH >			
>>>DRAC static information	MP		DRAC static information 10.3.5.7		
>TDD				(no data)	
Downlink transport channels					
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6		
Deleted TrCH information list	OP	1 to <maxTrCH >			
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4		
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >			
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1		
PhyCH information elements					
Frequency info	OP		Frequency info 10.3.6.36		
Uplink radio resources					
Maximum allowed UL TX power	MD		Maximum allowed UL TX power 10.3.6.39	Default value is the existing maximum UL TX power	
CHOICE <i>channel requirement</i>	OP				
>Uplink DPCH info			Uplink DPCH info 10.3.6.88		
>CPCH SET Info			CPCH SET Info 10.3.6.13		
Downlink radio resources					
CHOICE <i>mode</i>	MP				
>FDD					
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30		
>TDD				(no data)	
Downlink HS-PDSCH Information	OP		Downlink HS-PDSCH Information 10.3.6.23a		REL-5
Downlink information common	OP		Downlink		

Information Element/Group name	Need	Multi	Type and reference	Semantics description	<u>Version</u>
for all radio links			information common for all radio links 10.3.6.24		
Downlink information per radio link list	OP	1 to <maxRL>		Send downlink information for each radio link to be set-up	
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27		

CHANGE REQUEST

⌘ 25.331 CR 2326 ⌘ rev - ⌘ Current version: 5.8.0 ⌘

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:	⌘ Misalignments between R'99 and Rel-5 procedures		
Source:	⌘ RAN WG2		
Work item code:	⌘ TEI-5	Date:	⌘ May 2004
Category:	⌘ F Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Release:	⌘ Rel-5 Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change: ⌘ At RAN2#41 we agreed on CRs 2273 and 2274 that corrected misalignments between R99 and R5 specifications. Two of the corrections need to be reviewed:

1. In section 8.1.1.1.2:
In table 8.1.1 it was removed the possibility to read SIB 12 while in idle mode. This was corrected, since the UE should be free to read and store SIB 12 for a later use in the same cell. However, the change was introduced for the "UE mode/state when block is valid" column and not for the "UE mode/state when block is read" column where it was supposed to go.
2. In section 8.2.2.3:
No reason could be found for the removal of "COUNT-C" from the sentences below in Rel-5 and it was agreed to reintroduce the R99 formulation.
 - 2> set the new uplink and downlink HFN component of COUNT-C of RB2 to MAX(uplink HFN component of COUNT-C of RB2, downlink HFN component of COUNT-C of RB2);
 - 2> increment by one the downlink and uplink HFN values of the HFN component of COUNT-C for RB2;However these changes haven't been introduced correctly in the current version of the specification.

Summary of change: ⌘	<ol style="list-style-type: none"> Align Rel-5 to R'99, i.e. allow reading and storing of SIB 12 in idle mode Reinstate the correct R'99 text
Consequences if not approved: ⌘	<ol style="list-style-type: none"> The UE would be forbidden from reading and storing SIB 12 while in idle mode. This could delay common channel procedures and reduce the battery life. Ambiguity between COUNT-C and COUNT-I could lead of failure of the security procedure

Clauses affected: ⌘	8.1.1.1.2, 8.2.2.3									
Other specs affected:	<table border="1"> <tr> <td style="background-color: #ffffcc;">Y</td> <td style="background-color: #ffffcc;">N</td> </tr> <tr> <td style="background-color: #ffffcc;"></td> <td style="background-color: #ffffcc;">X</td> </tr> <tr> <td style="background-color: #ffffcc;"></td> <td style="background-color: #ffffcc;">X</td> </tr> <tr> <td style="background-color: #ffffcc;"></td> <td style="background-color: #ffffcc;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications ⌘ Test specifications O&M Specifications
	Y	N								
		X								
	X									
	X									
Other comments: ⌘										

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 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.
- With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

[...]

8.1.1.1.2 System information blocks

Table 8.1.1 specifies all system information blocks and their characteristics.

The *area scope column* in table 8.1.1 specifies the area where a system information block's value tag is valid. If the area scope is *cell*, the UE shall consider the system information block to be valid only in the cell in which it was read. If system information blocks have been previously stored for this cell, the UE shall check whether the value tag for the system information block in the entered cell is different compared to the stored value tag. If the area scope is *PLMN* or *Equivalent PLMN*, the UE shall check the value tag for the system information block when a new cell is selected. If the value tag for the system information block in the new cell is different compared to the value tag for the system information block stored in the UE, the UE shall re-read the system information block. If the area scope is *PLMN*, the UE shall consider the system information block to be valid only within the PLMN in which it was read. If the area scope is *Equivalent PLMN*, the UE shall consider the system information block to be valid within the PLMN in which it was received and all PLMNs which are indicated by higher layers to be equivalent.

For System information block types 15.2, 15.3 and 16, which may have multiple occurrences, each occurrence has its own independent value tag. The UE shall re-read a particular occurrence if the value tag of this occurrence has changed compared to that stored in the UE.

The *UE mode/state column when block is valid* in Table 8.1.1 specifies in which UE mode or UE state the IEs in a system information block shall be regarded as valid by the UE. In other words, the indicated system information block becomes invalid upon change to a mode/state that is not included in this column. System Information Block Type 16 remains also valid upon transition to or from GSM/GPRS. In some cases, the states are inserted in brackets to indicate that the validity is dependent on the broadcast of the associated System Information Blocks by the network as explained in the relevant procedure subclause.

The *UE mode/state column when block is read* in Table 8.1.1 specifies in which UE mode or UE state the IEs in a system information block may be read by the UE. The UE shall have the necessary information prior to execution of any procedure requiring information to be obtained from the appropriate system information block. The requirements on the UE in terms of when to read the system information may therefore be derived from the procedure specifications that specify which IEs are required in the different UE modes/states in conjunction with the different performance requirements that are specified.

System Information Block type 10 shall only be read by the UE while in CELL_DCH.

The UE shall:

- 1> if System Information Block type 11 is referenced in the master information block or in the scheduling blocks:
 - 2> if System Information Block type 12 is not referenced in the master information block or in the scheduling blocks, or broadcast of System Information Block type 12 is not indicated in System Information Block type 11:
 - 3> have read and acted upon System Information Block type 11 in a cell when the UE transmits an RRC message on RACH.
 - 2> else:
 - 3> have read and acted upon System Information Block type 11 in a cell before the UE transmits the RRC CONNECTION REQUEST message.
 - 3> have read and acted upon both System Information Block type 11 and System Information Block type 12 in a cell when:
 - 4> the UE transmits an RRC message on RACH in RRC connected mode; or
 - 4> the UE receives a message commanding to enter Cell_DCH state.

NOTE 1: There are a number of system information blocks that include the same IEs while the UE mode/state in which the information is valid differs. This approach is intended to allow the use of different IE values in different UE mode/states.

NOTE 2: System Information Block Type 16 is also obtained by a UE while in GSM/GPRS. The details of this are not within the scope of this specification.

The *Scheduling information* column in table 8.1.1 specifies the position and repetition period for the System Information Block.

The *modification of system information* column in table 8.1.1 specifies the update mechanisms applicable for a certain system information block. For system information blocks with a value tag, the UE shall update the information according to subclause 8.1.1.7.1 or 8.1.1.7.2. For system information blocks with an expiration timer, the UE shall, when the timer expires, perform an update of the information according to subclause 8.1.1.7.4.

Table 8.1.1: Specification of system information block characteristics

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
Master information block	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	SIB_POS = 0 SIB_REP = 8 (FDD) SIB_REP = 8, 16, 32 (TDD) SIB_OFF=2	Value tag	
Scheduling block 1	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information" in MIB	Value tag	
Scheduling block 2	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information" in MIB	Value tag	
System information block type 1	PLMN	Idle mode CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 2	Cell	URA_PCH	URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 3	Cell	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH)	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH)	Specified by the IE "Scheduling information"	Value tag	
System information block type 4	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	If System information block type 4 is not broadcast in a cell, the connected mode UE shall apply information in System information block type 3 in connected mode.
System information block type 5	Cell	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only))	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only))	Specified by the IE "Scheduling information"	Value tag	

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 6	Cell	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Specified by the IE "Scheduling information"	Value tag	<p>If system information block type 6 is not broadcast in a cell, the connected mode UE shall read System information block type 5.</p> <p>If some of the optional IEs are not included in System information block type 6, the UE shall read the corresponding IEs in System information block type 5</p> <p>In TDD mode system information block 6 shall only be read in CELL_DCH if required for open loop power control as specified in subclause 8.5.7 and/or if shared transport channels are assigned to the UE. If in these cases system information block type 6 is not broadcast the UE shall read system information block type 5.</p>
System information block type 7	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Specified by the IE "Scheduling information"	Expiration timer = MAX(32 , SIB_REP * ExpirationTimeFactor)	In TDD mode system information block type 7 shall only be read in CELL_DCH if shared transport channels are assigned to the UE.
System information block type 8	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 9	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	
System information block type 10	Cell	CELL_DCH	CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	
System information block type 11	Cell	Idle mode (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH)	Idle mode (CELL_FACH, CELL_PCH, URA_PCH)	Specified by the IE "Scheduling information"	Value tag	

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 12	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	If system information block type 12 is not broadcast in a cell, the connected mode UE shall read System information block type 11. If some of the optional IEs are not included in System information block type 12, the UE shall read the corresponding IEs in System information block type 11.
System information block type 13	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.1	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.2	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.3	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.4	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 14	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = MAX(32 , SIB_REP * ExpirationTimeFactor)	This system information block is used in 3.84 Mcps TDD mode only. System information block type 14 shall only be read in CELL_DCH if required for open loop power control as specified in subclause 8.5.7.
System information block type 15	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.1	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.2	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences
System information block type 15.3	PLMN	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 15.4	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.5	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 16	Equivalent PLMN	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences. This system information block is also valid while in GSM/GPRS.
System information block type 17	Cell	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	This system information block is used in TDD mode only. System information block type 17 shall only be read if shared transport channels are assigned to the UE.
System Information Block type 18	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	

The UE shall acquire all system information blocks except system information block type 10 on BCH. System Information Block type 10 shall be acquired on the FACH and only by UEs with support for simultaneous reception of one SCCPCH and one DPCH. If System Information Block type 10 is not broadcast in a cell, the DRAC procedures do not apply in this cell. System Information Block type 10 is used in FDD mode only.

[...]

8.2.2.3 Reception of RADIO BEARER SETUP or RADIO BEARER RECONFIGURATION or RADIO BEARER RELEASE or TRANSPORT CHANNEL RECONFIGURATION or PHYSICAL CHANNEL RECONFIGURATION message by the UE

The UE shall:

1> be able to receive any of the following messages:

2> RADIO BEARER SETUP message; or

2> RADIO BEARER RECONFIGURATION message; or

2> RADIO BEARER RELEASE message; or

2> TRANSPORT CHANNEL RECONFIGURATION message; or

2> PHYSICAL CHANNEL RECONFIGURATION message;

1> be able to perform a hard handover and apply physical layer synchronisation procedure A as specified in [29], even if no prior UE measurements have been performed on the target cell and/or frequency.

In case the reconfiguration procedure is used to remove all existing RL(s) in the active set while new RL(s) are established the UE shall:

1> if the UE has a pending "TGPS reconfiguration CFN" at the activation time received in the reconfiguration message and the reconfiguration requests a timing re-initialised hard handover (see subclause 8.3.5.1), the UE may:

2> abort the pending CM activation;

2> set the CM_PATTERN_ACTIVATION_ABORTED to TRUE.

1> otherwise:

2> set the CM_PATTERN_ACTIVATION_ABORTED to FALSE.

If the UE receives:

- a RADIO BEARER SETUP message; or
- a RADIO BEARER RECONFIGURATION message; or
- a RADIO BEARER RELEASE message; or
- a TRANSPORT CHANNEL RECONFIGURATION message; or
- a PHYSICAL CHANNEL RECONFIGURATION message:

it shall:

1> set the variable ORDERED_RECONFIGURATION to TRUE;

1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

1> act upon all received information elements as specified in subclause 8.6, unless specified in the following and perform the actions below.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE may first release the physical channel configuration used at reception of the reconfiguration message. The UE shall then:

1> in FDD, if the IE "PDSCH code mapping" is included but the IE "PDSCH with SHO DCH Info" is not included and if the DCH has only one link in its active set:

2> act upon the IE "PDSCH code mapping" as specified in subclause 8.6; and

2> infer that the PDSCH will be transmitted from the cell from which the downlink DPCH is transmitted.

1> enter a state according to subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

1> handle the message as if IE "RB information to reconfigure" was absent.

NOTE: The RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure". UTRAN has to include it even if it does not require the reconfiguration of any RB.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

1> in FDD; or

1> in TDD when "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:

2> remove any C-RNTI from MAC;

2> clear the variable C_RNTI.

If after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> stop any HS-DSCH reception procedures;
- 1> clear any stored HS-PDSCH configuration;
- 1> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;
- 1> release all HARQ resources;
- 1> remove any H-RNTI stored;
- 1> clear the variable H_RNTI;
- 1> set the variable HS_DSCH_RECEPTION to FALSE.

NOTE: If configured for HS-DSCH, the UE will have still stored the IEs "Added or Reconfigured MAC-d flow" and "RB mapping Info".

In FDD, if after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> remove any DSCH-RNTI from MAC;
- 1> clear the variable DSCH_RNTI.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;
- 1> in TDD:
 - 2> if "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
 - 3> remove any C-RNTI from MAC;
 - 3> clear the variable C_RNTI.
 - 1> if "DPCH frame offset" is included for one or more RLS in the active set:
 - 2> use its value to determine the beginning of the DPCH frame in accordance with the following:
 - 3> if the received IE "DPCH frame offset" is across the value range border compared to the DPCH frame offset currently used by the UE:
 - 4> consider it to be a request to adjust the timing with 256 chips across the frame border (e.g. if the UE receives value 0 while the value currently used is 38144 consider this as a request to adjust the timing with +256 chips).
 - 3> if after taking into account value range borders, the received IE "DPCH frame offset" corresponds to a request to adjust the timing with a step exceeding 256 chips:
 - 4> set the variable INVALID_CONFIGURATION to TRUE.
 - 3> and the procedure ends.
 - 2> adjust the radio link timing accordingly.

If after state transition the UE enters CELL_FACH state, the UE shall, after the state transition:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency;
 - 2> if the UE finds a suitable UTRA cell on that frequency:

- 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4];
 - 2> if the UE finds a suitable UTRA cell on the current frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on the current frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS;
 - 1> select PRACH according to subclause 8.5.17;
 - 1> select Secondary CCPCH according to subclause 8.5.19;
 - 1> use the transport format set given in system information;
 - 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> ignore that IE and stop using DRX.
 - 1> if the contents of the variable C_RNTI is empty:
 - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

- 2> when the cell update procedure completed successfully:
 - 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.

If the UE was in CELL_FACH state upon reception of the reconfiguration message and remains in CELL_FACH state, the UE shall:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency;
 - 2> if the UE finds a suitable UTRA cell on that frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> if the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) is included the UE shall either:
 - 3> ignore the content of the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) and proceed as below;
 - 2> or:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CPCH info" (for TDD), and it is different from the current cell:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.

If after state transition the UE enters CELL_PCH or URA_PCH state, the UE shall:

- 1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:
 - 2> set the variable INVALID_CONFIGURATION to TRUE.

The UE shall transmit a response message as specified in subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> if the received reconfiguration message included the IE "Downlink counter synchronisation info"; or
- 1> if the received reconfiguration message is a RADIO BEARER RECONFIGURATION and the IE "New U-RNTI" is included:
 - 2> if the variable PDCP_SN_INFO is empty:
 - 3> configure the corresponding RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "stop".
 - 2> else:
 - 3> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "stop";
 - 3> configure the RLC entity for UM and AM radio bearers for which the IE "PDCP SN Info" is not included to "stop".
 - 2> re-establish RB2;
 - 2> for the downlink and the uplink, apply the ciphering configuration as follows:
 - 3> if the received re-configuration message included the IE "Ciphering Mode Info":
 - 4> use the ciphering configuration in the received message when transmitting the response message.
 - 3> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because the activation times not having been reached:
 - 4> if the previous SECURITY MODE COMMAND was received due to new keys being received:
 - 5> consider the new ciphering configuration to include the received new keys;
 - 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 as indicated in subclause 8.1.12.3.1.
 - 4> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the previous SECURITY MODE COMMAND caused a change in LATEST_CONFIGURED_CN_DOMAIN:
 - 5> consider the new ciphering configuration to include the keys associated with the LATEST_CONFIGURED_CN_DOMAIN;
 - 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 to the most recently transmitted IE "START list" or IE "START" for the LATEST_CONFIGURED_CN_DOMAIN at the reception of the previous SECURITY MODE COMMAND.
 - 4> apply the new ciphering configuration immediately following RLC re-establishment.
 - 3> else:
 - 4> continue using the current ciphering configuration.
- 2> set the new uplink and downlink [HFN](#) component of COUNT-C ~~HFN~~ of RB2 to MAX(uplink HFN [component of COUNT-C](#) of RB2, downlink [HFN](#) component of COUNT-C ~~HFN~~ of RB2);
- 2> increment by one the downlink and uplink ~~HFN~~-values [of the HFN of COUNT-C](#) for RB2;
- 2> calculate the START value according to subclause 8.5.9;
- 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".

[...]

CHANGE REQUEST

25.331 CR 2327 # rev **-** # Current version: **6.1.0**

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:	# Misalignments between R'99 and Rel-5 procedures		
Source:	# RAN WG2		
Work item code:	# TEI5	Date:	# May 2004
Category:	# A	Release:	# Rel-6
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change: # At RAN2#41 we agreed on CR 2274 that corrected misalignments between R99 and R5 specifications. Two of the corrections need to be reviewed, also for Rel-6:

1. In section 8.1.1.1.2:
 In table 8.1.1 it was removed the possibility to read SIB 12 while in idle mode. This was corrected, since the UE should be free to read and store SIB 12 for a later use in the same cell. However, the change was introduced for the "UE mode/state when block is valid" column and not for the "UE mode/state when block is read" column where it was supposed to go.
2. In section 8.2.2.3:
 No reason could be found for the removal of "COUNT-C" from the sentences below in Rel-6 and it was agreed to reintroduce the R99 formulation.
 - 2> set the new uplink and downlink HFN component of COUNT-C of RB2 to MAX(uplink HFN component of COUNT-C of RB2, downlink HFN component of COUNT-C of RB2);
 - 2> increment by one the downlink and uplink HFN values of the HFN component of COUNT-C for RB2;
 However these changes haven't been introduced correctly in the current version of the specification.

Summary of change: ⌘	<ol style="list-style-type: none"> 1. Align Rel-6 to R'99, i.e. allow reading and storing of SIB 12 in idle mode 2. Reinstate the correct R'99 text
Consequences if not approved: ⌘	<ol style="list-style-type: none"> 1. The UE would be forbidden from reading and storing SIB 12 while in idle mode. This could delay common channel procedures and reduce the battery life. 2. Ambiguity between COUNT-C and COUNT-I could lead of failure of the security procedure

Clauses affected: ⌘	8.1.1.1.2, 8.2.2.3									
Other specs affected:	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘
Y	N									
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									
Other comments: ⌘										

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

[...]

8.1.1.1.2 System information blocks

Table 8.1.1 specifies all system information blocks and their characteristics.

