

**TSG-RAN Meeting #8
Düsseldorf, Germany, 21 - 23 June 2000**

TSGRP#8(00)0236

Title: Agreed CRs to TS 25.413

Source: TSG-RAN WG3

Agenda item: 5.3.3

Tdoc_Num	Specification	CR_Num	Revision_Nu	CR_Subject	CR_Category	WG_Status	Cur_Ver_Num	New_Ver_Nu
R3-001650	25.413	115	2	Combined ASN.1 definition based on agreed	F	agreed	3.1.0	3.2.0
R3-001513	25.413	112	1	Change of the RANAP IMEI coding to	C	agreed	3.1.0	3.2.0

**Other
comments:**



help.doc

<----- double-click here for help and instructions on how to create a CR.

9.2.1.9 UE Identity

This element identifies the element to be traced i.e. the subscriber or the user equipment.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice UE Identity				
>IMSI			OCTET STRING (SIZE (3..8))	<ul style="list-style-type: none"> - digits 0 to 9, two digits per octet, - each digit encoded 0000 to 1001, - 1111 used as filler - bit 4 to 1 of octet n encoding digit 2n-1 - bit 8 to 5 of octet n encoding digit 2n <p>-Number of decimal digits shall be from 6 to 15 starting with the digits from the PLMN-ID.</p>
>IMEI			OCTET STRING (SIZE (8))	<ul style="list-style-type: none"> - <u>hexadecimal</u> digits 0 to <u>F9</u>, two <u>hexadecimal</u> digits per octet, - each <u>hexadecimal</u> digit encoded 0000 to 1<u>100</u>1, - 1111 used as filler <u>for bits 8 to 5 of last octet</u> - bit 4 to 1 of octet n encoding digit 2n-1 - bit 8 to 5 of octet n encoding digit 2n <p>Number of <u>hexa</u>decimal digits shall be 15.</p>

NEXT MODIFIED SECTION

9.3.4 Information Element Definitions

****** LOTS OF UNAFFECTED ASN.1 DESCRIPTION FROM SECTION 9.3.4 REMOVED ******

-- I

| IMEI ::= ~~TBCD-OCTET~~ STRING (SIZE (8))
-- Reference: 23.003

****** LOTS OF UNAFFECTED ASN.1 DESCRIPTION FROM SECTION 9.3.4 REMOVED ******

affected:

Other GSM core specifications
MS test specifications
BSS test specifications
O&M specifications

→ List of CRs:
→ List of CRs:
→ List of CRs:
→ List of CRs:

--

Other comments:



help.doc

It is proposed that this CR is updated according to CRs approved in this meeting (either online or with e-mail approval), and then this is submitted for TSG RAN#8 for approval.

<----- [double-click here for help and instructions on how to create a CR.](#)

9.3 Message and Information Element Abstract Syntax (with ASN.1)

9.3.1 Usage of private message mechanism for non-standard use

The private message mechanism for non-standard use may be used:

- for special operator- (and/or vendor) specific features considered not to be part of the basic functionality, i.e. the functionality required for a complete and high-quality specification in order to guarantee multivendor interoperability;
- by vendors for research purposes, e.g. to implement and evaluate new algorithms/features before such features are proposed for standardisation.

The private message mechanism shall not be used for basic functionality. Such functionality shall be standardised.

9.3.2 Elementary Procedure Definitions

```

-- *****
--
-- Elementary Procedure definitions
--
-- *****

RANAP-PDU-Descriptions -- { object identifier to be allocated }--
DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS
    Criticality,
    ProcedureCode
FROM RANAP-CommonDataTypes

    Iu-ReleaseCommand,
    Iu-ReleaseComplete,
    RelocationCommand,
    RelocationPreparationFailure,
    RelocationRequired,
    RelocationRequest,
    RelocationRequestAcknowledge,

```


RelocationFailure,
RelocationCancel,
RelocationCancelAcknowledge,
SRNS-ContextRequest,
SRNS-ContextResponse,
SecurityModeCommand,
SecurityModeComplete,
SecurityModeReject,
DataVolumeReportRequest,
DataVolumeReport,
CN-InformationBroadcastRequest,
CN-InformationBroadcastConfirm,
CN-InformationBroadcastReject,
Reset,
ResetAcknowledge,
RAB-ReleaseRequest,
Iu-ReleaseRequest,
RelocationDetect,
RelocationComplete,
Paging,
CommonID,
CN-InvokeTrace,
CN-DeactivateTrace,
LocationReportingControl,
LocationReport,
InitialUE-Message,
DirectTransfer,
Overload,
ErrorIndication,
SRNS-DataForwardCommand,
ForwardSRNS-Context,
RAB-AssignmentRequest,
RAB-AssignmentResponse,
PrivateMessage,
ResetResource,
ResetResourceAcknowledge,
RANAP-RelocationInformation
FROM RANAP-PDU-Contents

id-CN-DeactivateTrace,
id-CN-InformationBroadcast,
id-CN-InvokeTrace,
id-CommonID,
id-DataVolumeReport,
id-DirectTransfer,
id-ErrorIndication,
id-ForwardSRNS-Context,
id-InitialUE-Message,
id-Iu-Release,
id-Iu-ReleaseRequest,

```

id-KeyStatus,
id-LocationReport,
id-LocationReportingControl,
id-OverloadControl,
id-Paging,
id-privateMessage,
id-RAB-Assignment,
id-RAB-ReleaseRequest,
id-RANAP-Relocation,
id-RelocationCancel,
id-RelocationComplete,
id-RelocationDetect,
id-RelocationPreparation,
id-RelocationResourceAllocation,
id-Reset,
id-SRNS-ContextTransfer,
id-SRNS-DataForward,
id-SecurityModeControl,
id-ResetResource
FROM RANAP-Constants;

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

RANAP-ELEMENTARY-PROCEDURE ::= CLASS {
&InitiatingMessage
,
&SuccessfulOutcome OPTIONAL,
&UnsuccessfulOutcome OPTIONAL,
&Outcome OPTIONAL,
&procedureCode ProcedureCode UNIQUE,
&criticality Criticality DEFAULT ignore
}
WITH SYNTAX {
INITIATING MESSAGE &InitiatingMessage
[SUCCESSFUL OUTCOME &SuccessfulOutcome]
[UNSUCCESSFUL OUTCOME &UnsuccessfulOutcome]
[OUTCOME &Outcome]
PROCEDURE CODE &procedureCode
[CRITICALITY &criticality]
}

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

```

```

RANAP-PDU ::= CHOICE {
  initiatingMessage InitiatingMessage,
  successfulOutcome SuccessfulOutcome,
  unsuccessfulOutcome UnsuccessfulOutcome,
  outcome Outcome,
  ...
}

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

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

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

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

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

RANAP-ELEMENTARY-PROCEDURES RANAP-ELEMENTARY-PROCEDURE ::= {
  RANAP-ELEMENTARY-PROCEDURES-CLASS-1 |
  RANAP-ELEMENTARY-PROCEDURES-CLASS-2 |
  RANAP-ELEMENTARY-PROCEDURES-CLASS-3 ,
  ...
}

RANAP-ELEMENTARY-PROCEDURES-CLASS-1 RANAP-ELEMENTARY-PROCEDURE ::= {
  iu-Release |
  relocationPreparation |
  relocationResourceAllocation |

```

```

    relocationCancel |
    sRNS-ContextTransfer |
    securityModeControl |
    dataVolumeReport |
    cN-InformationBroadcast |
    reset |
    resetResource ,
    ...
}

RANAP-ELEMENTARY-PROCEDURES-CLASS-2 RANAP-ELEMENTARY-PROCEDURE ::= {
    rAB-ReleaseRequest |
    iu-ReleaseRequest |
    relocationDetect |
    relocationComplete |
    paging |
    commonID |
    cN-InvokeTrace |
    cN-DeactivateTrace |
    locationReportingControl |
    locationReport |
    initialUE-Message |
    directTransfer |
    overloadControl |
    errorIndication |
    sRNS-DataForward |
    forwardSRNS-Context |
    privateMessage |
    rANAP-Relocation ,
    ...
}

RANAP-ELEMENTARY-PROCEDURES-CLASS-3 RANAP-ELEMENTARY-PROCEDURE ::= {
    rAB-Assignment ,
    ...
}

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

iu-Release RANAP-ELEMENTARY-PROCEDURE ::= {
    INITIATING MESSAGE Iu-ReleaseCommand
    SUCCESSFUL OUTCOME Iu-ReleaseComplete
    PROCEDURE CODE id-Iu-Release
    CRITICALITY ignore
}

