

9.4.3 Elementary Procedure Definitions

```
-- ASN1START
-- *****
--
-- Elementary Procedure definitions
--
-- *****

ElAP-PDU-Descriptions {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
ngran-access (22) modules (3) elap (5) version1 (1) elap-PDU-Descriptions (0) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS
    Criticality,
    ProcedureCode

FROM ElAP-CommonDataTypes
    Reset,
    ResetAcknowledge,
    ErrorIndication,
    GNB-CU-UP-ElSetupRequest,
    GNB-CU-UP-ElSetupResponse,
    GNB-CU-UP-ElSetupFailure,
    GNB-CU-CP-ElSetupRequest,
    GNB-CU-CP-ElSetupResponse,
    GNB-CU-CP-ElSetupFailure,
    GNB-CU-UP-ConfigurationUpdate,
    GNB-CU-UP-ConfigurationUpdateAcknowledge,
    GNB-CU-UP-ConfigurationUpdateFailure,
    GNB-CU-CP-ConfigurationUpdate,
    GNB-CU-CP-ConfigurationUpdateAcknowledge,
    GNB-CU-CP-ConfigurationUpdateFailure,
    BearerContextSetupRequest,
    BearerContextSetupResponse,
    BearerContextSetupFailure,
    BearerContextModificationRequest,
    BearerContextModificationResponse,
    BearerContextModificationFailure,
    BearerContextModificationRequired,
    BearerContextModificationConfirm,
```

BearerContextReleaseCommand,
BearerContextReleaseComplete,
BearerContextReleaseRequest,
BearerContextInactivityNotification,
DLDataNotification,
ULDataNotification,
DataUsageReport,
ElReleaseRequest,
ElReleaseResponse,
GNB-CU-UP-CounterCheckRequest,
GNB-CU-UP-StatusIndication,
MRDC-DataUsageReport,
DeactivateTrace,
TraceStart,
PrivateMessage,
ResourceStatusRequest,
ResourceStatusResponse,
ResourceStatusFailure,
ResourceStatusUpdate,
IAB-UPTNLAddressUpdate,
IAB-UPTNLAddressUpdateAcknowledge,
IAB-UPTNLAddressUpdateFailure,
CellTrafficTrace,
EarlyForwardingSNTransfer

FROM ElAP-PDU-Contents

id-reset,
id-errorIndication,
id-gNB-CU-UP-ElSetup,
id-gNB-CU-CP-ElSetup,
id-gNB-CU-UP-ConfigurationUpdate,
id-gNB-CU-CP-ConfigurationUpdate,
id-elRelease,
id-bearerContextSetup,
id-bearerContextModification,
id-bearerContextModificationRequired,
id-bearerContextRelease,
id-bearerContextReleaseRequest,
id-bearerContextInactivityNotification,
id-dLDataNotification,
id-uLDataNotification,
id-dataUsageReport,
id-gNB-CU-UP-CounterCheck,
id-gNB-CU-UP-StatusIndication,
id-mRDC-DataUsageReport,
id-DeactivateTrace,
id-TraceStart,
id-privateMessage,
id-resourceStatusReportingInitiation,
id-resourceStatusReporting,
id-iAB-UPTNLAddressUpdate,
id-CellTrafficTrace,
id-earlyForwardingSNTransfer

```

FROM ElAP-Constants;

-- *****
--
-- Interface Elementary Procedure Class
--
-- *****

ElAP-ELEMENTARY-PROCEDURE ::= CLASS {
    &InitiatingMessage          ,
    &SuccessfulOutcome          OPTIONAL,

    &UnsuccessfulOutcome        OPTIONAL,
    &procedureCode              ProcedureCode UNIQUE,
    &criticality                 Criticality   DEFAULT ignore
}
WITH SYNTAX {
    INITIATING MESSAGE          &InitiatingMessage
    [SUCCESSFUL OUTCOME         &SuccessfulOutcome]
    [UNSUCCESSFUL OUTCOME       &UnsuccessfulOutcome]
    PROCEDURE CODE              &procedureCode
    [CRITICALITY                &criticality]
}

-- *****
--
-- Interface PDU Definition
--
-- *****

ElAP-PDU ::= CHOICE {
    initiatingMessage          InitiatingMessage,
    successfulOutcome          SuccessfulOutcome,
    unsuccessfulOutcome        UnsuccessfulOutcome,
    ...
}

InitiatingMessage ::= SEQUENCE {
    procedureCode              ElAP-ELEMENTARY-PROCEDURE.&procedureCode      ({ElAP-ELEMENTARY-PROCEDURES}),
    criticality                ElAP-ELEMENTARY-PROCEDURE.&criticality          ({ElAP-ELEMENTARY-PROCEDURES}{@procedureCode}),
    value                      ElAP-ELEMENTARY-PROCEDURE.&InitiatingMessage   ({ElAP-ELEMENTARY-PROCEDURES}{@procedureCode})
}

SuccessfulOutcome ::= SEQUENCE {
    procedureCode              ElAP-ELEMENTARY-PROCEDURE.&procedureCode      ({ElAP-ELEMENTARY-PROCEDURES}),
    criticality                ElAP-ELEMENTARY-PROCEDURE.&criticality          ({ElAP-ELEMENTARY-PROCEDURES}{@procedureCode}),
    value                      ElAP-ELEMENTARY-PROCEDURE.&SuccessfulOutcome   ({ElAP-ELEMENTARY-PROCEDURES}{@procedureCode})
}

UnsuccessfulOutcome ::= SEQUENCE {
    procedureCode              ElAP-ELEMENTARY-PROCEDURE.&procedureCode      ({ElAP-ELEMENTARY-PROCEDURES}),
    criticality                ElAP-ELEMENTARY-PROCEDURE.&criticality          ({ElAP-ELEMENTARY-PROCEDURES}{@procedureCode}),
    value                      ElAP-ELEMENTARY-PROCEDURE.&UnsuccessfulOutcome ({ElAP-ELEMENTARY-PROCEDURES}{@procedureCode})
}

```

```

-- *****
--
-- Interface Elementary Procedure List
--
-- *****

E1AP-ELEMENTARY-PROCEDURES E1AP-ELEMENTARY-PROCEDURE ::= {
    E1AP-ELEMENTARY-PROCEDURES-CLASS-1      |
    E1AP-ELEMENTARY-PROCEDURES-CLASS-2      ,

    ...
}

E1AP-ELEMENTARY-PROCEDURES-CLASS-1 E1AP-ELEMENTARY-PROCEDURE ::= {
    reset                                     |
    gNB-CU-UP-E1Setup                       |
    gNB-CU-CP-E1Setup                       |
    gNB-CU-UP-ConfigurationUpdate           |
    gNB-CU-CP-ConfigurationUpdate           |
    e1Release                               |
    bearerContextSetup                      |
    bearerContextModification              |
    bearerContextModificationRequired       |
    bearerContextRelease                   |
    resourceStatusReportingInitiation       |
    iAB-UPTNLAddressUpdate                  |
    ...
}

E1AP-ELEMENTARY-PROCEDURES-CLASS-2 E1AP-ELEMENTARY-PROCEDURE ::= {
    errorIndication                        |
    bearerContextReleaseRequest            |
    bearerContextInactivityNotification    |
    dLDataNotification                    |
    uLDataNotification                    |
    dataUsageReport                       |
    gNB-CU-UP-CounterCheck                 |
    gNB-CU-UP-StatusIndication             |
    mRDC-DataUsageReport                   |
    deactivateTrace                        |
    traceStart                             |
    privateMessage                         |
    privateMessage                         |
    cellTrafficTrace                       |
    resourceStatusReporting                 |
    earlyForwardingSNTransfer              |
    ...
}

-- *****
--
-- Interface Elementary Procedures
--

```

```
-- *****

reset ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      Reset
    SUCCESSFUL OUTCOME      ResetAcknowledge
    PROCEDURE CODE          id-reset
    CRITICALITY             reject
}

errorIndication ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      ErrorIndication
    PROCEDURE CODE          id-errorIndication
    CRITICALITY             ignore
}

gNB-CU-UP-ElSetup ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      GNB-CU-UP-ElSetupRequest
    SUCCESSFUL OUTCOME      GNB-CU-UP-ElSetupResponse
    UNSUCCESSFUL OUTCOME    GNB-CU-UP-ElSetupFailure
    PROCEDURE CODE          id-gNB-CU-UP-ElSetup
    CRITICALITY             reject
}

gNB-CU-CP-ElSetup ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      GNB-CU-CP-ElSetupRequest
    SUCCESSFUL OUTCOME      GNB-CU-CP-ElSetupResponse
    UNSUCCESSFUL OUTCOME    GNB-CU-CP-ElSetupFailure
    PROCEDURE CODE          id-gNB-CU-CP-ElSetup
    CRITICALITY             reject
}

gNB-CU-UP-ConfigurationUpdate ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      GNB-CU-UP-ConfigurationUpdate
    SUCCESSFUL OUTCOME      GNB-CU-UP-ConfigurationUpdateAcknowledge
    UNSUCCESSFUL OUTCOME    GNB-CU-UP-ConfigurationUpdateFailure
    PROCEDURE CODE          id-gNB-CU-UP-ConfigurationUpdate
    CRITICALITY             reject
}

gNB-CU-CP-ConfigurationUpdate ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      GNB-CU-CP-ConfigurationUpdate
    SUCCESSFUL OUTCOME      GNB-CU-CP-ConfigurationUpdateAcknowledge
    UNSUCCESSFUL OUTCOME    GNB-CU-CP-ConfigurationUpdateFailure
    PROCEDURE CODE          id-gNB-CU-CP-ConfigurationUpdate
    CRITICALITY             reject
}

elRelease ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      ElReleaseRequest
    SUCCESSFUL OUTCOME      ElReleaseResponse
    PROCEDURE CODE          id-elRelease
    CRITICALITY             reject
}
```

```
bearerContextSetup ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      BearerContextSetupRequest
    SUCCESSFUL OUTCOME      BearerContextSetupResponse
    UNSUCCESSFUL OUTCOME    BearerContextSetupFailure
    PROCEDURE CODE          id-bearerContextSetup
    CRITICALITY             reject
}

bearerContextModification ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      BearerContextModificationRequest
    SUCCESSFUL OUTCOME      BearerContextModificationResponse
    UNSUCCESSFUL OUTCOME    BearerContextModificationFailure
    PROCEDURE CODE          id-bearerContextModification
    CRITICALITY             reject
}

bearerContextModificationRequired ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      BearerContextModificationRequired
    SUCCESSFUL OUTCOME      BearerContextModificationConfirm
    PROCEDURE CODE          id-bearerContextModificationRequired
    CRITICALITY             reject
}

bearerContextRelease ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      BearerContextReleaseCommand
    SUCCESSFUL OUTCOME      BearerContextReleaseComplete
    PROCEDURE CODE          id-bearerContextRelease
    CRITICALITY             reject
}

bearerContextReleaseRequest ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      BearerContextReleaseRequest
    PROCEDURE CODE          id-bearerContextReleaseRequest
    CRITICALITY             ignore
}

bearerContextInactivityNotification ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      BearerContextInactivityNotification
    PROCEDURE CODE          id-bearerContextInactivityNotification
    CRITICALITY             ignore
}

dLDataNotification ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      DLDataNotification
    PROCEDURE CODE          id-dLDataNotification
    CRITICALITY             ignore
}

uLDataNotification ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      ULDataNotification
    PROCEDURE CODE          id-uLDataNotification
    CRITICALITY             ignore
}
```

```
dataUsageReport ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      DataUsageReport
    PROCEDURE CODE          id-dataUsageReport
    CRITICALITY              ignore
}

gNB-CU-UP-CounterCheck ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      GNB-CU-UP-CounterCheckRequest
    PROCEDURE CODE          id-gNB-CU-UP-CounterCheck
    CRITICALITY              ignore
}

gNB-CU-UP-StatusIndication ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      GNB-CU-UP-StatusIndication
    PROCEDURE CODE          id-gNB-CU-UP-StatusIndication
    CRITICALITY              ignore
}

privateMessage ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      PrivateMessage
    PROCEDURE CODE          id-privateMessage
    CRITICALITY              ignore
}

mRDC-DataUsageReport ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      mRDC-DataUsageReport
    PROCEDURE CODE          id-mRDC-DataUsageReport
    CRITICALITY              ignore
}

deactivateTrace ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      DeactivateTrace
    PROCEDURE CODE          id-DeactivateTrace
    CRITICALITY              ignore
}

traceStart ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      TraceStart
    PROCEDURE CODE          id-TraceStart
    CRITICALITY              ignore
}

resourceStatusReportingInitiation ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      ResourceStatusRequest
    SUCCESSFUL OUTCOME      ResourceStatusResponse
    UNSUCCESSFUL OUTCOME    ResourceStatusFailure
    PROCEDURE CODE          id-resourceStatusReportingInitiation
    CRITICALITY              reject
}

resourceStatusReporting ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      ResourceStatusUpdate
    PROCEDURE CODE          id-resourceStatusReporting
    CRITICALITY              ignore
}
```

```

}

iAB-UPTNLAddressUpdate ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      IAB-UPTNLAddressUpdate
    SUCCESSFUL OUTCOME      IAB-UPTNLAddressUpdateAcknowledge
    UNSUCCESSFUL OUTCOME    IAB-UPTNLAddressUpdateFailure
    PROCEDURE CODE          id-iAB-UPTNLAddressUpdate
    CRITICALITY              reject
}

cellTrafficTrace ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      CellTrafficTrace
    PROCEDURE CODE          id-CellTrafficTrace
    CRITICALITY              ignore
}

earlyForwardingSNTransfer ElAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE      EarlyForwardingSNTransfer
    PROCEDURE CODE          id-earlyForwardingSNTransfer
    CRITICALITY              ignore
}

END
-- ASN1STOP

```

9.4.4 PDU Definitions

```

-- ASN1START
-- *****
--
-- PDU definitions for ElAP
--
-- *****

ElAP-PDU-Contents {
    itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
    ngran-access (22) modules (3) elap (5) version1 (1) elap-PDU-Contents (1) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS

    Cause,
    CriticalityDiagnostics,
    GNB-CU-CP-UE-ElAP-ID,

```


GNB-CU-UP-UE-ElAP-ID,
UE-associatedLogicalEl-ConnectionItem,
GNB-CU-UP-ID,
GNB-CU-UP-Name,
GNB-CU-CP-Name,
CNSupport,
PLMN-Identity,
Slice-Support-List,
NR-CGI-Support-List,
QoS-Parameters-Support-List,
SecurityInformation,
BitRate,
BearerContextStatusChange,
DRB-To-Setup-List-EUTRAN,
DRB-Setup-List-EUTRAN,
DRB-Failed-List-EUTRAN,
DRB-To-Modify-List-EUTRAN,
DRB-Modified-List-EUTRAN,
DRB-Failed-To-Modify-List-EUTRAN,
DRB-To-Remove-List-EUTRAN,
DRB-Required-To-Remove-List-EUTRAN,
DRB-Required-To-Modify-List-EUTRAN,
DRB-Confirm-Modified-List-EUTRAN,
DRB-To-Setup-Mod-List-EUTRAN,
DRB-Setup-Mod-List-EUTRAN,
DRB-Failed-Mod-List-EUTRAN,
ExtendedSliceSupportList,
PDU-Session-Resource-To-Setup-List,
PDU-Session-Resource-Setup-List,
PDU-Session-Resource-Failed-List,
PDU-Session-Resource-To-Modify-List,
PDU-Session-Resource-Modified-List,
PDU-Session-Resource-Failed-To-Modify-List,
PDU-Session-Resource-To-Remove-List,
PDU-Session-Resource-Required-To-Modify-List,
PDU-Session-Resource-Confirm-Modified-List,
PDU-Session-Resource-To-Setup-Mod-List,
PDU-Session-Resource-Setup-Mod-List,
PDU-Session-Resource-Failed-Mod-List,
PDU-Session-To-Notify-List,
DRB-Status-Item,
DRB-Activity-Item,
Data-Usage-Report-List,
TimeToWait,
ActivityNotificationLevel,
ActivityInformation,
New-UL-TNL-Information-Required,
GNB-CU-CP-TNLA-Setup-Item,
GNB-CU-CP-TNLA-Failed-To-Setup-Item,
GNB-CU-CP-TNLA-To-Add-Item,
GNB-CU-CP-TNLA-To-Remove-Item,
GNB-CU-CP-TNLA-To-Update-Item,
GNB-CU-UP-TNLA-To-Remove-Item,
TransactionID,

Inactivity-Timer,
DRBs-Subject-To-Counter-Check-List-EUTRAN,
DRBs-Subject-To-Counter-Check-List-NG-RAN,
PPI,
GNB-CU-UP-Capacity,
GNB-CU-UP-OverloadInformation,
DataDiscardRequired,
PDU-Session-Resource-Data-Usage-List,
RANUEID,
GNB-DU-ID,
TraceID,
TraceActivation,
SubscriberProfileIDforRFP,
AdditionalRRMPriorityIndex,
RetainabilityMeasurementsInfo,
Transport-Layer-Address-Info,
HW-CapacityIndicator,
RegistrationRequest,
ReportCharacteristics,
ReportingPeriodicity,
TNL-AvailableCapacityIndicator,
DLUPTNLAddressToUpdateItem,
ULUPTNLAddressToUpdateItem,
NPNContextInfo,
NPNSupportInfo,
MDTPLMNLList,
PrivacyIndicator,
URIaddress,
DRBs-Subject-To-Early-Forwarding-List,
CHOInitiation,
ExtendedSliceSupportList,
TransportLayerAddress

FROM ElAP-IEs

PrivateIE-Container{},
ProtocolExtensionContainer{},
ProtocolIE-Container{},
ProtocolIE-ContainerList{},
ProtocolIE-SingleContainer{},
ElAP-PRIVATE-IES,
ElAP-PROTOCOL-EXTENSION,
ElAP-PROTOCOL-IES

FROM ElAP-Containers

id-Cause,
id-CriticalityDiagnostics,
id-gNB-CU-CP-UE-ElAP-ID,
id-gNB-CU-UP-UE-ElAP-ID,
id-ResetType,
id-UE-associatedLogicalEl-ConnectionItem,

id-UE-associatedLogicalEl-ConnectionListResAck,
id-gNB-CU-UP-ID,
id-gNB-CU-UP-Name,
id-gNB-CU-CP-Name,
id-CNSupport,
id-SupportedPLMNs,
id-NPNSupportInfo,
id-NPNContextInfo,
id-SecurityInformation,
id-UEDLAggregateMaximumBitRate,
id-BearerContextStatusChange,
id-System-BearerContextSetupRequest,
id-System-BearerContextSetupResponse,
id-System-BearerContextModificationRequest,
id-System-BearerContextModificationResponse,
id-System-BearerContextModificationConfirm,
id-System-BearerContextModificationRequired,
id-DRB-Status-List,
id-Data-Usage-Report-List,
id-TimeToWait,
id-ActivityNotificationLevel,
id-ActivityInformation,
id-New-UL-TNL-Information-Required,
id-GNB-CU-CP-TNLA-Setup-List,
id-GNB-CU-CP-TNLA-Failed-To-Setup-List,
id-GNB-CU-CP-TNLA-To-Add-List,
id-GNB-CU-CP-TNLA-To-Remove-List,
id-GNB-CU-CP-TNLA-To-Update-List,
id-GNB-CU-UP-TNLA-To-Remove-List,
id-DRB-To-Setup-List-EUTRAN,
id-DRB-To-Modify-List-EUTRAN,
id-DRB-To-Remove-List-EUTRAN,
id-DRB-Required-To-Modify-List-EUTRAN,
id-DRB-Required-To-Remove-List-EUTRAN,
id-DRB-Setup-List-EUTRAN,
id-DRB-Failed-List-EUTRAN,
id-DRB-Modified-List-EUTRAN,
id-DRB-Failed-To-Modify-List-EUTRAN,
id-DRB-Confirm-Modified-List-EUTRAN,
id-DRB-To-Setup-Mod-List-EUTRAN,
id-DRB-Setup-Mod-List-EUTRAN,
id-DRB-Failed-Mod-List-EUTRAN,
id-PDU-Session-Resource-To-Setup-List,
id-PDU-Session-Resource-To-Modify-List,
id-PDU-Session-Resource-To-Remove-List,
id-PDU-Session-Resource-Required-To-Modify-List,
id-PDU-Session-Resource-Setup-List,
id-PDU-Session-Resource-Failed-List,
id-PDU-Session-Resource-Modified-List,
id-PDU-Session-Resource-Failed-To-Modify-List,
id-PDU-Session-Resource-Confirm-Modified-List,
id-PDU-Session-Resource-Setup-Mod-List,
id-PDU-Session-Resource-Failed-Mod-List,
id-PDU-Session-Resource-To-Setup-Mod-List,

```
id-PDU-Session-To-Notify-List,
id-TransactionID,
id-Serving-PLMN,
id-UE-Inactivity-Timer,
id-System-GNB-CU-UP-CounterCheckRequest,
id-DRBs-Subject-To-Counter-Check-List-EUTRAN,
id-DRBs-Subject-To-Counter-Check-List-NG-RAN,
id-PPI,
id-gNB-CU-UP-Capacity,
id-gNB-CU-UP-OverloadInformation,
id-UEDLMaximumIntegrityProtectedDataRate,
id-DataDiscardRequired,
id-PDU-Session-Resource-Data-Usage-List,
id-RANUEID,
id-gNB-DU-ID,
id-TraceID,
id-TraceActivation,
id-SubscriberProfileIDforRFP,
id-AdditionalRRMPriorityIndex,
id-RetainabilityMeasurementsInfo,
id-Transport-Layer-Address-Info,
id-gNB-CU-CP-Measurement-ID,
id-gNB-CU-UP-Measurement-ID,
id-RegistrationRequest,
id-ReportCharacteristics,
id-ReportingPeriodicity,
id-TNL-AvailableCapacityIndicator,
id-HW-CapacityIndicator,
id-DLUPTNLAddressToUpdateList,
id-ULUPTNLAddressToUpdateList,
id-ManagementBasedMDTPLMNList,
id-TraceCollectionEntityIPAddress,
id-PrivacyIndicator,
id-URIaddress,
id-DRBs-Subject-To-Early-Forwarding-List,
id-CHOInitiation,
id-ExtendedSliceSupportList,

maxnoofErrors,
maxnoofSPLMNs,
maxnoofDRBs,
maxnoofTNLAssociations,
maxnoofIndividualElConnectionsToReset,
maxnoofTNLAddresses
```

```
FROM ElAP-Constants;
```

```
-- *****
--
-- RESET
--
-- *****
```

```

-- *****
--
-- Reset
--
-- *****

Reset ::= SEQUENCE {
    protocolIES          ProtocolIE-Container    { {ResetIES} },
    ...
}

ResetIES EAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-Cause                  CRITICALITY ignore TYPE Cause                  PRESENCE mandatory }|
    { ID id-ResetType              CRITICALITY reject TYPE ResetType              PRESENCE mandatory },
    ...
}

ResetType ::= CHOICE {
    e1-Interface                ResetAll,
    partOfE1-Interface          UE-associatedLogicalE1-ConnectionListRes,
    choice-extension             ProtocolIE-SingleContainer  {{ResetType-ExtIES}}
}

ResetType-ExtIES EAP-PROTOCOL-IES ::= {
    ...
}

ResetAll ::= ENUMERATED {
    reset-all,
    ...
}

UE-associatedLogicalE1-ConnectionListRes ::= SEQUENCE (SIZE(1.. maxnoofIndividualE1ConnectionsToReset)) OF ProtocolIE-SingleContainer { { UE-
associatedLogicalE1-ConnectionItemRes } }

UE-associatedLogicalE1-ConnectionItemRes EAP-PROTOCOL-IES ::= {
    { ID id-UE-associatedLogicalE1-ConnectionItem CRITICALITY reject TYPE UE-associatedLogicalE1-ConnectionItem PRESENCE mandatory},
    ...
}

-- *****
--
-- Reset Acknowledge
--
-- *****

ResetAcknowledge ::= SEQUENCE {
    protocolIES          ProtocolIE-Container    { {ResetAcknowledgeIES} },
    ...
}

ResetAcknowledgeIES EAP-PROTOCOL-IES ::= {