The *area scope column* in table 8.1.1 specifies the area where a system information block's value tag is valid. If the area scope is *cell*, the UE shall consider the system information block to be valid only in the cell in which it was read. If system information blocks have been previously stored for this cell, the UE shall check whether the value tag for the system information block in the entered cell is different compared to the stored value tag. If the area scope is *PLMN* or *Equivalent PLMN*, the UE shall check the value tag for the system information block when a new cell is selected. If the value tag for the system information block in the new cell is different compared to the value tag for the system information block stored in the UE, the UE shall re-read the system information block. If the area scope is *PLMN*, the UE shall consider the system information block to be valid only within the PLMN in which it was read. If the area scope is *Equivalent PLMN*, the UE shall consider the system information block to be valid within the PLMN in which it was received and all PLMNs which are indicated by higher layers to be equivalent.

For System information block types 15.2, 15.3 and 16, which may have multiple occurrences, each occurrence has its own independent value tag. The UE shall re-read a particular occurrence if the value tag of this occurrence has changed compared to that stored in the UE.

The *UE mode/state column when block is valid* in Table 8.1.1 specifies in which UE mode or UE state the IEs in a system information block shall be regarded as valid by the UE. In other words, the indicated system information block becomes invalid upon change to a mode/state that is not included in this column. System Information Block Type 16 remains also valid upon transition to or from GSM/GPRS. In some cases, the states are inserted in brackets to indicate that the validity is dependent on the broadcast of the associated System Information Blocks by the network as explained in the relevant procedure subclause.

The *UE mode/state column when block is read* in Table 8.1.1 specifies in which UE mode or UE state the IEs in a system information block may be read by the UE. The UE shall have the necessary information prior to execution of any procedure requiring information to be obtained from the appropriate system information block. The requirements on the UE in terms of when to read the system information may therefore be derived from the procedure specifications that specify which IEs are required in the different UE modes/states in conjunction with the different performance requirements that are specified.

System Information Block type 10 shall only be read by the UE while in CELL_DCH.

The UE shall:

- 1> if System Information Block type 11 is referenced in the master information block or in the scheduling blocks:
 - 2> if System Information Block type 12 is not referenced in the master information block or in the scheduling blocks, or broadcast of System Information Block type 12 is not indicated in System Information Block type 11:
 - 3> have read and acted upon System Information Block type 11 in a cell when the UE transmits an RRC message on RACH.
 - 2> else:
 - 3> have read and acted upon System Information Block type 11 in a cell before the UE transmits the RRC CONNECTION REQUEST message.
 - 3> have read and acted upon both System Information Block type 11 and System Information Block type 12 in a cell when:
 - 4> the UE transmits an RRC message on RACH in RRC connected mode; or
 - 4> the UE receives a message commanding to enter Cell_DCH state.

NOTE 1: There are a number of system information blocks that include the same IEs while the UE mode/state in which the information is valid differs. This approach is intended to allow the use of different IE values in different UE mode/states.

NOTE 2: System Information Block Type 16 is also obtained by a UE while in GSM/GPRS. The details of this are not within the scope of this specification.

The *Scheduling information* column in table 8.1.1 specifies the position and repetition period for the System Information Block.

The *modification of system information* column in table 8.1.1 specifies the update mechanisms applicable for a certain system information block. For system information blocks with a value tag, the UE shall update the information according to subclause 8.1.1.7.1 or 8.1.1.7.2. For system information blocks with an expiration timer, the UE shall, when the timer expires, perform an update of the information according to subclause 8.1.1.7.4.

Table 8.1.1: Specification of system information block characteristics

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
Master information block	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	SIB_POS = 0 SIB_REP = 8 (FDD) SIB_REP = 8, 16, 32 (TDD) SIB_OFF=2	Value tag	
Scheduling block 1	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information" in MIB	Value tag	
Scheduling block 2	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information" in MIB	Value tag	
System information block type 1	PLMN	Idle mode CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 2	Cell	URA_PCH	URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 3	Cell	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH)	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH)	Specified by the IE "Scheduling information"	Value tag	
System information block type 4	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	If System information block type 4 is not broadcast in a cell, the connected mode UE shall apply information in System information block type 3 in connected mode.
System information block type 5	Cell	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only))	Idle mode, (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only))	Specified by the IE "Scheduling information"	Value tag	

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 6	Cell	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Specified by the IE "Scheduling information"	Value tag	<p>If system information block type 6 is not broadcast in a cell, the connected mode UE shall read System information block type 5.</p> <p>If some of the optional IEs are not included in System information block type 6, the UE shall read the corresponding IEs in System information block type 5</p> <p>In TDD mode system information block 6 shall only be read in CELL_DCH if required for open loop power control as specified in subclause 8.5.7 and/or if shared transport channels are assigned to the UE. If in these cases system information block type 6 is not broadcast the UE shall read system information block type 5.</p>
System information block type 7	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH (TDD only)	Specified by the IE "Scheduling information"	Expiration timer = MAX(32 , SIB_REP * ExpirationTimeFactor)	In TDD mode system information block type 7 shall only be read in CELL_DCH if shared transport channels are assigned to the UE.
System information block type 8	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 9	Cell	CELL_FACH, CELL_PCH, URA_PCH	CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	
System information block type 10	Cell	CELL_DCH	CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	
System information block type 11	Cell	Idle mode (CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH)	Idle mode (CELL_FACH, CELL_PCH, URA_PCH)	Specified by the IE "Scheduling information"	Value tag	

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 12	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	If system information block type 12 is not broadcast in a cell, the connected mode UE shall read System information block type 11. If some of the optional IEs are not included in System information block type 12, the UE shall read the corresponding IEs in System information block type 11.
System information block type 13	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.1	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.2	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.3	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 13.4	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 14	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = MAX(32, SIB_REP * ExpirationTimeFactor)	This system information block is used in 3.84 Mcps TDD mode only. System information block type 14 shall only be read in CELL_DCH if required for open loop power control as specified in subclause 8.5.7.
System information block type 15	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.1	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.2	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences
System information block type 15.3	PLMN	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences

System information block	Area scope	UE mode/state when block is valid	UE mode/state when block is read	Scheduling information	Modification of system information	Additional comment
System information block type 15.4	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 15.5	Cell	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	
System information block type 16	Equivalent PLMN	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle Mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	For this system information block there may be multiple occurrences. This system information block is also valid while in GSM/GPRS.
System information block type 17	Cell	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Specified by the IE "Scheduling information"	Expiration timer = SIB_REP	This system information block is used in TDD mode only. System information block type 17 shall only be read if shared transport channels are assigned to the UE.
System Information Block type 18	Cell	Idle mode, CELL_FACH, CELL_PCH, URA_PCH, CELL_DCH	Idle mode, CELL_FACH, CELL_PCH, URA_PCH	Specified by the IE "Scheduling information"	Value tag	

The UE shall acquire all system information blocks except system information block type 10 on BCH. System Information Block type 10 shall be acquired on the FACH and only by UEs with support for simultaneous reception of one SCCPCH and one DPCH. If System Information Block type 10 is not broadcast in a cell, the DRAC procedures do not apply in this cell. System Information Block type 10 is used in FDD mode only.

[...]

8.2.2.3 Reception of RADIO BEARER SETUP or RADIO BEARER RECONFIGURATION or RADIO BEARER RELEASE or TRANSPORT CHANNEL RECONFIGURATION or PHYSICAL CHANNEL RECONFIGURATION message by the UE

The UE shall:

1> be able to receive any of the following messages:

2> RADIO BEARER SETUP message; or

2> RADIO BEARER RECONFIGURATION message; or

2> RADIO BEARER RELEASE message; or

2> TRANSPORT CHANNEL RECONFIGURATION message; or

2> PHYSICAL CHANNEL RECONFIGURATION message;

1> be able to perform a hard handover and apply physical layer synchronisation procedure A as specified in [29], even if no prior UE measurements have been performed on the target cell and/or frequency.

In case the reconfiguration procedure is used to remove all existing RL(s) in the active set while new RL(s) are established the UE shall:

1> if the UE has a pending "TGPS reconfiguration CFN" at the activation time received in the reconfiguration message and the reconfiguration requests a timing re-initialised hard handover (see subclause 8.3.5.1), the UE may:

2> abort the pending CM activation;

2> set the CM_PATTERN_ACTIVATION_ABORTED to TRUE.

1> otherwise:

2> set the CM_PATTERN_ACTIVATION_ABORTED to FALSE.

If the UE receives:

- a RADIO BEARER SETUP message; or
- a RADIO BEARER RECONFIGURATION message; or
- a RADIO BEARER RELEASE message; or
- a TRANSPORT CHANNEL RECONFIGURATION message; or
- a PHYSICAL CHANNEL RECONFIGURATION message:

it shall:

1> set the variable ORDERED_RECONFIGURATION to TRUE;

1> if the UE will enter the CELL_DCH state from any state other than CELL_DCH state at the conclusion of this procedure:

2> perform the physical layer synchronisation procedure A as specified in [29] (FDD only).

1> act upon all received information elements as specified in subclause 8.6, unless specified in the following and perform the actions below.

The UE may:

1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

The UE may first release the physical channel configuration used at reception of the reconfiguration message. The UE shall then:

1> in FDD, if the IE "PDSCH code mapping" is included but the IE "PDSCH with SHO DCH Info" is not included and if the DCH has only one link in its active set:

2> act upon the IE "PDSCH code mapping" as specified in subclause 8.6; and

2> infer that the PDSCH will be transmitted from the cell from which the downlink DPCH is transmitted.

1> enter a state according to subclause 8.6.3.3.

In case the UE receives a RADIO BEARER RECONFIGURATION message including the IE "RB information to reconfigure" that only includes the IE "RB identity", the UE shall:

1> handle the message as if IE "RB information to reconfigure" was absent.

NOTE: The RADIO BEARER RECONFIGURATION message always includes the IE "RB information to reconfigure". UTRAN has to include it even if it does not require the reconfiguration of any RB.

If after state transition the UE enters CELL_DCH state, the UE shall, after the state transition:

1> in FDD; or

1> in TDD when "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:

2> remove any C-RNTI from MAC;

2> clear the variable C_RNTI.

If after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> stop any HS-DSCH reception procedures;
- 1> clear any stored HS-PDSCH configuration;
- 1> act as if the IE "MAC-hs reset indicator" is received and set to TRUE;
- 1> release all HARQ resources;
- 1> remove any H-RNTI stored;
- 1> clear the variable H_RNTI;
- 1> set the variable HS_DSCH_RECEPTION to FALSE.

NOTE: If configured for HS-DSCH, the UE will have still stored the IEs "Added or Reconfigured MAC-d flow" and "RB mapping Info".

In FDD, if after state transition the UE leaves CELL_DCH state, the UE shall, after the state transition:

- 1> remove any DSCH-RNTI from MAC;
- 1> clear the variable DSCH_RNTI.

If the UE was in CELL_DCH state upon reception of the reconfiguration message and remains in CELL_DCH state, the UE shall:

- 1> if the IE "Uplink DPCH Info" is absent, not change its current UL Physical channel configuration;
- 1> in TDD:
 - 2> if "Primary CCPCH Info" is included indicating a new target cell and "New C-RNTI" is not specified:
 - 3> remove any C-RNTI from MAC;
 - 3> clear the variable C_RNTI.
 - 1> if "DPCH frame offset" is included for one or more RLS in the active set:
 - 2> use its value to determine the beginning of the DPCH frame in accordance with the following:
 - 3> if the received IE "DPCH frame offset" is across the value range border compared to the DPCH frame offset currently used by the UE:
 - 4> consider it to be a request to adjust the timing with 256 chips across the frame border (e.g. if the UE receives value 0 while the value currently used is 38144 consider this as a request to adjust the timing with +256 chips).
 - 3> if after taking into account value range borders, the received IE "DPCH frame offset" corresponds to a request to adjust the timing with a step exceeding 256 chips:
 - 4> set the variable INVALID_CONFIGURATION to TRUE.
 - 3> and the procedure ends.
 - 2> adjust the radio link timing accordingly.

If after state transition the UE enters CELL_FACH state, the UE shall, after the state transition:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency;
 - 2> if the UE finds a suitable UTRA cell on that frequency:

- 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4];
 - 2> if the UE finds a suitable UTRA cell on the current frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on the current frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 1> start timer T305 using its initial value if timer T305 is not running and if periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity" in the variable TIMERS_AND_CONSTANTS;
 - 1> select PRACH according to subclause 8.5.17;
 - 1> select Secondary CCPCH according to subclause 8.5.19;
 - 1> use the transport format set given in system information;
 - 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> ignore that IE and stop using DRX.
 - 1> if the contents of the variable C_RNTI is empty:
 - 2> perform a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";

- 2> when the cell update procedure completed successfully:
 - 3> if the UE is in CELL_PCH or URA_PCH state:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission";
 - 4> proceed as below.

If the UE was in CELL_FACH state upon reception of the reconfiguration message and remains in CELL_FACH state, the UE shall:

- 1> if the IE "Frequency info" is included in the received reconfiguration message:
 - 2> select a suitable UTRA cell according to [4] on that frequency;
 - 2> if the UE finds a suitable UTRA cell on that frequency:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selected another cell than indicated by this IE or the received reconfiguration message did not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD):
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
 - 2> else, if the UE can not find a suitable UTRA cell on that frequency but it finds a suitable UTRA cell on another frequency:
 - 3> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 3> when the cell update procedure completed successfully:
 - 4> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.
- 1> if the IE "Frequency info" is not included in the received reconfiguration message:
 - 2> if the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) is included the UE shall either:
 - 3> ignore the content of the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD) and proceed as below;
 - 2> or:
 - 3> if the received reconfiguration message included the IE "Primary CPICH info" (for FDD) or "Primary CPCH info" (for TDD), and it is different from the current cell:
 - 4> initiate a cell update procedure according to subclause 8.3.1 using the cause "Cell reselection";
 - 4> when the cell update procedure completed successfully:
 - 5> if the UE is in CELL_PCH or URA_PCH state, initiate a cell update procedure according to subclause 8.3.1 using the cause "Uplink data transmission" and proceed as below.

If after state transition the UE enters CELL_PCH or URA_PCH state, the UE shall:

- 1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:
 - 2> set the variable INVALID_CONFIGURATION to TRUE.

The UE shall transmit a response message as specified in subclause 8.2.2.4, setting the information elements as specified below. The UE shall:

- 1> if the received reconfiguration message included the IE "Downlink counter synchronisation info"; or
- 1> if the received reconfiguration message is a RADIO BEARER RECONFIGURATION and the IE "New U-RNTI" is included:
 - 2> if the variable PDCP_SN_INFO is empty:
 - 3> configure the corresponding RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "stop".
 - 2> else:
 - 3> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "stop";
 - 3> configure the RLC entity for UM and AM radio bearers for which the IE "PDCP SN Info" is not included to "stop".
 - 2> re-establish RB2;
 - 2> for the downlink and the uplink, apply the ciphering configuration as follows:
 - 3> if the received re-configuration message included the IE "Ciphering Mode Info":
 - 4> use the ciphering configuration in the received message when transmitting the response message.
 - 3> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because the activation times not having been reached:
 - 4> if the previous SECURITY MODE COMMAND was received due to new keys being received:
 - 5> consider the new ciphering configuration to include the received new keys;
 - 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 as indicated in subclause 8.1.12.3.1.
 - 4> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the previous SECURITY MODE COMMAND caused a change in LATEST_CONFIGURED_CN_DOMAIN:
 - 5> consider the new ciphering configuration to include the keys associated with the LATEST_CONFIGURED_CN_DOMAIN;
 - 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 to the most recently transmitted IE "START list" or IE "START" for the LATEST_CONFIGURED_CN_DOMAIN at the reception of the previous SECURITY MODE COMMAND.
 - 4> apply the new ciphering configuration immediately following RLC re-establishment.
 - 3> else:
 - 4> continue using the current ciphering configuration.
- 2> set the new uplink and downlink [HFN](#) component of COUNT-C ~~HFN~~ of RB2 to MAX(uplink HFN [component of COUNT-C](#) of RB2, downlink [HFN](#) component of COUNT-C ~~HFN~~ of RB2);
- 2> increment by one the downlink and uplink ~~HFN~~-values [of the HFN of COUNT-C](#) for RB2;
- 2> calculate the START value according to subclause 8.5.9;
- 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info".

[...]

CHANGE REQUEST

25.331 CR 2328 # rev **-** # Current version: **5.8.0**

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:	# Erroneous setting of Re-establish Indicator in case of SRNS relocation		
Source:	# RAN WG2		
Work item code:	# TEI5	Date:	# 10/05/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	# 1. The current specification allows for the network to trigger an RLC re-establishment by explicitly setting the RLC re-establish indicator in the CELL UPDATE CONFIRM while also including the IE "Downlink counter synchronisation info" to trigger the necessary actions in the UE for SRNS relocation. However, doing so can lead to inter-operability problems unless the network and UE perform the identical (sequence of) actions in setting of the HFN following relocation. Since the SRNS relocation procedure requires the UE to perform an RLC re-establishment, the network does not need to explicitly trigger this by setting the RLC re-establish indicator to TRUE.
	# 2. The current specification for the SRNS Relocation container explicitly requires the target to use the HFN sent in the container (which is set by the source to the last value of the HFN used by the UE) when initializing security for the UE on relocation. However, the setting of the RLC re-establish to TRUE would imply that the UE needs to use the START sent in the last CELL UPDATE to set the HFN as opposed to continuing to use the current HFN to set the START. Thus the network should not set the IE "RLC re-establish" to TRUE in the CELL UPDATE CONFIRM, since the UE actions in this case would cause the network and UE to be out-of-synch.
Summary of change:	# It is stated in the procedure text that the UE does not support simultaneous inclusion of the IE "Downlink counter synchronisation info" element and setting of the RLC re-establish to TRUE. It is specified that UE actions are not specified in case the network erroneously sets the RLC re-establish to TRUE when triggering a SRNS relocation.
	# Networks supporting R99 functionality only, should also comply with this CR irrespective of the UE access stratum release indicator to avoid HFN

desynchronisation.

Consequences if not approved: ⌘ A network setting the "RLC re-establish" to TRUE while triggering a SRNS relocation may get out of synch with the UE in terms of HFN.

Clauses affected: ⌘ 8.3.1.6, 10.2.8

Other specs affected: ⌘

Y	N
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Other core specifications ⌘
Test specifications
O&M Specifications

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.1.6 Reception of the CELL UPDATE CONFIRM/URA UPDATE CONFIRM message by the UE

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

the UE may:

- 1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

the UE shall:

- 1> stop timer T302;

- 1> in case of a cell update procedure and the CELL UPDATE CONFIRM message:

- 2> includes "RB information elements"; and/or

- 2> includes "Transport channel information elements"; and/or

- 2> includes "Physical channel information elements"; and

- 2> if the variable ORDERED_RECONFIGURATION is set to FALSE:

- 3> set the variable ORDERED_RECONFIGURATION to TRUE.

- 1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:

- 2> if the IE "Frequency info" is included in the message:

- 3> if the IE "RRC State Indicator" is set to the value "CELL_FACH" or "CELL_PCH" or URA_PCH":

- 4> select a suitable UTRA cell according to [4] on that frequency;

- 4> act as specified in subclause 8.3.1.12.