```

```
relocationPreparation RANAP-ELEMENTARY-PROCEDURE ::= {  
  INITIATING MESSAGE RelocationRequired  
  SUCCESSFUL OUTCOME RelocationCommand  
  UNSUCCESSFUL OUTCOME RelocationPreparationFailure  
  PROCEDURE CODE id-RelocationPreparation  
  CRITICALITY ignore  
}  
  
relocationResourceAllocation RANAP-ELEMENTARY-PROCEDURE ::= {  
  INITIATING MESSAGE RelocationRequest  
  SUCCESSFUL OUTCOME RelocationRequestAcknowledge  
  UNSUCCESSFUL OUTCOME RelocationFailure  
  PROCEDURE CODE id-RelocationResourceAllocation  
  CRITICALITY ignore  
}  
  
relocationCancel RANAP-ELEMENTARY-PROCEDURE ::= {  
  INITIATING MESSAGE RelocationCancel  
  SUCCESSFUL OUTCOME RelocationCancelAcknowledge  
  PROCEDURE CODE id-RelocationCancel  
  CRITICALITY ignore  
}  
  
srns-ContextTransfer RANAP-ELEMENTARY-PROCEDURE ::= {  
  INITIATING MESSAGE SRNS-ContextRequest  
  SUCCESSFUL OUTCOME SRNS-ContextResponse  
  PROCEDURE CODE id-SRNS-ContextTransfer  
  CRITICALITY ignore  
}  
  
securityModeControl RANAP-ELEMENTARY-PROCEDURE ::= {  
  INITIATING MESSAGE SecurityModeCommand  
  SUCCESSFUL OUTCOME SecurityModeComplete  
  UNSUCCESSFUL OUTCOME SecurityModeReject  
  PROCEDURE CODE id-SecurityModeControl  
  CRITICALITY ignore  
}  
  
dataVolumeReport RANAP-ELEMENTARY-PROCEDURE ::= {  
  INITIATING MESSAGE DataVolumeReportRequest  
  SUCCESSFUL OUTCOME DataVolumeReport  
  PROCEDURE CODE id-DataVolumeReport  
  CRITICALITY ignore  
}  
  
cn-InformationBroadcast RANAP-ELEMENTARY-PROCEDURE ::= {  
  INITIATING MESSAGE CN-InformationBroadcastRequest  
  SUCCESSFUL OUTCOME CN-InformationBroadcastConfirm  
  UNSUCCESSFUL OUTCOME CN-InformationBroadcastReject  
  PROCEDURE CODE id-CN-InformationBroadcast
```

```
    CRITICALITY ignore
  }

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

rAB-ReleaseRequest RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE RAB-ReleaseRequest
  PROCEDURE CODE id-RAB-ReleaseRequest
  CRITICALITY ignore
}

iu-ReleaseRequest RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE Iu-ReleaseRequest
  PROCEDURE CODE id-Iu-ReleaseRequest
  CRITICALITY ignore
}

relocationDetect RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE RelocationDetect
  PROCEDURE CODE id-RelocationDetect
  CRITICALITY ignore
}

relocationComplete RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE RelocationComplete
  PROCEDURE CODE id-RelocationComplete
  CRITICALITY ignore
}

paging RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE Paging
  PROCEDURE CODE id-Paging
  CRITICALITY ignore
}

commonID RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE CommonID
  PROCEDURE CODE id-CommonID
  CRITICALITY ignore
}

cN-InvokeTrace RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE CN-InvokeTrace
  PROCEDURE CODE id-CN-InvokeTrace
  CRITICALITY ignore
}
```

```
}  
  
cN-DeactivateTrace RANAP-ELEMENTARY-PROCEDURE ::= {  
  INITIATING MESSAGE CN-DeactivateTrace  
  PROCEDURE CODE      id-CN-DeactivateTrace  
  CRITICALITY         ignore  
}  
  
locationReportingControl RANAP-ELEMENTARY-PROCEDURE ::= {  
  INITIATING MESSAGE LocationReportingControl  
  PROCEDURE CODE      id-LocationReportingControl  
  CRITICALITY         ignore  
}  
  
locationReport RANAP-ELEMENTARY-PROCEDURE ::= {  
  INITIATING MESSAGE LocationReport  
  PROCEDURE CODE      id-LocationReport  
  CRITICALITY         ignore  
}  
  
initialUE-Message RANAP-ELEMENTARY-PROCEDURE ::= {  
  INITIATING MESSAGE InitialUE-Message  
  PROCEDURE CODE      id-InitialUE-Message  
  CRITICALITY         ignore  
}  
  
directTransfer RANAP-ELEMENTARY-PROCEDURE ::= {  
  INITIATING MESSAGE DirectTransfer  
  PROCEDURE CODE      id-DirectTransfer  
  CRITICALITY         ignore  
}  
  
overloadControl RANAP-ELEMENTARY-PROCEDURE ::= {  
  INITIATING MESSAGE Overload  
  PROCEDURE CODE      id-OverloadControl  
  CRITICALITY         ignore  
}  
  
errorIndication RANAP-ELEMENTARY-PROCEDURE ::= {  
  INITIATING MESSAGE ErrorIndication  
  PROCEDURE CODE      id-ErrorIndication  
  CRITICALITY         ignore  
}  
  
srns-DataForward RANAP-ELEMENTARY-PROCEDURE ::= {  
  INITIATING MESSAGE SRNS-DataForwardCommand  
  PROCEDURE CODE      id-SRNS-DataForward  
  CRITICALITY         ignore  
}
```

```

forwardSRNS-Context RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE ForwardSRNS-Context
  PROCEDURE CODE id-ForwardSRNS-Context
  CRITICALITY ignore
}

rAB-Assignment RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE RAB-AssignmentRequest
  OUTCOME RAB-AssignmentResponse
  PROCEDURE CODE id-rAB-Assignment
  CRITICALITY ignore
}

privateMessage RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE PrivateMessage

  PROCEDURE CODE id-privateMessage
  CRITICALITY ignore
}

resetResource RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE ResetResource
  SUCCESSFUL OUTCOME ResetResourceAcknowledge
  PROCEDURE CODE id-ResetResource
  CRITICALITY ignore
}

rANAP-Relocation RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE RANAP-RelocationInformation
  PROCEDURE CODE id-rANAP-Relocation
  CRITICALITY ignore
}

END
-- *****
--
-- Elementary Procedure definitions
--
-- *****

RANAP-PDU-Descriptions --- { object identifier to be allocated } ---
DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