```

```

        { ID id-TransactionID                CRITICALITY reject  TYPE TransactionID                PRESENCE mandatory }|
        { ID id-UE-associatedLogicalE1-ConnectionListResAck  CRITICALITY ignore  TYPE UE-associatedLogicalE1-ConnectionListResAck  PRESENCE
optional }|
        { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics          PRESENCE optional },
        ...
    }

UE-associatedLogicalE1-ConnectionListResAck ::= SEQUENCE (SIZE(1.. maxnoofIndividualE1ConnectionsToReset)) OF ProtocolIE-SingleContainer { { UE-
associatedLogicalE1-ConnectionItemResAck } }

UE-associatedLogicalE1-ConnectionItemResAck  E1AP-PROTOCOL-IES ::= {
    { ID id-UE-associatedLogicalE1-ConnectionItem  CRITICALITY ignore  TYPE UE-associatedLogicalE1-ConnectionItem  PRESENCE mandatory },
    ...
}

-- *****
--
-- ERROR INDICATION
--
-- *****

ErrorIndication ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container    {{ErrorIndication-IEs}},
    ...
}

ErrorIndication-IEs E1AP-PROTOCOL-IES ::= {
    { ID id-TransactionID                CRITICALITY reject  TYPE TransactionID                PRESENCE mandatory }|
    { ID id-gNB-CU-CP-UE-E1AP-ID          CRITICALITY ignore  TYPE GNB-CU-CP-UE-E1AP-ID          PRESENCE optional }|
    { ID id-gNB-CU-UP-UE-E1AP-ID          CRITICALITY ignore  TYPE GNB-CU-UP-UE-E1AP-ID          PRESENCE optional }|
    { ID id-Cause                         CRITICALITY ignore  TYPE Cause                         PRESENCE optional }|
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics          PRESENCE optional },
    ...
}

-- *****
--
-- GNB-CU-UP E1 SETUP
--
-- *****

-- *****
--
-- GNB-CU-UP E1 Setup Request
--
-- *****

GNB-CU-UP-E1SetupRequest ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container    { {GNB-CU-UP-E1SetupRequestIEs} },
    ...
}

GNB-CU-UP-E1SetupRequestIEs E1AP-PROTOCOL-IES ::= {

```

```

    { ID id-TransactionID                CRITICALITY reject TYPE TransactionID                PRESENCE mandatory }|
    { ID id-gNB-CU-UP-ID                 CRITICALITY reject TYPE GNB-CU-UP-ID                 PRESENCE mandatory }|
    { ID id-gNB-CU-UP-Name                CRITICALITY ignore TYPE GNB-CU-UP-Name                PRESENCE optional }|
    { ID id-CNSupport                    CRITICALITY reject TYPE CNSupport                    PRESENCE mandatory }|
    { ID id-SupportedPLMNs                CRITICALITY reject TYPE SupportedPLMNs-List            PRESENCE mandatory }|
    { ID id-gNB-CU-UP-Capacity            CRITICALITY ignore TYPE GNB-CU-UP-Capacity            PRESENCE optional }|
    { ID id-Transport-Layer-Address-Info  CRITICALITY ignore TYPE Transport-Layer-Address-Info PRESENCE optional },
    ...
}

SupportedPLMNs-List ::= SEQUENCE (SIZE (1..maxnoofSPLMNs)) OF SupportedPLMNs-Item

SupportedPLMNs-Item ::= SEQUENCE {
    pLMN-Identity                PLMN-Identity,
    slice-Support-List           Slice-Support-List                OPTIONAL,
    nR-CGI-Support-List          NR-CGI-Support-List                OPTIONAL,
    qoS-Parameters-Support-List  QoS-Parameters-Support-List    OPTIONAL,
    iE-Extensions                ProtocolExtensionContainer { { SupportedPLMNs-ExtIEs } } OPTIONAL,
    ...
}

SupportedPLMNs-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    { ID id-NPNSupportInfo CRITICALITY reject EXTENSION NPNSupportInfo PRESENCE optional }|
    { ID id-ExtendedSliceSupportList CRITICALITY reject EXTENSION ExtendedSliceSupportList PRESENCE optional },
    ...
}

-- *****
--
-- GNB-CU-UP E1 Setup Response
--
-- *****

GNB-CU-UP-E1SetupResponse ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { GNB-CU-UP-E1SetupResponseIEs } },
    ...
}

GNB-CU-UP-E1SetupResponseIEs E1AP-PROTOCOL-IES ::= {
    { ID id-TransactionID                CRITICALITY reject TYPE TransactionID                PRESENCE mandatory }|
    { ID id-gNB-CU-CP-Name                CRITICALITY ignore TYPE GNB-CU-CP-Name                PRESENCE optional }|
    { ID id-Transport-Layer-Address-Info  CRITICALITY ignore TYPE Transport-Layer-Address-Info PRESENCE optional },
    ...
}

-- *****
--
-- GNB-CU-UP E1 Setup Failure
--
-- *****

GNB-CU-UP-E1SetupFailure ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { GNB-CU-UP-E1SetupFailureIEs } },
    ...
}

```

```

}

GNB-CU-UP-E1SetupFailureIEs E1AP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
  { ID id-Cause                  CRITICALITY ignore TYPE Cause                  PRESENCE mandatory }|
  { ID id-TimeToWait             CRITICALITY ignore TYPE TimeToWait             PRESENCE optional }|
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
  ...
}

-- *****
--
-- GNB-CU-CP E1 SETUP
--
-- *****

-- *****
--
-- GNB-CU-CP E1 Setup Request
--
-- *****

GNB-CU-CP-E1SetupRequest ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container    { {GNB-CU-CP-E1SetupRequestIEs} },
  ...
}

GNB-CU-CP-E1SetupRequestIEs E1AP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
  { ID id-gNB-CU-CP-Name         CRITICALITY ignore TYPE GNB-CU-CP-Name         PRESENCE optional }|
  { ID id-Transport-Layer-Address-Info CRITICALITY ignore TYPE Transport-Layer-Address-Info PRESENCE optional },
  ...
}

-- *****
--
-- GNB-CU-CP E1 Setup Response
--
-- *****

GNB-CU-CP-E1SetupResponse ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container    { {GNB-CU-CP-E1SetupResponseIEs} },
  ...
}

GNB-CU-CP-E1SetupResponseIEs E1AP-PROTOCOL-IES ::= {
  { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
  { ID id-gNB-CU-UP-ID           CRITICALITY reject TYPE GNB-CU-UP-ID           PRESENCE mandatory }|
  { ID id-gNB-CU-UP-Name         CRITICALITY ignore TYPE GNB-CU-UP-Name         PRESENCE optional }|
  { ID id-CNSupport             CRITICALITY reject TYPE CNSupport             PRESENCE mandatory }|
  { ID id-SupportedPLMNs        CRITICALITY reject TYPE SupportedPLMNs-List     PRESENCE mandatory }|
  { ID id-gNB-CU-UP-Capacity     CRITICALITY ignore TYPE GNB-CU-UP-Capacity     PRESENCE optional }|
  { ID id-Transport-Layer-Address-Info CRITICALITY ignore TYPE Transport-Layer-Address-Info PRESENCE optional },
  ...
}

```



```

}

-- *****
--
-- GNB-CU-CP E1 Setup Failure
--
-- *****

GNB-CU-CP-E1SetupFailure ::= SEQUENCE {
    protocolIES          ProtocolIE-Container    { {GNB-CU-CP-E1SetupFailureIES} },
    ...
}

GNB-CU-CP-E1SetupFailureIES ELAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-Cause                  CRITICALITY ignore TYPE Cause                  PRESENCE mandatory }|
    { ID id-TimeToWait             CRITICALITY ignore TYPE TimeToWait             PRESENCE optional }|
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

-- *****
--
-- GNB-CU-UP CONFIGURATION UPDATE
--
-- *****

-- *****
--
-- GNB-CU-UP Configuration Update
--
-- *****

GNB-CU-UP-ConfigurationUpdate ::= SEQUENCE {
    protocolIES          ProtocolIE-Container    { {GNB-CU-UP-ConfigurationUpdateIES} },
    ...
}

GNB-CU-UP-ConfigurationUpdateIES ELAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-gNB-CU-UP-ID           CRITICALITY reject TYPE GNB-CU-UP-ID           PRESENCE mandatory }|
    { ID id-gNB-CU-UP-Name         CRITICALITY ignore TYPE GNB-CU-UP-Name         PRESENCE optional }|
    { ID id-SupportedPLMNs         CRITICALITY reject TYPE SupportedPLMNs-List     PRESENCE optional }|
    { ID id-gNB-CU-UP-Capacity     CRITICALITY ignore TYPE GNB-CU-UP-Capacity     PRESENCE optional }|
    { ID id-gNB-CU-UP-TNLA-To-Remove-List CRITICALITY reject TYPE GNB-CU-UP-TNLA-To-Remove-List PRESENCE optional }|
    { ID id-Transport-Layer-Address-Info CRITICALITY ignore TYPE Transport-Layer-Address-Info PRESENCE optional },
    ...
}

GNB-CU-UP-TNLA-To-Remove-List ::= SEQUENCE (SIZE(1.. maxnoofTNLAAssociations)) OF GNB-CU-UP-TNLA-To-Remove-Item

-- *****
--
-- GNB-CU-UP Configuration Update Acknowledge

```

```

--
-- *****
GNB-CU-UP-ConfigurationUpdateAcknowledge ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container      { {GNB-CU-UP-ConfigurationUpdateAcknowledgeIEs} },
    ...
}

GNB-CU-UP-ConfigurationUpdateAcknowledgeIEs ELAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics CRITICALITY ignore  TYPE CriticalityDiagnostics PRESENCE optional }|
    { ID id-Transport-Layer-Address-Info CRITICALITY ignore  TYPE Transport-Layer-Address-Info PRESENCE optional },
    ...
}

-- *****
--
-- GNB-CU-UP Configuration Update Failure
--
-- *****

GNB-CU-UP-ConfigurationUpdateFailure ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container      { {GNB-CU-UP-ConfigurationUpdateFailureIEs} },
    ...
}

GNB-CU-UP-ConfigurationUpdateFailureIEs ELAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
    { ID id-Cause                  CRITICALITY ignore  TYPE Cause                  PRESENCE mandatory }|
    { ID id-TimeToWait             CRITICALITY ignore  TYPE TimeToWait             PRESENCE optional }|
    { ID id-CriticalityDiagnostics CRITICALITY ignore  TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

-- *****
--
-- GNB-CU-CP CONFIGURATION UPDATE
--
-- *****

-- *****
--
-- GNB-CU-CP Configuration Update
--
-- *****

GNB-CU-CP-ConfigurationUpdate ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container      { {GNB-CU-CP-ConfigurationUpdateIEs} },
    ...
}

GNB-CU-CP-ConfigurationUpdateIEs ELAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
    { ID id-gNB-CU-CP-Name         CRITICALITY ignore  TYPE GNB-CU-UP-Name         PRESENCE optional }|

```

```

    { ID id-GNB-CU-CP-TNLA-To-Add-List          CRITICALITY ignore TYPE GNB-CU-CP-TNLA-To-Add-List PRESENCE optional }|
    { ID id-GNB-CU-CP-TNLA-To-Remove-List       CRITICALITY ignore TYPE GNB-CU-CP-TNLA-To-Remove-List PRESENCE optional }|
    { ID id-GNB-CU-CP-TNLA-To-Update-List       CRITICALITY ignore TYPE GNB-CU-CP-TNLA-To-Update-List PRESENCE optional }|
    { ID id-Transport-Layer-Address-Info        CRITICALITY ignore TYPE Transport-Layer-Address-Info PRESENCE optional },
    ...
}

GNB-CU-CP-TNLA-To-Add-List ::= SEQUENCE (SIZE(1.. maxnoofTNLAAssociations)) OF GNB-CU-CP-TNLA-To-Add-Item
GNB-CU-CP-TNLA-To-Remove-List ::= SEQUENCE (SIZE(1.. maxnoofTNLAAssociations)) OF GNB-CU-CP-TNLA-To-Remove-Item
GNB-CU-CP-TNLA-To-Update-List ::= SEQUENCE (SIZE(1.. maxnoofTNLAAssociations)) OF GNB-CU-CP-TNLA-To-Update-Item

-- *****
--
-- GNB-CU-CP Configuration Update Acknowledge
--
-- *****

GNB-CU-CP-ConfigurationUpdateAcknowledge ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { {GNB-CU-CP-ConfigurationUpdateAcknowledgeIEs} },
    ...
}

GNB-CU-CP-ConfigurationUpdateAcknowledgeIEs E1AP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional }|
    { ID id-GNB-CU-CP-TNLA-Setup-List CRITICALITY ignore TYPE GNB-CU-CP-TNLA-Setup-List PRESENCE optional }|
    { ID id-GNB-CU-CP-TNLA-Failed-To-Setup-List CRITICALITY ignore TYPE GNB-CU-CP-TNLA-Failed-To-Setup-List PRESENCE optional }|
    { ID id-Transport-Layer-Address-Info CRITICALITY ignore TYPE Transport-Layer-Address-Info PRESENCE optional },
    ...
}

GNB-CU-CP-TNLA-Setup-List ::= SEQUENCE (SIZE(1.. maxnoofTNLAAssociations)) OF GNB-CU-CP-TNLA-Setup-Item
GNB-CU-CP-TNLA-Failed-To-Setup-List ::= SEQUENCE (SIZE(1.. maxnoofTNLAAssociations)) OF GNB-CU-CP-TNLA-Failed-To-Setup-Item

-- *****
--
-- GNB-CU-CP Configuration Update Failure
--
-- *****

GNB-CU-CP-ConfigurationUpdateFailure ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { {GNB-CU-CP-ConfigurationUpdateFailureIEs} },
    ...
}

GNB-CU-CP-ConfigurationUpdateFailureIEs E1AP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID PRESENCE mandatory }|
    { ID id-Cause                  CRITICALITY ignore TYPE Cause PRESENCE mandatory }|
    { ID id-TimeToWait             CRITICALITY ignore TYPE TimeToWait PRESENCE optional }|
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

```

```

-- *****
--
-- El RELEASE
--
-- *****

-- *****
--
-- El Release Request
--
-- *****

ElReleaseRequest ::= SEQUENCE {
    protocolIES          ProtocolIE-Container      { {ElReleaseRequestIES} },
    ...
}

ElReleaseRequestIES ElAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory }|
    { ID id-Cause                  CRITICALITY ignore   TYPE Cause                  PRESENCE mandatory },
    ...
}

-- *****
--
-- El Release Response
--
-- *****

ElReleaseResponse ::= SEQUENCE {
    protocolIES          ProtocolIE-Container      { {ElReleaseResponseIES} },
    ...
}

ElReleaseResponseIES ElAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory },
    ...
}

-- *****
--
-- BEARER CONTEXT SETUP
--
-- *****

-- *****
--
-- Bearer Context Setup Request
--
-- *****

BearerContextSetupRequest ::= SEQUENCE {
    protocolIES          ProtocolIE-Container      { { BearerContextSetupRequestIES} },
    ...
}

```

```

}

BearerContextSetupRequestIES E1AP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-CP-UE-E1AP-ID          CRITICALITY reject  TYPE GNB-CU-CP-UE-E1AP-ID          PRESENCE mandatory }|
  { ID id-SecurityInformation            CRITICALITY reject  TYPE SecurityInformation        PRESENCE mandatory }|
  { ID id-UEDLAggregateMaximumBitRate    CRITICALITY reject  TYPE BitRate                    PRESENCE mandatory }|
  { ID id-UEDLMaximumIntegrityProtectedDataRate CRITICALITY reject  TYPE BitRate                    PRESENCE optional }|
  { ID id-Serving-PLMN                  CRITICALITY ignore  TYPE PLMN-Identity              PRESENCE mandatory }|
  { ID id-ActivityNotificationLevel      CRITICALITY reject  TYPE ActivityNotificationLevel  PRESENCE mandatory }|
  { ID id-UE-Inactivity-Timer           CRITICALITY reject  TYPE Inactivity-Timer           PRESENCE optional }|
  { ID id-BearerContextStatusChange      CRITICALITY reject  TYPE BearerContextStatusChange  PRESENCE optional }|
  { ID id-System-BearerContextSetupRequest CRITICALITY reject  TYPE System-BearerContextSetupRequest PRESENCE mandatory }|
  { ID id-RANUEID                       CRITICALITY ignore  TYPE RANUEID                    PRESENCE optional }|
  { ID id-GNB-DU-ID                     CRITICALITY ignore  TYPE GNB-DU-ID                  PRESENCE optional }|
  { ID id-TraceActivation                CRITICALITY ignore  TYPE TraceActivation            PRESENCE optional }|
  { ID id-NPNContextInfo                 CRITICALITY reject  TYPE NPNContextInfo             PRESENCE optional }|
  { ID id-ManagementBasedMDTPLMNList     CRITICALITY ignore  TYPE MDTPLMNList               PRESENCE optional }|
  { ID id-CHOInitiation                  CRITICALITY reject  TYPE CHOInitiation              PRESENCE optional },
  ...
}

System-BearerContextSetupRequest ::= CHOICE {
  e-UTRAN-BearerContextSetupRequest      ProtocolIE-Container      {{ EUTRAN-BearerContextSetupRequest }},
  nG-RAN-BearerContextSetupRequest        ProtocolIE-Container      {{ NG-RAN-BearerContextSetupRequest }},
  choice-extension                        ProtocolIE-SingleContainer {{ System-BearerContextSetupRequest-ExtIES }}
}

System-BearerContextSetupRequest-ExtIES E1AP-PROTOCOL-IES ::= {
  ...
}

EUTRAN-BearerContextSetupRequest E1AP-PROTOCOL-IES ::= {
  { ID id-DRB-To-Setup-List-EUTRAN      CRITICALITY reject  TYPE DRB-To-Setup-List-EUTRAN  PRESENCE mandatory }|
  { ID id-SubscriberProfileIDforRFP      CRITICALITY ignore  TYPE SubscriberProfileIDforRFP  PRESENCE optional }|
  { ID id-AdditionalRRMPriorityIndex     CRITICALITY ignore  TYPE AdditionalRRMPriorityIndex PRESENCE optional },
  ...
}

NG-RAN-BearerContextSetupRequest E1AP-PROTOCOL-IES ::= {
  { ID id-PDU-Session-Resource-To-Setup-List CRITICALITY reject  TYPE PDU-Session-Resource-To-Setup-List PRESENCE mandatory },
  ...
}

-- *****
--
-- Bearer Context Setup Response
--
-- *****

BearerContextSetupResponse ::= SEQUENCE {
  protocolIES          ProtocolIE-Container      { { BearerContextSetupResponseIES } },
  ...
}

```

```

}

BearerContextSetupResponseIEs E1AP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-CP-UE-E1AP-ID          CRITICALITY reject  TYPE GNB-CU-CP-UE-E1AP-ID          PRESENCE mandatory }|
  { ID id-gNB-CU-UP-UE-E1AP-ID          CRITICALITY reject  TYPE GNB-CU-UP-UE-E1AP-ID          PRESENCE mandatory }|
  { ID id-System-BearerContextSetupResponse CRITICALITY ignore TYPE System-BearerContextSetupResponse PRESENCE mandatory },
  ...
}

System-BearerContextSetupResponse ::= CHOICE {
  e-UTRAN-BearerContextSetupResponse      ProtocolIE-Container      {{EUTRAN-BearerContextSetupResponse}},
  nG-RAN-BearerContextSetupResponse      ProtocolIE-Container      {{NG-RAN-BearerContextSetupResponse}},
  choice-extension                        ProtocolIE-SingleContainer {{System-BearerContextSetupResponse-ExtIEs}}
}

System-BearerContextSetupResponse-ExtIEs E1AP-PROTOCOL-IES ::= {
  ...
}

EUTRAN-BearerContextSetupResponse E1AP-PROTOCOL-IES ::= {
  { ID id-DRB-Setup-List-EUTRAN          CRITICALITY ignore  TYPE DRB-Setup-List-EUTRAN          PRESENCE mandatory }|
  { ID id-DRB-Failed-List-EUTRAN         CRITICALITY ignore  TYPE DRB-Failed-List-EUTRAN         PRESENCE optional },
  ...
}

NG-RAN-BearerContextSetupResponse E1AP-PROTOCOL-IES ::= {
  { ID id-PDU-Session-Resource-Setup-List CRITICALITY ignore  TYPE PDU-Session-Resource-Setup-List PRESENCE mandatory }|
  { ID id-PDU-Session-Resource-Failed-List CRITICALITY ignore  TYPE PDU-Session-Resource-Failed-List PRESENCE optional },
  ...
}

-- *****
--
-- Bearer Context Setup Failure
--
-- *****

BearerContextSetupFailure ::= SEQUENCE {
  protocolIEs      ProtocolIE-Container      { { BearerContextSetupFailureIEs } },
  ...
}

BearerContextSetupFailureIEs E1AP-PROTOCOL-IES ::= {
  { ID id-gNB-CU-CP-UE-E1AP-ID          CRITICALITY reject  TYPE GNB-CU-CP-UE-E1AP-ID          PRESENCE mandatory }|
  { ID id-gNB-CU-UP-UE-E1AP-ID          CRITICALITY ignore  TYPE GNB-CU-UP-UE-E1AP-ID          PRESENCE optional }|
  { ID id-Cause                          CRITICALITY ignore  TYPE Cause                          PRESENCE mandatory }|
  { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics          PRESENCE optional },
  ...
}

-- *****
--