- 3> if the IE "RRC State Indicator" is set to the value "CELL_DCH":

- 4> act on the IE "Frequency info" as specified in subclause 8.6.6.1.

- 2> use the transport channel(s) applicable for the physical channel types that is used; and

- 2> if the IE "TFS" is neither included nor previously stored in the UE for that transport channel(s):

- 3> use the TFS given in system information.

- 2> if none of the TFS stored is compatible with the physical channel:

- 3> delete the stored TFS;

- 3> use the TFS given in system information.

- 2> if the IE "RLC re-establish indicator (RB2, RB3 and RB4)" in the CELL UPDATE CONFIRM message is set to TRUE:

- 3> re-establish the RLC entities for signalling radio bearer RB2, signalling radio bearer RB3 and signalling radio bearer RB4 (if established);

- 3> if the value of the IE "Status" in the variable CIPHERING_STATUS of the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN is set to "Started":

- 4> set the HFN component of the respective COUNT-C values for AM RLC entities with RB identity 2, RB identity 3 and RB identity 4 (if established) equal to the START value included in the latest transmitted CELL UPDATE message for the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN.
- 2> if the IE "RLC re-establish indicator (RB5 and upwards)" in the CELL UPDATE CONFIRM message is set to TRUE:
 - 3> for radio bearers with RB identity 5 and upwards:
 - 4> re-establish the AM RLC entities;
 - 4> if the value of the IE "Status" in the variable CIPHERING_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED_RABS is set to "Started":
 - 5> set the HFN component of the respective COUNT-C values for AM RLC entities equal to the START value included in this CELL UPDATE message for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED_RABS.

NOTE: UE actions, in case IE "Downlink counter synchronisation info" is included and either IE "RLC re-establish indicator (RB2, RB3 and RB4)" or IE "RLC re-establish indicator (RB5 and upwards)" are set to TRUE, are not defined.

- 1> if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":
 - 2> set the IE "Status" in the variable SECURITY_MODIFICATION for all the CN domains in the variable SECURITY_MODIFICATION to "Affected".
- 1> if the variable ESTABLISHMENT_CAUSE is set:
 - 2> clear the variable ESTABLISHMENT_CAUSE.
- 1> enter a state according to subclause 8.6.3.3 applied on the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message.

If the UE after state transition enters CELL_DCH state, it shall:

- 1> perform the physical layer synchronisation procedure A as specified in [29] (FDD only);
- 1> not prohibit periodical status transmission in RLC.

If the UE after state transition remains in CELL_FACH state, it shall

- 1> start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";
- 1> select PRACH according to subclause 8.5.17;
- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> not prohibit periodical status transmission in RLC;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> ignore that IE and stop using DRX.

If the UE after state transition enters URA_PCH or CELL_PCH state, it shall:

- 1> prohibit periodical status transmission in RLC;
- 1> clear the variable C_RNTI;
- 1> stop using that C_RNTI just cleared from the variable C_RNTI in MAC;

1> start the timer T305 using its initial value if timer T305 is not running and periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";

1> select Secondary CCPCH according to subclause 8.5.19;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging Occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.

1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:

2> set the variable INVALID_CONFIGURATION to TRUE.

If the UE after the state transition remains in CELL_FACH state; and

1> the contents of the variable C_RNTI are empty:

it shall check the value of V302; and:

1> if V302 is equal to or smaller than N302:

2> if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:

3> the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE; and/or

3> the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:

4> abort the ongoing integrity and/or ciphering reconfiguration;

4> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":

5> set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and

5> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.

4> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":

5> set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and

5> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.

2> in case of a URA update procedure:

3> stop the URA update procedure;

3> clear any entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and

3> continue with a cell update procedure.

2> set the contents of the CELL UPDATE message according to subclause 8.3.1.3, except for the IE "Cell update cause" which shall be set to "cell reselection";

2> submit the CELL UPDATE message for transmission on the uplink CCCH;

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302:

2> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

2> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

- 2> in case of a cell update procedure:
 - 3> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
- 2> in case of a URA update procedure:
 - 3> clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
- 2> release all its radio resources;
- 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
- 2> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
- 2> clear the variable ESTABLISHED_RABS;
- 2> enter idle mode;
- 2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
- 2> and the procedure ends.

If the UE after the state transition remains in CELL_FACH state; and

- a C-RNTI is stored in the variable C_RNTI;

or

- the UE after the state transition moves to another state than the CELL_FACH state:

the UE shall:

- 1> if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - 2> include and set the IE "Radio bearer uplink ciphering activation time info" in any response message transmitted below to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- 1> in case cell reselection interrupted an ongoing cell update procedure and a CELL UPDATE CONFIRM/URA UPDATE CONFIRM was received with the IE "Downlink counter synchronisation info" present and the response to which was not submitted to the lower layers due to the cell re-selection:
 - 2> include the IE "START list" in the response message transmitted according to subclause 8.3.1.7;
 - 2> if the CELL UPDATE CONFIRM/URA UPDATE CONFIRM, the response to which was not delivered to the lower layers, due to the cell re-selection, included the IE "RB with PDCP information list":
 - 3> include the IE "RB with PDCP information list" in the response message transmitted according to subclause 8.3.1.7.

1> in case of a cell update procedure:

- 2> set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 2> clear that entry.

1> in case of a URA update procedure:

- 2> set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 2> clear that entry;
- 1> if the variable PDCP_SN_INFO is non-empty:
 - 2> include the IE "RB with PDCP information list" in any response message transmitted below and set it to the value of the variable PDCP_SN_INFO.
- 1> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message included the IE "Downlink counter synchronisation info":
 - 2> if the variable PDCP_SN_INFO is empty:
 - 3> configure the corresponding RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "stop".
 - 2> else:
 - 3> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "stop";
 - 3> configure the RLC entity for UM and AM radio bearers for which the IE "PDCP SN Info" is not included to "stop".
 - 2> re-establish RB2;
 - 2> for the downlink and the uplink, apply the ciphering configuration as follows:
 - 3> if the received re-configuration message included the IE "Ciphering Mode Info":
 - 4> use the ciphering configuration in the received message when transmitting the response message.
 - 3> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because the activation times not having been reached:
 - 4> if the previous SECURITY MODE COMMAND was received due to new keys being received:
 - 5> consider the new ciphering configuration to include the received new keys;
 - 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 as indicated in subclause 8.1.12.3.1.
 - 4> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the previous SECURITY MODE COMMAND caused a change in LATEST_CONFIGURED_CN_DOMAIN:
 - 5> consider the new ciphering configuration to include the keys associated with the LATEST_CONFIGURED_CN_DOMAIN;
 - 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 to the most recently transmitted IE "START list" or IE "START" for the LATEST_CONFIGURED_CN_DOMAIN at the reception of the previous SECURITY MODE COMMAND.
 - 4> apply the new ciphering configuration immediately following RLC re-establishment.
 - 3> else:
 - 4> continue using the current ciphering configuration.
 - 2> set the new uplink and downlink HFN component of the COUNT-C of RB2 to MAX(uplink HFN component of the COUNT-C of RB2, downlink HFN component of the COUNT-C of RB2);
 - 2> increment by one the downlink and uplink values of the HFN component of the COUNT-C for RB2;

- 2> calculate the START value according to subclause 8.5.9;
 - 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in any response message transmitted below.
- 1> transmit a response message as specified in subclause 8.3.1.7;
 - 1> if the IE "Integrity protection mode info" was present in the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:
 - 2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message.
 - 1> if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
 - 2> set the variable ORDERED_RECONFIGURATION to FALSE.
 - 1> clear the variable PDCP_SN_INFO;
 - 1> when the response message transmitted per subclause 8.3.1.7 to the UTRAN has been confirmed by RLC:
 - 2> if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - 3> resume data transmission on any suspended radio bearer and signalling radio bearer mapped on RLC-AM or RLC-UM;
 - 3> set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - 3> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
 - 2> if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - 3> set "Uplink RRC Message sequence number" for signalling radio bearer RB0 in the variable INTEGRITY_PROTECTION_INFO to a value such that next RRC message to be sent on uplink RB0 will use the new integrity protection configuration;
 - 3> allow the transmission of RRC messages on all signalling radio bearers with any RRC SN;
 - 3> set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE.
 - 2> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.
 - 1> in case of a cell update procedure:
 - 2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
 - 1> in case of a URA update procedure:
 - 2> clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
 - 1> set the variable CELL_UPDATE_STARTED to FALSE;
 - 1> clear the variable SECURITY_MODIFICATION.

The procedure ends.

8.3.1.7 Transmission of a response message to UTRAN

If the CELL UPDATE CONFIRM message:

- includes the IE "RB information to release list":

the UE shall:

- 1> transmit a RADIO BEARER RELEASE COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list"; and
- includes the IE "RB information to reconfigure list"; or
- includes the IE "RB information to be affected list":

the UE shall:

- 1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list", nor the IE "RB information to reconfigure list", nor the IE "RB information to be affected list"; and
- includes "Transport channel information elements":

the UE shall:

- 1> transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list", nor the IE "RB information to reconfigure list", nor the IE "RB information to be affected list"; and
- does not include "Transport channel information elements"; and
- includes "Physical channel information elements":

the UE shall:

- 1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list", nor the IE "RB information to reconfigure list", nor the IE "RB information to be affected list"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes the IE "New C-RNTI"; or
- includes the IE "New U-RNTI"; or
- includes the IE "Downlink counter synchronisation info" and the IE "New U-RNTI":

the UE shall:

- 1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and

- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- does not include "CN information elements"; and
- does not include the IE "Ciphering mode info"; and
- does not include the IE "Integrity protection mode info"; and
- does not include the IE "New C-RNTI"; and
- does not include the IE "New U-RNTI";

the UE shall:

- 1> transmit no response message.

If the URA UPDATE CONFIRM message:

- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes any one or both of the IEs "New C-RNTI" and "New U-RNTI"; or
- includes the IE "Downlink counter synchronisation info" and the IE "New U-RNTI";

the UE shall:

- 1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

If the URA UPDATE CONFIRM message:

- does not include "CN information elements"; and
- does not include the IE "Ciphering mode info"; and
- does not include the IE "Integrity protection mode info"; and
- does not include the IE "New U-RNTI"; and
- does not include the IE "New C-RNTI";

the UE shall:

- 1> transmit no response message.

If the new state is CELL_DCH or CELL_FACH, the response message shall be transmitted using the new configuration after the state transition., and the UE shall:

- 1> if the IE "Downlink counter synchronisation info" was included in the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:
 - 2> when RLC has confirmed the successful transmission of the response message:
 - 3> if the variable PDCP_SN_INFO is empty:
 - 4> configure the RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "continue".
 - 3> else:
 - 4> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "continue";
 - 4> configure the RLC entity for UM and AM radio bearers for which the IE " PDCP SN Info" is not included to "continue".

- 3> re-establish all AM and UM RLC entities with RB identities larger than 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the corresponding CN domain;
- 3> re-establish the RLC entities with RB identities 1, 3 and 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN;
- 3> set the remaining bits of the HFN component of the COUNT-C values of all UM RLC entities to zero;
- 3> if the IE "PDCP context relocation info" is not present:
 - > re-initialise the PDCP header compression entities of each radio bearer in the variable ESTABLISHED_RABS as specified in [36].
- 3> if the IE "PDCP context relocation info" is present:
 - 4> perform the actions as specified in subclause 8.6.4.13.
- 1> if the variable PDCP_SN_INFO is empty:
 - 2> if the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - 3> when RLC has confirmed the successful transmission of the response message:
 - 4> continue with the remainder of the procedure.
 - 2> if the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message did not contain the IE "Ciphering mode info":
 - 3> when RLC has been requested to transmit the response message,
 - 4> continue with the remainder of the procedure.
 - 1> if the variable PDCP_SN_INFO is non-empty:
 - 2> when RLC has confirmed the successful transmission of the response message:
 - 3> for each radio bearer in the variable PDCP_SN_INFO:
 - 4> if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":
 - 5> configure the RLC entity for that radio bearer to "continue".
 - 3> continue with the remainder of the procedure.

If the new state is CELL_PCH or URA_PCH, the response message shall be transmitted in CELL_FACH state, and the UE shall:

- 1> when RLC has confirmed the successful transmission of the response message:
 - 2> if the IE "Downlink counter synchronisation info" was included in the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:
 - 3> re-establish all AM and UM RLC entities with RB identities larger than 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the corresponding CN domain;
 - 3> re-establish the RLC entities with RB identities 1, 3 and 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN;
 - 3> set the remaining bits of the HFN component of the COUNT-C values of all UM RLC entities to zero;
 - 3> re-initialise the PDCP header compression entities of each radio bearer in the variable ESTABLISHED_RABS as specified in [36].

2> for each radio bearer in the variable PDCP_SN_INFO:

3> if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":

4> configure the RLC entity for that radio bearer to "continue".

2> enter the new state (CELL_PCH or URA_PCH, respectively).

1> continue with the remainder of the procedure.

10.2.8 CELL UPDATE CONFIRM

This message confirms the cell update procedure and can be used to reallocate new RNTI information for the UE valid in the new cell.

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE Information Elements					
U-RNTI	CV-CCCH		U-RNTI 10.3.3.47		
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36		
Integrity check info	CH		Integrity check info 10.3.3.16		
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing an SRNS relocation or a cell reselection from GERAN <i>lu mode</i>	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	The UTRAN should not include this IE unless it is performing either an SRNS relocation or a cell reselection from GERAN <i>lu mode</i> , and a change in ciphering algorithm.	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"	
New U-RNTI	OP		U-RNTI 10.3.3.47		
New C-RNTI	OP		C-RNTI 10.3.3.8		
New DSCH-RNTI	OP		DSCH-RNTI 10.3.3.9a		
New H-RNTI	OP		H-RNTI 10.3.3.14a		REL-5

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
RRC State Indicator	MP		RRC State Indicator 10.3.3.35a		
UTRAN DRX cycle length coefficient	OP		UTRAN DRX cycle length coefficient 10.3.3.49		
RLC re-establish indicator (RB2, RB3 and RB4)	MP		RLC re-establish indicator 10.3.3.35	Should not be set to TRUE if IE "Downlink counter synchronisation info" is included in message.	
RLC re-establish indicator (RB5 and upwards)	MP		RLC re-establish indicator 10.3.3.35	Should not be set to TRUE if IE "Downlink counter synchronisation info" is included in message.	
CN Information Elements					
CN Information info	OP		CN Information info 10.3.1.3		
UTRAN Information Elements					
URA identity	OP		URA identity 10.3.2.6		
RB information elements					
RB information to release list	OP	1 to <maxRB>			
>RB information to release	MP		RB information to release 10.3.4.19		
RB information to reconfigure list	OP	1 to <maxRB>			
>RB information to reconfigure	MP		RB information to reconfigure 10.3.4.18		
RB information to be affected list	OP	1 to <maxRB>			
>RB information to be affected	MP		RB information to be affected 10.3.4.17		
Downlink counter synchronisation info	OP				
>RB with PDCP information list	OP	1 to <maxRBall RABs>			
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	This IE is needed for each RB having PDCP in the case of lossless SRNS relocation	
	OP				REL-5
>>PDCP context relocation info	OP		PDCP context relocation info 10.3.4.1a	This IE is needed for each RB having PDCP and performing PDCP context relocation	REL-5
TrCH Information Elements					

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Uplink transport channels					
UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24		
Deleted TrCH information list	OP	1 to <maxTrCH >			
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5		
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >			
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2		
CHOICE <i>mode</i>	MP				
>FDD					
>>CPCH set ID	OP		CPCH set ID 10.3.5.3		
>>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxTrCH >			
>>>>DRAC static information	MP		DRAC static information 10.3.5.7		
>TDD				(no data)	
Downlink transport channels					
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6		
Deleted TrCH information list	OP	1 to <maxTrCH >			
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4		
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >			
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1		
PhyCH information elements					
Frequency info	OP		Frequency info 10.3.6.36		
Uplink radio resources					
Maximum allowed UL TX power	MD		Maximum allowed UL TX power	Default value is the existing maximum UL TX	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			10.3.6.39	power	
<i>CHOICE channel requirement</i>	OP				
>Uplink DPCH info			Uplink DPCH info 10.3.6.88.		
>CPCH SET Info			CPCH SET Info 10.3.6.13		
Downlink radio resources					
<i>CHOICE mode</i>	MP				
>FDD					
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30		
>TDD				(no data)	
Downlink HS-PDSCH Information	OP		Downlink HS_PDSCH Information 10.3.6.23a		REL-5
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24		
Downlink information per radio link list	OP	1 to <maxRL>		Send downlink information for each radio link to be set-up	
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27		

Condition	Explanation
CCCH	This IE is mandatory present when CCCH is used and ciphering is not required and not needed otherwise.

CHANGE REQUEST

25.331 CR 2329 # rev - # Current version: 6.1.0

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:	# Erroneous setting of Re-establish Indicator in case of SRNS relocation		
Source:	# RAN WG2		
Work item code:	# TEI5	Date:	# 10/05/2004
Category:	# A	Release:	# Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	# 1. The current specification allows for the network to trigger an RLC re-establishment by explicitly setting the RLC re-establish indicator in the CELL UPDATE CONFIRM while also including the IE "Downlink counter synchronisation info" to trigger the necessary actions in the UE for SRNS relocation. However, doing so can lead to inter-operability problems unless the network and UE perform the identical (sequence of) actions in setting of the HFN following relocation. Since the SRNS relocation procedure requires the UE to perform an RLC re-establishment, the network does not need to explicitly trigger this by setting the RLC re-establish indicator to TRUE.
	# 2. The current specification for the SRNS Relocation container explicitly requires the target to use the HFN sent in the container (which is set by the source to the last value of the HFN used by the UE) when initializing security for the UE on relocation. However, the setting of the RLC re-establish to TRUE would imply that the UE needs to use the START sent in the last CELL UPDATE to set the HFN as opposed to continuing to use the current HFN to set the START. Thus the network should not set the IE "RLC re-establish" to TRUE in the CELL UPDATE CONFIRM, since the UE actions in this case would cause the network and UE to be out-of-synch.
Summary of change:	# It is stated in the procedure text that the UE does not support simultaneous inclusion of the IE "Downlink counter synchronisation info" element and setting of the RLC re-establish to TRUE. It is specified that UE actions are not specified in case the network erroneously sets the RLC re-establish to TRUE when triggering a SRNS relocation.
	# Networks supporting R99 functionality only, should also comply with this CR irrespective of the UE access stratum release indicator to avoid HFN

desynchronisation.

Consequences if not approved: ⌘ A network setting the "RLC re-establish" to TRUE while triggering a SRNS relocation may get out of synch with the UE in terms of HFN.

Clauses affected: ⌘ 8.3.1.6, 10.2.8

Other specs affected: ⌘

Y	N

Other core specifications ⌘
Test specifications
O&M Specifications

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.3.1.6 Reception of the CELL UPDATE CONFIRM/URA UPDATE CONFIRM message by the UE

When the UE receives a CELL UPDATE CONFIRM/URA UPDATE CONFIRM message; and

- if the message is received on the CCCH, and IE "U-RNTI" is present and has the same value as the variable U_RNTI; or
- if the message is received on DCCH:

the UE may:

- 1> maintain a list of the set of cells to which the UE has Radio Links if the IE "Cell ID" is present.

the UE shall:

- 1> stop timer T302;

- 1> in case of a cell update procedure and the CELL UPDATE CONFIRM message:

- 2> includes "RB information elements"; and/or

- 2> includes "Transport channel information elements"; and/or

- 2> includes "Physical channel information elements"; and

- 2> if the variable ORDERED_RECONFIGURATION is set to FALSE:

- 3> set the variable ORDERED_RECONFIGURATION to TRUE.