```



```
IMPORTS
—— Criticality,
—— ProcedureCode
FROM RANAP-CommonDataTypes

—— Iu-ReleaseCommand,
—— Iu-ReleaseComplete,
—— RelocationCommand,
—— RelocationPreparationFailure,
—— RelocationRequired,
—— RelocationRequest,
—— RelocationRequestAcknowledge,
—— RelocationFailure,
—— RelocationCancel,
—— RelocationCancelAcknowledge,
—— SRNS-ContextRequest,
—— SRNS-ContextResponse,
—— SecurityModeCommand,
—— SecurityModeComplete,
—— SecurityModeReject,
—— DataVolumeReportRequest,
—— DataVolumeReport,
—— CN-InformationBroadcastRequest,
—— CN-InformationBroadcastConfirm,
—— CN-InformationBroadcastReject,
—— Reset,
—— ResetAcknowledge,
—— RAB-ReleaseRequest,
—— Iu-ReleaseRequest,
—— RelocationDetect,
—— RelocationComplete,
—— Paging,
—— CommonID,
—— CN-InvokeTrace,
—— CN-DeactivateTrace,
—— LocationReportingControl,
—— LocationReport,
—— InitialUE-Message,
—— DirectTransfer,
—— Overload,
—— ErrorIndication,
—— SRNS-DataForwardCommand,
—— ForwardSRNS-Context,
—— RAB-AssignmentRequest,
—— RAB-AssignmentResponse,
—— PrivateMessage,
—— ResetResource,
—— ResetResourceAcknowledge,
—— RANAP-RelocationInformation
```

```

FROM RANAP-PDU-Contents

id-CN-DeactivateTrace,
id-CN-InformationBroadcast,
id-CN-InvokeTrace,
id-CommonID,
id-DataVolumeReport,
id-DirectTransfer,
id-ErrorIndication,
id-ForwardSRNS-Context,
id-InitialUE-Message,
id-Iu-Release,
id-Iu-ReleaseRequest,
id-KeyStatus,
id-LocationReport,
id-LocationReportingControl,
id-OverloadControl,
id-Paging,
id-privateMessage,
id-RAB-Assignment,
id-RAB-ReleaseRequest,
id-RANAP-Relocation,
id-RelocationCancel,
id-RelocationComplete,
id-RelocationDetect,
id-RelocationPreparation,
id-RelocationResourceAllocation,
id-Reset,
id-SRNS-ContextTransfer,
id-SRNS-DataForward,
id-SecurityModeControl,
id-ResetResource

FROM RANAP-Constants;


*****


Interface Elementary Procedure Class


*****


RANAP-ELEMENTARY-PROCEDURE ::= CLASS {

&InitiatingMessage,
&SuccessfulOutcome OPTIONAL,
&UnsuccessfulOutcome OPTIONAL,
&Outcome OPTIONAL,
&procedureCode ProcedureCode UNIQUE,
&criticality Criticality DEFAULT ignore

}
WITH SYNTAX {

INITIATING MESSAGE &InitiatingMessage


```

```

--- [SUCCESSFUL_OUTCOME &SuccessfulOutcome}
--- {UNSUCCESSFUL_OUTCOME &UnsuccessfulOutcome}
--- {OUTCOME &Outcome}
--- PROCEDURE_CODE &procedureCode
--- {CRITICALITY &criticality}
}

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

RANAP_PDU ::= CHOICE {
--- initiatingMessage InitiatingMessage,
--- successfulOutcome SuccessfulOutcome,
--- unsuccessfulOutcome UnsuccessfulOutcome,
--- outcome Outcome,
--- ...
}

InitiatingMessage ::= SEQUENCE {
--- procedureCode RANAP_ELEMENTARY_PROCEDURE.&procedureCode ({RANAP_ELEMENTARY_PROCEDURES}),
--- criticality RANAP_ELEMENTARY_PROCEDURE.&criticality ({RANAP_ELEMENTARY_PROCEDURES}{@procedureCode}),
--- value RANAP_ELEMENTARY_PROCEDURE.&InitiatingMessage ({RANAP_ELEMENTARY_PROCEDURES}{@procedureCode})
}

SuccessfulOutcome ::= SEQUENCE {
--- procedureCode RANAP_ELEMENTARY_PROCEDURE.&procedureCode ({RANAP_ELEMENTARY_PROCEDURES}),
--- criticality RANAP_ELEMENTARY_PROCEDURE.&criticality ({RANAP_ELEMENTARY_PROCEDURES}{@procedureCode}),
--- value RANAP_ELEMENTARY_PROCEDURE.&SuccessfulOutcome ({RANAP_ELEMENTARY_PROCEDURES}{@procedureCode})
}

UnsuccessfulOutcome ::= SEQUENCE {
--- procedureCode RANAP_ELEMENTARY_PROCEDURE.&procedureCode ({RANAP_ELEMENTARY_PROCEDURES}),
--- criticality RANAP_ELEMENTARY_PROCEDURE.&criticality ({RANAP_ELEMENTARY_PROCEDURES}{@procedureCode}),
--- value RANAP_ELEMENTARY_PROCEDURE.&UnsuccessfulOutcome ({RANAP_ELEMENTARY_PROCEDURES}{@procedureCode})
}

Outcome ::= SEQUENCE {
--- procedureCode RANAP_ELEMENTARY_PROCEDURE.&procedureCode ({RANAP_ELEMENTARY_PROCEDURES}),
--- criticality RANAP_ELEMENTARY_PROCEDURE.&criticality ({RANAP_ELEMENTARY_PROCEDURES}{@procedureCode}),
--- value RANAP_ELEMENTARY_PROCEDURE.&Outcome ({RANAP_ELEMENTARY_PROCEDURES}{@procedureCode})
}

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

```

```

RANAP-ELEMENTARY-PROCEDURES-RANAP-ELEMENTARY-PROCEDURE ::= {
  RANAP-ELEMENTARY-PROCEDURES-CLASS-1 |
  RANAP-ELEMENTARY-PROCEDURES-CLASS-2 |
  RANAP-ELEMENTARY-PROCEDURES-CLASS-3 ,
  ...
}

RANAP-ELEMENTARY-PROCEDURES-CLASS-1-RANAP-ELEMENTARY-PROCEDURE ::= {
  iu-Release |
  relocationPreparation |
  relocationResourceAllocation |
  relocationCancel |
  sRNS-ContextTransfer |
  securityModeControl |
  dataVolumeReport |
  eN-InformationBroadcast |
  reset |
  resetResource ,
  ...
}

RANAP-ELEMENTARY-PROCEDURES-CLASS-2-RANAP-ELEMENTARY-PROCEDURE ::= {
  rAB-ReleaseRequest |
  iu-ReleaseRequest |
  relocationDetect |
  relocationComplete |
  paging |
  commonID |
  eN-InvokeTrace |
  eN-DeactivateTrace |
  locationReportingControl |
  locationReport |
  initialUE-Message |
  directTransfer |
  overloadControl |
  errorIndication |
  sRNS-DataForward |
  forwardSRNS-Context |
  privateMessage |
  rANAP-Relocation ,
  ...
}

RANAP-ELEMENTARY-PROCEDURES-CLASS-3-RANAP-ELEMENTARY-PROCEDURE ::= {
  rAB-Assignment ,
  ...
}