```

```

-- BEARER CONTEXT MODIFICATION
--
-- *****

-- *****

--
-- Bearer Context Modification Request
--
-- *****

BearerContextModificationRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { BearerContextModificationRequestIEs} },
    ...
}

BearerContextModificationRequestIEs E1AP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-E1AP-ID          CRITICALITY reject TYPE GNB-CU-CP-UE-E1AP-ID          PRESENCE mandatory }|
    { ID id-gNB-CU-UP-UE-E1AP-ID          CRITICALITY reject TYPE GNB-CU-UP-UE-E1AP-ID          PRESENCE mandatory }|
    { ID id-SecurityInformation            CRITICALITY reject TYPE SecurityInformation          PRESENCE optional   }|
    { ID id-UEDLAggregateMaximumBitRate    CRITICALITY reject TYPE BitRate                  PRESENCE optional   }|
    { ID id-UEDLMaximumIntegrityProtectedDataRate CRITICALITY reject TYPE BitRate                  PRESENCE optional   }|
    { ID id-BearerContextStatusChange      CRITICALITY reject TYPE BearerContextStatusChange        PRESENCE optional   }|
    { ID id-New-UL-TNL-Information-Required CRITICALITY reject TYPE New-UL-TNL-Information-Required    PRESENCE optional   }|
    { ID id-UE-Inactivity-Timer            CRITICALITY reject TYPE Inactivity-Timer                  PRESENCE optional   }|
    { ID id-DataDiscardRequired            CRITICALITY ignore TYPE DataDiscardRequired                PRESENCE optional   }|
    { ID id-System-BearerContextModificationRequest CRITICALITY reject TYPE System-BearerContextModificationRequest PRESENCE optional   }|
    { ID id-RANUEID                        CRITICALITY ignore TYPE RANUEID                      PRESENCE optional   }|
    { ID id-GNB-DU-ID                      CRITICALITY ignore TYPE GNB-DU-ID                      PRESENCE optional   }|
    { ID id-ActivityNotificationLevel       CRITICALITY ignore TYPE ActivityNotificationLevel          PRESENCE optional   },
    ...
}

System-BearerContextModificationRequest ::= CHOICE {
    e-UTRAN-BearerContextModificationRequest ProtocolIE-Container    {{UTRAN-BearerContextModificationRequest}},
    nG-RAN-BearerContextModificationRequest  ProtocolIE-Container    {{NG-RAN-BearerContextModificationRequest}},
    choice-extension                         ProtocolIE-SingleContainer {{System-BearerContextModificationRequest-ExtIEs}}
}

System-BearerContextModificationRequest-ExtIEs E1AP-PROTOCOL-IES ::= {
    ...
}

EUTRAN-BearerContextModificationRequest E1AP-PROTOCOL-IES ::= {
    { ID id-DRB-To-Setup-Mod-List-EUTRAN    CRITICALITY reject TYPE DRB-To-Setup-Mod-List-EUTRAN    PRESENCE optional }|
    { ID id-DRB-To-Modify-List-EUTRAN       CRITICALITY reject TYPE DRB-To-Modify-List-EUTRAN       PRESENCE optional }|
    { ID id-DRB-To-Remove-List-EUTRAN       CRITICALITY reject TYPE DRB-To-Remove-List-EUTRAN       PRESENCE optional }|
    { ID id-SubscriberProfileIDforRFP       CRITICALITY ignore  TYPE SubscriberProfileIDforRFP       PRESENCE optional }|
    { ID id-AdditionalRRMPriorityIndex       CRITICALITY ignore  TYPE AdditionalRRMPriorityIndex       PRESENCE optional },
    ...
}

NG-RAN-BearerContextModificationRequest E1AP-PROTOCOL-IES ::= {
    { ID id-PDU-Session-Resource-To-Setup-Mod-List CRITICALITY reject TYPE PDU-Session-Resource-To-Setup-Mod-List PRESENCE optional }|
    { ID id-PDU-Session-Resource-To-Modify-List   CRITICALITY reject TYPE PDU-Session-Resource-To-Modify-List   PRESENCE optional }|

```

```

    { ID id-PDU-Session-Resource-To-Remove-List      CRITICALITY reject   TYPE PDU-Session-Resource-To-Remove-List      PRESENCE optional },
    ...
}

-- *****
--
-- Bearer Context Modification Response
--
-- *****

BearerContextModificationResponse ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container      { { BearerContextModificationResponseIEs } },
    ...
}

BearerContextModificationResponseIEs ELAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-ElAP-ID          CRITICALITY reject   TYPE GNB-CU-CP-UE-ElAP-ID          PRESENCE mandatory }|
    { ID id-gNB-CU-UP-UE-ElAP-ID          CRITICALITY reject   TYPE GNB-CU-UP-UE-ElAP-ID          PRESENCE mandatory }|
    { ID id-System-BearerContextModificationResponse  CRITICALITY ignore   TYPE System-BearerContextModificationResponse  PRESENCE optional },
    ...
}

System-BearerContextModificationResponse ::= CHOICE {
    e-UTRAN-BearerContextModificationResponse  ProtocolIE-Container {{e-UTRAN-BearerContextModificationResponse}},
    nG-RAN-BearerContextModificationResponse  ProtocolIE-Container {{nG-RAN-BearerContextModificationResponse}},
    choice-extension                           ProtocolIE-SingleContainer {{System-BearerContextModificationResponse-ExtIEs}}
}

System-BearerContextModificationResponse-ExtIEs ELAP-PROTOCOL-IES ::= {
    ...
}

e-UTRAN-BearerContextModificationResponse ELAP-PROTOCOL-IES ::= {
    { ID id-DRB-Setup-Mod-List-EUTRAN          CRITICALITY ignore   TYPE DRB-Setup-Mod-List-EUTRAN          PRESENCE optional }|
    { ID id-DRB-Failed-Mod-List-EUTRAN          CRITICALITY ignore   TYPE DRB-Failed-Mod-List-EUTRAN          PRESENCE optional }|
    { ID id-DRB-Modified-List-EUTRAN            CRITICALITY ignore   TYPE DRB-Modified-List-EUTRAN            PRESENCE optional }|
    { ID id-DRB-Failed-To-Modify-List-EUTRAN      CRITICALITY ignore   TYPE DRB-Failed-To-Modify-List-EUTRAN      PRESENCE optional }|
    { ID id-RetainabilityMeasurementsInfo        CRITICALITY ignore   TYPE RetainabilityMeasurementsInfo        PRESENCE optional },
    ...
}

nG-RAN-BearerContextModificationResponse ELAP-PROTOCOL-IES ::= {
    { ID id-PDU-Session-Resource-Setup-Mod-List      CRITICALITY reject   TYPE PDU-Session-Resource-Setup-Mod-List      PRESENCE optional }|
    { ID id-PDU-Session-Resource-Failed-Mod-List      CRITICALITY reject   TYPE PDU-Session-Resource-Failed-Mod-List      PRESENCE optional }|
    { ID id-PDU-Session-Resource-Modified-List        CRITICALITY reject   TYPE PDU-Session-Resource-Modified-List        PRESENCE optional }|
    { ID id-PDU-Session-Resource-Failed-To-Modify-List  CRITICALITY reject   TYPE PDU-Session-Resource-Failed-To-Modify-List  PRESENCE optional }|
    { ID id-RetainabilityMeasurementsInfo              CRITICALITY ignore   TYPE RetainabilityMeasurementsInfo              PRESENCE optional },
    ...
}

-- *****

```



```

--
-- Bearer Context Modification Failure
--
-- *****

BearerContextModificationFailure ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { BearerContextModificationFailureIEs} },
    ...
}

BearerContextModificationFailureIEs ELAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-CP-UE-ElAP-ID          PRESENCE mandatory }|
    { ID id-gNB-CU-UP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-UP-UE-ElAP-ID          PRESENCE mandatory }|
    { ID id-Cause                          CRITICALITY ignore  TYPE Cause                          PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics          CRITICALITY ignore  TYPE CriticalityDiagnostics          PRESENCE optional  },
    ...
}

-- *****
--
-- BEARER CONTEXT MODIFICATION REQUIRED
--
-- *****

-- *****
--
-- Bearer Context Modification Required
--
-- *****

BearerContextModificationRequired ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { BearerContextModificationRequiredIEs} },
    ...
}

BearerContextModificationRequiredIEs ELAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-CP-UE-ElAP-ID          PRESENCE mandatory
    }|
    { ID id-gNB-CU-UP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-UP-UE-ElAP-ID          PRESENCE mandatory
    }|
    { ID id-System-BearerContextModificationRequired  CRITICALITY reject  TYPE System-BearerContextModificationRequired  PRESENCE mandatory
    },
    ...
}

System-BearerContextModificationRequired ::= CHOICE {
    e-UTRAN-BearerContextModificationRequired  ProtocolIE-Container {{EUTRAN-BearerContextModificationRequired}},
    nG-RAN-BearerContextModificationRequired    ProtocolIE-Container {{NG-RAN-BearerContextModificationRequired}},
    choice-extension                             ProtocolIE-SingleContainer {{System-BearerContextModificationRequired-ExtIEs}}
}

System-BearerContextModificationRequired-ExtIEs ELAP-PROTOCOL-IES ::= {
    ...
}

```

```

EUTRAN-BearerContextModificationRequired E1AP-PROTOCOL-IES ::= {
    { ID id-DRB-Required-To-Modify-List-EUTRAN    CRITICALITY reject    TYPE DRB-Required-To-Modify-List-EUTRAN    PRESENCE optional }|
    { ID id-DRB-Required-To-Remove-List-EUTRAN    CRITICALITY reject    TYPE DRB-Required-To-Remove-List-EUTRAN    PRESENCE optional },
    ...
}

NG-RAN-BearerContextModificationRequired E1AP-PROTOCOL-IES ::= {
    { ID id-PDU-Session-Resource-Required-To-Modify-List    CRITICALITY reject    TYPE PDU-Session-Resource-Required-To-Modify-List    PRESENCE optional }|
    { ID id-PDU-Session-Resource-To-Remove-List    CRITICALITY reject    TYPE PDU-Session-Resource-To-Remove-List    PRESENCE optional },
    ...
}

-- *****
--
-- Bearer Context Modification Confirm
--
-- *****

BearerContextModificationConfirm ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { BearerContextModificationConfirmIEs} },
    ...
}

BearerContextModificationConfirmIEs E1AP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-E1AP-ID                CRITICALITY reject    TYPE GNB-CU-CP-UE-E1AP-ID                PRESENCE mandatory }|
    { ID id-gNB-CU-UP-UE-E1AP-ID                CRITICALITY reject    TYPE GNB-CU-UP-UE-E1AP-ID                PRESENCE mandatory }|
    { ID id-System-BearerContextModificationConfirm    CRITICALITY ignore    TYPE System-BearerContextModificationConfirm    PRESENCE optional },
    ...
}

System-BearerContextModificationConfirm ::= CHOICE {
    e-UTRAN-BearerContextModificationConfirm    ProtocolIE-Container {{EUTRAN-BearerContextModificationConfirm}},
    nG-RAN-BearerContextModificationConfirm      ProtocolIE-Container {{NG-RAN-BearerContextModificationConfirm}},
    choice-extension                             ProtocolIE-SingleContainer {{System-BearerContextModificationConfirm-ExtIEs}}
}

System-BearerContextModificationConfirm-ExtIEs E1AP-PROTOCOL-IES ::= {
    ...
}

EUTRAN-BearerContextModificationConfirm E1AP-PROTOCOL-IES ::= {
    { ID id-DRB-Confirm-Modified-List-EUTRAN    CRITICALITY ignore    TYPE DRB-Confirm-Modified-List-EUTRAN    PRESENCE optional },
    ...
}

NG-RAN-BearerContextModificationConfirm E1AP-PROTOCOL-IES ::= {
    { ID id-PDU-Session-Resource-Confirm-Modified-List    CRITICALITY ignore    TYPE PDU-Session-Resource-Confirm-Modified-List    PRESENCE optional },
    ...
}

```

```

-- *****
--
-- BEARER CONTEXT RELEASE
--
-- *****

-- *****
--
-- Bearer Context Release Command
--
-- *****

BearerContextReleaseCommand ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { BearerContextReleaseCommandIEs} },
    ...
}

BearerContextReleaseCommandIEs E1AP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-E1AP-ID          CRITICALITY reject TYPE GNB-CU-CP-UE-E1AP-ID          PRESENCE mandatory }|
    { ID id-gNB-CU-UP-UE-E1AP-ID          CRITICALITY reject TYPE GNB-CU-UP-UE-E1AP-ID          PRESENCE mandatory }|
    { ID id-Cause                          CRITICALITY ignore TYPE Cause                      PRESENCE mandatory },
    ...
}

-- *****
--
-- Bearer Context Release Complete
--
-- *****

BearerContextReleaseComplete ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { BearerContextReleaseCompleteIEs} },
    ...
}

BearerContextReleaseCompleteIEs E1AP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-E1AP-ID          CRITICALITY reject TYPE GNB-CU-CP-UE-E1AP-ID          PRESENCE mandatory }|
    { ID id-gNB-CU-UP-UE-E1AP-ID          CRITICALITY reject TYPE GNB-CU-UP-UE-E1AP-ID          PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics         CRITICALITY ignore TYPE CriticalityDiagnostics       PRESENCE optional }|
    { ID id-RetainabilityMeasurementsInfo CRITICALITY ignore TYPE RetainabilityMeasurementsInfo PRESENCE optional },
    ...
}

-- *****
--
-- BEARER CONTEXT RELEASE REQUEST
--
-- *****

-- *****
--
-- Bearer Context Release Request

```

```

--
-- *****
BearerContextReleaseRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { BearerContextReleaseRequestIEs } },
    ...
}

BearerContextReleaseRequestIEs ElAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-ElAP-ID          CRITICALITY reject TYPE GNB-CU-CP-UE-ElAP-ID          PRESENCE mandatory }|
    { ID id-gNB-CU-UP-UE-ElAP-ID          CRITICALITY reject TYPE GNB-CU-UP-UE-ElAP-ID          PRESENCE mandatory }|
    { ID id-DRB-Status-List               CRITICALITY ignore TYPE DRB-Status-List             PRESENCE optional  }|
    { ID id-Cause                         CRITICALITY ignore TYPE Cause                     PRESENCE mandatory },
    ...
}

DRB-Status-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF DRB-Status-Item

-- *****
--
-- BEARER CONTEXT INACTIVITY NOTIFICATION
--
-- *****

-- *****
--
-- Bearer Context Inactivity Notification
--
-- *****

BearerContextInactivityNotification ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { BearerContextInactivityNotificationIEs } },
    ...
}

BearerContextInactivityNotificationIEs ElAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-ElAP-ID          CRITICALITY reject TYPE GNB-CU-CP-UE-ElAP-ID          PRESENCE mandatory }|
    { ID id-gNB-CU-UP-UE-ElAP-ID          CRITICALITY reject TYPE GNB-CU-UP-UE-ElAP-ID          PRESENCE mandatory }|
    { ID id-ActivityInformation            CRITICALITY reject TYPE ActivityInformation          PRESENCE mandatory },
    ...
}

-- *****
--
-- DL DATA NOTIFICATION
--
-- *****

-- *****
--
-- DL Data Notification
--

```

```

-- *****

DLDataNotification ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { DLDataNotificationIEs } },
    ...
}

DLDataNotificationIEs ElAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-CP-UE-ElAP-ID          PRESENCE mandatory }|
    { ID id-gNB-CU-UP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-UP-UE-ElAP-ID          PRESENCE mandatory }|
    { ID id-PPI                           CRITICALITY ignore   TYPE PPI                           PRESENCE optional },
    ...
}

-- *****

-- *****
--
-- UL Data Notification
--
-- *****

ULDataNotification ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { ULDataNotificationIEs } },
    ...
}

ULDataNotificationIEs ElAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-CP-UE-ElAP-ID          PRESENCE mandatory }|
    { ID id-gNB-CU-UP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-UP-UE-ElAP-ID          PRESENCE mandatory }|
    { ID id-PDU-Session-To-Notify-List    CRITICALITY reject  TYPE PDU-Session-To-Notify-List    PRESENCE mandatory },
    ...
}

-- *****
--
-- DATA USAGE REPORT
--
-- *****

-- *****
--
-- Data Usage Report
--
-- *****

DataUsageReport ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { { DataUsageReportIEs } },
    ...
}

DataUsageReportIEs ElAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-CP-UE-ElAP-ID          PRESENCE mandatory }|
    { ID id-gNB-CU-UP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-UP-UE-ElAP-ID          PRESENCE mandatory }|

```

```

    { ID id-Data-Usage-Report-List          CRITICALITY ignore  TYPE Data-Usage-Report-List          PRESENCE mandatory },
    ...
}

-- *****
--
-- GNB-CU-UP COUNTER CHECK
--
-- *****

-- *****
--
-- gNB-CU-UP Counter Check Request
--
-- *****

GNB-CU-UP-CounterCheckRequest ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { { GNB-CU-UP-CounterCheckRequestIEs } },
    ...
}

GNB-CU-UP-CounterCheckRequestIEs ELAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-CP-UE-ElAP-ID          PRESENCE mandatory }|
    { ID id-gNB-CU-UP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-UP-UE-ElAP-ID          PRESENCE mandatory }|
    { ID id-System-GNB-CU-UP-CounterCheckRequest  CRITICALITY reject  TYPE System-GNB-CU-UP-CounterCheckRequest  PRESENCE mandatory },
    ...
}

System-GNB-CU-UP-CounterCheckRequest ::= CHOICE {
    e-UTRAN-GNB-CU-UP-CounterCheckRequest  ProtocolIE-Container          {{EUTRAN-GNB-CU-UP-CounterCheckRequest}},
    nG-RAN-GNB-CU-UP-CounterCheckRequest  ProtocolIE-Container          {{NG-RAN-GNB-CU-UP-CounterCheckRequest}},
    choice-extension                      ProtocolIE-SingleContainer  {{System-GNB-CU-UP-CounterCheckRequest-ExtIEs}}
}

System-GNB-CU-UP-CounterCheckRequest-ExtIEs ELAP-PROTOCOL-IES ::= {
    ...
}

EUTRAN-GNB-CU-UP-CounterCheckRequest ELAP-PROTOCOL-IES ::= {
    { ID id-DRBs-Subject-To-Counter-Check-List-EUTRAN  CRITICALITY ignore  TYPE DRBs-Subject-To-Counter-Check-List-EUTRAN  PRESENCE mandatory },
    ...
}

NG-RAN-GNB-CU-UP-CounterCheckRequest ELAP-PROTOCOL-IES ::= {
    { ID id-DRBs-Subject-To-Counter-Check-List-NG-RAN  CRITICALITY ignore  TYPE DRBs-Subject-To-Counter-Check-List-NG-RAN  PRESENCE mandatory },
    ...
}

-- *****
--
-- gNB-CU-UP STATUS INDICATION ELEMENTARY PROCEDURE
--

```

```

-- *****
-- *****
--
-- gNB-CU-UP Status Indication
--
-- *****

GNB-CU-UP-StatusIndication ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { { GNB-CU-UP-StatusIndicationIEs } },
    ...
}

GNB-CU-UP-StatusIndicationIEs ELAP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject  TYPE TransactionID          PRESENCE mandatory } |
    { ID id-gNB-CU-UP-OverloadInformation  CRITICALITY reject  TYPE GNB-CU-UP-OverloadInformation  PRESENCE mandatory },
    ...
}

-- *****
--
-- MR-DC DATA USAGE REPORT
--
-- *****

MRDC-DataUsageReport ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { { MRDC-DataUsageReportIEs } },
    ...
}

MRDC-DataUsageReportIEs ELAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-CP-UE-ElAP-ID          PRESENCE mandatory } |
    { ID id-gNB-CU-UP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-UP-UE-ElAP-ID          PRESENCE mandatory } |
    { ID id-PDU-Session-Resource-Data-Usage-List  CRITICALITY ignore  TYPE PDU-Session-Resource-Data-Usage-List  PRESENCE mandatory },
    ...
}

-- *****
--
-- TRACE ELEMENTARY PROCEDURES
--
-- *****
--
-- TRACE START
--
-- *****

TraceStart ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { { TraceStartIEs } },

```

```

    ...
}

TraceStartIES E1AP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-E1AP-ID          CRITICALITY reject TYPE GNB-CU-CP-UE-E1AP-ID          PRESENCE mandatory }|
    { ID id-gNB-CU-UP-UE-E1AP-ID          CRITICALITY reject TYPE GNB-CU-UP-UE-E1AP-ID          PRESENCE mandatory }|
    { ID id-TraceActivation                CRITICALITY ignore TYPE TraceActivation              PRESENCE mandatory },
    ...
}

-- *****
--
-- DEACTIVATE TRACE
--
-- *****

DeactivateTrace ::= SEQUENCE {
    protocolIES      ProtocolIE-Container      { {DeactivateTraceIES} },
    ...
}

DeactivateTraceIES E1AP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-E1AP-ID          CRITICALITY reject TYPE GNB-CU-CP-UE-E1AP-ID          PRESENCE mandatory }|
    { ID id-gNB-CU-UP-UE-E1AP-ID          CRITICALITY reject TYPE GNB-CU-UP-UE-E1AP-ID          PRESENCE mandatory }|
    { ID id-TraceID                      CRITICALITY ignore TYPE TraceID                    PRESENCE mandatory },
    ...
}

-- *****
--
-- Cell Traffic Trace
--
-- *****

CellTrafficTrace ::= SEQUENCE {
    protocolIES      ProtocolIE-Container { { CellTrafficTraceIES } },
    ...
}

CellTrafficTraceIES E1AP-PROTOCOL-IES ::= {
    {ID id-gNB-CU-CP-UE-E1AP-ID          CRITICALITY reject TYPE GNB-CU-CP-UE-E1AP-ID          PRESENCE mandatory }|
    {ID id-gNB-CU-UP-UE-E1AP-ID          CRITICALITY reject TYPE GNB-CU-UP-UE-E1AP-ID          PRESENCE mandatory }|
    {ID id-TraceID                      CRITICALITY ignore TYPE TraceID                    PRESENCE mandatory }|
    {ID id-TraceCollectionEntityIPAddress CRITICALITY ignore TYPE TransportLayerAddress      PRESENCE mandatory }|
    {ID id-PrivacyIndicator              CRITICALITY ignore TYPE PrivacyIndicator          PRESENCE optional }|
    {ID id-URIaddress                    CRITICALITY ignore TYPE URIaddress                PRESENCE optional },
    ...
}

-- *****
--
-- PRIVATE MESSAGE

```



```

--
-- *****

PrivateMessage ::= SEQUENCE {
    privateIES      PrivateIE-Container {{PrivateMessage-IES}},
    ...
}

PrivateMessage-IES E1AP-PRIVATE-IES ::= {
    ...
}

-- *****
--
-- RESOURCE STATUS REQUEST
--
-- *****

ResourceStatusRequest ::= SEQUENCE {
    protocolIES      ProtocolIE-Container      { { ResourceStatusRequestIES } },
    ...
}

ResourceStatusRequestIES E1AP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject      TYPE TransactionID  PRESENCE mandatory}|
    { ID id-gNB-CU-CP-Measurement-ID CRITICALITY reject      TYPE INTEGER (1..4095, ...) PRESENCE mandatory}|
    { ID id-gNB-CU-UP-Measurement-ID CRITICALITY ignore    TYPE INTEGER (1..4095, ...) PRESENCE optional}|
    { ID id-RegistrationRequest      CRITICALITY reject      TYPE RegistrationRequest PRESENCE mandatory}|
    { ID id-ReportCharacteristics     CRITICALITY reject      TYPE ReportCharacteristics PRESENCE conditional}|
    { ID id-ReportingPeriodicity      CRITICALITY reject      TYPE ReportingPeriodicity PRESENCE optional},
    ...
}

-- *****
--
-- RESOURCE STATUS RESPONSE
--
-- *****

ResourceStatusResponse ::= SEQUENCE {
    protocolIES      ProtocolIE-Container      { { ResourceStatusResponseIES } },
    ...
}

ResourceStatusResponseIES E1AP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject      TYPE TransactionID  PRESENCE mandatory}|
    { ID id-gNB-CU-CP-Measurement-ID CRITICALITY reject      TYPE INTEGER (1..4095, ...) PRESENCE mandatory}|
    { ID id-gNB-CU-UP-Measurement-ID CRITICALITY ignore    TYPE INTEGER (1..4095, ...) PRESENCE mandatory}|
    { ID id-CriticalityDiagnostics    CRITICALITY ignore    TYPE CriticalityDiagnostics PRESENCE optional},
    ...
}