- 1> act upon all received information elements as specified in subclause 8.6, unless specified otherwise in the following:

- 2> if the IE "Frequency info" is included in the message:

- 3> if the IE "RRC State Indicator" is set to the value "CELL_FACH" or "CELL_PCH" or URA_PCH":

- 4> select a suitable UTRA cell according to [4] on that frequency;

- 4> act as specified in subclause 8.3.1.12.

- 3> if the IE "RRC State Indicator" is set to the value "CELL_DCH":

- 4> act on the IE "Frequency info" as specified in subclause 8.6.6.1.

- 2> use the transport channel(s) applicable for the physical channel types that is used; and

- 2> if the IE "TFS" is neither included nor previously stored in the UE for that transport channel(s):

- 3> use the TFS given in system information.

- 2> if none of the TFS stored is compatible with the physical channel:

- 3> delete the stored TFS;

- 3> use the TFS given in system information.

- 2> if the IE "RLC re-establish indicator (RB2, RB3 and RB4)" in the CELL UPDATE CONFIRM message is set to TRUE:

- 3> re-establish the RLC entities for signalling radio bearer RB2, signalling radio bearer RB3 and signalling radio bearer RB4 (if established);

- 3> if the value of the IE "Status" in the variable CIPHERING_STATUS of the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN is set to "Started":

- 4> set the HFN component of the respective COUNT-C values for AM RLC entities with RB identity 2, RB identity 3 and RB identity 4 (if established) equal to the START value included in the latest transmitted CELL UPDATE message for the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN.
- 2> if the IE "RLC re-establish indicator (RB5 and upwards)" in the CELL UPDATE CONFIRM message is set to TRUE:
 - 3> for radio bearers with RB identity 5 and upwards:
 - 4> re-establish the AM RLC entities;
 - 4> if the value of the IE "Status" in the variable CIPHERING_STATUS of the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED_RABS is set to "Started":
 - 5> set the HFN component of the respective COUNT-C values for AM RLC entities equal to the START value included in this CELL UPDATE message for the CN domain as indicated in the IE "CN domain identity" in the IE "RAB info" in the variable ESTABLISHED_RABS.

NOTE: UE actions, in case IE "Downlink counter synchronisation info" is included and either IE "RLC re-establish indicator (RB2, RB3 and RB4)" or IE "RLC re-establish indicator (RB5 and upwards)" are set to TRUE, are not defined.

- 1> if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info" or contained the IE "Integrity protection mode info":
 - 2> set the IE "Status" in the variable SECURITY_MODIFICATION for all the CN domains in the variable SECURITY_MODIFICATION to "Affected".
- 1> if the variable ESTABLISHMENT_CAUSE is set:
 - 2> clear the variable ESTABLISHMENT_CAUSE.
- 1> enter a state according to subclause 8.6.3.3 applied on the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message.

If the UE after state transition enters CELL_DCH state, it shall:

- 1> perform the physical layer synchronisation procedure A as specified in [29] (FDD only);
- 1> not prohibit periodical status transmission in RLC.

If the UE after state transition remains in CELL_FACH state, it shall

- 1> start the timer T305 using its initial value if timer T305 is not running and periodical cell update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";
- 1> select PRACH according to subclause 8.5.17;
- 1> select Secondary CCPCH according to subclause 8.5.19;
- 1> not prohibit periodical status transmission in RLC;
- 1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:
 - 2> ignore that IE and stop using DRX.

If the UE after state transition enters URA_PCH or CELL_PCH state, it shall:

- 1> prohibit periodical status transmission in RLC;
- 1> clear the variable C_RNTI;
- 1> stop using that C_RNTI just cleared from the variable C_RNTI in MAC;

1> start the timer T305 using its initial value if timer T305 is not running and periodical update has been configured by T305 in the IE "UE Timers and constants in connected mode" set to any other value than "infinity";

1> select Secondary CCPCH according to subclause 8.5.19;

1> if the IE "UTRAN DRX cycle length coefficient" is included in the same message:

2> use the value in the IE "UTRAN DRX Cycle length coefficient" for calculating Paging Occasion and PICH Monitoring Occasion as specified in subclause 8.6.3.2.

1> if the IE "UTRAN DRX cycle length coefficient" is not included in the same message:

2> set the variable INVALID_CONFIGURATION to TRUE.

If the UE after the state transition remains in CELL_FACH state; and

1> the contents of the variable C_RNTI are empty:

it shall check the value of V302; and:

1> if V302 is equal to or smaller than N302:

2> if, caused by the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:

3> the IE "Reconfiguration" in the variable CIPHERING_STATUS is set to TRUE; and/or

3> the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO is set to TRUE:

4> abort the ongoing integrity and/or ciphering reconfiguration;

4> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":

5> set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and

5> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.

4> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":

5> set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE; and

5> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.

2> in case of a URA update procedure:

3> stop the URA update procedure;

3> clear any entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and

3> continue with a cell update procedure.

2> set the contents of the CELL UPDATE message according to subclause 8.3.1.3, except for the IE "Cell update cause" which shall be set to "cell reselection";

2> submit the CELL UPDATE message for transmission on the uplink CCCH;

2> increment counter V302;

2> restart timer T302 when the MAC layer indicates success or failure to transmit the message.

1> if V302 is greater than N302:

2> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO;

2> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO;

- 2> in case of a cell update procedure:
 - 3> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
- 2> in case of a URA update procedure:
 - 3> clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
- 2> release all its radio resources;
- 2> indicate release (abort) of the established signalling connections (as stored in the variable ESTABLISHED_SIGNALLING_CONNECTIONS) and established radio access bearers (as stored in the variable ESTABLISHED_RABS) to upper layers;
- 2> clear the variable ESTABLISHED_SIGNALLING_CONNECTIONS;
- 2> clear the variable ESTABLISHED_RABS;
- 2> enter idle mode;
- 2> other actions the UE shall perform when entering idle mode from connected mode are specified in subclause 8.5.2;
- 2> and the procedure ends.

If the UE after the state transition remains in CELL_FACH state; and

- a C-RNTI is stored in the variable C_RNTI;

or

- the UE after the state transition moves to another state than the CELL_FACH state:

the UE shall:

- 1> if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - 2> include and set the IE "Radio bearer uplink ciphering activation time info" in any response message transmitted below to the value of the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
- 1> in case cell reselection interrupted an ongoing cell update procedure and a CELL UPDATE CONFIRM/URA UPDATE CONFIRM was received with the IE "Downlink counter synchronisation info" present and the response to which was not submitted to the lower layers due to the cell re-selection:
 - 2> include the IE "START list" in the response message transmitted according to subclause 8.3.1.7;
 - 2> if the CELL UPDATE CONFIRM/URA UPDATE CONFIRM, the response to which was not delivered to the lower layers, due to the cell re-selection, included the IE "RB with PDCP information list":
 - 3> include the IE "RB with PDCP information list" in the response message transmitted according to subclause 8.3.1.7.

1> in case of a cell update procedure:

- 2> set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the CELL UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 2> clear that entry.

1> in case of a URA update procedure:

- 2> set the IE "RRC transaction identifier" in any response message transmitted below to the value of "RRC transaction identifier" in the entry for the URA UPDATE CONFIRM message in the table "Accepted transactions" in the variable TRANSACTIONS; and
- 2> clear that entry;
- 1> if the variable PDCP_SN_INFO is non-empty:
 - 2> include the IE "RB with PDCP information list" in any response message transmitted below and set it to the value of the variable PDCP_SN_INFO.
- 1> if the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message included the IE "Downlink counter synchronisation info":
 - 2> if the variable PDCP_SN_INFO is empty:
 - 3> configure the corresponding RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "stop".
 - 2> else:
 - 3> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "stop";
 - 3> configure the RLC entity for UM and AM radio bearers for which the IE "PDCP SN Info" is not included to "stop".
 - 2> re-establish RB2;
 - 2> for the downlink and the uplink, apply the ciphering configuration as follows:
 - 3> if the received re-configuration message included the IE "Ciphering Mode Info":
 - 4> use the ciphering configuration in the received message when transmitting the response message.
 - 3> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because the activation times not having been reached:
 - 4> if the previous SECURITY MODE COMMAND was received due to new keys being received:
 - 5> consider the new ciphering configuration to include the received new keys;
 - 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 as indicated in subclause 8.1.12.3.1.
 - 4> if the ciphering configuration for RB2 from a previously received SECURITY MODE COMMAND has not yet been applied because of the corresponding activation times not having been reached and the previous SECURITY MODE COMMAND caused a change in LATEST_CONFIGURED_CN_DOMAIN:
 - 5> consider the new ciphering configuration to include the keys associated with the LATEST_CONFIGURED_CN_DOMAIN;
 - 5> initialise the HFN component of the uplink COUNT-C and downlink COUNT-C of SRB2 to the most recently transmitted IE "START list" or IE "START" for the LATEST_CONFIGURED_CN_DOMAIN at the reception of the previous SECURITY MODE COMMAND.
 - 4> apply the new ciphering configuration immediately following RLC re-establishment.
 - 3> else:
 - 4> continue using the current ciphering configuration.
 - 2> set the new uplink and downlink HFN component of the COUNT-C of RB2 to MAX(uplink HFN component of the COUNT-C of RB2, downlink HFN component of the COUNT-C of RB2);
 - 2> increment by one the downlink and uplink values of the HFN component of the COUNT-C for RB2;

- 2> calculate the START value according to subclause 8.5.9;
 - 2> include the calculated START values for each CN domain in the IE "START list" in the IE "Uplink counter synchronisation info" in any response message transmitted below.
- 1> transmit a response message as specified in subclause 8.3.1.7;
 - 1> if the IE "Integrity protection mode info" was present in the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:
 - 2> start applying the new integrity protection configuration in the uplink for signalling radio bearer RB2 from and including the transmitted response message.
 - 1> if the variable ORDERED_RECONFIGURATION is set to TRUE caused by the received CELL UPDATE CONFIRM message in case of a cell update procedure:
 - 2> set the variable ORDERED_RECONFIGURATION to FALSE.
 - 1> clear the variable PDCP_SN_INFO;
 - 1> when the response message transmitted per subclause 8.3.1.7 to the UTRAN has been confirmed by RLC:
 - 2> if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - 3> resume data transmission on any suspended radio bearer and signalling radio bearer mapped on RLC-AM or RLC-UM;
 - 3> set the IE "Reconfiguration" in the variable CIPHERING_STATUS to FALSE; and
 - 3> clear the variable RB_UPLINK_CIPHERING_ACTIVATION_TIME_INFO.
 - 2> if the CELL UPDATE CONFIRM / URA UPDATE CONFIRM message contained the IE "Integrity protection mode info":
 - 3> set "Uplink RRC Message sequence number" for signalling radio bearer RB0 in the variable INTEGRITY_PROTECTION_INFO to a value such that next RRC message to be sent on uplink RB0 will use the new integrity protection configuration;
 - 3> allow the transmission of RRC messages on all signalling radio bearers with any RRC SN;
 - 3> set the IE "Reconfiguration" in the variable INTEGRITY_PROTECTION_INFO to FALSE.
 - 2> clear the variable INTEGRITY_PROTECTION_ACTIVATION_INFO.
 - 1> in case of a cell update procedure:
 - 2> clear the entry for the CELL UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
 - 1> in case of a URA update procedure:
 - 2> clear the entry for the URA UPDATE CONFIRM message in the table "Rejected transactions" in the variable TRANSACTIONS.
 - 1> set the variable CELL_UPDATE_STARTED to FALSE;
 - 1> clear the variable SECURITY_MODIFICATION.

The procedure ends.

8.3.1.7 Transmission of a response message to UTRAN

If the CELL UPDATE CONFIRM message:

- includes the IE "RB information to release list":

the UE shall:

- 1> transmit a RADIO BEARER RELEASE COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list"; and
- includes the IE "RB information to reconfigure list"; or
- includes the IE "RB information to be affected list":

the UE shall:

- 1> transmit a RADIO BEARER RECONFIGURATION COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list", nor the IE "RB information to reconfigure list", nor the IE "RB information to be affected list"; and
- includes "Transport channel information elements":

the UE shall:

- 1> transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list", nor the IE "RB information to reconfigure list", nor the IE "RB information to be affected list"; and
- does not include "Transport channel information elements"; and
- includes "Physical channel information elements":

the UE shall:

- 1> transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include the IE "RB information to release list", nor the IE "RB information to reconfigure list", nor the IE "RB information to be affected list"; and
- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes the IE "New C-RNTI"; or
- includes the IE "New U-RNTI"; or
- includes the IE "Downlink counter synchronisation info" and the IE "New U-RNTI":

the UE shall:

- 1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

If the CELL UPDATE CONFIRM message:

- does not include "RB information elements"; and

- does not include "Transport channel information elements"; and
- does not include "Physical channel information elements"; and
- does not include "CN information elements"; and
- does not include the IE "Ciphering mode info"; and
- does not include the IE "Integrity protection mode info"; and
- does not include the IE "New C-RNTI"; and
- does not include the IE "New U-RNTI";

the UE shall:

- 1> transmit no response message.

If the URA UPDATE CONFIRM message:

- includes "CN information elements"; or
- includes the IE "Ciphering mode info"; or
- includes the IE "Integrity protection mode info"; or
- includes any one or both of the IEs "New C-RNTI" and "New U-RNTI"; or
- includes the IE "Downlink counter synchronisation info" and the IE "New U-RNTI";

the UE shall:

- 1> transmit a UTRAN MOBILITY INFORMATION CONFIRM as response message using AM RLC.

If the URA UPDATE CONFIRM message:

- does not include "CN information elements"; and
- does not include the IE "Ciphering mode info"; and
- does not include the IE "Integrity protection mode info"; and
- does not include the IE "New U-RNTI"; and
- does not include the IE "New C-RNTI";

the UE shall:

- 1> transmit no response message.

If the new state is CELL_DCH or CELL_FACH, the response message shall be transmitted using the new configuration after the state transition., and the UE shall:

- 1> if the IE "Downlink counter synchronisation info" was included in the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:
 - 2> when RLC has confirmed the successful transmission of the response message:
 - 3> if the variable PDCP_SN_INFO is empty:
 - 4> configure the RLC entity for all AM and UM radio bearers and AM and UM signalling radio bearers except RB2 to "continue".
 - 3> else:
 - 4> configure the RLC entity for signalling radio bearers RB1, RB3 and RB4 to "continue";
 - 4> configure the RLC entity for UM and AM radio bearers for which the IE " PDCP SN Info" is not included to "continue".

- 3> re-establish all AM and UM RLC entities with RB identities larger than 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the corresponding CN domain;
- 3> re-establish the RLC entities with RB identities 1, 3 and 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN;
- 3> set the remaining bits of the HFN component of the COUNT-C values of all UM RLC entities to zero;
- 3> if the IE "PDCP context relocation info" is not present:
 - > re-initialise the PDCP header compression entities of each radio bearer in the variable ESTABLISHED_RABS as specified in [36].
- 3> if the IE "PDCP context relocation info" is present:
 - 4> perform the actions as specified in subclause 8.6.4.13.
- 1> if the variable PDCP_SN_INFO is empty:
 - 2> if the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message contained the IE "Ciphering mode info":
 - 3> when RLC has confirmed the successful transmission of the response message:
 - 4> continue with the remainder of the procedure.
 - 2> if the CELL UPDATE CONFIRM or URA UPDATE CONFIRM message did not contain the IE "Ciphering mode info":
 - 3> when RLC has been requested to transmit the response message,
 - 4> continue with the remainder of the procedure.
 - 1> if the variable PDCP_SN_INFO is non-empty:
 - 2> when RLC has confirmed the successful transmission of the response message:
 - 3> for each radio bearer in the variable PDCP_SN_INFO:
 - 4> if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":
 - 5> configure the RLC entity for that radio bearer to "continue".
 - 3> continue with the remainder of the procedure.

If the new state is CELL_PCH or URA_PCH, the response message shall be transmitted in CELL_FACH state, and the UE shall:

- 1> when RLC has confirmed the successful transmission of the response message:
 - 2> if the IE "Downlink counter synchronisation info" was included in the received CELL UPDATE CONFIRM or URA UPDATE CONFIRM message:
 - 3> re-establish all AM and UM RLC entities with RB identities larger than 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the corresponding CN domain;
 - 3> re-establish the RLC entities with RB identities 1, 3 and 4 and set the first 20 bits of all the HFN component of the respective COUNT-C values to the START value included in the response message for the CN domain stored in the variable LATEST_CONFIGURED_CN_DOMAIN;
 - 3> set the remaining bits of the HFN component of the COUNT-C values of all UM RLC entities to zero;
 - 3> re-initialise the PDCP header compression entities of each radio bearer in the variable ESTABLISHED_RABS as specified in [36].

2> for each radio bearer in the variable PDCP_SN_INFO:

3> if the IE "RB started" in the variable ESTABLISHED_RABS is set to "started":

4> configure the RLC entity for that radio bearer to "continue".

2> enter the new state (CELL_PCH or URA_PCH, respectively).

1> continue with the remainder of the procedure.

10.2.8 CELL UPDATE CONFIRM

This message confirms the cell update procedure and can be used to reallocate new RNTI information for the UE valid in the new cell.