```

```
-----
--
-- Interface Elementary Procedures
--
-----
iu-Release-RANAP-ELEMENTARY-PROCEDURE ::= {
-- INITIATING MESSAGE Iu-ReleaseCommand
-- SUCCESSFUL OUTCOME Iu-ReleaseComplete
-- PROCEDURE CODE id-Iu-Release
-- CRITICALITY ignore
}

relocationPreparation-RANAP-ELEMENTARY-PROCEDURE ::= {
-- INITIATING MESSAGE RelocationRequired
-- SUCCESSFUL OUTCOME RelocationCommand
-- UNSUCCESSFUL OUTCOME RelocationPreparationFailure
-- PROCEDURE CODE id-RelocationPreparation
-- CRITICALITY ignore
}

relocationResourceAllocation-RANAP-ELEMENTARY-PROCEDURE ::= {
-- INITIATING MESSAGE RelocationRequest
-- SUCCESSFUL OUTCOME RelocationRequestAcknowledge
-- UNSUCCESSFUL OUTCOME RelocationFailure
-- PROCEDURE CODE id-RelocationResourceAllocation
-- CRITICALITY ignore
}

relocationCancel-RANAP-ELEMENTARY-PROCEDURE ::= {
-- INITIATING MESSAGE RelocationCancel
-- SUCCESSFUL OUTCOME RelocationCancelAcknowledge
-- PROCEDURE CODE id-RelocationCancel
-- CRITICALITY ignore
}

srns-ContextTransfer-RANAP-ELEMENTARY-PROCEDURE ::= {
-- INITIATING MESSAGE SRNS-ContextRequest
-- SUCCESSFUL OUTCOME SRNS-ContextResponse
-- PROCEDURE CODE id-SRNS-ContextTransfer
-- CRITICALITY ignore
}

securityModeControl-RANAP-ELEMENTARY-PROCEDURE ::= {
-- INITIATING MESSAGE SecurityModeCommand
-- SUCCESSFUL OUTCOME SecurityModeComplete
-- UNSUCCESSFUL OUTCOME SecurityModeReject
-- PROCEDURE CODE id-SecurityModeControl
-- CRITICALITY ignore
}
}
```

```
-----
dataVolumeReport RANAP-ELEMENTARY-PROCEDURE ::= {
  ----- INITIATING MESSAGE DataVolumeReportRequest
  ----- SUCCESSFUL OUTCOME DataVolumeReport
  ----- PROCEDURE CODE id-DataVolumeReport
  ----- CRITICALITY ignore
}
-----
eN-InformationBroadcast RANAP-ELEMENTARY-PROCEDURE ::= {
  ----- INITIATING MESSAGE CN-InformationBroadcastRequest
  ----- SUCCESSFUL OUTCOME CN-InformationBroadcastConfirm
  ----- UNSUCCESSFUL OUTCOME CN-InformationBroadcastReject
  ----- PROCEDURE CODE id-CN-InformationBroadcast
  ----- CRITICALITY ignore
}
-----
reset RANAP-ELEMENTARY-PROCEDURE ::= {
  ----- INITIATING MESSAGE Reset
  ----- SUCCESSFUL OUTCOME ResetAcknowledge
  ----- PROCEDURE CODE id-Reset
  ----- CRITICALITY ignore
}
-----
rAB-ReleaseRequest RANAP-ELEMENTARY-PROCEDURE ::= {
  ----- INITIATING MESSAGE RAB-ReleaseRequest
  ----- PROCEDURE CODE id-RAB-ReleaseRequest
  ----- CRITICALITY ignore
}
-----
iu-ReleaseRequest RANAP-ELEMENTARY-PROCEDURE ::= {
  ----- INITIATING MESSAGE Iu-ReleaseRequest
  ----- PROCEDURE CODE id-Iu-ReleaseRequest
  ----- CRITICALITY ignore
}
-----
relocationDetect RANAP-ELEMENTARY-PROCEDURE ::= {
  ----- INITIATING MESSAGE RelocationDetect
  ----- PROCEDURE CODE id-RelocationDetect
  ----- CRITICALITY ignore
}
-----
relocationComplete RANAP-ELEMENTARY-PROCEDURE ::= {
  ----- INITIATING MESSAGE RelocationComplete
  ----- PROCEDURE CODE id-RelocationComplete
  ----- CRITICALITY ignore
}
-----
paging RANAP-ELEMENTARY-PROCEDURE ::= {
  ----- INITIATING MESSAGE Paging
  ----- PROCEDURE CODE id-Paging
}
```

```
—— CRITICALITY —— ignore
}

commonID-RANAP-ELEMENTARY-PROCEDURE ::= {
—— INITIATING MESSAGE —— CommonID
—— PROCEDURE CODE —— id-CommonID
—— CRITICALITY —— ignore
}

eN-InvokeTrace-RANAP-ELEMENTARY-PROCEDURE ::= {
—— INITIATING MESSAGE —— CN-InvokeTrace
—— PROCEDURE CODE —— id-CN-InvokeTrace
—— CRITICALITY —— ignore
}

eN-DeactivateTrace-RANAP-ELEMENTARY-PROCEDURE ::= {
—— INITIATING MESSAGE —— CN-DeactivateTrace
—— CODE —— id-CN-DeactivateTrace
—— CRITICALITY —— ignore
}

locationReportingControl-RANAP-ELEMENTARY-PROCEDURE ::= {
—— INITIATING MESSAGE —— LocationReportingControl
—— PROCEDURE CODE —— id-LocationReportingControl
—— CRITICALITY —— ignore
}

locationReport-RANAP-ELEMENTARY-PROCEDURE ::= {
—— INITIATING MESSAGE —— LocationReport
—— PROCEDURE CODE —— id-LocationReport
—— CRITICALITY —— ignore
}

initialUE-Message-RANAP-ELEMENTARY-PROCEDURE ::= {
—— INITIATING MESSAGE —— InitialUE-Message
—— PROCEDURE CODE —— id-InitialUE-Message
—— CRITICALITY —— ignore
}

directTransfer-RANAP-ELEMENTARY-PROCEDURE ::= {
—— INITIATING MESSAGE —— DirectTransfer
—— PROCEDURE CODE —— id-DirectTransfer
—— CRITICALITY —— ignore
}

overloadControl-RANAP-ELEMENTARY-PROCEDURE ::= {
—— INITIATING MESSAGE —— Overload
—— PROCEDURE CODE —— id-OverloadControl
—— CRITICALITY —— ignore
}
```

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

SRNS-DataForward RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE SRNS-DataForwardCommand
  PROCEDURE CODE id-SRNS-DataForward
  CRITICALITY ignore
}

forwardSRNS-Context RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE ForwardSRNS-Context
  PROCEDURE CODE id-ForwardSRNS-Context
  CRITICALITY ignore
}

RAB-Assignment RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE RAB-AssignmentRequest
  OUTCOME RAB-AssignmentResponse
  PROCEDURE CODE id-RAB-Assignment
  CRITICALITY ignore
}

privateMessage RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE PrivateMessage

  PROCEDURE CODE id-privateMessage
  CRITICALITY ignore
}

resetResource RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE ResetResource
  SUCCESSFUL-OUTCOME ResetResourceAcknowledge
  CODE id-ResetResource
  CRITICALITY ignore
}

RANAP-Relocation RANAP-ELEMENTARY-PROCEDURE ::= {
  INITIATING MESSAGE RANAP-RelocationInformation
  CODE id-RANAP-Relocation
  CRITICALITY ignore
}