```

```

-- *****
--
-- RESOURCE STATUS FAILURE
--
-- *****

ResourceStatusFailure ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      { { ResourceStatusFailureIEs } },
    ...
}

ResourceStatusFailureIEs E1AP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject          TYPE TransactionID  PRESENCE mandatory}|
    { ID id-gNB-CU-CP-Measurement-ID  CRITICALITY reject          TYPE INTEGER (1..4095, ...)  PRESENCE mandatory}|
    { ID id-gNB-CU-UP-Measurement-ID  CRITICALITY ignore         TYPE INTEGER (1..4095, ...)  PRESENCE optional}|
    { ID id-Cause                    CRITICALITY ignore         TYPE Cause                    PRESENCE mandatory}|
    { ID id-CriticalityDiagnostics    CRITICALITY ignore         TYPE CriticalityDiagnostics    PRESENCE optional},
    ...
}

-- *****
--
-- RESOURCE STATUS UPDATE
--
-- *****

ResourceStatusUpdate ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      { { ResourceStatusUpdateIEs } },
    ...
}

ResourceStatusUpdateIEs E1AP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject          TYPE TransactionID  PRESENCE mandatory}|
    { ID id-gNB-CU-CP-Measurement-ID  CRITICALITY reject          TYPE INTEGER (1..4095, ...)  PRESENCE mandatory}|
    { ID id-gNB-CU-UP-Measurement-ID  CRITICALITY ignore         TYPE INTEGER (1..4095, ...)  PRESENCE optional}|
    { ID id-TNL-AvailableCapacityIndicator  CRITICALITY ignore         TYPE                    TNL-AvailableCapacityIndicator  PRESENCE
optional}|
    { ID id-HW-CapacityIndicator          CRITICALITY ignore         TYPE                    HW-CapacityIndicator          PRESENCE
mandatory},
    ...
}

-- *****
--
-- IAB UP TNL ADDRESS UPDATE
--
-- *****

-- *****
--
-- IAB UP TNL Address Update
--
-- *****

```

```

IAB-UPTNLAddressUpdate ::= SEQUENCE {
    protocolIES          ProtocolIE-Container      { { IAB-UPTNLAddressUpdateIES } },
    ...
}

IAB-UPTNLAddressUpdateIES E1AP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-DLUPTNLAddressToUpdateList CRITICALITY ignore TYPE DLUPTNLAddressToUpdateList PRESENCE optional },
    ...
}

DLUPTNLAddressToUpdateList ::= SEQUENCE (SIZE(1.. maxnoofTNLAddresses)) OF DLUPTNLAddressToUpdateItem

-- *****
--
-- IAB UP TNL Address Update Acknowledge
--
-- *****

IAB-UPTNLAddressUpdateAcknowledge ::= SEQUENCE {
    protocolIES          ProtocolIE-Container      { { IAB-UPTNLAddressUpdateAcknowledgeIES } },
    ...
}

IAB-UPTNLAddressUpdateAcknowledgeIES E1AP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional }|
    { ID id-ULUPTNLAddressToUpdateList CRITICALITY ignore TYPE ULUPTNLAddressToUpdateList PRESENCE optional },
    ...
}

ULUPTNLAddressToUpdateList ::= SEQUENCE (SIZE(1.. maxnoofTNLAddresses)) OF ULUPTNLAddressToUpdateItem

-- *****
--
-- IAB UP TNL Address Update Failure
--
-- *****

IAB-UPTNLAddressUpdateFailure ::= SEQUENCE {
    protocolIES          ProtocolIE-Container      { { IAB-UPTNLAddressUpdateFailureIES } },
    ...
}

IAB-UPTNLAddressUpdateFailureIES E1AP-PROTOCOL-IES ::= {
    { ID id-TransactionID          CRITICALITY reject TYPE TransactionID          PRESENCE mandatory }|
    { ID id-Cause                  CRITICALITY ignore TYPE Cause                  PRESENCE mandatory }|
    { ID id-TimeToWait             CRITICALITY ignore TYPE TimeToWait             PRESENCE optional }|
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

```

```

-- *****
--
-- EARLY FORWARDING SN TRANSFER
--
-- *****

-- *****
--
-- Early Forwarding SN Transfer
--
-- *****

EarlyForwardingSNTransfer ::= SEQUENCE {
    protocolIES          ProtocolIE-Container    { { EarlyForwardingSNTransferIES } },
    ...
}

EarlyForwardingSNTransferIES ElAP-PROTOCOL-IES ::= {
    { ID id-gNB-CU-CP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-CP-UE-ElAP-ID          PRESENCE mandatory } |
    { ID id-gNB-CU-UP-UE-ElAP-ID          CRITICALITY reject  TYPE GNB-CU-UP-UE-ElAP-ID          PRESENCE mandatory } |
    { ID id-DRBs-Subject-To-Early-Forwarding-List      CRITICALITY reject  TYPE DRBs-Subject-To-Early-Forwarding-List      PRESENCE mandatory },
    ...
}

END
-- ASN1STOP

```

9.4.5 Information Element Definitions

```

-- ASN1START
-- *****
--
-- Information Element Definitions
--
-- *****

ElAP-IEs {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
ngran-access (22) modules (3) elap (5) version1 (1) elap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    id-CommonNetworkInstance,
    id-SNSSAI,
    id-OldQoSFlowMap-ULendmarkerexpected,
    id-DRB-QoS,
    id-endpoint-IP-Address-and-Port,
    id-NetworkInstance,
    id-QoSFlowMappingIndication,

```

```
id-TNLAssociationTransportLayerAddressgNBCUUP,  
id-Cause,  
id-QoSMonitoringRequest,  
id-PDCP-StatusReportIndication,  
id-RedundantCommonNetworkInstance,  
id-redundant-nG-UL-UP-TNL-Information,  
id-redundant-nG-DL-UP-TNL-Information,  
id-RedundantQoSFlowIndicator,  
id-TSCTrafficCharacteristics,  
id-ExtendedPacketDelayBudget,  
id-CNPacketDelayBudgetDownlink,  
id-CNPacketDelayBudgetUplink,  
id-AdditionalPDCPduplicationInformation,  
id-RedundantPDUSessionInformation,  
id-RedundantPDUSessionInformation-used,  
id-QoS-Mapping-Information,  
id-MDTConfiguration,  
id-TraceCollectionEntityURI,  
id-EHC-Parameters,  
id-DAPSRequestInfo,  
id-EarlyForwardingCOUNTReq,  
id-EarlyForwardingCOUNTInfo,  
id-AlternativeQoSParaSetList,  
maxnoofQoSParaSets,  
maxnoofErrors,  
maxnoofSliceItems,  
maxnoofEUTRANQoSParameters,  
maxnoofNGRANQoSParameters,  
maxnoofDRBs,  
maxnoofPDUSessionResource,  
maxnoofQoSFlows,  
maxnoofUPParameters,  
maxnoofCellGroups,  
maxnooftimeperiods,  
maxnoofNR CGI,  
maxnoofTLAs,  
maxnoofGTPTLAs,  
maxnoofSPLMNs,  
maxnoofMDTPLMNs,  
maxnoofExtSliceItems
```

FROM ElAP-Constants

```
Criticality,  
ProcedureCode,  
ProtocolIE-ID,  
TriggeringMessage
```

FROM ElAP-CommonDataTypes

```
ProtocolExtensionContainer{},  
ProtocolIE-SingleContainer{},  
ElAP-PROTOCOL-EXTENSION,  
ElAP-PROTOCOL-IES
```

```

FROM ElAP-Containers;

-- A

ActivityInformation ::= CHOICE {
    drb-Activity-List          DRB-Activity-List,
    pdu-Session-Resource-Activity-List  PDU-Session-Resource-Activity-List,
    ue-Activity                UE-Activity,
    choice-extension          ProtocolIE-SingleContainer  {{ActivityInformation-ExtIEs}}
}

ActivityInformation-ExtIEs ElAP-PROTOCOL-IES ::= {
    ...
}

ActivityNotificationLevel ::= ENUMERATED {
    drb,
    pdu-session,
    ue,
    ...
}

AdditionalPDCPDuplicationInformation ::= ENUMERATED {
    three,
    four,
    ...
}

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

AveragingWindow ::= INTEGER (0..4095, ...)

AlternativeQoSParaSetList ::= SEQUENCE (SIZE(1..maxnoofQoSParaSets)) OF AlternativeQoSParaSetItem

AlternativeQoSParaSetItem ::= SEQUENCE {
    alternativeQoSParameterIndex  INTEGER(1..8,...),
    guaranteedFlowBitRateDL       BitRate                OPTIONAL,
    guaranteedFlowBitRateUL       BitRate                OPTIONAL,
    packetDelayBudget              PacketDelayBudget      OPTIONAL,
    packetErrorRate                PacketErrorRate        OPTIONAL,
    iE-Extensions                 ProtocolExtensionContainer { {AlternativeQoSParaSetItem-ExtIEs} }  OPTIONAL,
    ...
}

AlternativeQoSParaSetItem-ExtIEs ElAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- B

BearerContextStatusChange ::= ENUMERATED {
    suspend,

```

```
        resume,
        ...
    }

BitRate ::= INTEGER (0..4000000000000,...)

-- C

Cause ::= CHOICE {
    radioNetwork      CauseRadioNetwork,
    transport         CauseTransport,
    protocol          CauseProtocol,
    misc              CauseMisc,
    choice-extension  ProtocolIE-SingleContainer  {{Cause-ExtIEs}}
}

Cause-ExtIEs ELAP-PROTOCOL-IES ::= {
    ...
}

CauseMisc ::= ENUMERATED {
    control-processing-overload,
    not-enough-user-plane-processing-resources,
    hardware-failure,
    om-intervention,
    unspecified,
    ...
}

CauseProtocol ::= ENUMERATED {
    transfer-syntax-error,
    abstract-syntax-error-reject,
    abstract-syntax-error-ignore-and-notify,
    message-not-compatible-with-receiver-state,
    semantic-error,
    abstract-syntax-error-falsely-constructed-message,
    unspecified,
    ...
}

CauseRadioNetwork ::= ENUMERATED {
    unspecified,
    unknown-or-already-allocated-gnb-cu-cp-ue-elap-id,
    unknown-or-already-allocated-gnb-cu-up-ue-elap-id,
    unknown-or-inconsistent-pair-of-ue-elap-id,
    interaction-with-other-procedure,
    pPDCP-Count-wrap-around,
    not-supported-QCI-value,
    not-supported-5QI-value,
    encryption-algorithms-not-supported,
    integrity-protection-algorithms-not-supported,
    uP-integrity-protection-not-possible,
    uP-confidentiality-protection-not-possible,
    multiple-PDU-Session-ID-Instances,
}
```

```

    unknown-PDU-Session-ID,
    multiple-QoS-Flow-ID-Instances,
    unknown-QoS-Flow-ID,
    multiple-DRB-ID-Instances,
    unknown-DRB-ID,
    invalid-QoS-combination,
    procedure-cancelled,
    normal-release,
    no-radio-resources-available,
    action-desirable-for-radio-reasons,
    resources-not-available-for-the-slice,
    pDCP-configuration-not-supported,
    ...,
    ue-dl-max-IP-data-rate-reason,
    uP-integrity-protection-failure,
    release-due-to-pre-emption,
    rsn-not-available-for-the-up,
    nPN-not-supported
}

CauseTransport ::= ENUMERATED {
    unspecified,
    transport-resource-unavailable,
    ...,
    unknown-TNL-address-for-IAB
}

Cell-Group-Information ::= SEQUENCE (SIZE(1.. maxnoofCellGroups)) OF Cell-Group-Information-Item

Cell-Group-Information-Item ::= SEQUENCE {
    cell-Group-ID                Cell-Group-ID,
    uL-Configuration              UL-Configuration              OPTIONAL,
    dL-TX-Stop                    DL-TX-Stop                    OPTIONAL,
    rAT-Type                      RAT-Type                      OPTIONAL,
    iE-Extensions                 ProtocolExtensionContainer { { Cell-Group-Information-Item-ExtIES } } OPTIONAL,
    ...
}

Cell-Group-Information-Item-ExtIES      E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

Cell-Group-ID ::= INTEGER (0..3, ...)

CHOInitiation ::= ENUMERATED {true, ...}

CipheringAlgorithm ::= ENUMERATED {
    nEA0,
    c-128-NEA1,
    c-128-NEA2,
    c-128-NEA3,
    ...
}

```



```

CNSupport ::= ENUMERATED {
    c-epc,
    c-5gc,
    both,
    ...
}

CommonNetworkInstance ::= OCTET STRING

ConfidentialityProtectionIndication ::= ENUMERATED {
    required,
    preferred,
    not-needed,
    ...
}

ConfidentialityProtectionResult ::= ENUMERATED {
    performed,
    not-performed,
    ...
}

CP-TNL-Information ::= CHOICE {
    endpoint-IP-Address      TransportLayerAddress,
    choice-extension         ProtocolIE-SingleContainer  {{CP-TNL-Information-ExtIEs}}
}

CP-TNL-Information-ExtIEs E1AP-PROTOCOL-IES ::= {
    { ID id-endpoint-IP-Address-and-Port      CRITICALITY reject  TYPE Endpoint-IP-address-and-port  PRESENCE mandatory},
    ...
}

CriticalityDiagnostics ::= SEQUENCE {
    procedureCode              ProcedureCode              OPTIONAL,
    triggeringMessage          TriggeringMessage          OPTIONAL,
    procedureCriticality        Criticality                OPTIONAL,
    transactionID              TransactionID              OPTIONAL,
    iEsCriticalityDiagnostics   CriticalityDiagnostics-IE-List  OPTIONAL,
    iE-Extensions              ProtocolExtensionContainer { {CriticalityDiagnostics-ExtIEs} }  OPTIONAL,
    ...
}

CriticalityDiagnostics-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

CriticalityDiagnostics-IE-List ::= SEQUENCE (SIZE (1..maxnoofErrors)) OF
    SEQUENCE {
        iECriticality          Criticality,

```

```

        iE-ID                ProtocolIE-ID,
        typeOfError          TypeOfError,
        iE-Extensions        ProtocolExtensionContainer { {CriticalityDiagnostics-IE-List-ExtIEs} } OPTIONAL,
        ...
    }

CriticalityDiagnostics-IE-List-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- D

DAPSRequestInfo ::= SEQUENCE {
    dapsIndicator            ENUMERATED {daps-HO-required, ...},
    iE-Extensions          ProtocolExtensionContainer { {DAPSRequestInfo-ExtIEs} } OPTIONAL,
    ...
}

DAPSRequestInfo-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

Data-Forwarding-Information-Request ::= SEQUENCE {
    data-Forwarding-Request    Data-Forwarding-Request,
    qos-Flows-Forwarded-On-Fwd-Tunnels QoS-Flow-Mapping-List OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { Data-Forwarding-Information-Request-ExtIEs } } OPTIONAL,
    ...
}

Data-Forwarding-Information-Request-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

Data-Forwarding-Information ::= SEQUENCE {
    uL-Data-Forwarding        UP-TNL-Information OPTIONAL,
    dL-Data-Forwarding        UP-TNL-Information OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { Data-Forwarding-Information-ExtIEs } } OPTIONAL,
    ...
}

Data-Forwarding-Information-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

Data-Forwarding-Request ::= ENUMERATED {
    uL,
    dL,
    both,
    ...
}

Data-Usage-per-PDU-Session-Report ::= SEQUENCE {
    secondaryRATType          ENUMERATED {nR, e-UTRA, ...},
    pdu-session-Timed-Report-List SEQUENCE (SIZE(1..maxnooftimeperiods)) OF MRDC-Data-Usage-Report-Item,

```

```

    iE-Extensions          ProtocolExtensionContainer { { Data-Usage-per-PDU-Session-Report-ExtIEs } } OPTIONAL,
    ...
}

Data-Usage-per-PDU-Session-Report-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

Data-Usage-per-QoS-Flow-List ::= SEQUENCE (SIZE(1..maxnoofQoSFlows)) OF Data-Usage-per-QoS-Flow-Item

Data-Usage-per-QoS-Flow-Item ::= SEQUENCE {
    qoS-Flow-Identifier      QoS-Flow-Identifier,
    secondaryRATType          ENUMERATED {nR, e-UTRA, ...},
    qoS-Flow-Timed-Report-List SEQUENCE (SIZE(1..maxnooftimeperiods)) OF MRDC-Data-Usage-Report-Item,
    iE-Extensions            ProtocolExtensionContainer { { Data-Usage-per-QoS-Flow-Item-ExtIEs } } OPTIONAL,
    ...
}

Data-Usage-per-QoS-Flow-Item-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

Data-Usage-Report-List ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF Data-Usage-Report-Item

Data-Usage-Report-Item ::= SEQUENCE {
    dRB-ID                    DRB-ID,
    rAT-Type                  RAT-Type,
    dRB-Usage-Report-List     DRB-Usage-Report-List,
    iE-Extensions            ProtocolExtensionContainer { { Data-Usage-Report-ItemExtIEs } } OPTIONAL,
    ...
}

Data-Usage-Report-ItemExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

DefaultDRB ::= ENUMERATED {
    true,
    false,
    ...
}

DiscardTimer ::= ENUMERATED {ms10, ms20, ms30, ms40, ms50, ms60, ms75, ms100, ms150, ms200, ms250, ms300, ms500, ms750, ms1500, infinity}

DLDiscarding ::= SEQUENCE {
    dLDiscardingCountVal      PDCP-Count,
    iE-Extensions            ProtocolExtensionContainer { { DLDiscarding-ExtIEs } } OPTIONAL
}

DLDiscarding-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

DLUPTNLAddressToUpdateItem ::= SEQUENCE {

```

```

    oldTNLAddress          TransportLayerAddress,
    newTNLAddress          TransportLayerAddress,
    iE-Extensions          ProtocolExtensionContainer { { DLUPTNLAddressToUpdateItemExtIEs } } OPTIONAL,
    ...
}

DLUPTNLAddressToUpdateItemExtIEs      ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

DL-TX-Stop ::= ENUMERATED {
    stop,
    resume,
    ...
}

DRB-Activity ::= ENUMERATED {
    active,
    not-active,
    ...
}

DRB-Activity-List ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF DRB-Activity-Item

DRB-Activity-Item ::= SEQUENCE {
    dRB-ID                DRB-ID,
    dRB-Activity           DRB-Activity,
    iE-Extensions          ProtocolExtensionContainer { { DRB-Activity-ItemExtIEs } } OPTIONAL,
    ...
}

DRB-Activity-ItemExtIEs      ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Confirm-Modified-List-EUTRAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Confirm-Modified-Item-EUTRAN

DRB-Confirm-Modified-Item-EUTRAN ::= SEQUENCE {
    dRB-ID                DRB-ID,
    cell-Group-Information Cell-Group-Information OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { DRB-Confirm-Modified-Item-EUTRAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Confirm-Modified-Item-EUTRAN-ExtIEs      ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Confirm-Modified-List-NG-RAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Confirm-Modified-Item-NG-RAN

DRB-Confirm-Modified-Item-NG-RAN ::= SEQUENCE {
    dRB-ID                DRB-ID,
    cell-Group-Information Cell-Group-Information OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { DRB-Confirm-Modified-Item-NG-RAN-ExtIEs } } OPTIONAL,

```

```

    ...
}

DRB-Confirm-Modified-Item-NG-RAN-ExtIEs      E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Failed-List-EUTRAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Failed-Item-EUTRAN

DRB-Failed-Item-EUTRAN ::= SEQUENCE {
    dRB-ID                DRB-ID,
    cause                 Cause,
    iE-Extensions         ProtocolExtensionContainer { { DRB-Failed-Item-EUTRAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Failed-Item-EUTRAN-ExtIEs      E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Failed-Mod-List-EUTRAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Failed-Mod-Item-EUTRAN

DRB-Failed-Mod-Item-EUTRAN ::= SEQUENCE {
    dRB-ID                DRB-ID,
    cause                 Cause,
    iE-Extensions         ProtocolExtensionContainer { { DRB-Failed-Mod-Item-EUTRAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Failed-Mod-Item-EUTRAN-ExtIEs      E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Failed-List-NG-RAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Failed-Item-NG-RAN

DRB-Failed-Item-NG-RAN ::= SEQUENCE {
    dRB-ID                DRB-ID,
    cause                 Cause,
    iE-Extensions         ProtocolExtensionContainer { { DRB-Failed-Item-NG-RAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Failed-Item-NG-RAN-ExtIEs      E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Failed-Mod-List-NG-RAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Failed-Mod-Item-NG-RAN

DRB-Failed-Mod-Item-NG-RAN ::= SEQUENCE {
    dRB-ID                DRB-ID,
    cause                 Cause,
    iE-Extensions         ProtocolExtensionContainer { { DRB-Failed-Mod-Item-NG-RAN-ExtIEs } } OPTIONAL,
    ...
}

```

```

DRB-Failed-Mod-Item-NG-RAN-ExtIEs      E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Failed-To-Modify-List-EUTRAN      ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Failed-To-Modify-Item-EUTRAN

DRB-Failed-To-Modify-Item-EUTRAN      ::= SEQUENCE {
    dRB-ID                             DRB-ID,
    cause                             Cause,
    iE-Extensions                     ProtocolExtensionContainer { { DRB-Failed-To-Modify-Item-EUTRAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Failed-To-Modify-Item-EUTRAN-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Failed-To-Modify-List-NG-RAN      ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Failed-To-Modify-Item-NG-RAN

DRB-Failed-To-Modify-Item-NG-RAN      ::= SEQUENCE {
    dRB-ID                             DRB-ID,
    cause                             Cause,
    iE-Extensions                     ProtocolExtensionContainer { { DRB-Failed-To-Modify-Item-NG-RAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Failed-To-Modify-Item-NG-RAN-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-ID ::= INTEGER (1..32, ...)

DRB-Modified-List-EUTRAN      ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Modified-Item-EUTRAN

DRB-Modified-Item-EUTRAN      ::= SEQUENCE {
    dRB-ID                             DRB-ID,
    s1-DL-UP-TNL-Information           UP-TNL-Information                OPTIONAL,
    pDCP-SN-Status-Information         PDCP-SN-Status-Information        OPTIONAL,
    uL-UP-Transport-Parameters         UP-Parameters                  OPTIONAL,
    iE-Extensions                     ProtocolExtensionContainer { { DRB-Modified-Item-EUTRAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Modified-Item-EUTRAN-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Modified-List-NG-RAN      ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Modified-Item-NG-RAN

DRB-Modified-Item-NG-RAN      ::= SEQUENCE {
    dRB-ID                             DRB-ID,
    uL-UP-Transport-Parameters         UP-Parameters                  OPTIONAL,
    pDCP-SN-Status-Information         PDCP-SN-Status-Information        OPTIONAL,