RLC-SAP: UM

Logical channel: CCCH or DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Message Type	MP		Message Type		
UE Information Elements					
U-RNTI	CV-CCCH		U-RNTI 10.3.3.47		
RRC transaction identifier	MP		RRC transaction identifier 10.3.3.36		
Integrity check info	CH		Integrity check info 10.3.3.16		
Integrity protection mode info	OP		Integrity protection mode info 10.3.3.19	The UTRAN should not include this IE unless it is performing an SRNS relocation or a cell reselection from GERAN <i>lu mode</i>	
Ciphering mode info	OP		Ciphering mode info 10.3.3.5	The UTRAN should not include this IE unless it is performing either an SRNS relocation or a cell reselection from GERAN <i>lu mode</i> , and a change in ciphering algorithm.	
Activation time	MD		Activation time 10.3.3.1	Default value is "now"	
New U-RNTI	OP		U-RNTI 10.3.3.47		
New C-RNTI	OP		C-RNTI 10.3.3.8		
New DSCH-RNTI	OP		DSCH-RNTI 10.3.3.9a		
New H-RNTI	OP		H-RNTI 10.3.3.14a		REL-5

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
RRC State Indicator	MP		RRC State Indicator 10.3.3.35a		
UTRAN DRX cycle length coefficient	OP		UTRAN DRX cycle length coefficient 10.3.3.49		
RLC re-establish indicator (RB2, RB3 and RB4)	MP		RLC re-establish indicator 10.3.3.35	Should not be set to TRUE if IE "Downlink counter synchronisation info" is included in message.	
RLC re-establish indicator (RB5 and upwards)	MP		RLC re-establish indicator 10.3.3.35	Should not be set to TRUE if IE "Downlink counter synchronisation info" is included in message.	
CN Information Elements					
CN Information info	OP		CN Information info 10.3.1.3		
UTRAN Information Elements					
URA identity	OP		URA identity 10.3.2.6		
RB information elements					
RB information to release list	OP	1 to <maxRB>			
>RB information to release	MP		RB information to release 10.3.4.19		
RB information to reconfigure list	OP	1 to <maxRB>			
>RB information to reconfigure	MP		RB information to reconfigure 10.3.4.18		
RB information to be affected list	OP	1 to <maxRB>			
>RB information to be affected	MP		RB information to be affected 10.3.4.17		
Downlink counter synchronisation info	OP				
>RB with PDCP information list	OP	1 to <maxRBall RABs>			
>>RB with PDCP information	MP		RB with PDCP information 10.3.4.22	This IE is needed for each RB having PDCP in the case of lossless SRNS relocation	
	OP				REL-5
>>PDCP context relocation info	OP		PDCP context relocation info 10.3.4.1a	This IE is needed for each RB having PDCP and performing PDCP context relocation	REL-5
TrCH Information Elements					

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Uplink transport channels					
UL Transport channel information common for all transport channels	OP		UL Transport channel information common for all transport channels 10.3.5.24		
Deleted TrCH information list	OP	1 to <maxTrCH >			
>Deleted UL TrCH information	MP		Deleted UL TrCH information 10.3.5.5		
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >			
>Added or Reconfigured UL TrCH information	MP		Added or Reconfigured UL TrCH information 10.3.5.2		
CHOICE <i>mode</i>	MP				
>FDD					
>>CPCH set ID	OP		CPCH set ID 10.3.5.3		
>>>Added or Reconfigured TrCH information for DRAC list	OP	1 to <maxTrCH >			
>>>>DRAC static information	MP		DRAC static information 10.3.5.7		
>TDD				(no data)	
Downlink transport channels					
DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6		
Deleted TrCH information list	OP	1 to <maxTrCH >			
>Deleted DL TrCH information	MP		Deleted DL TrCH information 10.3.5.4		
Added or Reconfigured TrCH information list	OP	1 to <maxTrCH >			
>Added or Reconfigured DL TrCH information	MP		Added or Reconfigured DL TrCH information 10.3.5.1		
PhyCH information elements					
Frequency info	OP		Frequency info 10.3.6.36		
Uplink radio resources					
Maximum allowed UL TX power	MD		Maximum allowed UL TX power	Default value is the existing maximum UL TX	

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
			10.3.6.39	power	
<i>CHOICE channel requirement</i>	OP				
>Uplink DPCH info			Uplink DPCH info 10.3.6.88.		
>CPCH SET Info			CPCH SET Info 10.3.6.13		
Downlink radio resources					
<i>CHOICE mode</i>	MP				
>FDD					
>>Downlink PDSCH information	OP		Downlink PDSCH information 10.3.6.30		
>TDD				(no data)	
Downlink HS-PDSCH Information	OP		Downlink HS_PDSCH Information 10.3.6.23a		REL-5
Downlink information common for all radio links	OP		Downlink information common for all radio links 10.3.6.24		
Downlink information per radio link list	OP	1 to <maxRL>		Send downlink information for each radio link to be set-up	
>Downlink information for each radio link	MP		Downlink information for each radio link 10.3.6.27		

Condition	Explanation
CCCH	This IE is mandatory present when CCCH is used and ciphering is not required and not needed otherwise.

CR-Form-v7

CHANGE REQUEST

TS 25.331 CR 2333 # rev **-** # Current version: **5.8.0**

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:	# Correction Concerning UE Positioning Measurement		
Source:	# RAN WG2		
Work item code:	# TEI5	Date:	# 14/05/2004
Category:	# F	Release:	# REL-5
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	# For the UE positioning measurement type there is a misalignment between the procedure text and the Need of the IEs "Reporting quantity" and "Report criteria" within the tabular specification.
Summary of change:	# The procedure text has been aligned with the tabular specification, as follows: <ul style="list-style-type: none"> • The procedure text specifying the UE behaviour upon absence of IEs 'UE positioning reporting quantity' and/ or 'CHOICE Report criteria' has been removed since these IEs are mandatory A number of minor changes concerning IE naming Isolated impact <ul style="list-style-type: none"> • The change only concerns the configuration of UE positioning measurements by means of a measurement control message • UE implementations should not be affected since the conditions for the error are impossible to occur due to the message syntax
Consequences if not approved:	# The misalignment between procedure text and tabular specification remains

Clauses affected:	# 8.4.1.3, 8.4.1.6.7, 8.6.7.18a						
Other specs affected:	<table style="display: inline-table; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px;">Y</td> <td style="border: 1px solid black; padding: 2px;">N</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">#</td> <td style="border: 1px solid black; padding: 2px;">X</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">#</td> <td style="border: 1px solid black; padding: 2px;">X</td> </tr> </table> Other core specifications # Test specifications #	Y	N	#	X	#	X
Y	N						
#	X						
#	X						

Other comments: ☞

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ☞ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.4.1.3 Reception of MEASUREMENT CONTROL by the UE

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

The UE shall:

- 1> read the IE "Measurement command";
- 1> if the IE "Measurement command" has the value "setup":
 - 2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
 - 2> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
 - 3> if the UE is in CELL_FACH state:
 - 4> the UE behaviour is not specified.
 - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency:
 - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements on at least one supported band of that measurement type:
 - 4> if the measurement is valid in the current RRC state of the UE:
 - 5> begin measurements according to the stored control information for this measurement identity.

NOTE: The UE is not required to perform measurements on cells for which it needs compressed mode but a suitable compressed mode pattern is not activated.

- 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> begin measurements according to the stored control information for this measurement identity.
- 2> for measurement type "UE positioning measurement":
 - 3> if the UE is in CELL_FACH state:
 - 4> if IE "Positioning Method" is set to "OTDOA":
 - 5> if IE "Method Type" is set to "UE assisted":
 - 6> if IE "UE positioning OTDOA assistance data for UE assisted" is not included:
 - 7> if System Information Block type 15.4 is broadcast:
 - 8> read System Information Block type 15.4.
 - 7> act as specified in subclause 8.6.7.19.2.
 - 5> if IE "Method Type" is set to "UE based":
 - 6> if IE "UE positioning OTDOA assistance data for UE based" is not included:
 - 7> if System Information Block type 15.5 is broadcast:

- 8> read System Information Block type 15.5.
- 7> act as specified in subclause 8.6.7.19.2a.
- 2> for any other measurement type:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> begin measurements according to the stored control information for this measurement identity.
- 1> if the IE "Measurement command" has the value "modify":
 - 2> for all IEs present in the MEASUREMENT CONTROL message:
 - 3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":
 - 4> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
 - 5> if the UE is in CELL_FACH state:
 - 6> the UE behaviour is not specified.
 - 4> if measurement type is set to "intra-frequency measurement", for any of the optional IEs "Intra-frequency measurement objects list", "Intra-frequency measurement quantity", "Intra-frequency reporting quantity", "Measurement Validity", "report criteria" and "parameters required for each event" (given "report criteria" is set to "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "inter-frequency measurement", for any of the optional IEs "Inter-frequency measurement quantity", "Inter-frequency reporting quantity", "Measurement Validity", "Inter-frequency set update" and "parameters required for each event" (given "report criteria" is set to either "inter-frequency measurement reporting criteria" or "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "inter-RAT measurement", for any of the optional IEs "Inter-RAT measurement objects list", "Inter-RAT measurement quantity", "Inter-RAT reporting quantity" and "parameters required for each event" (given "report criteria" is set to "inter-RAT measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning OTDOA assistance data" is present, for any of the optional IEs "UE positioning OTDOA neighbour cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-based", "UE positioning OTDOA neighbour cell info for UE-based" and "UE positioning" that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "traffic volume measurement", for any of the optional IEs "Traffic volume measurement Object", "Traffic volume measurement quantity", "Traffic volume reporting quantity", "Measurement Validity" and "parameters required for each event" (given "report criteria" is set to "traffic volume measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "quality measurement", for any of the optional IE "Quality reporting quantity" that is present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE internal measurement", for any of the optional IEs "UE internal measurement quantity", "UE internal reporting quantity" and "parameters required for each event" (given "report criteria" is set to "UE internal measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:

- 5> replace all instances of the IEs listed above (and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IEs received in the MEASUREMENT CONTROL message;
 - 5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.
- 3> otherwise:
- 4> set the variable CONFIGURATION_INCOMPLETE to TRUE.
- 2> if measurement type is set to "inter-frequency measurement":
- 3> if "report criteria" is set to "intra-frequency measurement reporting criteria" and "reporting criteria" in "inter-frequency measurement quantity" is set to "intra-frequency reporting criteria":
 - 4> if IE "Parameters required for each event" is included:
 - 5> leave the currently stored "inter-frequency measurement reporting criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables, and also store the newly received "intra-frequency measurement reporting criteria" and "intra-frequency reporting criteria".
 - 4> otherwise:
 - 5> leave the currently stored "inter-frequency measurement reporting criteria" and "intra-frequency measurement reporting criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables, and also store the newly received "intra-frequency reporting criteria".
- 3> otherwise:
- 4> clear the variables associated with the CHOICE "report criteria" and store the received "report criteria" choice;
 - 4> if the IE "inter-frequency measurement quantity" is present:
 - 5> clear the variables associated with the choice "reporting criteria" in "inter-frequency measurement quantity" and store the received "reporting criteria" choice.
- NOTE: If the UTRAN wants to modify the inter-frequency cell info list for an inter-frequency measurement configured with event based reporting without repeating any IEs related to the configured events, the only possibility is to set the IE "report criteria" to "intra-frequency measurement reporting criteria", not include the IE "parameters required for each event", and set the IE "reporting criteria" in the IE "inter-frequency measurement quantity" to "intra-frequency reporting criteria".
- 2> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:
 - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode, on at least one supported band of that measurement type, to perform the measurements:
 - 4> resume the measurements according to the new stored measurement control information.
 - 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> resume measurements according to the new stored control information for this measurement identity.

- 2> for any other measurement type:
 - 3> resume the measurements according to the new stored measurement control information.
 - 1> if the IE "measurement command" has the value "release":
 - 2> terminate the measurement associated with the identity given in the IE "measurement identity";
 - 2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY.
 - 1> if the IE "DPCH Compressed Mode Status Info" is present:
 - 2> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IE 'TGMP' in variable TGPS_IDENTITY):
 - 3> set the variable CONFIGURATION_INCOMPLETE to TRUE.
 - 2> if there is any pending "TGPS reconfiguration CFN" or any pending "TGCFN":
 - 3> the UE behaviour is unspecified;
 - 2> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS_IDENTITY):
 - 3> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
 - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message;
 - 4> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".
 - 3> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
 - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message.
- NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.
- 2> after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:
 - 3> activate the pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in this message is set to "activate" at the time indicated by IE "TGCFN"; and
 - 3> set the corresponding "Current TGPS status flag" for this pattern sequence in the variable TGPS_IDENTITY to "active"; and
 - 3> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
 - 3> if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:
 - 4> start the concerned pattern sequence immediately at that CFN.
 - 2> not alter pattern sequences stored in variable TGPS_IDENTITY, if the pattern sequence is not identified in IE "TGPSI" in the received message.
- 1> if the UE in CELL_FACH state receives a MEASUREMENT CONTROL message, which indicates the same measurement identity as that stored in the variable MEASUREMENT_IDENTITY:
 - 2> update the stored information with the traffic volume measurement control information in variable MEASUREMENT_IDENTITY; and
 - 2> refrain from updating the traffic volume measurement control information associated with this measurement identity in the variable MEASUREMENT_IDENTITY with the information received in System Information

Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) until this measurement is explicitly released with another MEASUREMENT CONTROL message.

- 1> if the IE "Read SFN indicator" included in the IE "Cell info" of an inter-frequency cell is set to TRUE and the variable UE_CAPABILITY_TRANSFERRED has the DL "Measurement capability" for "FDD measurements" set to TRUE (the UE requires DL compressed mode in order to perform measurements on FDD):
 - 2> set the variable CONFIGURATION_INCOMPLETE to TRUE.
- 1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS.

The UE may:

- 1> if the IE "Measurement command" has the value "setup":
 - 2> for measurement type "UE positioning measurement":
 - 3> if the UE is CELL_FACH state:
 - 4> if IE "Positioning Method" is set to "GPS":
 - 5> if IE "UE positioning GPS assistance data" is not included and variable UE_POSITIONING_GPS_DATA is empty:
 - 6> if System Information Block types 15, 15.1, 15.2 and 15.3 are broadcast:
 - 7> read System Information Block types 15, 15.1, 15.2 and 15.3.
 - 6> act as specified in subclause 8.6.7.19.3.
- 1> and the procedure ends.

8.4.1.6.7 UE positioning measurement

Upon transition from CELL_DCH to CELL_FACH and upon transition from CELL_DCH to CELL_PCH or URA_PCH for UE assisted GPS measurements, the UE shall:

- 1> retrieve each set of measurement control information of measurement type "UE positioning" stored in the variable MEASUREMENT_IDENTITY; and
 - 2> if the optional IE "measurement validity" for this measurement has not been included:
 - 3> delete the measurement associated with the variable MEASUREMENT_IDENTITY.
 - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "CELL_DCH":
 - 3> stop measurement reporting;
 - 3> store the measurement associated with the variable MEASUREMENT_IDENTITY to be used after the next transition to CELL_DCH state.
 - 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":
 - 3> upon transition from CELL_DCH to CELL_PCH or URA_PCH:
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning [measurement](#)" stored in the variable MEASUREMENT_IDENTITY is set to "UE positioning reporting criteria" and the value of the IE "Measurement interval" included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Measurement interval " as being 64 seconds;
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning [measurement](#)" stored in the variable MEASUREMENT_IDENTITY is set to "Periodical Reporting Criteria" and the value of the IE "Reporting interval" included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Reporting Interval" as being 64 seconds
 - 3> continue measurement reporting according to its UE positioning measurement reporting capability.
 - 2> if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "all states except CELL_DCH":
 - 3> upon transition from CELL_DCH to CELL_PCH or URA_PCH:
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning [measurement](#)" stored in the variable MEASUREMENT_IDENTITY is set to "UE positioning reporting criteria" and the value of the IE "Measurement interval " included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Measurement interval " as being 64 seconds.
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning [measurement](#)" stored in the variable MEASUREMENT_IDENTITY is set to "Periodical Reporting Criteria" and the value of the IE "Reporting interval" included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Reporting Interval" as being 64 seconds.
 - 3> resume this measurement and associated reporting according to its UE Positioning measurement reporting capability.
- 1> if the transition is due to a reconfiguration message which included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects a cell other than that indicated by this IE; or
- 1> if the transition is due to a reconfiguration message which does not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD); or

- 1> if the transition is due to a reconfiguration message which included the IE "Frequency info", and the UE selects a cell on another frequency than that indicated by this IE; or
- 1> if the transition is due to a reconfiguration message which does not include the IE "Frequency info", and the UE can not find a cell on the current frequency, but it selects a cell on another frequency; or
- 1> if the transition is not due to a reconfiguration message:
 - 2> delete the assistance data included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED and UE_POSITIONING_OTDOA_DATA_UE_ASSISTED.
- 1> if the IE "Positioning Methods" stored in the variable MEASUREMENT_IDENTITY is set to "OTDOA" or "OTDOA or GPS":
 - 2> if the IE "Method type" stored in the variable MEASUREMENT_IDENTITY is set to "UE-based" or "UE assisted preferred but UE-based allowed" or "UE-based preferred but UE-assisted allowed":
 - 3> begin monitoring assistance data received in System Information Block type 15.4 and System Information Block type 15.5 according to subclause 8.1.1.6.15.
 - 2> if the IE "Method type" stored in the variable MEASUREMENT_IDENTITY is set to "UE-assisted":
 - 3> begin monitoring assistance data received in System Information Block type 15.4 according to subclause 8.1.1.6.15.
- 1> if the UE is in CELL_FACH state:
 - 2> if the IE "UE positioning OTDOA neighbour cell list for UE assisted" stored in the variable UE_POSITIONING_OTDOA_DATA_UE_ASSISTED or UE_POSITIONING_OTDOA_DATA_UE_BASED contains neighbour cells on other frequencies than the current frequency:
 - 3> perform measurements on other frequencies according to the IE "FACH measurement occasion info".

The UE may:

- 1> if the IE "Positioning Methods" stored in the variable MEASUREMENT_IDENTITY is set to "GPS" or "OTDOA or GPS":
 - 2> begin monitoring assistance data received in System Information Block type 15 and/or System Information Block type 15.1 and/or System Information Block type 15.2 and/or System Information Block type 15.3 according to subclause 8.1.1.6.15.

8.6.7.18a ~~UE positioning measurement~~Void

~~If IE "UE positioning measurement" is received by the UE in a MEASUREMENT_CONTROL message, where IE "measurement command" has the value "setup", but IE "UE positioning reporting quantity" or "CHOICE report criteria" is not received, the UE shall:~~

- ~~1> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY;~~
- ~~1> set the variable CONFIGURATION_INCOMPLETE to TRUE.~~

CR-Form-v7

CHANGE REQUEST

TS 25.331 CR 2334 # rev **-** # Current version: **6.1.0**

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:	# Correction Concerning UE Positioning Measurement		
Source:	# RAN WG2		
Work item code:	# TEI5	Date:	# 14/05/2004
Category:	# A	Release:	# REL-6
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	# For the UE positioning measurement type there is a misalignment between the procedure text and the Need of the IEs "Reporting quantity" and "Report criteria" within the tabular specification.
Summary of change:	# The procedure text has been aligned with the tabular specification, as follows: <ul style="list-style-type: none"> The procedure text specifying the UE behaviour upon absence of IEs 'UE positioning reporting quantity' and/ or 'CHOICE Report criteria' has been removed since these IEs are mandatory A number of minor changes concerning IE naming Isolated impact <ul style="list-style-type: none"> The change only concerns the configuration of UE positioning measurements by means of a measurement control message UE implementations should not be affected since the conditions for the error are impossible to occur due to the message syntax
Consequences if not approved:	# The misalignment between procedure text and tabular specification remains

Clauses affected:	# 8.4.1.3, 8.4.1.6.7, 8.6.7.18a								
Other specs affected:	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications # <input type="checkbox"/> <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications # <input type="checkbox"/>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N								
<input type="checkbox"/>	<input checked="" type="checkbox"/>								
Y	N								
<input type="checkbox"/>	<input checked="" type="checkbox"/>								

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.4.1.3 Reception of MEASUREMENT CONTROL by the UE

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

The UE shall:

- 1> read the IE "Measurement command";
- 1> if the IE "Measurement command" has the value "setup":
 - 2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
 - 2> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
 - 3> if the UE is in CELL_FACH state:
 - 4> the UE behaviour is not specified.
 - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency:
 - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements on at least one supported band of that measurement type:
 - 4> if the measurement is valid in the current RRC state of the UE:
 - 5> begin measurements according to the stored control information for this measurement identity.

NOTE: The UE is not required to perform measurements on cells for which it needs compressed mode but a suitable compressed mode pattern is not activated.