END
```


9.3.3 PDU Definitions

```
-- *****
--
-- PDU definitions for RANAP.
--
-- *****

RANAP-PDU-Contents -- { object identifier to be allocated }--
DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS
    DataVolumeReference,
    AreaIdentity,
    CN-BroadcastArea,
    CN-DomainIndicator,
    Cause,
    CriticalityDiagnostics,
    ChosenEncryptionAlgorithm,
    ChosenIntegrityProtectionAlgorithm,
    ChosenUP-Version,
    ClassmarkInformation2,
    ClassmarkInformation3,
    DL-GTP-PDU-SequenceNumber,
    DL-N-PDU-SequenceNumber,
    DataVolumeReportingIndication,
    DRX-CycleLengthCoefficient,
    EncryptionInformation,
    GlobalRNC-ID,
    IntegrityProtectionInformation,
    IuSignallingConnectionIdentifier,
    IuTransportAssociation,
    KeyStatus,
    L3-Information,
    LAI,
    NAS-BroadcastInformation,
    InformationIdentity,
    InformationPriority,
    InformationControl,
    NAS-PDU,
    NAS-SynchronisationIndicator,
    NonSearchingIndication,
```

NumberOfSteps,
OMC-ID,
OldBSS-ToNewBSS-Information,
PagingAreaID,
PagingCause,
PDP-TypeInformation,
PermanentNAS-UE-ID,
RAB-ID,
RAB-Parameters,
RAC,
RelocationType,
RequestType,
SAI,
SAPI,
SourceID,
SourceRNC-ToTargetRNC-TransparentContainer,
TargetID,
TargetRNC-ToSourceRNC-TransparentContainer,
TemporaryUE-ID,
TraceReference,
TraceType,
UnsuccessfullyTransmittedDataVolume,
TransportLayerAddress,
TriggerID,
UE-ID,
UL-GTP-PDU-SequenceNumber,
UL-N-PDU-SequenceNumber,
UP-ModeVersions,
UserPlaneMode
FROM RANAP-IES

PrivateIE-Container{},
ProtocolExtensionContainer{},
ProtocolIE-ContainerList{},
ProtocolIE-ContainerPair{},
ProtocolIE-ContainerPairList{},
ProtocolIE-Container{},
RANAP-PRIVATE-IES,
RANAP-PROTOCOL-EXTENSION,
RANAP-PROTOCOL-IES,
RANAP-PROTOCOL-IES-PAIR
FROM RANAP-Containers

maxNrOfDTs,
maxNrOfErrors,
maxNrOfIuSigConIds,
maxNrOfPieces,
maxNrOfRABs,
maxNrOfVol,

id-AreaIdentity,
id-CN-BroadcastInformationPiece,
id-CN-BroadcastInformationPieceList,
id-CN-DomainIndicator,
id-Cause,
id-ChosenEncryptionAlgorithm,
id-ChosenIntegrityProtectionAlgorithm,
id-ClassmarkInformation2,
id-ClassmarkInformation3,
id-CriticalityDiagnostics,
id-DRX-CycleLengthCoefficient,
id-DirectTransferInformationItem-RANAP-RelocInf,
id-DirectTransferInformationList-RANAP-RelocInf,
id-DL-GTP-PDU-SequenceNumber,
id-EncryptionInformation,
id-GlobalRNC-ID,
id-IntegrityProtectionInformation,
id-IuSigConId, id-IuSigConIdItem,
id-IuSigConIdList,
id-IuTransportAssociation,
id-KeyStatus,
id-L3-Information,
id-LAI,
id-NAS-PDU,
id-NonSearchingIndication,
id-NumberOfSteps,
id-OMC-ID,
id-OldBSS-ToNewBSS-Information,
id-PagingAreaID,
id-PagingCause,
id-PermanentNAS-UE-ID,
id-RAB-ContextItem,
id-RAB-ContextList,
id-RAB-ContextFailedtoTransferItem,
id-RAB-ContextFailedtoTransferList,
id-RAB-ContextItem-RANAP-RelocInf,
id-RAB-ContextList-RANAP-RelocInf,
id-RAB-DataForwardingItem,
id-RAB-DataForwardingItem-SRNS-CtxReq,
id-RAB-DataForwardingList,
id-RAB-DataForwardingList-SRNS-CtxReq,
id-RAB-DataVolumeReportItem,
id-RAB-DataVolumeReportList,
id-RAB-DataVolumeReportRequestItem,
id-RAB-DataVolumeReportRequestList,
id-RAB-FailedItem,
id-RAB-FailedList,
id-RAB-FailedtoReportItem,
id-RAB-FailedtoReportList,

```

    id-RAB-ID,
    id-RAB-QueuedItem,
    id-RAB-QueuedList,
    id-RAB-ReleaseFailedList,
    id-RAB-ReleaseItem,
    id-RAB-ReleasedItem-IuRelComp,
    id-RAB-ReleaseList,
    id-RAB-ReleasedItem,
    id-RAB-ReleasedList,
    id-RAB-ReleasedList-IuRelComp,
    id-RAB-RelocationReleaseItem,
    id-RAB-RelocationReleaseList,
    id-RAB-SetupItem-RelocReq,
    id-RAB-SetupItem-RelocReqAck,
    id-RAB-SetupList-RelocReq,
    id-RAB-SetupList-RelocReqAck,
    id-RAB-SetupOrModifiedItem,
    id-RAB-SetupOrModifiedList,
    id-RAB-SetupOrModifyItem,
    id-RAB-SetupOrModifyList,
    id-RAC,
    id-RelocationType,
    id-RequestType,
    id-SAI,
    id-SAPI,
    id-SourceID,
    id-SourceRNC-ToTargetRNC-TransparentContainer,
    id-TargetID,
    id-TargetRNC-ToSourceRNC-TransparentContainer,
    id-TemporaryUE-ID,
    id-TraceReference,
    id-TraceType,
    id-TransportLayerAddress,
    id-TriggerID,
    id-UE-ID,
    id-UL-GTP-PDU-SequenceNumber
FROM RANAP-Constants;

-- *****
--
-- Common Container Lists
--
-- *****

RAB-IE-ContainerList          { RANAP-PROTOCOL-IES      : IEsSetParam } ::= ProtocolIE-ContainerList { 1, maxNrOfRABs, { IEsSetParam } }
RAB-IE-ContainerPairList     { RANAP-PROTOCOL-IES-PAIR : IEsSetParam } ::= ProtocolIE-ContainerPairList { 1, maxNrOfRABs, { IEsSetParam } }
ProtocolError-IE-ContainerList { RANAP-PROTOCOL-IES      : IEsSetParam } ::= ProtocolIE-ContainerList { 1, maxNrOfRABs, { IEsSetParam } }
CN-BroadcastInfPiece-IE-ContainerList { RANAP-PROTOCOL-IES      : IEsSetParam } ::= ProtocolIE-ContainerList { 1, maxNrOfPieces, { IEsSetParam } }
IuSigConId-IE-ContainerList  { RANAP-PROTOCOL-IES      : IEsSetParam } ::= ProtocolIE-ContainerList { 1, maxNrOfIuSigConIds, { IEsSetParam } }

```

```

DirectTransfer-IE-ContainerList { RANAP-PROTOCOL-IES : IEsSetParam } ::= ProtocolIE-ContainerList { 1, maxNrOfDTs, {IEsSetParam} }

-- *****
--
-- Iu RELEASE ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Iu Release Command
--
-- *****

Iu-ReleaseCommand ::= SEQUENCE {
    protocolIEs ProtocolIE-Container { {Iu-ReleaseCommandIEs} },
    protocolExtensions ProtocolExtensionContainer { {Iu-ReleaseCommandExtensions} } OPTIONAL,
    ...
}

Iu-ReleaseCommandIEs RANAP-PROTOCOL-IES ::= {
    { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory },
    ...
}

Iu-ReleaseCommandExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- Iu Release Complete
--
-- *****

Iu-ReleaseComplete ::= SEQUENCE {
    protocolIEs ProtocolIE-Container { {Iu-ReleaseCompleteIEs} },
    protocolExtensions ProtocolExtensionContainer { {Iu-ReleaseCompleteExtensions} } OPTIONAL,
    ...
}

Iu-ReleaseCompleteIEs RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-DataVolumeReportList CRITICALITY ignore TYPE RAB-DataVolumeReportList PRESENCE conditional
      -- This group is only present if data volume reporting for PS domain is required -- } |
    { ID id-RAB-ReleasedList-IuRelComp CRITICALITY ignore TYPE RAB-ReleasedList-IuRelComp PRESENCE conditional
      -- This group is only present for RABs towards the PS domain when the release was initiated by UTRAN -- } |
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

```

```

RAB-DataVolumeReportList ::= RAB-IE-ContainerList { {RAB-DataVolumeReportItemIEs} }

RAB-DataVolumeReportItemIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-DataVolumeReportItem          CRITICALITY ignore  TYPE RAB-DataVolumeReportItem          PRESENCE mandatory },
  ...
}

RAB-DataVolumeReportItem ::= SEQUENCE {
  rAB-ID          RAB-ID,
  dl-UnsuccessfullyTransmittedDataVolume  DataVolumeList  OPTIONAL
  -- This IE is only present if data volume reporting for PS domain is required --,
  iE-Extensions  ProtocolExtensionContainer { {RAB-DataVolumeReportItem-ExtIEs} }  OPTIONAL,
  ...
}

RAB-DataVolumeReportItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

RAB-ReleasedList-IuRelComp ::= RAB-IE-ContainerList { {RAB-ReleasedItem-IuRelComp-IEs} }

RAB-ReleasedItem-IuRelComp-IEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-ReleasedItem-IuRelComp          CRITICALITY ignore  TYPE RAB-ReleasedItem-IuRelComp          PRESENCE mandatory },
  ...
}

RAB-ReleasedItem-IuRelComp ::= SEQUENCE {
  rAB-ID          RAB-ID,
  dL-GTP-PDU-SequenceNumber  DL-GTP-PDU-SequenceNumber,
  uL-GTP-PDU-SequenceNumber  UL-GTP-PDU-SequenceNumber,
  iE-Extensions  ProtocolExtensionContainer { {RAB-ReleasedItem-IuRelComp-ExtIEs} }  OPTIONAL,
  ...
}