```

```

    flow-Setup-List                QoS-Flow-List                OPTIONAL,
    flow-Failed-List               QoS-Flow-Failed-List         OPTIONAL,
    iE-Extensions                  ProtocolExtensionContainer { { DRB-Modified-Item-NG-RAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Modified-Item-NG-RAN-ExtIEs    ELAP-PROTOCOL-EXTENSION ::= {
    {ID id-EarlyForwardingCOUNTInfo    CRITICALITY reject  EXTENSION EarlyForwardingCOUNTInfo    PRESENCE optional}|
    {ID id-OldQoSFlowMap-ULendmarkerexpected  CRITICALITY ignore  EXTENSION QoS-Flow-List        PRESENCE optional},
    ...
}

DRB-Removed-Item ::= SEQUENCE {
    dRB-ID                        DRB-ID,
    dRB-Released-In-Session       ENUMERATED {released-in-session, not-released-in-session, ...} OPTIONAL,
    dRB-Accumulated-Session-Time  OCTET STRING (SIZE(5)) OPTIONAL,
    qoS-Flow-Removed-List        SEQUENCE (SIZE(1.. maxnoofQoSFlows)) OF QoS-Flow-Removed-Item OPTIONAL,
    iE-Extensions                ProtocolExtensionContainer { { DRB-Removed-Item-ExtIEs } } OPTIONAL,
    ...
}

DRB-Removed-Item-ExtIEs    ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Required-To-Modify-List-EUTRAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Required-To-Modify-Item-EUTRAN

DRB-Required-To-Modify-Item-EUTRAN ::= SEQUENCE {
    dRB-ID                        DRB-ID,
    s1-DL-UP-TNL-Information      UP-TNL-Information                OPTIONAL,
    gNB-CU-UP-CellGroupRelatedConfiguration GNB-CU-UP-CellGroupRelatedConfiguration OPTIONAL,
    cause                        Cause                OPTIONAL,
    iE-Extensions                ProtocolExtensionContainer { { DRB-Required-To-Modify-Item-EUTRAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Required-To-Modify-Item-EUTRAN-ExtIEs    ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Required-To-Modify-List-NG-RAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Required-To-Modify-Item-NG-RAN

DRB-Required-To-Modify-Item-NG-RAN ::= SEQUENCE {
    dRB-ID                        DRB-ID,
    gNB-CU-UP-CellGroupRelatedConfiguration GNB-CU-UP-CellGroupRelatedConfiguration OPTIONAL,
    flow-To-Remove                QoS-Flow-List                OPTIONAL,
    cause                        Cause                OPTIONAL,
    iE-Extensions                ProtocolExtensionContainer { { DRB-Required-To-Modify-Item-NG-RAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Required-To-Modify-Item-NG-RAN-ExtIEs    ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

DRB-Setup-List-EUTRAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Setup-Item-EUTRAN

DRB-Setup-Item-EUTRAN ::= SEQUENCE {
    dRB-ID                                DRB-ID,
    s1-DL-UP-TNL-Information              UP-TNL-Information,
    data-Forwarding-Information-Response  Data-Forwarding-Information OPTIONAL,
    uL-UP-Transport-Parameters            UP-Parameters,
    s1-DL-UP-Unchanged                    ENUMERATED {true, ...} OPTIONAL,
    iE-Extensions                          ProtocolExtensionContainer { { DRB-Setup-Item-EUTRAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Setup-Item-EUTRAN-ExtIEs             E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Setup-Mod-List-EUTRAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Setup-Mod-Item-EUTRAN

DRB-Setup-Mod-Item-EUTRAN ::= SEQUENCE {
    dRB-ID                                DRB-ID,
    s1-DL-UP-TNL-Information              UP-TNL-Information,
    data-Forwarding-Information-Response  Data-Forwarding-Information OPTIONAL,
    uL-UP-Transport-Parameters            UP-Parameters,
    iE-Extensions                          ProtocolExtensionContainer { { DRB-Setup-Mod-Item-EUTRAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Setup-Mod-Item-EUTRAN-ExtIEs          E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Setup-List-NG-RAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Setup-Item-NG-RAN

DRB-Setup-Item-NG-RAN ::= SEQUENCE {
    dRB-ID                                DRB-ID,
    dRB-data-Forwarding-Information-Response  Data-Forwarding-Information OPTIONAL,
    uL-UP-Transport-Parameters              UP-Parameters,
    flow-Setup-List                         QoS-Flow-List,
    flow-Failed-List                       QoS-Flow-Failed-List OPTIONAL,
    iE-Extensions                          ProtocolExtensionContainer { { DRB-Setup-Item-NG-RAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Setup-Item-NG-RAN-ExtIEs              E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Setup-Mod-List-NG-RAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Setup-Mod-Item-NG-RAN

DRB-Setup-Mod-Item-NG-RAN ::= SEQUENCE {
    dRB-ID                                DRB-ID,
    dRB-data-Forwarding-Information-Response  Data-Forwarding-Information OPTIONAL,

```



```

    uL-UP-Transport-Parameters          UP-Parameters,
    flow-Setup-List                     QoS-Flow-List,
    flow-Failed-List                   QoS-Flow-Failed-List OPTIONAL,
    iE-Extensions                      ProtocolExtensionContainer { { DRB-Setup-Mod-Item-NG-RAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Setup-Mod-Item-NG-RAN-ExtIEs      E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Status-Item ::= SEQUENCE {
    dRB-ID                DRB-ID,
    pDCP-DL-Count         PDCP-Count OPTIONAL,
    pDCP-UL-Count         PDCP-Count OPTIONAL,
    iE-Extensions         ProtocolExtensionContainer { { DRB-Status-ItemExtIEs } } OPTIONAL,
    ...
}

DRB-Status-ItemExtIEs      E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRBs-Subject-To-Counter-Check-List-EUTRAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRBs-Subject-To-Counter-Check-Item-EUTRAN

DRBs-Subject-To-Counter-Check-Item-EUTRAN ::= SEQUENCE {
    dRB-ID                DRB-ID,
    pDCP-UL-Count         PDCP-Count,
    pDCP-DL-Count         PDCP-Count,
    iE-Extensions         ProtocolExtensionContainer { { DRBs-Subject-To-Counter-Check-Item-EUTRAN-ExtIEs } } OPTIONAL,
    ...
}

DRBs-Subject-To-Counter-Check-Item-EUTRAN-ExtIEs      E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRBs-Subject-To-Counter-Check-List-NG-RAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRBs-Subject-To-Counter-Check-Item-NG-RAN

DRBs-Subject-To-Counter-Check-Item-NG-RAN ::= SEQUENCE {
    pDU-Session-ID        PDU-Session-ID,
    dRB-ID                DRB-ID,
    pDCP-UL-Count         PDCP-Count,
    pDCP-DL-Count         PDCP-Count,
    iE-Extensions         ProtocolExtensionContainer { { DRBs-Subject-To-Counter-Check-Item-NG-RAN-ExtIEs } } OPTIONAL,
    ...
}

DRBs-Subject-To-Counter-Check-Item-NG-RAN-ExtIEs      E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRBs-Subject-To-Early-Forwarding-List ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRBs-Subject-To-Early-Forwarding-Item

```

```

DRBs-Subject-To-Early-Forwarding-Item ::= SEQUENCE {
    dRB-ID                DRB-ID,
    dLCountValue          PDCP-Count,
    iE-Extensions         ProtocolExtensionContainer { { DRBs-Subject-To-Early-Forwarding-Item-ExtIEs } } OPTIONAL,
    ...
}

DRBs-Subject-To-Early-Forwarding-Item-ExtIEs      E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-To-Modify-List-EUTRAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-To-Modify-Item-EUTRAN

DRB-To-Modify-Item-EUTRAN ::= SEQUENCE {
    dRB-ID                DRB-ID,
    pDCP-Configuration    PDCP-Configuration                OPTIONAL,
    eUTRAN-QoS            EUTRAN-QoS                        OPTIONAL,
    s1-UL-UP-TNL-Information UP-TNL-Information            OPTIONAL,
    data-Forwarding-Information Data-Forwarding-Information OPTIONAL,
    pDCP-SN-Status-Request PDCP-SN-Status-Request          OPTIONAL,
    pDCP-SN-Status-Information PDCP-SN-Status-Information  OPTIONAL,
    dL-UP-Parameters      UP-Parameters                    OPTIONAL,
    cell-Group-To-Add      Cell-Group-Information          OPTIONAL,
    cell-Group-To-Modify   Cell-Group-Information          OPTIONAL,
    cell-Group-To-Remove   Cell-Group-Information          OPTIONAL,
    dRB-Inactivity-Timer   Inactivity-Timer                 OPTIONAL,
    iE-Extensions         ProtocolExtensionContainer { { DRB-To-Modify-Item-EUTRAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-To-Modify-Item-EUTRAN-ExtIEs      E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-To-Modify-List-NG-RAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-To-Modify-Item-NG-RAN

DRB-To-Modify-Item-NG-RAN ::= SEQUENCE {
    dRB-ID                DRB-ID,
    sDAP-Configuration    SDAP-Configuration                OPTIONAL,
    pDCP-Configuration    PDCP-Configuration                OPTIONAL,
    dRB-Data-Forwarding-Information Data-Forwarding-Information OPTIONAL,
    pDCP-SN-Status-Request PDCP-SN-Status-Request          OPTIONAL,
    pdcp-SN-Status-Information PDCP-SN-Status-Information  OPTIONAL,
    dL-UP-Parameters      UP-Parameters                    OPTIONAL,
    cell-Group-To-Add      Cell-Group-Information          OPTIONAL,
    cell-Group-To-Modify   Cell-Group-Information          OPTIONAL,
    cell-Group-To-Remove   Cell-Group-Information          OPTIONAL,
    flow-Mapping-Information QoS-Flow-QoS-Parameter-List   OPTIONAL,
    dRB-Inactivity-Timer   Inactivity-Timer                 OPTIONAL,
    iE-Extensions         ProtocolExtensionContainer { { DRB-To-Modify-Item-NG-RAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-To-Modify-Item-NG-RAN-ExtIEs      E1AP-PROTOCOL-EXTENSION ::= {

```

```

    {ID id-OldQoSFlowMap-ULendmarkerexpected CRITICALITY reject EXTENSION QoS-Flow-List PRESENCE optional}|
    {ID id-DRB-QoS CRITICALITY ignore EXTENSION QoSFlowLevelQoSParameters PRESENCE optional}|
    {ID id-EarlyForwardingCOUNTReq CRITICALITY reject EXTENSION EarlyForwardingCOUNTReq PRESENCE optional}|
    {ID id-EarlyForwardingCOUNTInfo CRITICALITY reject EXTENSION EarlyForwardingCOUNTInfo PRESENCE optional},
    ...
}

DRB-To-Remove-List-EUTRAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-To-Remove-Item-EUTRAN

DRB-To-Remove-Item-EUTRAN ::= SEQUENCE {
    dRB-ID DRB-ID,
    iE-Extensions ProtocolExtensionContainer { { DRB-To-Remove-Item-EUTRAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-To-Remove-Item-EUTRAN-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Required-To-Remove-List-EUTRAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Required-To-Remove-Item-EUTRAN

DRB-Required-To-Remove-Item-EUTRAN ::= SEQUENCE {
    dRB-ID DRB-ID,
    cause Cause,
    iE-Extensions ProtocolExtensionContainer { { DRB-Required-To-Remove-Item-EUTRAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Required-To-Remove-Item-EUTRAN-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-To-Remove-List-NG-RAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-To-Remove-Item-NG-RAN

DRB-To-Remove-Item-NG-RAN ::= SEQUENCE {
    dRB-ID DRB-ID,
    iE-Extensions ProtocolExtensionContainer { { DRB-To-Remove-Item-NG-RAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-To-Remove-Item-NG-RAN-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-Required-To-Remove-List-NG-RAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Required-To-Remove-Item-NG-RAN

DRB-Required-To-Remove-Item-NG-RAN ::= SEQUENCE {
    dRB-ID DRB-ID,
    cause Cause,
    iE-Extensions ProtocolExtensionContainer { { DRB-Required-To-Remove-Item-NG-RAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-Required-To-Remove-Item-NG-RAN-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {

```

```

    ...
}

DRB-To-Setup-List-EUTRAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-To-Setup-Item-EUTRAN

DRB-To-Setup-Item-EUTRAN ::= SEQUENCE {
    drb-ID,
    pDCP-Configuration,
    eUTRAN-QoS,
    s1-UL-UP-TNL-Information,
    data-Forwarding-Information-Request OPTIONAL,
    cell-Group-Information,
    dL-UP-Parameters OPTIONAL,
    drb-Inactivity-Timer OPTIONAL,
    existing-Allocated-S1-DL-UP-TNL-Info OPTIONAL,
    iE-Extensions,
    ProtocolExtensionContainer { { DRB-To-Setup-Item-EUTRAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-To-Setup-Item-EUTRAN-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-To-Setup-Mod-List-EUTRAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-To-Setup-Mod-Item-EUTRAN

DRB-To-Setup-Mod-Item-EUTRAN ::= SEQUENCE {
    drb-ID,
    pDCP-Configuration,
    eUTRAN-QoS,
    s1-UL-UP-TNL-Information,
    data-Forwarding-Information-Request OPTIONAL,
    cell-Group-Information,
    dL-UP-Parameters OPTIONAL,
    drb-Inactivity-Timer OPTIONAL,
    iE-Extensions,
    ProtocolExtensionContainer { { DRB-To-Setup-Mod-Item-EUTRAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-To-Setup-Mod-Item-EUTRAN-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

DRB-To-Setup-List-NG-RAN ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-To-Setup-Item-NG-RAN

DRB-To-Setup-Item-NG-RAN ::= SEQUENCE {
    drb-ID,
    sDAP-Configuration,
    pDCP-Configuration,
    cell-Group-Information,
    qos-flow-Information-To-Be-Setup QoS-Flow-QoS-Parameter-List,
    drb-Data-Forwarding-Information-Request OPTIONAL,
    drb-Inactivity-Timer OPTIONAL,
    pDCP-SN-Status-Information OPTIONAL,
    iE-Extensions,
    ProtocolExtensionContainer { { DRB-To-Setup-Item-NG-RAN-ExtIEs } } OPTIONAL,

```

```

    ...
}

DRB-To-Setup-Item-NG-RAN-ExtIEs    E1AP-PROTOCOL-EXTENSION ::= {
    {ID id-DRB-QoS      CRITICALITY ignore  EXTENSION QoSFlowLevelQoSParameters PRESENCE optional}|
    {ID id-DAPSRequestInfo CRITICALITY ignore  EXTENSION DAPSRequestInfo          PRESENCE optional},
    ...
}

DRB-To-Setup-Mod-List-NG-RAN      ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-To-Setup-Mod-Item-NG-RAN

DRB-To-Setup-Mod-Item-NG-RAN      ::= SEQUENCE {
    dRB-ID                      DRB-ID,
    sDAP-Configuration          SDAP-Configuration,
    pDCP-Configuration          PDCP-Configuration,
    cell-Group-Information       Cell-Group-Information,
    flow-Mapping-Information     QoS-Flow-QoS-Parameter-List,
    dRB-Data-Forwarding-Information-Request Data-Forwarding-Information-Request OPTIONAL,
    dRB-Inactivity-Timer         Inactivity-Timer OPTIONAL,
    pDCP-SN-Status-Information   PDCP-SN-Status-Information OPTIONAL,
    iE-Extensions                ProtocolExtensionContainer { { DRB-To-Setup-Mod-Item-NG-RAN-ExtIEs } } OPTIONAL,
    ...
}

DRB-To-Setup-Mod-Item-NG-RAN-ExtIEs    E1AP-PROTOCOL-EXTENSION ::= {
    {ID id-DRB-QoS  CRITICALITY ignore  EXTENSION QoSFlowLevelQoSParameters PRESENCE optional},
    ...
}

DRB-Usage-Report-List ::= SEQUENCE (SIZE(1..maxnooftimeperiods)) OF DRB-Usage-Report-Item

DRB-Usage-Report-Item ::= SEQUENCE {
    startTimeStamp      OCTET STRING (SIZE(4)),
    endTimeStamp        OCTET STRING (SIZE(4)),
    usageCountUL         INTEGER (0..18446744073709551615),
    usageCountDL         INTEGER (0..18446744073709551615),
    iE-Extensions        ProtocolExtensionContainer { { DRB-Usage-Report-Item-ExtIEs } } OPTIONAL,
    ...
}

DRB-Usage-Report-Item-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

Duplication-Activation ::= ENUMERATED {
    active,
    inactive,
    ...
}

Dynamic5QIDescriptor ::= SEQUENCE {
    qoSPriorityLevel      QoSPriorityLevel,
    packetDelayBudget     PacketDelayBudget,

```

```

    packetErrorRate          PacketErrorRate,
    fiveQI                   INTEGER (0..255, ...)                OPTIONAL,
    delayCritical             ENUMERATED {delay-critical, non-delay-critical}  OPTIONAL,
    averagingWindow          AveragingWindow                      OPTIONAL,
    maxDataBurstVolume       MaxDataBurstVolume                  OPTIONAL,
    iE-Extensions            ProtocolExtensionContainer { { Dynamic5QIDescriptor-ExtIEs } } OPTIONAL
}

Dynamic5QIDescriptor-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    { ID id-ExtendedPacketDelayBudget          CRITICALITY ignore EXTENSION ExtendedPacketDelayBudget PRESENCE optional } |
    { ID id-CNPacketDelayBudgetDownlink        CRITICALITY ignore EXTENSION ExtendedPacketDelayBudget PRESENCE optional } |
    { ID id-CNPacketDelayBudgetUplink          CRITICALITY ignore EXTENSION ExtendedPacketDelayBudget PRESENCE optional },
    ...
}

DataDiscardRequired ::= ENUMERATED {
    required,
    ...
}

-- E

EarlyForwardingCOUNTInfo ::= CHOICE {
    firstDLCount          FirstDLCount,
    dLDiscardingCount     DLDiscarding,
    choice-Extension      ProtocolIE-SingleContainer { { EarlyForwardingCOUNTInfo-ExtIEs } }
}

EarlyForwardingCOUNTInfo-ExtIEs ELAP-PROTOCOL-IES ::= {
    ...
}

EarlyForwardingCOUNTReq ::= ENUMERATED { first-dl-count, dl-discarding, ...}

EHC-Common-Parameters ::= SEQUENCE {
    ehc-CID-Length        ENUMERATED { bits7, bits15, ...},
    iE-Extensions         ProtocolExtensionContainer { { EHC-Common-Parameters-ExtIEs } }    OPTIONAL
}

EHC-Common-Parameters-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

EHC-Downlink-Parameters ::= SEQUENCE {
    drb-ContinueEHC-DL    ENUMERATED { true, ...},
    iE-Extensions         ProtocolExtensionContainer { { EHC-Downlink-Parameters-ExtIEs } }    OPTIONAL
}

EHC-Downlink-Parameters-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

EHC-Uplink-Parameters ::= SEQUENCE {
    drb-ContinueEHC-UL    ENUMERATED { true, ...},

```

```

    iE-Extensions          ProtocolExtensionContainer { { EHC-Uplink-Parameters-ExtIEs } }    OPTIONAL
}

EHC-Uplink-Parameters-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

EHC-Parameters ::= SEQUENCE {
    ehc-Common          EHC-Common-Parameters,
    ehc-Downlink        EHC-Downlink-Parameters          OPTIONAL,
    ehc-Uplink          EHC-Uplink-Parameters          OPTIONAL,
    iE-Extensions      ProtocolExtensionContainer { { EHC-Parameters-ExtIEs } }    OPTIONAL
}

EHC-Parameters-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

EncryptionKey ::= OCTET STRING

Endpoint-IP-address-and-port ::= SEQUENCE {
    endpoint-IP-Address    TransportLayerAddress,
    portNumber            PortNumber,
    iE-Extensions        ProtocolExtensionContainer { { Endpoint-IP-address-and-port-ExtIEs } }    OPTIONAL
}

Endpoint-IP-address-and-port-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

EUTRANAllocationAndRetentionPriority ::= SEQUENCE {
    priorityLevel          PriorityLevel,
    pre-emptionCapability    Pre-emptionCapability,
    pre-emptionVulnerability Pre-emptionVulnerability,
    iE-Extensions        ProtocolExtensionContainer { { EUTRANAllocationAndRetentionPriority-ExtIEs } }    OPTIONAL,
    ...
}

ExtendedPacketDelayBudget ::= INTEGER (1..65535, ...)

EUTRANAllocationAndRetentionPriority-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

EUTRAN-QoS-Support-List ::= SEQUENCE (SIZE(1.. maxnoofEUTRANQOSParameters)) OF EUTRAN-QoS-Support-Item

EUTRAN-QoS-Support-Item ::= SEQUENCE {
    eUTRAN-QoS    EUTRAN-QoS,
    iE-Extensions ProtocolExtensionContainer { { EUTRAN-QoS-Support-Item-ExtIEs } }    OPTIONAL
}

EUTRAN-QoS-Support-Item-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

}

EUTRAN-QoS ::= SEQUENCE {
    qCI,
    eUTRANAllocationAndRetentionPriority,
    gbrQosInformation,
    iE-Extensions,
    ...
    ProtocolExtensionContainer { { EUTRAN-QoS-ExtIEs } } OPTIONAL,
}

EUTRAN-QoS-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

ExtendedSliceSupportList ::= SEQUENCE (SIZE(1.. maxnoofExtSliceItems)) OF Slice-Support-Item

-- F

FirstDLCount ::= SEQUENCE {
    firstDLCountVal,
    iE-Extensions,
    PDCP-Count,
    ProtocolExtensionContainer { { FirstDLCount-ExtIEs } } OPTIONAL
}

FirstDLCount-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- G

GNB-CU-CP-Name ::= PrintableString(SIZE(1..150,...))

GNB-CU-CP-UE-ElAP-ID ::= INTEGER (0..4294967295)

GNB-CU-UP-Capacity ::= INTEGER (0..255)

GNB-CU-UP-CellGroupRelatedConfiguration ::= SEQUENCE (SIZE(1.. maxnoofUPParameters)) OF GNB-CU-UP-CellGroupRelatedConfiguration-Item

GNB-CU-UP-CellGroupRelatedConfiguration-Item ::= SEQUENCE {
    cell-Group-ID,
    uP-TNL-Information,
    uL-Configuration,
    iE-Extensions,
    Cell-Group-ID,
    UP-TNL-Information,
    UL-Configuration,
    ProtocolExtensionContainer { { GNB-CU-UP-CellGroupRelatedConfiguration-Item-ExtIEs } } OPTIONAL
}

GNB-CU-UP-CellGroupRelatedConfiguration-Item-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

GNB-CU-UP-ID ::= INTEGER (0..68719476735)

GNB-CU-UP-Name ::= PrintableString(SIZE(1..150,...))

GNB-CU-UP-UE-ElAP-ID ::= INTEGER (0..4294967295)

```



```

GNB-CU-CP-TNLA-Setup-Item ::= SEQUENCE {
    tNLAssociationTransportLayerAddress    CP-TNL-Information,
    iE-Extensions                          ProtocolExtensionContainer { { GNB-CU-CP-TNLA-Setup-Item-ExtIEs } } OPTIONAL,
    ...
}

GNB-CU-CP-TNLA-Setup-Item-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

GNB-CU-CP-TNLA-Failed-To-Setup-Item ::= SEQUENCE {
    tNLAssociationTransportLayerAddress    CP-TNL-Information,
    cause                                  Cause,
    iE-Extensions                          ProtocolExtensionContainer { { GNB-CU-CP-TNLA-Failed-To-Setup-Item-ExtIEs } } OPTIONAL
}

GNB-CU-CP-TNLA-Failed-To-Setup-Item-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

GNB-CU-CP-TNLA-To-Add-Item ::= SEQUENCE {
    tNLAssociationTransportLayerAddress    CP-TNL-Information,
    tNLAssociationUsage                    TNLAssociationUsage,
    iE-Extensions                          ProtocolExtensionContainer { { GNB-CU-CP-TNLA-To-Add-Item-ExtIEs } } OPTIONAL
}

GNB-CU-CP-TNLA-To-Add-Item-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

GNB-CU-CP-TNLA-To-Remove-Item ::= SEQUENCE {
    tNLAssociationTransportLayerAddress    CP-TNL-Information,
    iE-Extensions                          ProtocolExtensionContainer { { GNB-CU-CP-TNLA-To-Remove-Item-ExtIEs } } OPTIONAL
}

GNB-CU-CP-TNLA-To-Remove-Item-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    {ID id-TNLAssociationTransportLayerAddresssgNBCUUP    CRITICALITY reject    EXTENSION CP-TNL-Information    PRESENCE optional},
    ...
}

GNB-CU-CP-TNLA-To-Update-Item ::= SEQUENCE {
    tNLAssociationTransportLayerAddress    CP-TNL-Information,
    tNLAssociationUsage                    TNLAssociationUsage    OPTIONAL,
    iE-Extensions                          ProtocolExtensionContainer { { GNB-CU-CP-TNLA-To-Update-Item-ExtIEs } } OPTIONAL
}

GNB-CU-CP-TNLA-To-Update-Item-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

GNB-CU-UP-TNLA-To-Remove-Item ::= SEQUENCE {
    tNLAssociationTransportLayerAddress    CP-TNL-Information,
    tNLAssociationTransportLayerAddresssgNBCUUP    CP-TNL-Information    OPTIONAL,
    iE-Extensions                          ProtocolExtensionContainer { { GNB-CU-UP-TNLA-To-Remove-Item-ExtIEs } } OPTIONAL
}