- 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> begin measurements according to the stored control information for this measurement identity.
- 2> for measurement type "UE positioning measurement":
 - 3> if the UE is in CELL_FACH state:
 - 4> if IE "Positioning Method" is set to "OTDOA":
 - 5> if IE "Method Type" is set to "UE assisted":
 - 6> if IE "UE positioning OTDOA assistance data for UE assisted" is not included:
 - 7> if System Information Block type 15.4 is broadcast:
 - 8> read System Information Block type 15.4.
 - 7> act as specified in subclause 8.6.7.19.2.
 - 5> if IE "Method Type" is set to "UE based":
 - 6> if IE "UE positioning OTDOA assistance data for UE based" is not included:
 - 7> if System Information Block type 15.5 is broadcast:

- 8> read System Information Block type 15.5.
- 7> act as specified in subclause 8.6.7.19.2a.
- 2> for any other measurement type:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> begin measurements according to the stored control information for this measurement identity.
- 1> if the IE "Measurement command" has the value "modify":
 - 2> for all IEs present in the MEASUREMENT CONTROL message:
 - 3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":
 - 4> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
 - 5> if the UE is in CELL_FACH state:
 - 6> the UE behaviour is not specified.
 - 4> if measurement type is set to "intra-frequency measurement", for any of the optional IEs "Intra-frequency measurement objects list", "Intra-frequency measurement quantity", "Intra-frequency reporting quantity", "Measurement Validity", "report criteria" and "parameters required for each event" (given "report criteria" is set to "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "inter-frequency measurement", for any of the optional IEs "Inter-frequency measurement quantity", "Inter-frequency reporting quantity", "Measurement Validity", "Inter-frequency set update" and "parameters required for each event" (given "report criteria" is set to either "inter-frequency measurement reporting criteria" or "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "inter-RAT measurement", for any of the optional IEs "Inter-RAT measurement objects list", "Inter-RAT measurement quantity", "Inter-RAT reporting quantity" and "parameters required for each event" (given "report criteria" is set to "inter-RAT measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning OTDOA assistance data" is present, for any of the optional IEs "UE positioning OTDOA neighbour cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-based", "UE positioning OTDOA neighbour cell info for UE-based" and "UE positioning" that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "traffic volume measurement", for any of the optional IEs "Traffic volume measurement Object", "Traffic volume measurement quantity", "Traffic volume reporting quantity", "Measurement Validity" and "parameters required for each event" (given "report criteria" is set to "traffic volume measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "quality measurement", for any of the optional IE "Quality reporting quantity" that is present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE internal measurement", for any of the optional IEs "UE internal measurement quantity", "UE internal reporting quantity" and "parameters required for each event" (given "report criteria" is set to "UE internal measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:

- 5> replace all instances of the IEs listed above (and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IEs received in the MEASUREMENT CONTROL message;
 - 5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.
 - 3> otherwise:
 - 4> set the variable CONFIGURATION_INCOMPLETE to TRUE.
 - 2> if measurement type is set to "inter-frequency measurement":
 - 3> if "report criteria" is set to "intra-frequency measurement reporting criteria" and "reporting criteria" in "inter-frequency measurement quantity" is set to "intra-frequency reporting criteria":
 - 4> if IE "Parameters required for each event" is included:
 - 5> leave the currently stored "inter-frequency measurement reporting criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables, and also store the newly received "intra-frequency measurement reporting criteria" and "intra-frequency reporting criteria".
 - 4> otherwise:
 - 5> leave the currently stored "inter-frequency measurement reporting criteria" and "intra-frequency measurement reporting criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables, and also store the newly received "intra-frequency reporting criteria".
 - 3> otherwise:
 - 4> clear the variables associated with the CHOICE "report criteria" and store the received "report criteria" choice;
 - 4> if the IE "inter-frequency measurement quantity" is present:
 - 5> clear the variables associated with the choice "reporting criteria" in "inter-frequency measurement quantity" and store the received "reporting criteria" choice.
- NOTE: If the UTRAN wants to modify the inter-frequency cell info list for an inter-frequency measurement configured with event based reporting without repeating any IEs related to the configured events, the only possibility is to set the IE "report criteria" to "intra-frequency measurement reporting criteria", not include the IE "parameters required for each event", and set the IE "reporting criteria" in the IE "inter-frequency measurement quantity" to "intra-frequency reporting criteria".
- 2> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:
 - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode, on at least one supported band of that measurement type, to perform the measurements:
 - 4> resume the measurements according to the new stored measurement control information.
 - 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> resume measurements according to the new stored control information for this measurement identity.

- 2> for any other measurement type:
 - 3> resume the measurements according to the new stored measurement control information.
 - 1> if the IE "measurement command" has the value "release":
 - 2> terminate the measurement associated with the identity given in the IE "measurement identity";
 - 2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY.
 - 1> if the IE "DPCH Compressed Mode Status Info" is present:
 - 2> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IE 'TGMP' in variable TGPS_IDENTITY):
 - 3> set the variable CONFIGURATION_INCOMPLETE to TRUE.
 - 2> if there is any pending "TGPS reconfiguration CFN" or any pending "TGCFN":
 - 3> the UE behaviour is unspecified;
 - 2> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS_IDENTITY):
 - 3> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
 - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message;
 - 4> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".
 - 3> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
 - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message.
- NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.
- 2> after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:
 - 3> activate the pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in this message is set to "activate" at the time indicated by IE "TGCFN"; and
 - 3> set the corresponding "Current TGPS status flag" for this pattern sequence in the variable TGPS_IDENTITY to "active"; and
 - 3> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
 - 3> if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:
 - 4> start the concerned pattern sequence immediately at that CFN.
 - 2> not alter pattern sequences stored in variable TGPS_IDENTITY, if the pattern sequence is not identified in IE "TGPSI" in the received message.
- 1> if the UE in CELL_FACH state receives a MEASUREMENT CONTROL message, which indicates the same measurement identity as that stored in the variable MEASUREMENT_IDENTITY:
 - 2> update the stored information with the traffic volume measurement control information in variable MEASUREMENT_IDENTITY; and
 - 2> refrain from updating the traffic volume measurement control information associated with this measurement identity in the variable MEASUREMENT_IDENTITY with the information received in System Information

Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) until this measurement is explicitly released with another MEASUREMENT CONTROL message.

- 1> if the IE "Read SFN indicator" included in the IE "Cell info" of an inter-frequency cell is set to TRUE and the variable UE_CAPABILITY_TRANSFERRED has the DL "Measurement capability" for "FDD measurements" set to TRUE (the UE requires DL compressed mode in order to perform measurements on FDD):
 - 2> set the variable CONFIGURATION_INCOMPLETE to TRUE.
- 1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS.

The UE may:

- 1> if the IE "Measurement command" has the value "setup":
 - 2> for measurement type "UE positioning measurement":
 - 3> if the UE is CELL_FACH state:
 - 4> if IE "Positioning Method" is set to "GPS":
 - 5> if IE "UE positioning GPS assistance data" is not included and variable UE_POSITIONING_GPS_DATA is empty:
 - 6> if System Information Block types 15, 15.1, 15.2 and 15.3 are broadcast:
 - 7> read System Information Block types 15, 15.1, 15.2 and 15.3.
 - 6> act as specified in subclause 8.6.7.19.3.
- 1> and the procedure ends.

8.4.1.6.7 UE positioning measurement

Upon transition from CELL_DCH to CELL_FACH and upon transition from CELL_DCH to CELL_PCH or URA_PCH for UE assisted GPS measurements, the UE shall:

- 1> retrieve each set of measurement control information of measurement type "UE positioning" stored in the variable MEASUREMENT_IDENTITY; and
- 2> if the optional IE "measurement validity" for this measurement has not been included:
 - 3> delete the measurement associated with the variable MEASUREMENT_IDENTITY.
- 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "CELL_DCH":
 - 3> stop measurement reporting;
 - 3> store the measurement associated with the variable MEASUREMENT_IDENTITY to be used after the next transition to CELL_DCH state.
- 2> if the IE "measurement validity" for the measurement has been included, and the IE "UE state" has been assigned to value "all states":
 - 3> upon transition from CELL_DCH to CELL_PCH or URA_PCH:
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning [measurement](#)" stored in the variable MEASUREMENT_IDENTITY is set to "UE positioning reporting criteria" and the value of the IE "Measurement interval" included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Measurement interval " as being 64 seconds;
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning [measurement](#)" stored in the variable MEASUREMENT_IDENTITY is set to "Periodical Reporting Criteria" and the value of the IE "Reporting interval" included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Reporting Interval" as being 64 seconds
 - 3> continue measurement reporting according to its UE positioning measurement reporting capability.
- 2> if the IE "measurement validity" has been included and the IE "UE state" has been assigned to value "all states except CELL_DCH":
 - 3> upon transition from CELL_DCH to CELL_PCH or URA_PCH:
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning [measurement](#)" stored in the variable MEASUREMENT_IDENTITY is set to "UE positioning reporting criteria" and the value of the IE "Measurement interval " included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Measurement interval " as being 64 seconds.
 - 4> if the choice in the IE "Reporting Criteria" included the IE "UE Positioning [measurement](#)" stored in the variable MEASUREMENT_IDENTITY is set to "Periodical Reporting Criteria" and the value of the IE "Reporting interval" included in this IE is less than 64 seconds:
 - 5> consider the value of the IE "Reporting Interval" as being 64 seconds.
 - 3> resume this measurement and associated reporting according to its UE Positioning measurement reporting capability.
- 1> if the transition is due to a reconfiguration message which included the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD), and the UE selects a cell other than that indicated by this IE; or
- 1> if the transition is due to a reconfiguration message which does not include the IE "Primary CPICH info" (for FDD) or "Primary CCPCH info" (for TDD); or

- 1> if the transition is due to a reconfiguration message which included the IE "Frequency info", and the UE selects a cell on another frequency than that indicated by this IE; or
- 1> if the transition is due to a reconfiguration message which does not include the IE "Frequency info", and the UE can not find a cell on the current frequency, but it selects a cell on another frequency; or
- 1> if the transition is not due to a reconfiguration message:
 - 2> delete the assistance data included in the variable UE_POSITIONING_OTDOA_DATA_UE_BASED and UE_POSITIONING_OTDOA_DATA_UE_ASSISTED.
- 1> if the IE "Positioning Methods" stored in the variable MEASUREMENT_IDENTITY is set to "OTDOA" or "OTDOA or GPS":
 - 2> if the IE "Method type" stored in the variable MEASUREMENT_IDENTITY is set to "UE-based" or "UE assisted preferred but UE-based allowed" or "UE-based preferred but UE-assisted allowed":
 - 3> begin monitoring assistance data received in System Information Block type 15.4 and System Information Block type 15.5 according to subclause 8.1.1.6.15.
 - 2> if the IE "Method type" stored in the variable MEASUREMENT_IDENTITY is set to "UE-assisted":
 - 3> begin monitoring assistance data received in System Information Block type 15.4 according to subclause 8.1.1.6.15.
- 1> if the UE is in CELL_FACH state:
 - 2> if the IE "UE positioning OTDOA neighbour cell list for UE assisted" stored in the variable UE_POSITIONING_OTDOA_DATA_UE_ASSISTED or UE_POSITIONING_OTDOA_DATA_UE_BASED contains neighbour cells on other frequencies than the current frequency:
 - 3> perform measurements on other frequencies according to the IE "FACH measurement occasion info".

The UE may:

- 1> if the IE "Positioning Methods" stored in the variable MEASUREMENT_IDENTITY is set to "GPS" or "OTDOA or GPS":
 - 2> begin monitoring assistance data received in System Information Block type 15 and/or System Information Block type 15.1 and/or System Information Block type 15.2 and/or System Information Block type 15.3 according to subclause 8.1.1.6.15.

8.6.7.18a ~~UE positioning measurement~~Void

~~If IE "UE positioning measurement" is received by the UE in a MEASUREMENT_CONTROL message, where IE "measurement command" has the value "setup", but IE "UE positioning reporting quantity" or "CHOICE report criteria" is not received, the UE shall:~~

- ~~1> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY;~~
- ~~1> set the variable CONFIGURATION_INCOMPLETE to TRUE.~~

CHANGE REQUEST

25.331 CR 2335 # rev **-** # Current version: **5.8.0**

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:	# Pending compressed mode reconfigurations		
Source:	# RAN WG2		
Work item code:	# TEI5	Date:	# 26/04/2004
Category:	# F	Release:	# Rel-5
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change: # **Issue 1** - Compressed mode can be controlled by the IE 'DPCH Compressed mode info' contained within reconfiguration messages or by the IE 'DPCH Compressed mode status info' contained in Measurement control messages.

The IE 'DPCH Compressed mode info' has 2 purposes:
 1/ to provide new compressed mode patterns to the UE by including the IE 'Transmission gap pattern sequence configuration parameters' is included.
 2/ to activate/deactivate compressed mode patterns stored in the UE at the activation time specified in the reconfiguration message.

In contrast the 'DPCH Compressed mode status info' only has one purpose to activate/deactivate compressed mode patterns stored in the UE. The activation/deactivation occurs at the time specified by the 'TGPS reconfiguration CFN'.

If the UE is commanded to perform a compressed mode reconfiguration (either via a reconfiguration message or via a Measurement Control message) and there is already a previous compressed mode reconfiguration pending then the UE behaviour is not specified. This is described in sections 8.4.1.3 and 8.6.6.15. Unfortunately the text in these two sections do not cover all scenarios and also are not consistent with each other.

8.4.1.3 states that if there is any pending "TGPS reconfiguration CFN" or any pending "TGCFN" then UE behaviour is unspecified. This covers the scenario that the pending reconfiguration was due to a Measurement Control message but it does not cover the scenario that the pending compressed mode reconfiguration was due to a reconfiguration message.

8.6.6.15 has the same statement as in 8.4.1.3 but due to its position in the section it only applies if the DPCH Compressed mode info also downloaded a new compressed mode pattern. NOTE: This section also covers the scenario that the pending reconfiguration was due to a Measurement Control message but in this case it is not necessary to explicitly cover the pending reconfiguration being cause by a reconfiguration message is it is already clear from other parts of the spec that the UE can not have more than one ongoing reconfiguration procedure.

Issue 2 - 8.6.6.15 includes a consistency checks that checks whether 2 patterns with the same measurement purpose will be active after the reconfiguration. This check is incorrectly only applied if a new compressed mode pattern is download to the UE.

Summary of change: ⌘

Change 1 - 8.4.1.3 is corrected to also cover the case that the pending compressed mode reconfiguration is caused by a reconfiguration message.

8.6.6.15 is aligned to 8.4.1.3 so that the UE behaviour is not specified if there is any pending "TGPS reconfiguration CFN" or any pending "TGCFN" irrespective of whether there is any new compressed mode pattern downloaded to the UE.

Change 2 - The incorrectly placed consistency check is also placed in the branch of the text that applies in the case that no new compressed mode pattern is downloaded to the UE.

Isolated Impact Analysis

Functionality corrected: Compressed mode

Isolated impact statement: Correction to a function where specification was missing some procedural text and containing some contradiction. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Implementation of this CR by a Release 99/4 UE will not cause compatibility issues

Consequences if not approved:

⌘ If not approved it will not be clear to UTRAN implementers that the UE behaviour is not supported in certain scenarios. If the UTRAN were to attempt to use one of these scenarios the UE could behave unpredictably and ultimately result in a dropped call.

Clauses affected:

⌘ 8.4.1.3, 8.6.6.15

Other specs affected:

Y	N	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Other core specifications
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Test specifications
<input checked="" type="checkbox"/>	<input type="checkbox"/>	O&M Specifications

⌘

Other comments:

⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.4.1.3 Reception of MEASUREMENT CONTROL by the UE

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

The UE shall:

- 1> read the IE "Measurement command";
- 1> if the IE "Measurement command" has the value "setup":
 - 2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
 - 2> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
 - 3> if the UE is in CELL_FACH state:
 - 4> the UE behaviour is not specified.
 - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency:
 - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements on at least one supported band of that measurement type:
 - 4> if the measurement is valid in the current RRC state of the UE:
 - 5> begin measurements according to the stored control information for this measurement identity.

NOTE: The UE is not required to perform measurements on cells for which it needs compressed mode but a suitable compressed mode pattern is not activated.

- 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> begin measurements according to the stored control information for this measurement identity.
- 2> for measurement type "UE positioning measurement":
 - 3> if the UE is in CELL_FACH state:
 - 4> if IE "Positioning Method" is set to "OTDOA":
 - 5> if IE "Method Type" is set to "UE assisted":
 - 6> if IE "UE positioning OTDOA assistance data for UE assisted" is not included:
 - 7> if System Information Block type 15.4 is broadcast:
 - 8> read System Information Block type 15.4.
 - 7> act as specified in subclause 8.6.7.19.2.
 - 5> if IE "Method Type" is set to "UE based":
 - 6> if IE "UE positioning OTDOA assistance data for UE based" is not included:
 - 7> if System Information Block type 15.5 is broadcast:

- 8> read System Information Block type 15.5.
- 7> act as specified in subclause 8.6.7.19.2a.
- 2> for any other measurement type:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> begin measurements according to the stored control information for this measurement identity.
- 1> if the IE "Measurement command" has the value "modify":
 - 2> for all IEs present in the MEASUREMENT CONTROL message:
 - 3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":
 - 4> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
 - 5> if the UE is in CELL_FACH state:
 - 6> the UE behaviour is not specified.
 - 4> if measurement type is set to "intra-frequency measurement", for any of the optional IEs "Intra-frequency measurement objects list", "Intra-frequency measurement quantity", "Intra-frequency reporting quantity", "Measurement Validity", "report criteria" and "parameters required for each event" (given "report criteria" is set to "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "inter-frequency measurement", for any of the optional IEs "Inter-frequency measurement quantity", "Inter-frequency reporting quantity", "Measurement Validity", "Inter-frequency set update" and "parameters required for each event" (given "report criteria" is set to either "inter-frequency measurement reporting criteria" or "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "inter-RAT measurement", for any of the optional IEs "Inter-RAT measurement objects list", "Inter-RAT measurement quantity", "Inter-RAT reporting quantity" and "parameters required for each event" (given "report criteria" is set to "inter-RAT measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning OTDOA assistance data" is present, for any of the optional IEs "UE positioning OTDOA neighbour cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-based", "UE positioning OTDOA neighbour cell info for UE-based" and "UE positioning" that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "traffic volume measurement", for any of the optional IEs "Traffic volume measurement Object", "Traffic volume measurement quantity", "Traffic volume reporting quantity", "Measurement Validity" and "parameters required for each event" (given "report criteria" is set to "traffic volume measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "quality measurement", for any of the optional IE "Quality reporting quantity" that is present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE internal measurement", for any of the optional IEs "UE internal measurement quantity", "UE internal reporting quantity" and "parameters required for each event" (given "report criteria" is set to "UE internal measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:

- 5> replace all instances of the IEs listed above (and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IEs received in the MEASUREMENT CONTROL message;
 - 5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.
- 3> otherwise:
- 4> set the variable CONFIGURATION_INCOMPLETE to TRUE.
- 2> if measurement type is set to "inter-frequency measurement":
- 3> if "report criteria" is set to "intra-frequency measurement reporting criteria" and "reporting criteria" in "inter-frequency measurement quantity" is set to "intra-frequency reporting criteria":
 - 4> if IE "Parameters required for each event" is included:
 - 5> leave the currently stored "inter-frequency measurement reporting criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables, and also store the newly received "intra-frequency measurement reporting criteria" and "intra-frequency reporting criteria".
 - 4> otherwise:
 - 5> leave the currently stored "inter-frequency measurement reporting criteria" and "intra-frequency measurement reporting criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables, and also store the newly received "intra-frequency reporting criteria".
 - 3> otherwise:
 - 4> clear the variables associated with the CHOICE "report criteria" and store the received "report criteria" choice;
 - 4> if the IE "inter-frequency measurement quantity" is present:
 - 5> clear the variables associated with the choice "reporting criteria" in "inter-frequency measurement quantity" and store the received "reporting criteria" choice.
- NOTE: If the UTRAN wants to modify the inter-frequency cell info list for an inter-frequency measurement configured with event based reporting without repeating any IEs related to the configured events, the only possibility is to set the IE "report criteria" to "intra-frequency measurement reporting criteria", not include the IE "parameters required for each event", and set the IE "reporting criteria" in the IE "inter-frequency measurement quantity" to "intra-frequency reporting criteria".
- 2> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:
 - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode, on at least one supported band of that measurement type, to perform the measurements:
 - 4> resume the measurements according to the new stored measurement control information.
 - 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> resume measurements according to the new stored control information for this measurement identity.