RAB-ReleasedItem-IuRelComp-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

Iu-ReleaseCompleteExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- RELOCATION PREPARATION ELEMENTARY PROCEDURE
--
-- *****
-- *****

```

```

--
-- Relocation Required
--
-- *****
RelocationRequired ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { {RelocationRequiredIEs} },
    protocolExtensions   ProtocolExtensionContainer { {RelocationRequiredExtensions} } OPTIONAL,
    ...
}

RelocationRequiredIEs RANAP-PROTOCOL-IES ::= {
    { ID id-RelocationType          CRITICALITY ignore TYPE RelocationType          PRESENCE mandatory } |
    { ID id-Cause                    CRITICALITY ignore TYPE Cause                    PRESENCE mandatory } |
    { ID id-SourceID                 CRITICALITY ignore TYPE SourceID                 PRESENCE mandatory } |
    { ID id-TargetID                 CRITICALITY reject TYPE TargetID                 PRESENCE mandatory } |
    { ID id-ClassmarkInformation2     CRITICALITY ignore TYPE ClassmarkInformation2     PRESENCE conditional
    -- This is only present when initiating an inter system handover towards GSM BSC -- } |
    { ID id-ClassmarkInformation3     CRITICALITY ignore TYPE ClassmarkInformation3     PRESENCE conditional
    -- This is only present when initiating an inter system handover towards GSM BSC -- } |
    { ID id-SourceRNC-ToTargetRNC-TransparentContainer
    CRITICALITY reject TYPE SourceRNC-ToTargetRNC-TransparentContainer PRESENCE conditional
    -- This IE shall be present when initiating relocation of SRNS -- } |
    { ID id-OldBSS-ToNewBSS-Information CRITICALITY ignore TYPE OldBSS-ToNewBSS-Information PRESENCE conditional
    -- This is only present when initiating an inter system handover towards GSM BSC -- } ,
    ...
}

RelocationRequiredExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- Relocation Command
--
-- *****
RelocationCommand ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { {RelocationCommandIEs} },
    protocolExtensions   ProtocolExtensionContainer { {RelocationCommandExtensions} } OPTIONAL,
    ...
}

RelocationCommandIEs RANAP-PROTOCOL-IES ::= {
    { ID id-TargetRNC-ToSourceRNC-TransparentContainer
    CRITICALITY reject TYPE TargetRNC-ToSourceRNC-TransparentContainer PRESENCE conditional
    -- This IE shall be included if it is received by the CN from the relocation target. -- } |
    { ID id-L3-Information            CRITICALITY ignore TYPE L3-Information            PRESENCE conditional
    -- This IE shall be included if it is received by the CN from the relocation target. -- } |
}

```

```

    { ID id-RAB-RelocationReleaseList      CRITICALITY ignore  TYPE RAB-RelocationReleaseList      PRESENCE optional } |
    { ID id-RAB-DataForwardingList         CRITICALITY ignore  TYPE RAB-DataForwardingList         PRESENCE conditional
    -- This group if applicable is only present for RABs towards the PS domain -- } |
    { ID id-CriticalityDiagnostics         CRITICALITY ignore  TYPE CriticalityDiagnostics         PRESENCE optional },
    ...
}

RAB-RelocationReleaseList ::= RAB-IE-ContainerList { {RAB-RelocationReleaseItemIEs} }

RAB-RelocationReleaseItemIEs RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-RelocationReleaseItem      CRITICALITY ignore  TYPE RAB-RelocationReleaseItem      PRESENCE mandatory },
    ...
}

RAB-RelocationReleaseItem ::= SEQUENCE {
    rAB-ID                                RAB-ID,
    iE-Extensions                          ProtocolExtensionContainer { {RAB-RelocationReleaseItem-ExtIEs} } OPTIONAL,
    ...
}

RAB-RelocationReleaseItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RAB-DataForwardingList ::= RAB-IE-ContainerList { {RAB-DataForwardingItemIEs} }

RAB-DataForwardingItemIEs RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-DataForwardingItem         CRITICALITY ignore  TYPE RAB-DataForwardingItem         PRESENCE mandatory },
    ...
}

RAB-DataForwardingItem ::= SEQUENCE {
    rAB-ID                                RAB-ID,
    transportLayerAddress                  TransportLayerAddress,
    iuTransportAssociation                  IuTransportAssociation,
    iE-Extensions                          ProtocolExtensionContainer { {RAB-DataForwardingItem-ExtIEs} } OPTIONAL,
    ...
}

RAB-DataForwardingItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RelocationCommandExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- Relocation Preparation Failure

```



```

--
-- *****
RelocationPreparationFailure ::= SEQUENCE {
  protocolIEs      ProtocolIE-Container    { {RelocationPreparationFailureIEs} },
  protocolExtensions ProtocolExtensionContainer { {RelocationPreparationFailureExtensions} } OPTIONAL,
  ...
}

RelocationPreparationFailureIEs RANAP-PROTOCOL-IES ::= {
  { ID id-Cause          CRITICALITY ignore TYPE Cause          PRESENCE mandatory } |
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
  ...
}

RelocationPreparationFailureExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- RELOCATION RESOURCE ALLOCATION ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Relocation Request
--
-- *****

RelocationRequest ::= SEQUENCE {
  protocolIEs      ProtocolIE-Container    { {RelocationRequestIEs} },
  protocolExtensions ProtocolExtensionContainer { {RelocationRequestExtensions} } OPTIONAL,
  ...
}

RelocationRequestIEs RANAP-PROTOCOL-IES ::= {
  { ID id-PermanentNAS-UE-ID          CRITICALITY ignore TYPE PermanentNAS-UE-ID          PRESENCE conditional
  -- This IE is only present if available at the sending side -- } |
  { ID id-Cause          CRITICALITY ignore TYPE Cause          PRESENCE mandatory } |
  { ID id-CN-DomainIndicator CRITICALITY ignore TYPE CN-DomainIndicator PRESENCE mandatory } |
  { ID id-SourceRNC-ToTargetRNC-TransparentContainer
  CRITICALITY reject TYPE SourceRNC-ToTargetRNC-TransparentContainer PRESENCE mandatory } |
  { ID id-RAB-SetupList-RelocReq CRITICALITY reject TYPE RAB-SetupList-RelocReq PRESENCE optional } |
  { ID id-IntegrityProtectionInformation CRITICALITY ignore TYPE IntegrityProtectionInformation PRESENCE conditional
  -- This IE is only present if available at the sending side -- } |
  { ID id-EncryptionInformation CRITICALITY ignore TYPE EncryptionInformation PRESENCE optional } |
  { ID id-IuSigConId CRITICALITY ignore TYPE IuSignallingConnectionIdentifier PRESENCE mandatory },
  ...
}

```

```

}
RAB-SetupList-RelocReq ::= RAB-IE-ContainerList { {RAB-SetupItem-RelocReq-IEs} }
RAB-SetupItem-RelocReq-IEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-SetupItem-RelocReq CRITICALITY reject TYPE RAB-SetupItem-RelocReq PRESENCE mandatory },
  ...
}
RAB-SetupItem-RelocReq ::= SEQUENCE {
  rAB-ID RAB-ID,
  nAS-SynchronisationIndicator NAS-SynchronisationIndicator OPTIONAL
  -- This IE is present if the relevant NAS information is provided by the CN --,
  rAB-Parameters RAB-Parameters,
  dataVolumeReportingIndication DataVolumeReportingIndication OPTIONAL
  -- This IE is only present if available at the sending side --,
  pDP-TypeInformation PDP-TypeInformation OPTIONAL
  -- This IE is only present for RABs towards the PS domain --,
  userPlaneInformation UserPlaneInformation,
  transportLayerAddress TransportLayerAddress,
  iuTransportAssociation IuTransportAssociation,
  iE-Extensions ProtocolExtensionContainer { {RAB-SetupItem-RelocReq-ExtIEs} } OPTIONAL,
  ...
}
RAB-SetupItem-RelocReq-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}
UserPlaneInformation ::= SEQUENCE {
  userPlaneMode UserPlaneMode,
  uP-ModeVersions UP-ModeVersions,
  iE-Extensions ProtocolExtensionContainer { {UserPlaneInformation-ExtIEs} } OPTIONAL,
  ...
}
UserPlaneInformation-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}
RelocationRequestExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}
-- *****
--
-- Relocation Request Acknowledge
--
-- *****

```