```

```

}

GNB-CU-UP-TNLA-To-Remove-Item-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

GBR-QosInformation ::= SEQUENCE {
    e-RAB-MaximumBitrateDL      BitRate,
    e-RAB-MaximumBitrateUL      BitRate,
    e-RAB-GuaranteedBitrateDL    BitRate,
    e-RAB-GuaranteedBitrateUL    BitRate,
    iE-Extensions                ProtocolExtensionContainer { { GBR-QosInformation-ExtIEs} } OPTIONAL,
    ...
}

GBR-QosInformation-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

GBR-QoSFlowInformation ::= SEQUENCE {
    maxFlowBitRateDownlink      BitRate,
    maxFlowBitRateUplink        BitRate,
    guaranteedFlowBitRateDownlink BitRate,
    guaranteedFlowBitRateUplink  BitRate,
    maxPacketLossRateDownlink    MaxPacketLossRate OPTIONAL,
    maxPacketLossRateUplink      MaxPacketLossRate OPTIONAL,
    iE-Extensions                ProtocolExtensionContainer { { GBR-QoSFlowInformation-ExtIEs} } OPTIONAL,
    ...
}

GBR-QoSFlowInformation-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    {ID id-AlternativeQoSParaSetList CRITICALITY ignore EXTENSION AlternativeQoSParaSetList PRESENCE optional},
    ...
}

GTP-TEID ::= OCTET STRING (SIZE (4))

GTPTLAs ::= SEQUENCE (SIZE(1.. maxnoofGTPTLAs)) OF GTPTLA-Item

GTPTLA-Item ::= SEQUENCE {
    gTPTransportLayerAddresses      TransportLayerAddress,
    iE-Extensions    ProtocolExtensionContainer { { GTPTLA-Item-ExtIEs } } OPTIONAL,
    ...
}

GTPTLA-Item-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

GTPTunnel ::= SEQUENCE {
    transportLayerAddress      TransportLayerAddress,
    gTP-TEID                   GTP-TEID,
    iE-Extensions                ProtocolExtensionContainer { { GTPTunnel-ExtIEs} } OPTIONAL,
    ...
}

```

```
}

GTP Tunnel-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

GNB-CU-UP-OverloadInformation ::= ENUMERATED {overloaded, not-overloaded}

GNB-DU-ID      ::= INTEGER (0..68719476735)

-- H

HFN      ::=      INTEGER (0..4294967295)

HW-CapacityIndicator ::= SEQUENCE {
    offeredThroughput      INTEGER (1..16777216, ...),
    availableThroughput    INTEGER (0..100, ...),
    IE-Extensions          ProtocolExtensionContainer { { HW-CapacityIndicator-ExtIEs } },
    ...
}

HW-CapacityIndicator-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

-- I

IntegrityProtectionIndication ::= ENUMERATED {
    required,
    preferred,
    not-needed,
    ...
}

IntegrityProtectionAlgorithm    ::= ENUMERATED {
    nIA0,
    i-128-NIA1,
    i-128-NIA2,
    i-128-NIA3,
    ...
}

IntegrityProtectionKey  ::= OCTET STRING

IntegrityProtectionResult ::= ENUMERATED {
    performed,
    not-performed,
    ...
}

Inactivity-Timer      ::= INTEGER (1..7200, ...)

InterfacesToTrace ::= BIT STRING (SIZE(8))
```

```

ImmediateMDT ::= SEQUENCE {
  measurementsToActivate      MeasurementsToActivate,
  measurementFour             M4Configuration OPTIONAL,
  measurementSix              M6Configuration OPTIONAL,
  measurementSeven            M7Configuration OPTIONAL,
  iE-Extensions               ProtocolExtensionContainer { { ImmediateMDT-ExtIEs } } OPTIONAL,
  ...
}
ImmediateMDT-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
  ...
}

-- J

-- K

-- L

Links-to-log ::= ENUMERATED {
  uplink,
  downlink,
  both-uplink-and-downlink,
  ...
}

-- M

MaxDataBurstVolume ::= INTEGER (0..4095, ..., 4096.. 2000000)

MaximumIPdatarate ::= SEQUENCE {
  maxIPrate                   MaxIPrate,
  iE-Extensions               ProtocolExtensionContainer { {MaximumIPdatarate-ExtIEs} } OPTIONAL,
  ...
}
MaximumIPdatarate-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
  ...
}

MaxIPrate ::= ENUMERATED {
  bitrate64kbs,
  max-UErate,
  ...
}

MaxPacketLossRate ::= INTEGER (0..1000, ...)

MRDC-Data-Usage-Report-Item ::= SEQUENCE {
  startTimeStamp              OCTET STRING (SIZE(4)),
  endTimeStamp                OCTET STRING (SIZE(4)),
  usageCountUL                INTEGER (0..18446744073709551615),
  usageCountDL                INTEGER (0..18446744073709551615),
  iE-Extensions               ProtocolExtensionContainer { { MRDC-Data-Usage-Report-Item-ExtIEs } } OPTIONAL,

```

```

...
}

MRDC-Data-Usage-Report-Item-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

MRDC-Usage-Information ::= SEQUENCE {
    data-Usage-per-PDU-Session-Report      Data-Usage-per-PDU-Session-Report      OPTIONAL,
    data-Usage-per-QoS-Flow-List           Data-Usage-per-QoS-Flow-List           OPTIONAL,
    iE-Extensions                          ProtocolExtensionContainer { { MRDC-Usage-Information-ExtIEs} } OPTIONAL,
    ...
}

MRDC-Usage-Information-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

M4Configuration ::= SEQUENCE {
    m4period          M4period,
    m4-links-to-log   Links-to-log,
    iE-Extensions     ProtocolExtensionContainer { { M4Configuration-ExtIEs} } OPTIONAL,
    ...
}

M4Configuration-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

M4period ::= ENUMERATED {ms1024, ms2048, ms5120, ms10240, min1, ... }

M6Configuration ::= SEQUENCE {
    m6report-Interval M6report-Interval,
    m6-links-to-log   Links-to-log,
    iE-Extensions     ProtocolExtensionContainer { { M6Configuration-ExtIEs} } OPTIONAL,
    ...
}

M6Configuration-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

M6report-Interval ::= ENUMERATED { ms120, ms240, ms480, ms640, ms1024, ms2048, ms5120, ms10240, ms20480 ,ms40960, min1, min6, min12, min30, ... }

M7Configuration ::= SEQUENCE {
    m7period          M7period,
    m7-links-to-log   Links-to-log,
    iE-Extensions     ProtocolExtensionContainer { { M7Configuration-ExtIEs} } OPTIONAL,
    ...
}

M7Configuration-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

M7period ::= INTEGER(1..60, ...)

MDT-Activation ::= ENUMERATED {
    immediate-MDT-only,
    immediate-MDT-and-Trace,
    ...
}

MDT-Configuration ::= SEQUENCE {
    mdt-Activation      MDT-Activation,
    mDTMode             MDTMode,
    iE-Extensions       ProtocolExtensionContainer { { MDT-Configuration-ExtIEs} } OPTIONAL,
    ...
}

MDT-Configuration-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

MDTMode ::= CHOICE {
    immediateMDT          ImmediateMDT,
    choice-extension      ProtocolIE-SingleContainer {{MDTMode-ExtIEs}}
}

MDTMode-ExtIEs ELAP-PROTOCOL-IES ::= {
    ...
}

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

MDTPLMNList ::= SEQUENCE (SIZE(1..maxnoofMDTPLMNs)) OF PLMN-Identity

-- N

NetworkInstance ::= INTEGER (1..256, ...)

New-UL-TNL-Information-Required ::= ENUMERATED {
    required,
    ...
}

NGRANAllocationAndRetentionPriority ::= SEQUENCE {
    priorityLevel          PriorityLevel,
    pre-emptionCapability   Pre-emptionCapability,
    pre-emptionVulnerability Pre-emptionVulnerability,
    iE-Extensions          ProtocolExtensionContainer { {NGRANAllocationAndRetentionPriority-ExtIEs} } OPTIONAL
}

NGRANAllocationAndRetentionPriority-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

NG-RAN-QoS-Support-List ::= SEQUENCE (SIZE(1.. maxnoofNGRANQOSParameters)) OF NG-RAN-QoS-Support-Item

NG-RAN-QoS-Support-Item ::= SEQUENCE {

```

```

    non-Dynamic5QIDDescriptor      Non-Dynamic5QIDDescriptor,
    iE-Extensions                  ProtocolExtensionContainer { { NG-RAN-QoS-Support-Item-ExtIEs } } OPTIONAL
}

NG-RAN-QoS-Support-Item-ExtIEs  ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

NID ::= BIT STRING (SIZE (44))

Non-Dynamic5QIDDescriptor      ::= SEQUENCE {
    fiveQI                      INTEGER (0..255, ...),
    qosPriorityLevel             QoSPriorityLevel             OPTIONAL,
    averagingWindow             AveragingWindow             OPTIONAL,
    maxDataBurstVolume          MaxDataBurstVolume          OPTIONAL,
    iE-Extensions               ProtocolExtensionContainer { { Non-Dynamic5QIDDescriptor-ExtIEs } } OPTIONAL
}

Non-Dynamic5QIDDescriptor-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    { ID id-CNPacketDelayBudgetDownlink          CRITICALITY ignore EXTENSION ExtendedPacketDelayBudget PRESENCE optional } |
    { ID id-CNPacketDelayBudgetUplink            CRITICALITY ignore EXTENSION ExtendedPacketDelayBudget PRESENCE optional },
    ...
}

NPNSupportInfo ::= CHOICE {
    sNPN                      NPNSupportInfo-SNPN,
    choice-extension          ProtocolIE-SingleContainer { {NPNSupportInfo-ExtIEs}}
}

NPNSupportInfo-ExtIEs ELAP-PROTOCOL-IES ::= {
    ...
}

NPNSupportInfo-SNPN ::= SEQUENCE {
    nID                      NID,
    iE-Extensions            ProtocolExtensionContainer { { NPNSupportInfo-SNPN-ExtIEs } } OPTIONAL
}

NPNSupportInfo-SNPN-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

NPNContextInfo ::= CHOICE {
    sNPN                      NPNContextInfo-SNPN,
    choice-extension          ProtocolIE-SingleContainer { {NPNContextInfo-ExtIEs}}
}

NPNContextInfo-ExtIEs ELAP-PROTOCOL-IES ::= {
    ...
}

NPNContextInfo-SNPN ::= SEQUENCE {
    nID                      NID,

```

```

    iE-Extensions          ProtocolExtensionContainer { {NPNContextInfo-SNPN-ExtIEs } }    OPTIONAL
}

NPNContextInfo-SNPN-ExtIEs  ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

NR-Cell-Identity    ::=    BIT STRING (SIZE(36))

NR-CGI ::= SEQUENCE {
    pLMN-Identity          PLMN-Identity,
    nR-Cell-Identity       NR-Cell-Identity,
    iE-Extensions          ProtocolExtensionContainer { { NR-CGI-ExtIEs } }    OPTIONAL
}

NR-CGI-ExtIEs  ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

NR-CGI-Support-List ::= SEQUENCE (SIZE(1.. maxnoofNRCGI)) OF NR-CGI-Support-Item

NR-CGI-Support-Item ::= SEQUENCE {
    nR-CGI  NR-CGI,
    iE-Extensions          ProtocolExtensionContainer { { NR-CGI-Support-Item-ExtIEs } }    OPTIONAL
}

NR-CGI-Support-Item-ExtIEs  ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- O

OutOfOrderDelivery  ::= ENUMERATED {
    true,
    ...
}

-- P

PacketDelayBudget ::= INTEGER (0..1023, ...)

PacketErrorRate ::= SEQUENCE {
    pER-Scalar          PER-Scalar,
    pER-Exponent         PER-Exponent,
    iE-Extensions        ProtocolExtensionContainer { {PacketErrorRate-ExtIEs} } OPTIONAL,
    ...
}

PacketErrorRate-ExtIEs  ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

PER-Scalar ::= INTEGER (0..9, ...)

```


PER-Exponent ::= INTEGER (0..9, ...)

PDCP-Configuration ::= SEQUENCE {

pDCP-SN-Size-UL	PDCP-SN-Size,	
pDCP-SN-Size-DL	PDCP-SN-Size,	
rLC-Mode	RLC-Mode,	
rOHC-Parameters	ROHC-Parameters	OPTIONAL,
t-ReorderingTimer	T-ReorderingTimer	OPTIONAL,
discardTimer	DiscardTimer	OPTIONAL,
uLDataSplitThreshold	ULDataSplitThreshold	OPTIONAL,
pDCP-Duplication	PDCP-Duplication	OPTIONAL,
pDCP-Reestablishment	PDCP-Reestablishment	OPTIONAL,
pDCP-DataRecovery	PDCP-DataRecovery	OPTIONAL,
duplication-Activation	Duplication-Activation	OPTIONAL,
outOfOrderDelivery	OutOfOrderDelivery	OPTIONAL,
iE-Extensions	ProtocolExtensionContainer	{ { PDCP-Configuration-ExtIEs } } OPTIONAL,
...		

PDCP-Configuration-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {

{ ID id-PDCP-StatusReportIndication	CRITICALITY ignore	EXTENSION PDCP-StatusReportIndication	PRESENCE optional}
{ ID id-AdditionalPDCPduplicationInformation	CRITICALITY ignore	EXTENSION AdditionalPDCPduplicationInformation	PRESENCE optional}
{ ID id-EHC-Parameters	CRITICALITY ignore	EXTENSION EHC-Parameters	PRESENCE optional},
...			

}

PDCP-Count ::= SEQUENCE {

pDCP-SN	PDCP-SN,
hFN	HFN,
iE-Extensions	ProtocolExtensionContainer { { PDCP-Count-ExtIEs } } OPTIONAL,
...	

}

PDCP-Count-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {

...

}

PDCP-SN-Status-Request ::= ENUMERATED {

requested,

...

}

PDCP-DataRecovery ::= ENUMERATED {

true,

...

}

PDCP-Duplication ::= ENUMERATED {

true,

...

}

PDCP-Reestablishment ::= ENUMERATED {

```

    true,
    ...
}

PDU-Session-Resource-Data-Usage-List ::= SEQUENCE (SIZE(1.. maxnoofPDUSessionResource)) OF PDU-Session-Resource-Data-Usage-Item

PDU-Session-Resource-Data-Usage-Item ::= SEQUENCE {
    pduSession-ID          PDU-Session-ID,
    mRDC-Usage-Information MRDC-Usage-Information,
    iE-Extensions          ProtocolExtensionContainer { { PDU-Session-Resource-Data-Usage-Item-ExtIEs } } OPTIONAL,
    ...
}

PDU-Session-Resource-Data-Usage-Item-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDCP-SN ::= INTEGER (0..262143)

PDCP-SN-Size ::= ENUMERATED {
    s-12,
    s-18,
    ...
}

PDCP-SN-Status-Information ::= SEQUENCE {
    pdcpStatusTransfer-UL DRBBStatusTransfer,
    pdcpStatusTransfer-DL PDCP-Count,
    iE-Extension          ProtocolExtensionContainer { {DRBsSubjectToStatusTransfer-Item-ExtIEs} } OPTIONAL,
    ...
}

PDCP-StatusReportIndication ::= ENUMERATED {
    downlink,
    uplink,
    both,
    ...
}

DRBsSubjectToStatusTransfer-Item-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

DRBBStatusTransfer ::= SEQUENCE {
    receiveStatusofPDCPSDU BIT STRING (SIZE(1..131072)) OPTIONAL,
    countValue              PDCP-Count,
    iE-Extension            ProtocolExtensionContainer { {DRBBStatusTransfer-ExtIEs} } OPTIONAL,
    ...
}

DRBBStatusTransfer-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

PDU-Session-ID ::= INTEGER (0..255)

PDU-Session-Resource-Activity ::= ENUMERATED {
    active,
    not-active,
    ...
}

PDU-Session-Resource-Activity-List ::= SEQUENCE (SIZE(1.. maxnoofPDUSessionResource)) OF PDU-Session-Resource-Activity-Item

PDU-Session-Resource-Activity-Item ::= SEQUENCE {
    pDU-Session-ID                PDU-Session-ID,
    pDU-Session-Resource-Activity PDU-Session-Resource-Activity,
    iE-Extensions ProtocolExtensionContainer { { PDU-Session-Resource-Activity-ItemExtIEs } } OPTIONAL,
    ...
}

PDU-Session-Resource-Activity-ItemExtIEs    ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDU-Session-Resource-Confirm-Modified-List ::= SEQUENCE (SIZE(1.. maxnoofPDUSessionResource)) OF PDU-Session-Resource-Confirm-Modified-Item

PDU-Session-Resource-Confirm-Modified-Item ::= SEQUENCE {
    pDU-Session-ID                PDU-Session-ID,
    dRB-Confirm-Modified-List-NG-RAN DRB-Confirm-Modified-List-NG-RAN OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { PDU-Session-Resource-Confirm-Modified-Item-ExtIEs } } OPTIONAL,
    ...
}

PDU-Session-Resource-Confirm-Modified-Item-ExtIEs    ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDU-Session-Resource-Failed-List ::= SEQUENCE (SIZE(1.. maxnoofPDUSessionResource)) OF PDU-Session-Resource-Failed-Item

PDU-Session-Resource-Failed-Item ::= SEQUENCE {
    pDU-Session-ID                PDU-Session-ID,
    cause                         Cause,
    iE-Extensions ProtocolExtensionContainer { { PDU-Session-Resource-Failed-Item-ExtIEs } } OPTIONAL,
    ...
}

PDU-Session-Resource-Failed-Item-ExtIEs    ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDU-Session-Resource-Failed-Mod-List ::= SEQUENCE (SIZE(1.. maxnoofPDUSessionResource)) OF PDU-Session-Resource-Failed-Mod-Item

PDU-Session-Resource-Failed-Mod-Item ::= SEQUENCE {
    pDU-Session-ID                PDU-Session-ID,
    cause                         Cause,
    iE-Extensions ProtocolExtensionContainer { { PDU-Session-Resource-Failed-Mod-Item-ExtIEs } } OPTIONAL,
    ...
}

```

```

    ...
}

PDU-Session-Resource-Failed-Mod-Item-ExtIEs      ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDU-Session-Resource-Failed-To-Modify-List ::= SEQUENCE (SIZE(1.. maxnoofPDUSessionResource)) OF PDU-Session-Resource-Failed-To-Modify-Item

PDU-Session-Resource-Failed-To-Modify-Item ::= SEQUENCE {
    pDU-Session-ID          PDU-Session-ID,
    cause                   Cause,
    iE-Extensions           ProtocolExtensionContainer { { PDU-Session-Resource-Failed-To-Modify-Item-ExtIEs } } OPTIONAL,
    ...
}

PDU-Session-Resource-Failed-To-Modify-Item-ExtIEs      ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDU-Session-Resource-Modified-List ::= SEQUENCE (SIZE(1.. maxnoofPDUSessionResource)) OF PDU-Session-Resource-Modified-Item

PDU-Session-Resource-Modified-Item ::= SEQUENCE {
    pDU-Session-ID          PDU-Session-ID,
    nG-DL-UP-TNL-Information UP-TNL-Information OPTIONAL,
    securityResult          SecurityResult OPTIONAL,
    pDU-Session-Data-Forwarding-Information-Response Data-Forwarding-Information OPTIONAL,
    dRB-Setup-List-NG-RAN    DRB-Setup-List-NG-RAN OPTIONAL,
    dRB-Failed-List-NG-RAN    DRB-Failed-List-NG-RAN OPTIONAL,
    dRB-Modified-List-NG-RAN  DRB-Modified-List-NG-RAN OPTIONAL,
    dRB-Failed-To-Modify-List-NG-RAN DRB-Failed-To-Modify-List-NG-RAN OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { { PDU-Session-Resource-Modified-Item-ExtIEs } } OPTIONAL,
    ...
}

PDU-Session-Resource-Modified-Item-ExtIEs      ELAP-PROTOCOL-EXTENSION ::= {
    { ID id-redundant-nG-DL-UP-TNL-Information CRITICALITY ignore EXTENSION UP-TNL-Information PRESENCE optional },
    ...
}

PDU-Session-Resource-Required-To-Modify-List ::= SEQUENCE (SIZE(1.. maxnoofPDUSessionResource)) OF PDU-Session-Resource-Required-To-Modify-Item

PDU-Session-Resource-Required-To-Modify-Item ::= SEQUENCE {
    pDU-Session-ID          PDU-Session-ID,
    nG-DL-UP-TNL-Information UP-TNL-Information OPTIONAL,
    dRB-Required-To-Modify-List-NG-RAN DRB-Required-To-Modify-List-NG-RAN OPTIONAL,
    dRB-Required-To-Remove-List-NG-RAN DRB-Required-To-Remove-List-NG-RAN OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { { PDU-Session-Resource-Required-To-Modify-Item-ExtIEs } } OPTIONAL,
    ...
}

PDU-Session-Resource-Required-To-Modify-Item-ExtIEs      ELAP-PROTOCOL-EXTENSION ::= {
    { ID id-redundant-nG-DL-UP-TNL-Information CRITICALITY ignore EXTENSION UP-TNL-Information PRESENCE optional },
    ...
}

```

```

}

PDU-Session-Resource-Setup-List ::= SEQUENCE (SIZE(1.. maxnoofPDUSessionResource)) OF PDU-Session-Resource-Setup-Item

PDU-Session-Resource-Setup-Item ::= SEQUENCE {
    pDU-Session-ID                PDU-Session-ID,
    securityResult                SecurityResult                OPTIONAL,
    nG-DL-UP-TNL-Information      UP-TNL-Information,
    pDU-Session-Data-Forwarding-Information-Response Data-Forwarding-Information OPTIONAL,
    nG-DL-UP-Unchanged            ENUMERATED {true, ...}        OPTIONAL,
    dRB-Setup-List-NG-RAN         DRB-Setup-List-NG-RAN,
    dRB-Failed-List-NG-RAN        DRB-Failed-List-NG-RAN        OPTIONAL,
    iE-Extensions                 ProtocolExtensionContainer { { PDU-Session-Resource-Setup-Item-ExtIEs } } OPTIONAL,
    ...
}

PDU-Session-Resource-Setup-Item-ExtIEs      ELAP-PROTOCOL-EXTENSION ::= {
    { ID id-redundant-nG-DL-UP-TNL-Information      CRITICALITY ignore EXTENSION    UP-TNL-Information PRESENCE optional }|
    { ID id-RedundantPDUSessionInformation-used      CRITICALITY ignore EXTENSION    RedundantPDUSessionInformation PRESENCE optional },
    ...
}

PDU-Session-Resource-Setup-Mod-List ::= SEQUENCE (SIZE(1.. maxnoofPDUSessionResource)) OF PDU-Session-Resource-Setup-Mod-Item

PDU-Session-Resource-Setup-Mod-Item ::= SEQUENCE {
    pDU-Session-ID                PDU-Session-ID,
    securityResult                SecurityResult                OPTIONAL,
    nG-DL-UP-TNL-Information      UP-TNL-Information,
    pDU-Session-Data-Forwarding-Information-Response Data-Forwarding-Information OPTIONAL,
    dRB-Setup-Mod-List-NG-RAN     DRB-Setup-Mod-List-NG-RAN,
    dRB-Failed-Mod-List-NG-RAN    DRB-Failed-Mod-List-NG-RAN    OPTIONAL,
    iE-Extensions                 ProtocolExtensionContainer { { PDU-Session-Resource-Setup-Mod-Item-ExtIEs } }
    OPTIONAL,
    ...
}

PDU-Session-Resource-Setup-Mod-Item-ExtIEs      ELAP-PROTOCOL-EXTENSION ::= {
    { ID id-redundant-nG-DL-UP-TNL-Information      CRITICALITY ignore EXTENSION    UP-TNL-Information PRESENCE optional },
    ...
}

PDU-Session-Resource-To-Modify-List ::= SEQUENCE (SIZE(1.. maxnoofPDUSessionResource)) OF PDU-Session-Resource-To-Modify-Item

PDU-Session-Resource-To-Modify-Item ::= SEQUENCE {
    pDU-Session-ID                PDU-Session-ID,
    securityIndication             SecurityIndication            OPTIONAL,
    pDU-Session-Resource-DL-AMBR   BitRate                      OPTIONAL,
    nG-UL-UP-TNL-Information       UP-TNL-Information            OPTIONAL,
    pDU-Session-Data-Forwarding-Information-Request Data-Forwarding-Information-Request OPTIONAL,
    pDU-Session-Data-Forwarding-Information Data-Forwarding-Information OPTIONAL,
    pDU-Session-Inactivity-Timer   Inactivity-Timer              OPTIONAL,
    networkInstance                NetworkInstance               OPTIONAL,
    dRB-To-Setup-List-NG-RAN        DRB-To-Setup-List-NG-RAN    OPTIONAL,
    dRB-To-Modify-List-NG-RAN       DRB-To-Modify-List-NG-RAN    OPTIONAL,