- 2> for any other measurement type:
 - 3> resume the measurements according to the new stored measurement control information.
 - 1> if the IE "measurement command" has the value "release":
 - 2> terminate the measurement associated with the identity given in the IE "measurement identity";
 - 2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY.
 - 1> if the IE "DPCH Compressed Mode Status Info" is present:
 - 2> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IE 'TGMP' in variable TGPS_IDENTITY):
 - 3> set the variable CONFIGURATION_INCOMPLETE to TRUE.
 - 2> if there is any pending "TGPS reconfiguration CFN" or any pending "TGCFN":
 - 3> the UE behaviour is unspecified;
 - 2> if there is a pending "activation time" for a reconfiguration procedure that included the IE "DPCH Compressed mode info":
 - 3> the UE behaviour is unspecified;
 - 2> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS_IDENTITY):
 - 3> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
 - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message;
 - 4> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".
 - 3> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
 - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message.
- NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.
- 2> after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:
 - 3> activate the pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in this message is set to "activate" at the time indicated by IE "TGCFN"; and
 - 3> set the corresponding "Current TGPS status flag" for this pattern sequence in the variable TGPS_IDENTITY to "active"; and
 - 3> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
 - 3> if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:
 - 4> start the concerned pattern sequence immediately at that CFN.
 - 2> not alter pattern sequences stored in variable TGPS_IDENTITY, if the pattern sequence is not identified in IE "TGPSI" in the received message.
- 1> if the UE in CELL_FACH state receives a MEASUREMENT CONTROL message, which indicates the same measurement identity as that stored in the variable MEASUREMENT_IDENTITY:

- 2> update the stored information with the traffic volume measurement control information in variable MEASUREMENT_IDENTITY; and
 - 2> refrain from updating the traffic volume measurement control information associated with this measurement identity in the variable MEASUREMENT_IDENTITY with the information received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) until this measurement is explicitly released with another MEASUREMENT CONTROL message.
- 1> if the IE "Read SFN indicator" included in the IE "Cell info" of an inter-frequency cell is set to TRUE and the variable UE_CAPABILITY_TRANSFERRED has the DL "Measurement capability" for "FDD measurements" set to TRUE (the UE requires DL compressed mode in order to perform measurements on FDD):
 - 2> set the variable CONFIGURATION_INCOMPLETE to TRUE.
 - 1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS.

The UE may:

- 1> if the IE "Measurement command" has the value "setup":
 - 2> for measurement type "UE positioning measurement":
 - 3> if the UE is CELL_FACH state:
 - 4> if IE "Positioning Method" is set to "GPS":
 - 5> if IE "UE positioning GPS assistance data" is not included and variable UE_POSITIONING_GPS_DATA is empty:
 - 6> if System Information Block types 15, 15.1, 15.2 and 15.3 are broadcast:
 - 7> read System Information Block types 15, 15.1, 15.2 and 15.3.
 - 6> act as specified in subclause 8.6.7.19.3.
- 1> and the procedure ends.

8.6.6.15 DPCH Compressed mode info

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is included, the UE shall for each transmission gap pattern sequence perform the following consistency checks:

- 1> if the UE, according to its measurement capabilities, and for all supported bands of the UTRA mode or RAT associated with the measurement purpose indicated by IE "TGMP", requires UL compressed mode, and CHOICE 'UL/DL mode' indicates 'DL only':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, and for all supported bands of the UTRA mode or RAT associated with the measurement purpose indicated by IE "TGMP", requires DL compressed mode, and CHOICE 'UL/DL mode' indicates 'UL only':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, does not require UL compressed mode for any of supported band of the UTRA mode or RAT associated with the measurement purpose indicated by the IE "TGMP", and CHOICE 'UL/DL mode' indicates 'UL only' or 'UL and DL':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, does not require DL compressed mode for any supported band of the UTRA mode or RAT associated with the measurement purpose indicated by the IE "TGMP", and CHOICE 'UL/DL mode' indicates 'DL only' or 'UL and DL':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if UE already has an active transmission gap pattern sequence that, according to IE "TGMP", has the same measurement purpose, and both patterns will be active after the new configuration has been taken into use:
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if there is any pending "TGPS reconfiguration CFN" or any pending "TGCFN":
 - 2> the UE behaviour is unspecified.

If variable INVALID_CONFIGURATION has value FALSE after UE has performed the checks above, the UE shall:

- 1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS_IDENTITY):
 - 2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
 - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.
 - 3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".
 - 2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
 - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

- 1> update each pattern sequence to the variable TGPS_IDENTITY according to the IE "TGPSI";
- 1> update into the variable TGPS_IDENTITY the configuration information defined by IE group "transmission gap pattern sequence configuration parameters";

- 1> after the instant in which the message is to be executed, as specified in subclause 8.6.3.1:
 - 2> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in the variable TGPS_IDENTITY is set to "activate" at the time indicated by IE "TGCFN"; and
 - 2> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "active".

NOTE1: If the pattern is activated with a message that includes the IE "Activation time", and if the CFN value indicated by the IE "Activation Time" and the CFN value indicated by the TGCFN are included in the same TTI (but not at the TTI boundary) common to all the transport channels that are multiplexed onto the reference CCTrCh (as defined in subclause 8.6.3.1), and if the CFN value indicated by the TGCFN is equal or higher than the CFN value indicated by the IE "Activation Time" (as defined in subclause 8.6.3.1) value, the UE behaviour is not specified.

NOTE2: If the pattern is activated with a message used to perform timing re-initialised hard handover, the UE can start evaluating the activation of the pattern (i.e. compare the value of the CFN in the new configuration with the value of the TGCFN) at any time between the message activation time and the completion of the synchronisation procedure A.

- 2> if the IE "DPCH compressed mode info" is included in a message used to perform a Hard Handover with change of frequency (see subclause 8.3.5); or
- 2> if the IE "DPCH compressed mode info" is included in a message used to transfer the UE from Cell_FACH to Cell_DCH, and the cell in which the UE transited from CELL_FACH state is not included in the active set for the CELL_DCH state (see subclause 8.4.1.7.2):
 - 3> not begin the inter-frequency measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence.
- 2> else:
 - 3> begin the inter-frequency measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence.
- 2> begin the inter-RAT measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
- 2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":
 - 3> start the concerned pattern sequence immediately at that CFN.

- 1> monitor if the parallel transmission gap pattern sequences create an illegal overlap, and in case of overlap, take actions as specified in subclause 8.2.11.2.

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is not included, the UE shall:

1> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IEs "TGMP" and "Current TGPS Status Flag" in variable TGPS_IDENTITY):

1> set the variable CONFIGURATION_INCOMPLETE to TRUE.

1> if there is any pending "TGPS reconfiguration CFN" or any pending "TGCFN":

2> the UE behaviour is unspecified.

- 1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS_IDENTITY):
 - 2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
 - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use;

3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive".

2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

1> after the instant in which the message is to be executed, as specified in subclause 8.6.3.1:

2> at the time indicated by IE "TGCFN":

3> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate"; and

NOTE1: If the pattern is activated with a message that includes the IE "Activation time", and if the CFN value indicated by the IE "Activation Time" and the CFN value indicated by the TGCFN are included in the same TTI (but not at the TTI boundary) common to all the transport channels that are multiplexed onto the reference CCTrCh (as defined in subclause 8.6.3.1), and if the CFN value indicated by the TGCFN is equal or higher than the CFN value indicated by the IE "Activation Time" (as defined in subclause 8.6.3.1) value, the UE behaviour is not specified.

NOTE2: If the pattern is activated with a message used to perform timing re-initialised hard handover, the UE can start evaluating the activation of the pattern (i.e. compare the value of the CFN in the new configuration with the value of the TGCFN) at any time between the message activation time and the completion of the synchronisation procedure A.

3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "active".

2> if the IE "DPCH compressed mode info" is included in a message used to perform a Hard Handover with change of frequency (see subclause 8.3.5); or

2> if the IE "DPCH compressed mode info" is included in a message used to transfer the UE from Cell_FACH to Cell_DCH, and the cell in which the UE transited from CELL_FACH state is not included in the active set for the CELL_DCH state (see subclause 8.4.1.7.2):

3> not begin the inter-frequency measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence.

2> else:

3> begin the inter-frequency measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence.2>begin the inter-RAT measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":

3> start the concerned pattern sequence immediately at that CFN.

For transmission gap pattern sequences stored in variable TGPS_IDENTITY, but not identified in IE "TGPSI" (either due to the absence of the IE "DPCH compressed mode info" in the received message or due to not receiving the corresponding TGPSI value in the IE "DPCH compressed mode info"), the UE shall:

1> if the received message implies a timing re-initialised hard handover (see subclause 8.3.5.1):

2> deactivate such transmission gap pattern sequences at the beginning of the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message; and

2> set IE "Current TGPS Status Flag" in corresponding UE variable TGPS_IDENTITY to 'inactive'.

1> if the received message not implies a timing re-initialised hard handover (see subclause 8.3.5.1):

2> continue such transmission gap pattern sequence according to IE "Current TGPS Status Flag" in the corresponding UE variable TGPS_IDENTITY.

Uplink and downlink compressed mode methods are described in [27]. For UL "higher layer scheduling" compressed mode method and transport format combination selection, see [15].

CHANGE REQUEST

25.331 CR 2338 # rev **-** # Current version: **6.1.0**

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:	# Active compressed mode patterns with same measurement purpose		
Source:	# RAN WG2		
Work item code:	# TEI5	Date:	# 20/04/2004
Category:	# A	Release:	# Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96 (Release 1996)	
	B (addition of feature),	R97 (Release 1997)	
	C (functional modification of feature)	R98 (Release 1998)	
	D (editorial modification)	R99 (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4 (Release 4)	
		Rel-5 (Release 5)	
		Rel-6 (Release 6)	

Reason for change: # The specification contains consistency checks in 8.4.1.3 and 8.6.6.15 that check whether 2 patterns with the same measurement purpose are active at the same time. However, there could be different interpretations as to when a pattern is considered to be active:

- 1 - whenever the 'Current TGPS status flag' in the variable TGPS_IDENTITY is 'active'
- 2 - from the point in time when the first gap of the pattern sequence occurs (i.e. TGMP) until the final gap of the pattern sequence (i.e. after TGPRC repeats of the pattern in the case the pattern has a finite length.)

Elsewhere in the specification there are checks that consider a pattern active when the IE "Current TGPS status flag" in the variable TGPS_IDENTITY is 'active'. It is proposed that this consistency check is aligned to also consider a pattern active according to the "Current TGPS status flag".

In addition, the specification is inconsistent with regard to when the 'Current TGPS status flag' is set to 'active':

- 1 - In section 8.4.1.3, the flag is set at the 'TGPS Reconfiguration CFN' that is included in the Measurement Control message.
- 2 - In section 8.6.6.15, for the case that new compressed mode parameters are downloaded to the UE the flag is set at the 'activation time' of the Reconfiguration message. This is aligned to 1 above as TGPS Reconfiguration CFN in a Measurement Control message is equivalent to 'activation time' in a reconfiguration message.
- 3 - In section 8.6.6.15, for the case that no new compressed mode parameters are downloaded to the UE the flag is set at the 'TGCFN' included in the Reconfiguration message. This is not aligned with 1 and 2 above.

The specification also does not appear to be strictly correct with regard to when a

pattern is deactivated. In both section 8.4.1.3 and 8.6.6.15 the flag is set to inactive when the Measurement Control message or Reconfiguration message is received by the UE. However, the pattern itself is only deactivated at the 'TGPS Reconfiguration CFN' or 'activation time'.

Summary of change: ⌘ For the checks on whether a two pattern sequences with the same measurement purpose are active at the same time, it is clarified that a pattern is considered active according to the IE 'Current TGPS status flag' in the variable TGPS_IDENTITY.

In section 8.6.6.15, the case where no new compressed mode parameters are downloaded to the UE is changed so that the IE "Current TGPS status flag" in the variable TGPS_IDENTITY is set to 'active' at the 'activation time' of the reconfiguration message and not the 'TGCFN'.

In section 8.4.1.3 and 8.6.6.15 is clarified that the IE "Current TGPS status flag" in the variable TGPS_IDENTITY is set to 'inactive' at the 'TGPS reconfiguration time' and 'activation time' respectively.

A note is added to make it clear to network implementers that the "Current TGPS status flag" is only changed as a result of received message. The flag is not set to 'inactive' at the last gap of a finite length pattern sequence.

Isolated Impact Analysis

Functionality corrected: Compressed mode

Isolated impact statement: Correction to a function where specification was missing some procedural text and containing some contradiction. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Implementation of this CR by a Release 99/4 UE will not cause compatibility issues

Consequences if not approved: ⌘ If not approved the conditions used to check whether 2 compressed mode pattern sequences with the same measurement purpose are active at the same time will not be clear. Any UTRAN which uses 2 pattern compressed mode pattern sequences with the same measurement purpose and activates one close in time to deactivating the other one might experience unpredictable behaviour from the UE. This could result in failure to receive compressed mode measurements and ultimately dropped calls.

Clauses affected: ⌘ 8.4.1.3, 8.6.6.15

Other specs affected:	⌘	<table border="1"><tr><td>Y</td><td>N</td></tr><tr><td></td><td>X</td></tr></table>	Y	N		X	Other core specifications	⌘
	Y	N						
		X						
	<table border="1"><tr><td></td><td>X</td></tr></table>		X	Test specifications				
	X							
	<table border="1"><tr><td></td><td>X</td></tr></table>		X	O&M Specifications				
	X							

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.4.1.3 Reception of MEASUREMENT CONTROL by the UE

Upon reception of a MEASUREMENT CONTROL message the UE shall perform actions specified in subclause 8.6 unless otherwise specified below.

The UE shall:

- 1> read the IE "Measurement command";
- 1> if the IE "Measurement command" has the value "setup":
 - 2> store this measurement in the variable MEASUREMENT_IDENTITY according to the IE "measurement identity", first releasing any previously stored measurement with that identity if that exists;
 - 2> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
 - 3> if the UE is in CELL_FACH state:
 - 4> the UE behaviour is not specified.
 - 2> for measurement types "inter-RAT measurement" or "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency:
 - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode to perform the measurements on at least one supported band of that measurement type:
 - 4> if the measurement is valid in the current RRC state of the UE:
 - 5> begin measurements according to the stored control information for this measurement identity.

NOTE: The UE is not required to perform measurements on cells for which it needs compressed mode but a suitable compressed mode pattern is not activated.

- 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> begin measurements according to the stored control information for this measurement identity.
- 2> for measurement type "UE positioning measurement":
 - 3> if the UE is in CELL_FACH state:
 - 4> if IE "Positioning Method" is set to "OTDOA":
 - 5> if IE "Method Type" is set to "UE assisted":
 - 6> if IE "UE positioning OTDOA assistance data for UE assisted" is not included:
 - 7> if System Information Block type 15.4 is broadcast:
 - 8> read System Information Block type 15.4.
 - 7> act as specified in subclause 8.6.7.19.2.
 - 5> if IE "Method Type" is set to "UE based":
 - 6> if IE "UE positioning OTDOA assistance data for UE based" is not included:
 - 7> if System Information Block type 15.5 is broadcast:

- 8> read System Information Block type 15.5.
- 7> act as specified in subclause 8.6.7.19.2a.
- 2> for any other measurement type:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> begin measurements according to the stored control information for this measurement identity.
- 1> if the IE "Measurement command" has the value "modify":
 - 2> for all IEs present in the MEASUREMENT CONTROL message:
 - 3> if a measurement was stored in the variable MEASUREMENT_IDENTITY associated to the identity by the IE "measurement identity":
 - 4> if the measurement type is quality, UE internal, intra-frequency, inter-frequency or inter-RAT:
 - 5> if the UE is in CELL_FACH state:
 - 6> the UE behaviour is not specified.
 - 4> if measurement type is set to "intra-frequency measurement", for any of the optional IEs "Intra-frequency measurement objects list", "Intra-frequency measurement quantity", "Intra-frequency reporting quantity", "Measurement Validity", "report criteria" and "parameters required for each event" (given "report criteria" is set to "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "inter-frequency measurement", for any of the optional IEs "Inter-frequency measurement quantity", "Inter-frequency reporting quantity", "Measurement Validity", "Inter-frequency set update" and "parameters required for each event" (given "report criteria" is set to either "inter-frequency measurement reporting criteria" or "intra-frequency measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "inter-RAT measurement", for any of the optional IEs "Inter-RAT measurement objects list", "Inter-RAT measurement quantity", "Inter-RAT reporting quantity" and "parameters required for each event" (given "report criteria" is set to "inter-RAT measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning OTDOA assistance data" is present, for any of the optional IEs "UE positioning OTDOA neighbour cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-assisted", "UE positioning OTDOA reference cell info for UE-based", "UE positioning OTDOA neighbour cell info for UE-based" and "UE positioning" that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE positioning measurement" and the IE "UE positioning GPS assistance data" is present, for any of the optional IEs "UE positioning GPS reference time", "UE positioning GPS reference UE position", "UE positioning GPS DGPS corrections", "UE positioning GPS ionospheric model", "UE positioning GPS UTC model", "UE positioning GPS acquisition assistance", "UE positioning GPS real-time integrity" that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "traffic volume measurement", for any of the optional IEs "Traffic volume measurement Object", "Traffic volume measurement quantity", "Traffic volume reporting quantity", "Measurement Validity" and "parameters required for each event" (given "report criteria" is set to "traffic volume measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "quality measurement", for any of the optional IE "Quality reporting quantity" that is present in the MEASUREMENT CONTROL message:
 - 4> if measurement type is set to "UE internal measurement", for any of the optional IEs "UE internal measurement quantity", "UE internal reporting quantity" and "parameters required for each event" (given "report criteria" is set to "UE internal measurement reporting criteria") that are present in the MEASUREMENT CONTROL message:

- 5> replace all instances of the IEs listed above (and all their children) stored in variable MEASUREMENT_IDENTITY associated to the identity indicated by the IE "measurement identity" with the IEs received in the MEASUREMENT CONTROL message;
 - 5> leave all other stored information elements unchanged in the variable MEASUREMENT_IDENTITY.
 - 3> otherwise:
 - 4> set the variable CONFIGURATION_INCOMPLETE to TRUE.
 - 2> if measurement type is set to "inter-frequency measurement":
 - 3> if "report criteria" is set to "intra-frequency measurement reporting criteria" and "reporting criteria" in "inter-frequency measurement quantity" is set to "intra-frequency reporting criteria":
 - 4> if IE "Parameters required for each event" is included:
 - 5> leave the currently stored "inter-frequency measurement reporting criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables, and also store the newly received "intra-frequency measurement reporting criteria" and "intra-frequency reporting criteria".
 - 4> otherwise:
 - 5> leave the currently stored "inter-frequency measurement reporting criteria" and "intra-frequency measurement reporting criteria" within "report criteria" and "inter-frequency reporting criteria" within "inter-frequency measurement quantity" unchanged, and continue to act on the information stored in these variables, and also store the newly received "intra-frequency reporting criteria".
 - 3> otherwise:
 - 4> clear the variables associated with the CHOICE "report criteria" and store the received "report criteria" choice;
 - 4> if the IE "inter-frequency measurement quantity" is present:
 - 5> clear the variables associated with the choice "reporting criteria" in "inter-frequency measurement quantity" and store the received "reporting criteria" choice.
- NOTE: If the UTRAN wants to modify the inter-frequency cell info list for an inter-frequency measurement configured with event based reporting without repeating any IEs related to the configured events, the only possibility is to set the IE "report criteria" to "intra-frequency measurement reporting criteria", not include the IE "parameters required for each event", and set the IE "reporting criteria" in the IE "inter-frequency measurement quantity" to "intra-frequency reporting criteria".
- 2> for measurement types "inter-frequency measurement" that require measurements on a frequency other than the actually used frequency, or that require measurements on another RAT:
 - 3> if, according to its measurement capabilities, the UE requires compressed mode to perform that measurement type and after reception of this message a compressed mode pattern sequence with an appropriate measurement purpose is active according to the IE "Current TGPS Status Flag" in UE variable TGPS_IDENTITY; or
 - 3> if, according to its measurement capabilities, the UE does not require compressed mode, on at least one supported band of that measurement type, to perform the measurements:
 - 4> resume the measurements according to the new stored measurement control information.
 - 2> for measurement type "inter-frequency measurement" that requires measurements only on the same frequency as the actually used frequency:
 - 3> if the measurement is valid in the current RRC state of the UE:
 - 4> resume measurements according to the new stored control information for this measurement identity.

- 2> for any other measurement type:
 - 3> resume the measurements according to the new stored measurement control information.
 - 1> if the IE "measurement command" has the value "release":
 - 2> terminate the measurement associated with the identity given in the IE "measurement identity";
 - 2> clear all stored measurement control information related associated to this measurement identity in variable MEASUREMENT_IDENTITY.
 - 1> if the IE "DPCH Compressed Mode Status Info" is present:
 - 2> if, as the result of this message, UE will have more than one transmission gap pattern sequence with the same measurement purpose active (according to IEs ["TGMP"](#) and ["Current TGPS Status Flag"](#) in variable TGPS_IDENTITY):
 - 3> set the variable CONFIGURATION_INCOMPLETE to TRUE.
 - 2> if there is any pending "TGPS reconfiguration CFN" or any pending "TGCFN":
 - 3> the UE behaviour is unspecified;
 - 2> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS_IDENTITY):
 - 3> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
 - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message;
 - 4> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive" [at the frame indicated by IE "TGPS reconfiguration CFN" received in the message](#)
 - 3> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
 - 4> deactivate this pattern sequence at the beginning of the frame indicated by IE "TGPS reconfiguration CFN" received in the message.
- NOTE1:** The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.
- NOTE2:** [The deactivation of pattern sequences only occurs as a result of RRC messages received by the UE, i.e. the UE does not set the "Current TGPS Status Flag" to "inactive" after the final gap of a finite length pattern sequence.](#)
- 2> after the time indicated by IE "TGPS reconfiguration CFN" has elapsed:
 - 3> activate the pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in this message is set to "activate" at the time indicated by IE "TGCFN"; and
 - 3> set the corresponding "Current TGPS status flag" for this pattern sequence in the variable TGPS_IDENTITY to "active"; and
 - 3> begin the inter-frequency and/or inter-RAT measurements corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
 - 3> if the values of IE "TGPS reconfiguration CFN" and IE "TGCFN" are equal:
 - 4> start the concerned pattern sequence immediately at that CFN.
 - 2> not alter pattern sequences stored in variable TGPS_IDENTITY, if the pattern sequence is not identified in IE "TGPSI" in the received message.
- 1> if the UE in CELL_FACH state receives a MEASUREMENT CONTROL message, which indicates the same measurement identity as that stored in the variable MEASUREMENT_IDENTITY:

- 2> update the stored information with the traffic volume measurement control information in variable MEASUREMENT_IDENTITY; and
 - 2> refrain from updating the traffic volume measurement control information associated with this measurement identity in the variable MEASUREMENT_IDENTITY with the information received in System Information Block type 12 (or System Information Block type 11, according to subclause 8.1.1.6.11) until this measurement is explicitly released with another MEASUREMENT CONTROL message.
- 1> if the IE "Read SFN indicator" included in the IE "Cell info" of an inter-frequency cell is set to TRUE and the variable UE_CAPABILITY_TRANSFERRERD has the DL "Measurement capability" for "FDD measurements" set to TRUE (the UE requires DL compressed mode in order to perform measurements on FDD):
 - 2> set the variable CONFIGURATION_INCOMPLETE to TRUE.
 - 1> clear the entry for the MEASUREMENT CONTROL message in the table "Accepted transactions" in the variable TRANSACTIONS.

The UE may:

- 1> if the IE "Measurement command" has the value "setup":
 - 2> for measurement type "UE positioning measurement":
 - 3> if the UE is CELL_FACH state:
 - 4> if IE "Positioning Method" is set to "GPS":
 - 5> if IE "UE positioning GPS assistance data" is not included and variable UE_POSITIONING_GPS_DATA is empty:
 - 6> if System Information Block types 15, 15.1, 15.2 and 15.3 are broadcast:
 - 7> read System Information Block types 15, 15.1, 15.2 and 15.3.
 - 6> act as specified in subclause 8.6.7.19.3.
- 1> and the procedure ends.

8.6.6.15 DPCH Compressed mode info

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is included, the UE shall for each transmission gap pattern sequence perform the following consistency checks:

- 1> if the UE, according to its measurement capabilities, and for all supported bands of the UTRA mode or RAT associated with the measurement purpose indicated by IE "TGMP", requires UL compressed mode, and CHOICE 'UL/DL mode' indicates 'DL only':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, and for all supported bands of the UTRA mode or RAT associated with the measurement purpose indicated by IE "TGMP", requires DL compressed mode, and CHOICE 'UL/DL mode' indicates 'UL only':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, does not require UL compressed mode for any of supported band of the UTRA mode or RAT associated with the measurement purpose indicated by the IE "TGMP", and CHOICE 'UL/DL mode' indicates 'UL only' or 'UL and DL':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if the UE, according to its measurement capabilities, does not require DL compressed mode for any supported band of the UTRA mode or RAT associated with the measurement purpose indicated by the IE "TGMP", and CHOICE 'UL/DL mode' indicates 'DL only' or 'UL and DL':
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if UE already has an active transmission gap pattern sequence that, according to IE "TGMP", has the same measurement purpose, and both patterns will be active ([according to the IE "Current TGPS Status Flag" in variable TGPS_IDENTITY](#)) after the new configuration has been taken into use:
 - 2> set the variable INVALID_CONFIGURATION to TRUE.
- 1> if there is any pending "TGPS reconfiguration CFN" or any pending "TGCFN":
 - 2> the UE behaviour is unspecified.

If variable INVALID_CONFIGURATION has value FALSE after UE has performed the checks above, the UE shall:

- 1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag") in the variable TGPS_IDENTITY):
 - 2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
 - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.
 - 3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive" [at the frame, indicated by IE "Activation time" \(see subclause 8.6.3.1\) received in this message, when the new configuration received in this message is taken into use.](#)
 - 2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:
 - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE1: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

NOTE2: The deactivation of pattern sequences only occurs as a result of RRC messages received by the UE, i.e. the UE does not set the "Current TGPS Status Flag" to "inactive" after the final gap of a finite length pattern sequence.

- 1> update each pattern sequence to the variable TGPS_IDENTITY according to the IE "TGPSI";
- 1> update into the variable TGPS_IDENTITY the configuration information defined by IE group "transmission gap pattern sequence configuration parameters";
- 1> after the instant in which the message is to be executed, as specified in subclause 8.6.3.1:
 - 2> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" in the variable TGPS_IDENTITY is set to "activate" at the time indicated by IE "TGCFN"; and
 - 2> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "active".

NOTE1: If the pattern is activated with a message that includes the IE "Activation time", and if the CFN value indicated by the IE "Activation Time" and the CFN value indicated by the TGCFN are included in the same TTI (but not at the TTI boundary) common to all the transport channels that are multiplexed onto the reference CCTrCh (as defined in subclause 8.6.3.1), and if the CFN value indicated by the TGCFN is equal or higher than the CFN value indicated by the IE "Activation Time" (as defined in subclause 8.6.3.1) value, the UE behaviour is not specified.

NOTE2: If the pattern is activated with a message used to perform timing re-initialised hard handover, the UE can start evaluating the activation of the pattern (i.e. compare the value of the CFN in the new configuration with the value of the TGCFN) at any time between the message activation time and the completion of the synchronisation procedure A.

- 2> if the IE "DPCH compressed mode info" is included in a message used to perform a Hard Handover with change of frequency (see subclause 8.3.5); or
- 2> if the IE "DPCH compressed mode info" is included in a message used to transfer the UE from Cell_FACH to Cell_DCH, and the cell in which the UE transited from CELL_FACH state is not included in the active set for the CELL_DCH state (see subclause 8.4.1.7.2):
 - 3> not begin the inter-frequency measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence.
- 2> else:
 - 3> begin the inter-frequency measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence.
- 2> begin the inter-RAT measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence;
- 2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":
 - 3> start the concerned pattern sequence immediately at that CFN.
- 1> monitor if the parallel transmission gap pattern sequences create an illegal overlap, and in case of overlap, take actions as specified in subclause 8.2.11.2.

If the IE "DPCH compressed mode info" is included, and if the IE group "transmission gap pattern sequence configuration parameters" is not included, the UE shall:

- 1> if pattern sequence corresponding to IE "TGPSI" is already active (according to "Current TGPS Status Flag" in the variable TGPS_IDENTITY):
 - 2> if the "TGPS Status Flag" in this message is set to "deactivate" for the corresponding pattern sequence:
 - 3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use;

3> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "inactive" at the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use;

2> if the "TGPS Status Flag" in this message is set to "activate" for the corresponding pattern sequence:

3> deactivate this pattern sequence at the beginning of the frame, indicated by IE "Activation time"(see subclause 8.6.3.1) received in this message, when the new configuration received in this message is taken into use.

NOTE1: The temporary deactivation of pattern sequences for which the status flag is set to "activate" can be used by the network to align the timing of already active patterns with newly activated patterns.

NOTE2: The deactivation of pattern sequences only occurs as a result of RRC messages received by the UE, i.e. the UE does not set the "Current TGPS Status Flag" to "inactive" after the final gap of a finite length pattern sequence.

1> after the instant in which the message is to be executed, as specified in subclause 8.6.3.1:

~~2> at the time indicated by IE "TGCFN":~~

~~2~~3> activate the stored pattern sequence corresponding to each IE "TGPSI" for which the "TGPS status flag" is set to "activate" at the time indicated by IE "TGCFN"; and

NOTE1: If the pattern is activated with a message that includes the IE "Activation time", and if the CFN value indicated by the IE "Activation Time" and the CFN value indicated by the TGCFN are included in the same TTI (but not at the TTI boundary) common to all the transport channels that are multiplexed onto the reference CCTrCh (as defined in subclause 8.6.3.1), and if the CFN value indicated by the TGCFN is equal or higher than the CFN value indicated by the IE "Activation Time" (as defined in subclause 8.6.3.1) value, the UE behaviour is not specified.

NOTE2: If the pattern is activated with a message used to perform timing re-initialised hard handover, the UE can start evaluating the activation of the pattern (i.e. compare the value of the CFN in the new configuration with the value of the TGCFN) at any time between the message activation time and the completion of the synchronisation procedure A.

~~3~~2> set the "Current TGPS Status Flag" for this pattern sequence in the variable TGPS_IDENTITY to "active".

2> if the IE "DPCH compressed mode info" is included in a message used to perform a Hard Handover with change of frequency (see subclause 8.3.5); or

2> if the IE "DPCH compressed mode info" is included in a message used to transfer the UE from Cell_FACH to Cell_DCH, and the cell in which the UE transited from CELL_FACH state is not included in the active set for the CELL_DCH state (see subclause 8.4.1.7.2):

3> not begin the inter-frequency measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence.

2> else:

3> begin the inter-frequency measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence.2>begin the inter-RAT measurement reporting corresponding to the pattern sequence measurement purpose of each activated pattern sequence;

2> if the new configuration is taken into use at the same CFN as indicated by IE "TGCFN":

3> start the concerned pattern sequence immediately at that CFN.

For transmission gap pattern sequences stored in variable TGPS_IDENTITY, but not identified in IE "TGPSI" (either due to the absence of the IE "DPCH compressed mode info" in the received message or due to not receiving the corresponding TGPSI value in the IE "DPCH compressed mode info"), the UE shall:

1> if the received message implies a timing re-initialised hard handover (see subclause 8.3.5.1):

- 2> deactivate such transmission gap pattern sequences at the beginning of the frame, indicated by IE "Activation time" (see subclause 8.6.3.1) received in this message; and
 - 2> set IE "Current TGPS Status Flag" in corresponding UE variable TGPS_IDENTITY to 'inactive'.
- 1> if the received message not implies a timing re-initialised hard handover (see subclause 8.3.5.1):
- 2> continue such transmission gap pattern sequence according to IE "Current TGPS Status Flag" in the corresponding UE variable TGPS_IDENTITY.

Uplink and downlink compressed mode methods are described in [27]. For UL "higher layer scheduling" compressed mode method and transport format combination selection, see [15].

CHANGE REQUEST

⌘ **25.331 CR 2341** ⌘ rev **-** ⌘ Current version: **5.8.0** ⌘

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Naming correction in the HS-DSCH IE Measurement Feedback Information ⌘		
Source:	⌘ RAN WG2 ⌘		
Work item code:	⌘ HSDPA-L23 ⌘	Date:	⌘ 13/05/2004 ⌘
Category:	⌘ F ⌘	Release:	⌘ Rel-5 ⌘
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	⌘ The application of the parameter "POhdsch" in the IE Measurement Feedback Info is unclear. No reference is given. ⌘
Summary of change:	⌘ The parameter renamed to "measurement power offset", which is the name used for this parameter in TS 25.214. A reference [29] to TS 25.214 is provided. ⌘
Consequences if not approved:	⌘ The association between the signalled parameter and the FDD physical layer procedure requirements is unclear. ⌘ Isolated impact analysis: The correction only affects the naming of the signalled parameter. The transport syntax is not affected. The correction can be implemented independently by each sending or receiving signalling entity, without causing an interoperability problem. ⌘

Clauses affected:	⌘ 10.3.6.40a, 11.3 ⌘										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	⌘	34.108, 34.123-1 ⌘
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input checked="" type="checkbox"/>	<input type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
Other comments:	⌘ ⌘										

10.3.6.40a Measurement Feedback Info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE <i>mode</i>	MP				REL-5
>FDD					REL-5
>> Measurement Power Offset <i>P_{ohsdsch}</i>	MP		Real (-6 .. 13 by step of 0.5)	The measurement power offset, Γ, in dB, as described in [29]. Default Power offset between HS-PDSCH and P-CPICH/S-CPICH. In dB.	REL-5
>>CQI Feedback cycle, k	MP		Integer (0, 2, 4, 8, 10, 20, 40, 80, 160)	In milliseconds.	REL-5
>>CQI repetition factor	MP		Integer (1..4)		REL-5
>> Δ_{CQI}	MP		Integer (0..8)	Refer to quantization of the power offset in [28]	REL-5
>TDD				(no data)	REL-5

Next modified section

11.3 Information element definitions

:

```

Measurement-Feedback-Info ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      measurementPowerOffset po-hsdSCH MeasurementPowerOffset Po-hsdSCH,
      feedback-cycle Feedback-cycle,
      cqi-RepetitionFactor CQI-RepetitionFactor,
      deltaCQI DeltaCQI
    },
    tdd NULL
  }
}

```

:

```

-- Actual measurement power offset value Po-hsdSCH = IE value * 0.5
MeasurementPowerOffset Po-hsdSCH ::= INTEGER INTEGER (-12..26)

```


CHANGE REQUEST

⌘ **25.331 CR 2342** ⌘ rev **-** ⌘ Current version: **6.1.0** ⌘

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Naming correction in the HS-DSCH IE Measurement Feedback Information ⌘		
Source:	⌘ RAN WG2 ⌘		
Work item code:	⌘ HSDPA-L23 ⌘	Date:	⌘ 13/05/2004 ⌘
Category:	⌘ A ⌘	Release:	⌘ Rel-6 ⌘
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	⌘ The application of the parameter "POhdsch" in the IE Measurement Feedback Info is unclear. No reference is given. ⌘
Summary of change:	⌘ The parameter renamed to "measurement power offset", which is the name used for this parameter in TS 25.214. A reference [29] to TS 25.214 is provided. ⌘
Consequences if not approved:	⌘ The association between the signalled parameter and the FDD physical layer procedure requirements is unclear. ⌘ Isolated impact analysis: The correction only affects the naming of the signalled parameter. The transport syntax is not affected. The correction can be implemented independently by each sending or receiving signalling entity, without causing an interoperability problem. ⌘

Clauses affected:	⌘ 10.3.6.40a, 11.3 ⌘										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;"> </td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N		X	X			X	⌘	34.108, 34.123-1 ⌘
Y	N										
	X										
X											
	X										
Other comments:	⌘ ⌘										

10.3.6.40a Measurement Feedback Info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE <i>mode</i>	MP				REL-5
>FDD					REL-5
>> Measurement Power Offset <i>P_{ohsdsch}</i>	MP		Real(-6 .. 13 by step of 0.5)	The measurement power offset, Γ, in dB, as described in [29]. Default Power offset between HS-PDSCH and P-CPICH/S-CPICH, in dB.	REL-5
>>CQI Feedback cycle, k	MP		Integer (0, 2, 4, 8, 10, 20, 40, 80, 160)	In milliseconds.	REL-5
>>CQI repetition factor	MP		Integer (1..4)		REL-5
>> Δ_{CQI}	MP		Integer (0..8)	Refer to quantization of the power offset in [28]	REL-5
>TDD				(no data)	REL-5

Next modified section

11.3 Information element definitions

:

```

Measurement-Feedback-Info ::= SEQUENCE {
  modeSpecificInfo CHOICE {
    fdd SEQUENCE {
      measurementPowerOffsetpoHsdSch MeasurementPowerOffsetPoHsdSch,
      feedback-cycle Feedback-cycle,
      cqi-RepetitionFactor CQI-RepetitionFactor,
      deltaCQI DeltaCQI
    },
    tdd NULL
  }
}

```

:

```

-- Actual measurement power offset value PoHsdSch = IE value * 0.5
MeasurementPowerOffsetPoHsdSch ::= INTEGER INTEGER (-12..26)

```