```

```

    dRB-To-Remove-List-NG-RAN          DRB-To-Remove-List-NG-RAN          OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { PDU-Session-Resource-To-Modify-Item-ExtIEs } } OPTIONAL,
    ...
}

PDU-Session-Resource-To-Modify-Item-ExtIEs  ELAP-PROTOCOL-EXTENSION ::= {
    { ID id-SNSSAI          CRITICALITY reject EXTENSION SNSSAI          PRESENCE optional } |
    { ID id-CommonNetworkInstance          CRITICALITY ignore EXTENSION CommonNetworkInstance          PRESENCE optional } |
    { ID id-redundant-nG-UL-UP-TNL-Information          CRITICALITY ignore EXTENSION UP-TNL-Information          PRESENCE optional } |
    { ID id-RedundantCommonNetworkInstance          CRITICALITY ignore EXTENSION CommonNetworkInstance          PRESENCE optional },
    ...
}

PDU-Session-Resource-To-Remove-List ::= SEQUENCE (SIZE(1.. maxnoofPDUSessionResource)) OF PDU-Session-Resource-To-Remove-Item

PDU-Session-Resource-To-Remove-Item ::= SEQUENCE {
    pDU-Session-ID          PDU-Session-ID,
    iE-Extensions           ProtocolExtensionContainer { { PDU-Session-Resource-To-Remove-Item-ExtIEs } } OPTIONAL,
    ...
}

PDU-Session-Resource-To-Remove-Item-ExtIEs  ELAP-PROTOCOL-EXTENSION ::= {
    { ID id-Cause          CRITICALITY ignore EXTENSION Cause          PRESENCE optional },
    ...
}

PDU-Session-Resource-To-Setup-List ::= SEQUENCE (SIZE(1.. maxnoofPDUSessionResource)) OF PDU-Session-Resource-To-Setup-Item

PDU-Session-Resource-To-Setup-Item ::= SEQUENCE {
    pDU-Session-ID          PDU-Session-ID,
    pDU-Session-Type        PDU-Session-Type,
    sNSSAI                  SNSSAI,
    securityIndication      SecurityIndication,
    pDU-Session-Resource-DL-AMBR          BitRate          OPTIONAL,
    nG-UL-UP-TNL-Information          UP-TNL-Information,
    pDU-Session-Data-Forwarding-Information-Request          Data-Forwarding-Information-Request          OPTIONAL,
    pDU-Session-Inactivity-Timer          Inactivity-Timer          OPTIONAL,
    existing-Allocated-NG-DL-UP-TNL-Info          UP-TNL-Information          OPTIONAL,
    networkInstance          NetworkInstance          OPTIONAL,
    dRB-To-Setup-List-NG-RAN          DRB-To-Setup-List-NG-RAN,
    iE-Extensions           ProtocolExtensionContainer { { PDU-Session-Resource-To-Setup-Item-ExtIEs } } OPTIONAL,
    ...
}

PDU-Session-Resource-To-Setup-Item-ExtIEs  ELAP-PROTOCOL-EXTENSION ::= {
    { ID id-CommonNetworkInstance          CRITICALITY ignore EXTENSION CommonNetworkInstance          PRESENCE optional } |
    { ID id-redundant-nG-UL-UP-TNL-Information          CRITICALITY ignore EXTENSION UP-TNL-Information          PRESENCE optional } |
    { ID id-RedundantCommonNetworkInstance          CRITICALITY ignore EXTENSION CommonNetworkInstance          PRESENCE optional } |
    { ID id-RedundantPDUSessionInformation          CRITICALITY ignore EXTENSION RedundantPDUSessionInformation          PRESENCE optional },
    ...
}

```

```

PDU-Session-Resource-To-Setup-Mod-List ::= SEQUENCE (SIZE(1.. maxnoofPDUSessionResource)) OF PDU-Session-Resource-To-Setup-Mod-Item

PDU-Session-Resource-To-Setup-Mod-Item ::= SEQUENCE {
    pDU-Session-ID                PDU-Session-ID,
    pDU-Session-Type              PDU-Session-Type,
    sNSSAI                       SNSSAI,
    securityIndication            SecurityIndication,
    pDU-Session-Resource-AMBR     BitRate OPTIONAL,
    nG-UL-UP-TNL-Information      UP-TNL-Information,
    pDU-Session-Data-Forwarding-Information-Request Data-Forwarding-Information-Request OPTIONAL,
    pDU-Session-Inactivity-Timer  Inactivity-Timer OPTIONAL,
    dRB-To-Setup-Mod-List-NG-RAN  DRB-To-Setup-Mod-List-NG-RAN,
    iE-Extensions                 ProtocolExtensionContainer { { PDU-Session-Resource-To-Setup-Mod-Item-ExtIEs } }
    OPTIONAL,
    ...
}

PDU-Session-Resource-To-Setup-Mod-Item-ExtIEs      ELAP-PROTOCOL-EXTENSION ::= {
    {ID id-NetworkInstance      CRITICALITY ignore EXTENSION NetworkInstance PRESENCE optional}|
    {ID id-CommonNetworkInstance CRITICALITY ignore EXTENSION CommonNetworkInstance PRESENCE optional}|
    {ID id-redundant-nG-UL-UP-TNL-Information CRITICALITY ignore EXTENSION UP-TNL-Information PRESENCE optional}|
    {ID id-RedundantCommonNetworkInstance CRITICALITY ignore EXTENSION CommonNetworkInstance PRESENCE optional },
    ...
}

PDU-Session-To-Notify-List ::= SEQUENCE (SIZE(1.. maxnoofPDUSessionResource)) OF PDU-Session-To-Notify-Item

PDU-Session-To-Notify-Item ::= SEQUENCE {
    pDU-Session-ID                PDU-Session-ID,
    qos-Flow-List                 QoS-Flow-List,
    iE-Extensions                 ProtocolExtensionContainer { { PDU-Session-To-Notify-Item-ExtIEs } } OPTIONAL,
    ...
}

PDU-Session-To-Notify-Item-ExtIEs      ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

PDU-Session-Type ::= ENUMERATED {
    ipv4,
    ipv6,
    ipv4v6,
    ethernet,
    unstructured,
    ...
}

PLMN-Identity ::= OCTET STRING (SIZE(3))

PortNumber ::= BIT STRING (SIZE(16))

PPI ::= INTEGER (0..7, ...)

PriorityLevel ::= INTEGER { spare (0), highest (1), lowest (14), no-priority (15) } (0..15)

```

```

Pre-emptionCapability ::= ENUMERATED {
    shall-not-trigger-pre-emption,
    may-trigger-pre-emption
}

Pre-emptionVulnerability ::= ENUMERATED {
    not-pre-emptable,
    pre-emptable
}

PrivacyIndicator ::= ENUMERATED {
    immediate-MDT,
    logged-MDT,
    ...
}

-- Q

QCI ::= INTEGER (0..255)

QoS-Characteristics ::= CHOICE {
    non-Dynamic-5QI          Non-Dynamic5QIDescriptor,
    dynamic-5QI              Dynamic5QIDescriptor,
    choice-extension         ProtocolIE-SingleContainer  {{QoS-Characteristics-ExtIEs}}
}

QoS-Characteristics-ExtIEs ELAP-PROTOCOL-IES ::= {
    ...
}

QoS-Flow-Identifier ::= INTEGER (0..63)

QoS-Flow-List ::= SEQUENCE (SIZE(1.. maxnoofQoSFlows)) OF QoS-Flow-Item

QoS-Flow-Item ::= SEQUENCE {
    qoS-Flow-Identifier          QoS-Flow-Identifier,
    iE-Extensions                ProtocolExtensionContainer  { { QoS-Flow-Item-ExtIEs } } OPTIONAL,
    ...
}

QoS-Flow-Item-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    {ID id-QoSFlowMappingIndication    CRITICALITY ignore    EXTENSION QoS-Flow-Mapping-Indication    PRESENCE optional},
    ...
}

QoS-Flow-Failed-List ::= SEQUENCE (SIZE(1.. maxnoofQoSFlows)) OF QoS-Flow-Failed-Item

QoS-Flow-Failed-Item ::= SEQUENCE {
    qoS-Flow-Identifier          QoS-Flow-Identifier,
    cause                        Cause,
    iE-Extensions                ProtocolExtensionContainer  { { QoS-Flow-Failed-Item-ExtIEs } } OPTIONAL,
    ...
}

```



```

QoS-Flow-Failed-Item-ExtIEs      E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

QoS-Flow-Mapping-List ::= SEQUENCE (SIZE(1.. maxnoofQoSFlows)) OF QoS-Flow-Mapping-Item

QoS-Flow-Mapping-Item ::= SEQUENCE {
    qosFlowIdentifier             QoS-Flow-Identifier,
    qosFlowMappingIndication      QoS-Flow-Mapping-Indication OPTIONAL,
    iE-Extensions                 ProtocolExtensionContainer { { QoS-Flow-Mapping-Item-ExtIEs } } OPTIONAL,
    ...
}

QoS-Flow-Mapping-Item-ExtIEs      E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

QoS-Flow-Mapping-Indication ::= ENUMERATED {ul, dl, ...}

QoS-Parameters-Support-List ::= SEQUENCE {
    eUTRAN-QoS-Support-List      EUTRAN-QoS-Support-List OPTIONAL,
    nG-RAN-QoS-Support-List      NG-RAN-QoS-Support-List OPTIONAL,
    iE-Extensions                 ProtocolExtensionContainer { { QoS-Parameters-Support-List-ItemExtIEs } } OPTIONAL,
    ...
}

QoS-Parameters-Support-List-ItemExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

QoS-PriorityLevel ::= INTEGER (0..127, ...)

QoS-Flow-QoS-Parameter-List ::= SEQUENCE (SIZE(1.. maxnoofQoSFlows)) OF QoS-Flow-QoS-Parameter-Item

QoS-Flow-QoS-Parameter-Item ::= SEQUENCE {
    qosFlowIdentifier             QoS-Flow-Identifier,
    qosFlowLevelQoSParameters     QoSFlowLevelQoSParameters,
    qosFlowMappingIndication      QoS-Flow-Mapping-Indication OPTIONAL,
    iE-Extensions                 ProtocolExtensionContainer { { QoS-Flow-QoS-Parameter-Item-ExtIEs } } OPTIONAL,
    ...
}

QoS-Flow-QoS-Parameter-Item-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    {ID id-RedundantQoSFlowIndicator CRITICALITY ignore EXTENSION RedundantQoSFlowIndicator PRESENCE optional}|
    {ID id-TSCTrafficCharacteristics CRITICALITY ignore EXTENSION TSCTrafficCharacteristics PRESENCE optional},
    ...
}

QoSFlowLevelQoSParameters ::= SEQUENCE {
    qosCharacteristics             QoS-Characteristics,
    nGRANAllocationRetentionPriority NGRANAllocationAndRetentionPriority,
    gBR-QoS-Flow-Information       GBR-QoSFlowInformation OPTIONAL,

```

```

    reflective-QoS-Attribute          ENUMERATED {subject-to, ...}          OPTIONAL,
    additional-QoS-Information        ENUMERATED {more-likely, ...}        OPTIONAL,
    paging-Policy-Indicator           INTEGER (1..8, ...)                 OPTIONAL,
    reflective-QoS-Indicator          ENUMERATED {enabled, ...}            OPTIONAL,
    iE-Extensions                    ProtocolExtensionContainer { { QoSFlowLevelQoSParameters-ExtIEs } } OPTIONAL
}

QoSFlowLevelQoSParameters-ExtIEs    ELAP-PROTOCOL-EXTENSION ::= {
    {ID id-QoSMonitoringRequest CRITICALITY ignore EXTENSION QoSMonitoringRequest PRESENCE optional},
    ...
}

QoSMonitoringRequest ::= ENUMERATED {ul, dl, both}

QoS-Flow-Removed-Item ::= SEQUENCE {
    qoS-Flow-Identifier              QoS-Flow-Identifier,
    qoS-Flow-Released-In-Session     ENUMERATED {released-in-session, not-released-in-session, ...} OPTIONAL,
    qoS-Flow-Accumulated-Session-Time OCTET STRING (SIZE(5))              OPTIONAL,
    iE-Extensions                   ProtocolExtensionContainer { { QoS-Flow-Removed-Item-ExtIEs } } OPTIONAL,
    ...
}

QoS-Flow-Removed-Item-ExtIEs        ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

QoS-Mapping-Information ::= SEQUENCE {
    dscp                            BIT STRING (SIZE(6))                  OPTIONAL,
    flow-label                      BIT STRING (SIZE(20))                 OPTIONAL,
    ...
}

-- R

RANUEID ::= OCTET STRING (SIZE (8))

RAT-Type ::= ENUMERATED {
    e-UTRA,
    nR,
    ...
}

RedundantQoSFlowIndicator ::= ENUMERATED {true,false}

RedundantPDUSessionInformation ::= SEQUENCE {
    rSN                            RSN,
    iE-Extensions                  ProtocolExtensionContainer { {RedundantPDUSessionInformation-ExtIEs} } OPTIONAL,
    ...
}

RedundantPDUSessionInformation-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

RSN ::= ENUMERATED {v1, v2, ...}

RetainabilityMeasurementsInfo ::= SEQUENCE (SIZE(1.. maxnoofDRBs)) OF DRB-Removed-Item

RegistrationRequest ::= ENUMERATED {
    start,
    stop,
    ...
}

ReportCharacteristics ::= BIT STRING (SIZE(36))

ReportingPeriodicity ::= ENUMERATED {
    ms500, ms1000, ms2000, ms5000, ms10000, ms20000, ms30000, ms40000, ms50000, ms60000, ms70000, ms80000, ms90000, ms100000, ms110000, ms120000,
    ...
}

RLC-Mode ::= ENUMERATED {
    rlc-tm,
    rlc-am,
    rlc-um-bidirectional,
    rlc-um-unidirectional-ul,
    rlc-um-unidirectional-dl,
    ...
}

ROHC-Parameters ::= CHOICE {
    roHC                ROHC,
    uPlinkOnlyROHC       UplinkOnlyROHC,
    choice-Extension     ProtocolIE-SingleContainer { { ROHC-Parameters-ExtIEs } }
}

ROHC-Parameters-ExtIEs ELAP-PROTOCOL-IES ::= {
    ...
}

ROHC ::= SEQUENCE {
    maxCID                INTEGER (0..16383, ...),
    roHC-Profiles          INTEGER (0..511, ...),
    continueROHC           ENUMERATED {true, ...} OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { ROHC-ExtIEs } } OPTIONAL
}

ROHC-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- S

SecurityAlgorithm ::= SEQUENCE {
    cipheringAlgorithm     CipheringAlgorithm,

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    integrityProtectionAlgorithm    IntegrityProtectionAlgorithm    OPTIONAL,
    iE-Extensions                    ProtocolExtensionContainer { { SecurityAlgorithm-ExtIEs } } OPTIONAL,
    ...
}

SecurityAlgorithm-ExtIEs    ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

SecurityIndication ::= SEQUENCE {
    integrityProtectionIndication    IntegrityProtectionIndication,
    confidentialityProtectionIndication    ConfidentialityProtectionIndication,
    maximumIPdataRate                MaximumIPdataRate                OPTIONAL,
    iE-Extensions                    ProtocolExtensionContainer { {SecurityIndication-ExtIEs} } OPTIONAL,
    ...
}

SecurityIndication-ExtIEs    ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

SecurityInformation ::= SEQUENCE {
    securityAlgorithm                SecurityAlgorithm,
    uPSecuritykey                    UPSecuritykey,
    iE-Extensions                    ProtocolExtensionContainer { { SecurityInformation-ExtIEs } } OPTIONAL,
    ...
}

SecurityInformation-ExtIEs    ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

SecurityResult ::= SEQUENCE {
    integrityProtectionResult        IntegrityProtectionResult,
    confidentialityProtectionResult    ConfidentialityProtectionResult,
    iE-Extensions                    ProtocolExtensionContainer { {SecurityResult-ExtIEs} } OPTIONAL,
    ...
}

SecurityResult-ExtIEs    ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

Slice-Support-List ::= SEQUENCE (SIZE(1.. maxnoofSliceItems)) OF Slice-Support-Item

Slice-Support-Item ::= SEQUENCE {
    sNSSAI    SNSSAI,
    iE-Extensions    ProtocolExtensionContainer { { Slice-Support-Item-ExtIEs } } OPTIONAL
}

Slice-Support-Item-ExtIEs    ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

SNSSAI ::= SEQUENCE {
    sST          OCTET STRING (SIZE(1)),
    sD          OCTET STRING (SIZE(3)) OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { SNSSAI-ExtIEs } } OPTIONAL,
    ...
}

SNSSAI-ExtIEs  ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

SDAP-Configuration ::= SEQUENCE {
    defaultDRB          DefaultDRB,
    sDAP-Header-UL      SDAP-Header-UL,
    sDAP-Header-DL      SDAP-Header-DL,
    iE-Extensions      ProtocolExtensionContainer { { SDAP-Configuration-ExtIEs } } OPTIONAL,
    ...
}

SDAP-Configuration-ExtIEs  ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

SDAP-Header-DL ::= ENUMERATED {
    present,
    absent,
    ...
}

SDAP-Header-UL ::= ENUMERATED {
    present,
    absent,
    ...
}

SubscriberProfileIDforRFP ::= INTEGER (1..256, ...)

-- T

TimeToWait ::= ENUMERATED {v1s, v2s, v5s, v10s, v20s, v60s, ...}

TNLAssociationUsage ::= ENUMERATED {
    ue,
    non-ue,
    both,
    ...
}

TNL-AvailableCapacityIndicator ::= SEQUENCE {
    dL-TNL-OfferedCapacity      INTEGER (0..16777216, ...),
    dL-TNL-AvailableCapacity    INTEGER (0..100, ...),
    uL-TNL-OfferedCapacity      INTEGER (0..16777216, ...),
    uL-TNL-AvailableCapacity    INTEGER (0..100, ...),
    iE-Extensions              ProtocolExtensionContainer { { TNL-AvailableCapacityIndicator-ExtIEs } },

```

```

    ...
}

TNL-AvailableCapacityIndicator-ExtIEs    E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

TSTrafficCharacteristics ::= SEQUENCE {
    tSCTrafficCharacteristicsUL          TSTrafficInformation          OPTIONAL,
    tSCTrafficCharacteristicsDL          TSTrafficInformation          OPTIONAL,
    iE-Extensions                        ProtocolExtensionContainer { { TSTrafficCharacteristics-ExtIEs } } OPTIONAL
}

TSTrafficCharacteristics-ExtIEs    E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

TSTrafficInformation ::= SEQUENCE {
    periodicity                Periodicity,
    burstArrivalTime           BurstArrivalTime          OPTIONAL,
    iE-Extensions              ProtocolExtensionContainer { { TSTrafficInformation-ExtIEs } } OPTIONAL
}

TSTrafficInformation-ExtIEs    E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

Periodicity ::= INTEGER (1..640000, ...)

BurstArrivalTime ::= OCTET STRING

TraceActivation ::= SEQUENCE {
    traceID                    TraceID,
    interfacesToTrace          InterfacesToTrace,
    traceDepth                  TraceDepth,
    traceCollectionEntityIPAddress TransportLayerAddress,
    iE-Extensions              ProtocolExtensionContainer { {TraceActivation-ExtIEs} } OPTIONAL,
    ...
}

TraceActivation-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {
    { ID id-MDTConfiguration    CRITICALITY ignore EXTENSION MDT-Configuration    PRESENCE    optional }|
    { ID id-TraceCollectionEntityURI    CRITICALITY ignore EXTENSION URIaddress    PRESENCE    optional},
    ...
}

TraceDepth ::= ENUMERATED {
    minimum,
    medium,
    maximum,
    minimumWithoutVendorSpecificExtension,
    mediumWithoutVendorSpecificExtension,
    maximumWithoutVendorSpecificExtension,
    ...
}

```

```

}

TraceID ::= OCTET STRING (SIZE(8))

TransportLayerAddress ::= BIT STRING (SIZE(1..160, ...))

TransactionID ::= INTEGER (0..255, ...)

T-Reordering ::= ENUMERATED {ms0, ms1, ms2, ms4, ms5, ms8, ms10, ms15, ms20, ms30, ms40, ms50, ms60, ms80, ms100, ms120, ms140, ms160, ms180,
ms200, ms220, ms240, ms260, ms280, ms300, ms500, ms750, ms1000, ms1250, ms1500, ms1750, ms2000, ms2250, ms2500, ms2750, ms3000, ...}

T-ReorderingTimer ::= SEQUENCE {
    t-Reordering T-Reordering,
    iE-Extensions ProtocolExtensionContainer { { T-ReorderingTimer-ExtIEs } } OPTIONAL,
    ...
}

T-ReorderingTimer-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

TypeOfError ::= ENUMERATED {
    not-understood,
    missing,
    ...
}

Transport-Layer-Address-Info ::= SEQUENCE {
    transport-UP-Layer-Addresses-Info-To-Add-List Transport-UP-Layer-Addresses-Info-To-Add-List OPTIONAL,
    transport-UP-Layer-Addresses-Info-To-Remove-List Transport-UP-Layer-Addresses-Info-To-Remove-List OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { Transport-Layer-Address-Info-ExtIEs } } OPTIONAL,
    ...
}

Transport-Layer-Address-Info-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

Transport-UP-Layer-Addresses-Info-To-Add-List ::= SEQUENCE (SIZE(1.. maxnoofTLAs)) OF Transport-UP-Layer-Addresses-Info-To-Add-Item

Transport-UP-Layer-Addresses-Info-To-Add-Item ::= SEQUENCE {
    iP-SecTransportLayerAddress TransportLayerAddress,
    gTPTransportLayerAddressesToAdd GTPTLAs OPTIONAL,
    iE-Extensions ProtocolExtensionContainer { { Transport-UP-Layer-Addresses-Info-To-Add-ItemExtIEs } } OPTIONAL,
    ...
}

Transport-UP-Layer-Addresses-Info-To-Add-ItemExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

Transport-UP-Layer-Addresses-Info-To-Remove-List ::= SEQUENCE (SIZE(1.. maxnoofTLAs)) OF Transport-UP-Layer-Addresses-Info-To-Remove-Item

Transport-UP-Layer-Addresses-Info-To-Remove-Item ::= SEQUENCE {

```

```

    iP-SecTransportLayerAddress      TransportLayerAddress,
    gTPTransportLayerAddressesToRemove  GTPTLAS                      OPTIONAL,
    iE-Extensions                     ProtocolExtensionContainer { { Transport-UP-Layer-Addresses-Info-To-Remove-ItemExtIEs } } OPTIONAL,
    ...
}

Transport-UP-Layer-Addresses-Info-To-Remove-ItemExtIEs  E1AP-PROTOCOL-EXTENSION ::= {
    ...
}
-- U

UE-Activity ::= ENUMERATED {
    active,
    not-active,
    ...
}

UE-associatedLogicalE1-ConnectionItem ::= SEQUENCE {
    gNB-CU-CP-UE-E1AP-ID      GNB-CU-CP-UE-E1AP-ID      OPTIONAL,
    gNB-CU-UP-UE-E1AP-ID      GNB-CU-UP-UE-E1AP-ID      OPTIONAL,
    iE-Extensions             ProtocolExtensionContainer { { UE-associatedLogicalE1-ConnectionItemExtIEs } } OPTIONAL,
    ...
}

UE-associatedLogicalE1-ConnectionItemExtIEs  E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

UL-Configuration      ::= ENUMERATED {
    no-data,
    shared,
    only,
    ...
}

ULUPTNLAddressToUpdateItem  ::= SEQUENCE {
    oldTNLAddress            TransportLayerAddress,
    newTNLAddress            TransportLayerAddress,
    iE-Extensions            ProtocolExtensionContainer { { ULUPTNLAddressToUpdateItemExtIEs } } OPTIONAL,
    ...
}

ULUPTNLAddressToUpdateItemExtIEs  E1AP-PROTOCOL-EXTENSION ::= {
    ...
}

ULDataSplitThreshold      ::= ENUMERATED {b0, b100, b200, b400, b800, b1600, b3200, b6400, b12800, b25600, b51200, b102400, b204800, b409600,
b819200, b1228800, b1638400, b2457600, b3276800, b4096000, b4915200, b5734400, b6553600, infinity, ...}

UP-Parameters ::= SEQUENCE (SIZE(1.. maxnoofUPParameters)) OF UP-Parameters-Item

UP-Parameters-Item ::= SEQUENCE {
    uP-TNL-Information      UP-TNL-Information,
    cell-Group-ID           Cell-Group-ID,

```



```

    iE-Extensions          ProtocolExtensionContainer { { UP-Parameters-Item-ExtIEs } }    OPTIONAL,
    ...
}

UP-Parameters-Item-ExtIEs  ELAP-PROTOCOL-EXTENSION ::= {
    {ID id-QoS-Mapping-Information  CRITICALITY reject  EXTENSION QoS-Mapping-Information  PRESENCE optional},
    ...
}

UPSecuritykey ::= SEQUENCE {
    encryptionKey          EncryptionKey,
    integrityProtectionKey  IntegrityProtectionKey    OPTIONAL,
    iE-Extensions          ProtocolExtensionContainer { { UPSecuritykey-ExtIEs } } OPTIONAL,
    ...
}

UPSecuritykey-ExtIEs      ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

UP-TNL-Information ::= CHOICE {
    gTPTunnel      GTP Tunnel,
    choice-extension ProtocolIE-SingleContainer  {{UP-TNL-Information-ExtIEs}}
}

UP-TNL-Information-ExtIEs ELAP-PROTOCOL-IES ::= {
    ...
}

UplinkOnlyROHC ::= SEQUENCE {
    maxCID          INTEGER (0..16383, ...),
    rOHC-Profiles   INTEGER (0..511, ...),
    continueROHC    ENUMERATED {true, ...} OPTIONAL,
    iE-Extensions   ProtocolExtensionContainer { { UplinkOnlyROHC-ExtIEs } }    OPTIONAL
}

UplinkOnlyROHC-ExtIEs ELAP-PROTOCOL-EXTENSION ::= {
    ...
}

URIaddress ::= VisibleString

-- V

-- W

-- X

-- Y

-- Z

END
-- ASN1STOP

```

9.4.6 Common Definitions

```
-- ASN1START
-- *****
--
-- Common definitions
--
-- *****

ElAP-CommonDataTypes {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
ngran-access (22) modules (3) elap (5) version1 (1) elap-CommonDataTypes (3)}

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- *****
--
-- Extension constants
--
-- *****

maxPrivateIEs                INTEGER ::= 65535
maxProtocolExtensions         INTEGER ::= 65535
maxProtocolIEs               INTEGER ::= 65535

-- *****
--
-- Common Data Types
--
-- *****

Criticality      ::=      ENUMERATED { reject, ignore, notify }

Presence         ::= ENUMERATED { optional, conditional, mandatory }

PrivateIE-ID     ::= CHOICE {
    local          INTEGER (0..maxPrivateIEs),
    global         OBJECT IDENTIFIER
}

ProcedureCode    ::= INTEGER (0..255)

ProtocolExtensionID ::= INTEGER (0..maxProtocolExtensions)

ProtocolIE-ID    ::= INTEGER (0..maxProtocolIEs)

TriggeringMessage ::= ENUMERATED { initiating-message, successful-outcome, unsuccessful-outcome}

END
```

```
-- ASN1STOP
```

9.4.7 Constant Definitions

```
-- ASN1START
-- *****
--
-- Constant definitions
--
-- *****

ElAP-Constants {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
ngran-access (22) modules (3) elap (5) version1 (1) elap-Constants (4) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

    ProcedureCode,
    ProtocolIE-ID

FROM ElAP-CommonDataTypes;

-- *****
--
-- Elementary Procedures
--
-- *****

id-reset                               ProcedureCode ::= 0
id-errorIndication                     ProcedureCode ::= 1
id-privateMessage                      ProcedureCode ::= 2
id-gNB-CU-UP-EISetup                  ProcedureCode ::= 3
id-gNB-CU-CP-EISetup                  ProcedureCode ::= 4
id-gNB-CU-UP-ConfigurationUpdate      ProcedureCode ::= 5
id-gNB-CU-CP-ConfigurationUpdate      ProcedureCode ::= 6
id-eIRelease                          ProcedureCode ::= 7
id-bearerContextSetup                 ProcedureCode ::= 8
id-bearerContextModification          ProcedureCode ::= 9
id-bearerContextModificationRequired  ProcedureCode ::= 10
id-bearerContextRelease               ProcedureCode ::= 11
id-bearerContextReleaseRequest        ProcedureCode ::= 12
id-bearerContextInactivityNotification ProcedureCode ::= 13
id-dLDataNotification                ProcedureCode ::= 14
id-dataUsageReport                    ProcedureCode ::= 15
id-gNB-CU-UP-CounterCheck             ProcedureCode ::= 16
id-gNB-CU-UP-StatusIndication         ProcedureCode ::= 17
id-uLDataNotification                ProcedureCode ::= 18
id-mRDC-DataUsageReport               ProcedureCode ::= 19
```

id-TraceStart	ProcedureCode ::= 20
id-DeactivateTrace	ProcedureCode ::= 21
id-resourceStatusReportingInitiation	ProcedureCode ::= 22
id-resourceStatusReporting	ProcedureCode ::= 23
id-iAB-UPTNLAddressUpdate	ProcedureCode ::= 24
id-CellTrafficTrace	ProcedureCode ::= 25
id-earlyForwardingSNTransfer	ProcedureCode ::= 26

```
-- *****
--
-- Lists
--
-- *****
```

maxnoofErrors	INTEGER ::= 256
maxnoofSPLMNs	INTEGER ::= 12
maxnoofSliceItems	INTEGER ::= 1024
maxnoofIndividualElConnectionsToReset	INTEGER ::= 65536
maxnoofEUTRANQOSParameters	INTEGER ::= 256
maxnoofNGRANQOSParameters	INTEGER ::= 256
maxnoofDRBs	INTEGER ::= 32
maxnoofNR CGI	INTEGER ::= 512
maxnoofPDUSessionResource	INTEGER ::= 256
maxnoofQoSFlows	INTEGER ::= 64
maxnoofUPParameters	INTEGER ::= 8
maxnoofCellGroups	INTEGER ::= 4
maxnooftimeperiods	INTEGER ::= 2
maxnoofTNLAAssociations	INTEGER ::= 32
maxnoofTLAs	INTEGER ::= 16
maxnoofGTPTLAs	INTEGER ::= 16
maxnoofTNLAAddresses	INTEGER ::= 8
maxnoofMDTPLMNs	INTEGER ::= 16
maxnoofQoSParaSets	INTEGER ::= 8
maxnoofExtSliceItems	INTEGER ::= 65535

```
-- *****
--
-- IEs
--
-- *****
```

id-Cause	ProtocolIE-ID ::= 0
id-CriticalityDiagnostics	ProtocolIE-ID ::= 1
id-gNB-CU-CP-UE-EIAP-ID	ProtocolIE-ID ::= 2
id-gNB-CU-UP-UE-EIAP-ID	ProtocolIE-ID ::= 3
id-ResetType	ProtocolIE-ID ::= 4
id-UE-associatedLogicalEl-ConnectionItem	ProtocolIE-ID ::= 5
id-UE-associatedLogicalEl-ConnectionListResAck	ProtocolIE-ID ::= 6
id-gNB-CU-UP-ID	ProtocolIE-ID ::= 7
id-gNB-CU-UP-Name	ProtocolIE-ID ::= 8
id-gNB-CU-CP-Name	ProtocolIE-ID ::= 9
id-CNSupport	ProtocolIE-ID ::= 10

id-SupportedPLMNs	ProtocolIE-ID ::= 11
id-TimeToWait	ProtocolIE-ID ::= 12
id-SecurityInformation	ProtocolIE-ID ::= 13
id-UEDLAggregateMaximumBitRate	ProtocolIE-ID ::= 14
id-System-BearerContextSetupRequest	ProtocolIE-ID ::= 15
id-System-BearerContextSetupResponse	ProtocolIE-ID ::= 16
id-BearerContextStatusChange	ProtocolIE-ID ::= 17
id-System-BearerContextModificationRequest	ProtocolIE-ID ::= 18
id-System-BearerContextModificationResponse	ProtocolIE-ID ::= 19
id-System-BearerContextModificationConfirm	ProtocolIE-ID ::= 20
id-System-BearerContextModificationRequired	ProtocolIE-ID ::= 21
id-DRB-Status-List	ProtocolIE-ID ::= 22
id-ActivityNotificationLevel	ProtocolIE-ID ::= 23
id-ActivityInformation	ProtocolIE-ID ::= 24
id-Data-Usage-Report-List	ProtocolIE-ID ::= 25
id-New-UL-TNL-Information-Required	ProtocolIE-ID ::= 26
id-GNB-CU-CP-TNLA-To-Add-List	ProtocolIE-ID ::= 27
id-GNB-CU-CP-TNLA-To-Remove-List	ProtocolIE-ID ::= 28
id-GNB-CU-CP-TNLA-To-Update-List	ProtocolIE-ID ::= 29
id-GNB-CU-CP-TNLA-Setup-List	ProtocolIE-ID ::= 30
id-GNB-CU-CP-TNLA-Failed-To-Setup-List	ProtocolIE-ID ::= 31
id-DRB-To-Setup-List-EUTRAN	ProtocolIE-ID ::= 32
id-DRB-To-Modify-List-EUTRAN	ProtocolIE-ID ::= 33
id-DRB-To-Remove-List-EUTRAN	ProtocolIE-ID ::= 34
id-DRB-Required-To-Modify-List-EUTRAN	ProtocolIE-ID ::= 35
id-DRB-Required-To-Remove-List-EUTRAN	ProtocolIE-ID ::= 36
id-DRB-Setup-List-EUTRAN	ProtocolIE-ID ::= 37
id-DRB-Failed-List-EUTRAN	ProtocolIE-ID ::= 38
id-DRB-Modified-List-EUTRAN	ProtocolIE-ID ::= 39
id-DRB-Failed-To-Modify-List-EUTRAN	ProtocolIE-ID ::= 40
id-DRB-Confirm-Modified-List-EUTRAN	ProtocolIE-ID ::= 41
id-PDU-Session-Resource-To-Setup-List	ProtocolIE-ID ::= 42
id-PDU-Session-Resource-To-Modify-List	ProtocolIE-ID ::= 43
id-PDU-Session-Resource-To-Remove-List	ProtocolIE-ID ::= 44
id-PDU-Session-Resource-Required-To-Modify-List	ProtocolIE-ID ::= 45
id-PDU-Session-Resource-Setup-List	ProtocolIE-ID ::= 46
id-PDU-Session-Resource-Failed-List	ProtocolIE-ID ::= 47
id-PDU-Session-Resource-Modified-List	ProtocolIE-ID ::= 48
id-PDU-Session-Resource-Failed-To-Modify-List	ProtocolIE-ID ::= 49
id-PDU-Session-Resource-Confirm-Modified-List	ProtocolIE-ID ::= 50
id-DRB-To-Setup-Mod-List-EUTRAN	ProtocolIE-ID ::= 51
id-DRB-Setup-Mod-List-EUTRAN	ProtocolIE-ID ::= 52
id-DRB-Failed-Mod-List-EUTRAN	ProtocolIE-ID ::= 53
id-PDU-Session-Resource-Setup-Mod-List	ProtocolIE-ID ::= 54
id-PDU-Session-Resource-Failed-Mod-List	ProtocolIE-ID ::= 55
id-PDU-Session-Resource-To-Setup-Mod-List	ProtocolIE-ID ::= 56
id-TransactionID	ProtocolIE-ID ::= 57
id-Serving-PLMN	ProtocolIE-ID ::= 58
id-UE-Inactivity-Timer	ProtocolIE-ID ::= 59
id-System-GNB-CU-UP-CounterCheckRequest	ProtocolIE-ID ::= 60
id-DRBs-Subject-To-Counter-Check-List-EUTRAN	ProtocolIE-ID ::= 61
id-DRBs-Subject-To-Counter-Check-List-NG-RAN	ProtocolIE-ID ::= 62
id-PPI	ProtocolIE-ID ::= 63
id-gNB-CU-UP-Capacity	ProtocolIE-ID ::= 64

id-GNB-CU-UP-OverloadInformation	ProtocolIE-ID ::= 65
id-UEDLMaximumIntegrityProtectedDataRate	ProtocolIE-ID ::= 66
id-PDU-Session-To-Notify-List	ProtocolIE-ID ::= 67
id-PDU-Session-Resource-Data-Usage-List	ProtocolIE-ID ::= 68
id-SNSSAI	ProtocolIE-ID ::= 69
id-DataDiscardRequired	ProtocolIE-ID ::= 70
id-OldQoSFlowMap-ULendmarkerexpected	ProtocolIE-ID ::= 71
id-DRB-QoS	ProtocolIE-ID ::= 72
id-GNB-CU-UP-TNLA-To-Remove-List	ProtocolIE-ID ::= 73
id-endpoint-IP-Address-and-Port	ProtocolIE-ID ::= 74
id-TNLAssociationTransportLayerAddressgNBCUUP	ProtocolIE-ID ::= 75
id-RANUEID	ProtocolIE-ID ::= 76
id-GNB-DU-ID	ProtocolIE-ID ::= 77
id-CommonNetworkInstance	ProtocolIE-ID ::= 78
id-NetworkInstance	ProtocolIE-ID ::= 79
id-QoSFlowMappingIndication	ProtocolIE-ID ::= 80
id-TraceActivation	ProtocolIE-ID ::= 81
id-TraceID	ProtocolIE-ID ::= 82
id-SubscriberProfileIDforRFP	ProtocolIE-ID ::= 83
id-AdditionalRRMPriorityIndex	ProtocolIE-ID ::= 84
id-RetainabilityMeasurementsInfo	ProtocolIE-ID ::= 85
id-Transport-Layer-Address-Info	ProtocolIE-ID ::= 86
id-QoSMonitoringRequest	ProtocolIE-ID ::= 87
id-PDCP-StatusReportIndication	ProtocolIE-ID ::= 88
id-gNB-CU-CP-Measurement-ID	ProtocolIE-ID ::= 89
id-gNB-CU-UP-Measurement-ID	ProtocolIE-ID ::= 90
id-RegistrationRequest	ProtocolIE-ID ::= 91
id-ReportCharacteristics	ProtocolIE-ID ::= 92
id-ReportingPeriodicity	ProtocolIE-ID ::= 93
id-TNL-AvailableCapacityIndicator	ProtocolIE-ID ::= 94
id-HW-CapacityIndicator	ProtocolIE-ID ::= 95
id-RedundantCommonNetworkInstance	ProtocolIE-ID ::= 96
id-redundant-nG-UL-UP-TNL-Information	ProtocolIE-ID ::= 97
id-redundant-nG-DL-UP-TNL-Information	ProtocolIE-ID ::= 98
id-RedundantQoSFlowIndicator	ProtocolIE-ID ::= 99
id-TSCTrafficCharacteristics	ProtocolIE-ID ::= 100
id-CNPacketDelayBudgetDownlink	ProtocolIE-ID ::= 101
id-CNPacketDelayBudgetUplink	ProtocolIE-ID ::= 102
id-ExtendedPacketDelayBudget	ProtocolIE-ID ::= 103
id-AdditionalPDCPduplicationInformation	ProtocolIE-ID ::= 104
id-RedundantPDUSessionInformation	ProtocolIE-ID ::= 105
id-RedundantPDUSessionInformation-used	ProtocolIE-ID ::= 106
id-QoS-Mapping-Information	ProtocolIE-ID ::= 107
id-DLUPTNLAddressToUpdateList	ProtocolIE-ID ::= 108
id-ULUPTNLAddressToUpdateList	ProtocolIE-ID ::= 109
id-NPNSupportInfo	ProtocolIE-ID ::= 110
id-NPNContextInfo	ProtocolIE-ID ::= 111
id-MDTConfiguration	ProtocolIE-ID ::= 112
id-ManagementBasedMDTPLMNList	ProtocolIE-ID ::= 113
id-TraceCollectionEntityIPAddress	ProtocolIE-ID ::= 114
id-PrivacyIndicator	ProtocolIE-ID ::= 115
id-TraceCollectionEntityURI	ProtocolIE-ID ::= 116
id-URIaddress	ProtocolIE-ID ::= 117
id-EHC-Parameters	ProtocolIE-ID ::= 118

```

id-DRBs-Subject-To-Early-Forwarding-List      ProtocolIE-ID ::= 119
id-DAPSRequestInfo                           ProtocolIE-ID ::= 120
id-CHOInitiation                             ProtocolIE-ID ::= 121
id-EarlyForwardingCOUNTReq                  ProtocolIE-ID ::= 122
id-EarlyForwardingCOUNTInfo                 ProtocolIE-ID ::= 123
id-AlternativeQoSParaSetList                  ProtocolIE-ID ::= 124
    id-ExtendedSliceSupportList               ProtocolIE-ID ::= 125

END
-- ASN1STOP

```

9.4.8 Container Definitions

```

-- ASN1START
-- *****
--
-- Container definitions
--
-- *****

ElAP-Containers {
    itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
    ngran-access (22) modules (3) elap (5) version1 (1) elap-Containers (5) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS
    maxPrivateIEs,
    maxProtocolExtensions,
    maxProtocolIEs,
    Criticality,
    Presence,
    PrivateIE-ID,
    ProtocolIE-ID

FROM ElAP-CommonDataTypes;

-- *****
--
-- Class Definition for Protocol IEs

```

```

--
-- *****

E1AP-PROTOCOL-IES ::= CLASS {
    &id                ProtocolIE-ID          UNIQUE,
    &criticality        Criticality,
    &Value,
    &presence            Presence
}
WITH SYNTAX {
    ID                &id
    CRITICALITY        &criticality
    TYPE                &Value
    PRESENCE            &presence
}

-- *****
--
-- Class Definition for Protocol Extensions
--
-- *****

E1AP-PROTOCOL-EXTENSION ::= CLASS {
    &id                ProtocolIE-ID          UNIQUE,
    &criticality        Criticality,
    &Extension,
    &presence            Presence
}
WITH SYNTAX {
    ID                &id
    CRITICALITY        &criticality
    EXTENSION            &Extension
    PRESENCE            &presence
}

-- *****
--
-- Class Definition for Private IEs
--
-- *****

E1AP-PRIVATE-IES ::= CLASS {
    &id                PrivateIE-ID,
    &criticality        Criticality,
    &Value,
    &presence            Presence
}
WITH SYNTAX {
    ID                &id
    CRITICALITY        &criticality
    TYPE                &Value
    PRESENCE            &presence
}

```



```

-- *****
--
-- Container for Protocol IEs
--
-- *****

ProtocolIE-Container { ElAP-PROTOCOL-IES : IEsSetParam} ::=
    SEQUENCE (SIZE (0..maxProtocolIEs)) OF
        ProtocolIE-Field {{IEsSetParam}}

ProtocolIE-SingleContainer { ElAP-PROTOCOL-IES : IEsSetParam} ::=
    ProtocolIE-Field {{IEsSetParam}}

ProtocolIE-Field { ElAP-PROTOCOL-IES : IEsSetParam} ::= SEQUENCE {
    id                ElAP-PROTOCOL-IES.&id                ({IEsSetParam}),
    criticality        ElAP-PROTOCOL-IES.&criticality        ({IEsSetParam}@id}),
    value              ElAP-PROTOCOL-IES.&Value              ({IEsSetParam}@id)}
}

-- *****
--
-- Container Lists for Protocol IE Containers
--
-- *****

ProtocolIE-ContainerList {INTEGER : lowerBound, INTEGER : upperBound, ElAP-PROTOCOL-IES : IEsSetParam} ::=
    SEQUENCE (SIZE (lowerBound..upperBound)) OF
        ProtocolIE-Container {{IEsSetParam}}

-- *****
--
-- Container for Protocol Extensions
--
-- *****

ProtocolExtensionContainer { ElAP-PROTOCOL-EXTENSION : ExtensionSetParam} ::=
    SEQUENCE (SIZE (1..maxProtocolExtensions)) OF
        ProtocolExtensionField {{ExtensionSetParam}}

ProtocolExtensionField { ElAP-PROTOCOL-EXTENSION : ExtensionSetParam} ::= SEQUENCE {
    id                ElAP-PROTOCOL-EXTENSION.&id                ({ExtensionSetParam}),
    criticality        ElAP-PROTOCOL-EXTENSION.&criticality        ({ExtensionSetParam}@id}),
    extensionValue      ElAP-PROTOCOL-EXTENSION.&Extension        ({ExtensionSetParam}@id)}
}

-- *****
--
-- Container for Private IEs
--
-- *****

PrivateIE-Container { ElAP-PRIVATE-IES : IEsSetParam} ::=
    SEQUENCE (SIZE (1..maxPrivateIEs)) OF
        PrivateIE-Field {{IEsSetParam}}

```

```
PrivateIE-Field { ElAP-PRIVATE-IES : IESSetParam} ::= SEQUENCE {  
    id            ElAP-PRIVATE-IES.&id            ({IESSetParam}),  
    criticality    ElAP-PRIVATE-IES.&criticality    ({IESSetParam}{@id}),  
    value          ElAP-PRIVATE-IES.&Value          ({IESSetParam}{@id})  
}  
  
END  
-- ASN1STOP
```