```

RelocationRequestAcknowledge ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container      { {RelocationRequestAcknowledgeIEs} },
  protocolExtensions  ProtocolExtensionContainer { {RelocationRequestAcknowledgeExtensions} } OPTIONAL,
  ...
}

RelocationRequestAcknowledgeIEs RANAP-PROTOCOL-IES ::= {
  { ID id-TargetRNC-ToSourceRNC-TransparentContainer
    CRITICALITY ignore TYPE TargetRNC-ToSourceRNC-TransparentContainer PRESENCE conditional
    -- Must be included if applicapble and if not sent via the other CN -- } |
  { ID id-RAB-SetupList-RelocReqAck          CRITICALITY ignore TYPE RAB-SetupList-RelocReqAck          PRESENCE optional } |
  { ID id-RAB-FailedList                     CRITICALITY ignore TYPE RAB-FailedList                     PRESENCE optional } |
  { ID id-ChosenIntegrityProtectionAlgorithm CRITICALITY ignore TYPE ChosenIntegrityProtectionAlgorithm PRESENCE conditional
    -- This IE is only present if available at the sending side -- } |
  { ID id-ChosenEncryptionAlgorithm          CRITICALITY ignore TYPE ChosenEncryptionAlgorithm          PRESENCE optional } |
  { ID id-CriticalityDiagnostics             CRITICALITY ignore TYPE CriticalityDiagnostics             PRESENCE optional },
  ...
}

RAB-SetupList-RelocReqAck ::= RAB-IE-ContainerList { {RAB-SetupItem-RelocReqAck-IEs} }

RAB-SetupItem-RelocReqAck-IEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-SetupItem-RelocReqAck          CRITICALITY reject TYPE RAB-SetupItem-RelocReqAck          PRESENCE mandatory },
  ...
}

RAB-SetupItem-RelocReqAck ::= SEQUENCE {
  rAB-ID          RAB-ID,
  chosenUP-Version          ChosenUP-Version          OPTIONAL,
  transportLayerAddress      TransportLayerAddress      OPTIONAL,
  --This IE is only present for RABS towards the PS Domain
  iuTransportAssociation      IuTransportAssociation      OPTIONAL,
  --This IE is only present for RABS towards the PS Domain
  iE-Extensions             ProtocolExtensionContainer { {RAB-SetupItem-RelocReqAck-ExtIEs} } OPTIONAL,
  ...
}

RAB-SetupItem-RelocReqAck-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

RAB-FailedList ::= RAB-IE-ContainerList { {RAB-FailedItemIEs} }

RAB-FailedItemIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-FailedItem          CRITICALITY ignore TYPE RAB-FailedItem          PRESENCE mandatory },
  ...
}

RAB-FailedItem ::= SEQUENCE {
  rAB-ID          RAB-ID,

```

```

cause Cause,
iE-Extensions ProtocolExtensionContainer { {RAB-FailedItem-ExtIEs} } OPTIONAL,
...
}

RAB-FailedItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
...
}

RelocationRequestAcknowledgeExtensions RANAP-PROTOCOL-EXTENSION ::= {
...
}

-- *****
--
-- Relocation Failure
--
-- *****

RelocationFailure ::= SEQUENCE {
protocolIEs ProtocolIE-Container { {RelocationFailureIEs} },
protocolExtensions ProtocolExtensionContainer { {RelocationFailureExtensions} } OPTIONAL,
...
}

RelocationFailureIEs RANAP-PROTOCOL-IES ::= {
{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory } |
{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
...
}

RelocationFailureExtensions RANAP-PROTOCOL-EXTENSION ::= {
...
}

-- *****
--
-- RELOCATION CANCEL ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Relocation Cancel
--
-- *****

RelocationCancel ::= SEQUENCE {
protocolIEs ProtocolIE-Container { {RelocationCancelIEs} },
protocolExtensions ProtocolExtensionContainer { {RelocationCancelExtensions} } OPTIONAL,

```

```

    ...
}

RelocationCancelIEs RANAP-PROTOCOL-IES ::= {
    { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory },
    ...
}

RelocationCancelExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- Relocation Cancel Acknowledge
--
-- *****

RelocationCancelAcknowledge ::= SEQUENCE {
    protocolIEs ProtocolIE-Container { {RelocationCancelAcknowledgeIEs} },
    protocolExtensions ProtocolExtensionContainer { {RelocationCancelAcknowledgeExtensions} } OPTIONAL,
    ...
}

RelocationCancelAcknowledgeIEs RANAP-PROTOCOL-IES ::= {
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

RelocationCancelAcknowledgeExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- SRNS CONTEXT TRANSFER OPEARATION
--
-- *****

-- *****
--
-- SRNS Context Request
--
-- *****

SRNS-ContextRequest ::= SEQUENCE {
    protocolIEs ProtocolIE-Container { {SRNS-ContextRequestIEs} },
    protocolExtensions ProtocolExtensionContainer { {SRNS-ContextRequestExtensions} } OPTIONAL,
    ...
}

```

```

SRNS-ContextRequestIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-DataForwardingList-SRNS-CtxReq CRITICALITY ignore TYPE RAB-DataForwardingList-SRNS-CtxReq PRESENCE mandatory },
  ...
}

RAB-DataForwardingList-SRNS-CtxReq ::= RAB-IE-ContainerList { {RAB-DataForwardingItem-SRNS-CtxReq-IEs} }

RAB-DataForwardingItem-SRNS-CtxReq-IEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-DataForwardingItem-SRNS-CtxReq CRITICALITY ignore TYPE RAB-DataForwardingItem-SRNS-CtxReq PRESENCE mandatory },
  ...
}

RAB-DataForwardingItem-SRNS-CtxReq ::= SEQUENCE {
  rAB-ID RAB-ID,
  iE-Extensions ProtocolExtensionContainer { {RAB-DataForwardingItem-SRNS-CtxReq-ExtIEs} } OPTIONAL,
  ...
}

RAB-DataForwardingItem-SRNS-CtxReq-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

SRNS-ContextRequestExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- SRNS Context Response
--
-- *****

SRNS-ContextResponse ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {SRNS-ContextResponseIEs} },
  protocolExtensions ProtocolExtensionContainer { {SRNS-ContextResponseExtensions} } OPTIONAL,
  ...
}

SRNS-ContextResponseIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-ContextList CRITICALITY ignore TYPE RAB-ContextList PRESENCE conditional
    -- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
  { ID id-RAB-ContextFailedtoTransferList CRITICALITY ignore TYPE RAB-ContextFailedtoTransferList PRESENCE conditional
    -- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
  ...
}

RAB-ContextList ::= RAB-IE-ContainerList { {RAB-ContextItemIEs} }

```

```

RAB-ContextItemIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-ContextItem          CRITICALITY ignore  TYPE RAB-ContextItem          PRESENCE mandatory },
  ...
}

RAB-ContextItem ::= SEQUENCE {
  rAB-ID                RAB-ID,
  dl-GTP-PDU-SequenceNumber  DL-GTP-PDU-SequenceNumber,
  ul-GTP-PDU-SequenceNumber  UL-GTP-PDU-SequenceNumber,
  dl-N-PDU-SequenceNumber    DL-N-PDU-SequenceNumber,
  ul-N-PDU-SequenceNumber    UL-N-PDU-SequenceNumber,
  iE-Extensions          ProtocolExtensionContainer { {RAB-ContextItem-ExtIEs} }  OPTIONAL,
  ...
}

RAB-ContextItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

RAB-ContextFailedtoTransferList ::= RAB-IE-ContainerList { {RABs-ContextFailedtoTransferItemIEs} }

RABs-ContextFailedtoTransferItemIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-ContextFailedtoTransferItem  CRITICALITY ignore  TYPE RABs-ContextFailedtoTransferItem  PRESENCE mandatory },
  ...
}

RABs-ContextFailedtoTransferItem ::= SEQUENCE {
  rAB-ID                RAB-ID,
  cause                 Cause,
  iE-Extensions          ProtocolExtensionContainer { { RABs-ContextFailedtoTransferItem-ExtIEs} }  OPTIONAL,
  ...
}

RABs-ContextFailedtoTransferItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

SRNS-ContextResponseExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- SECURITY MODE CONTROL ELEMENTARY PROCEDURE
--
-- *****
-- *****

```

```
--
-- Security Mode Command
--
-- *****
SecurityModeCommand ::= SEQUENCE {
  protocolIEs      ProtocolIE-Container    { {SecurityModeCommandIEs} },
  protocolExtensions ProtocolExtensionContainer { {SecurityModeCommandExtensions} } OPTIONAL,
  ...
}

SecurityModeCommandIEs RANAP-PROTOCOL-IES ::= {
  { ID id-IntegrityProtectionInformation CRITICALITY ignore TYPE IntegrityProtectionInformation PRESENCE mandatory } |
  { ID id-EncryptionInformation          CRITICALITY ignore TYPE EncryptionInformation          PRESENCE optional } |
  { ID id-KeyStatus                       CRITICALITY ignore TYPE KeyStatus                 PRESENCE mandatory },
  ...
}

SecurityModeCommandExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- Security Mode Complete
--
-- *****

SecurityModeComplete ::= SEQUENCE {
  protocolIEs      ProtocolIE-Container    { {SecurityModeCompleteIEs} },
  protocolExtensions ProtocolExtensionContainer { {SecurityModeCompleteExtensions} } OPTIONAL,
  ...
}

SecurityModeCompleteIEs RANAP-PROTOCOL-IES ::= {
  { ID id-ChosenIntegrityProtectionAlgorithm CRITICALITY ignore TYPE ChosenIntegrityProtectionAlgorithm PRESENCE mandatory } |
  { ID id-ChosenEncryptionAlgorithm          CRITICALITY ignore TYPE ChosenEncryptionAlgorithm          PRESENCE optional } |
  { ID id-CriticalityDiagnostics             CRITICALITY ignore TYPE CriticalityDiagnostics             PRESENCE optional },
  ...
}

SecurityModeCompleteExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- Security Mode Reject
--
-- *****
```



```

SecurityModeReject ::= SEQUENCE {
  protocolIEs      ProtocolIE-Container    { {SecurityModeRejectIEs} },
  protocolExtensions ProtocolExtensionContainer { {SecurityModeRejectExtensions} } OPTIONAL,
  ...
}

SecurityModeRejectIEs RANAP-PROTOCOL-IES ::= {
  { ID id-Cause          CRITICALITY ignore TYPE Cause          PRESENCE mandatory },
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
  ...
}

SecurityModeRejectExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- DATA VOLUME REPORT ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Data Volume Report Request
--
-- *****

DataVolumeReportRequest ::= SEQUENCE {
  protocolIEs      ProtocolIE-Container    { {DataVolumeReportRequestIEs} },
  protocolExtensions ProtocolExtensionContainer { {DataVolumeReportRequestExtensions} } OPTIONAL,
  ...
}

DataVolumeReportRequestIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-DataVolumeReportRequestList CRITICALITY ignore TYPE RAB-DataVolumeReportRequestList PRESENCE mandatory },
  ...
}

RAB-DataVolumeReportRequestList ::= RAB-IE-ContainerList { {RAB-DataVolumeReportRequestItemIEs} }

RAB-DataVolumeReportRequestItemIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-DataVolumeReportRequestItem CRITICALITY ignore TYPE RAB-DataVolumeReportRequestItem PRESENCE mandatory },
  ...
}

RAB-DataVolumeReportRequestItem ::= SEQUENCE {
  rAB-ID          RAB-ID,
  iE-Extensions  ProtocolExtensionContainer { {RAB-DataVolumeReportRequestItem-ExtIEs} } OPTIONAL,

```

```

    ...
}

RAB-DataVolumeReportRequestItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

DataVolumeReportRequestExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- Data Volume Report
--
-- *****

DataVolumeReport ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { {DataVolumeReportIEs} },
    protocolExtensions   ProtocolExtensionContainer { {DataVolumeReportExtensions} } OPTIONAL,
    ...
}

DataVolumeReportIEs RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-DataVolumeReportList          CRITICALITY ignore TYPE RAB-DataVolumeReportList          PRESENCE conditional
      -- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
    { ID id-RAB-FailedtoReportList          CRITICALITY ignore TYPE RAB-FailedtoReportList          PRESENCE conditional
      -- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore TYPE CriticalityDiagnostics          PRESENCE optional },
    ...
}

DataVolumeReportExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RAB-FailedtoReportList ::= RAB-IE-ContainerList { {RABs-failed-to-reportItemIEs} }

RABs-failed-to-reportItemIEs RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-FailedtoReportItem          CRITICALITY ignore TYPE RABs-failed-to-reportItem          PRESENCE mandatory },
    ...
}

RABs-failed-to-reportItem ::= SEQUENCE {
    rAB-ID          RAB-ID,
    cause          Cause,
    iE-Extensions   ProtocolExtensionContainer { { RABs-failed-to-reportItem-ExtIEs} } OPTIONAL,
    ...
}

```

```

RABs-failed-to-reportItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- CN INFORMATION BROADCAST
--
-- *****

-- *****
--
-- CN Information Broadcast Request
--
-- *****

CN-InformationBroadcastRequest ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          { {CN-InformationBroadcastRequestIEs} },
  protocolExtensions  ProtocolExtensionContainer { {CN-InformationBroadcastRequestExtensions} } OPTIONAL,
  ...
}

CN-InformationBroadcastRequestIEs RANAP-PROTOCOL-IES ::= {
  { ID id-CN-DomainIndicator          CRITICALITY ignore TYPE CN-DomainIndicator          PRESENCE mandatory } |
  { ID id-CN-BroadcastInformationPieceList CRITICALITY ignore TYPE CN-BroadcastInformationPieceList PRESENCE mandatory },
  ...
}

CN-BroadcastInformationPieceList ::= CN-BroadcastInfPiece-IE-ContainerList { {CN-BroadcastInformationPieceIEs} }

CN-BroadcastInformationPieceIEs RANAP-PROTOCOL-IES ::= {
  { ID id-CN-BroadcastInformationPiece          CRITICALITY ignore TYPE CN-BroadcastInformationPiece          PRESENCE mandatory },
  ...
}

CN-BroadcastInformationPiece ::= SEQUENCE {
  informationIdentity          InformationIdentity,
  nAS-BroadcastInformation     NAS-BroadcastInformation          OPTIONAL
  -- Included if CN requests UTRAN to broadcast the information piece --,
  cN-BroadcastArea             CN-BroadcastArea                 OPTIONAL
  areaIdentity                 AreaIdentity                     OPTIONAL
  -- Included if CN requests UTRAN to broadcast the information piece --,
  informationPriority           InformationPriority               OPTIONAL
  -- Included if CN requests UTRAN to broadcast the information piece --,
  informationControl            InformationControl,
  iE-Extensions                ProtocolExtensionContainer { {CN-BroadcastInformationPiece-ExtIEs} }          OPTIONAL,
  ...
}

```

```

CN-BroadcastInformationPiece-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

CN-InformationBroadcastRequestExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- CN Information Broadcast Confirm
--
-- *****

CN-InformationBroadcastConfirm ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { {CN-InformationBroadcastConfirmIEs} },
    protocolExtensions   ProtocolExtensionContainer { {CN-InformationBroadcastConfirmExtensions} } OPTIONAL,
    ...
}

CN-InformationBroadcastConfirmIEs RANAP-PROTOCOL-IES ::= {
    { ID id-CN-DomainIndicator          CRITICALITY ignore TYPE CN-DomainIndicator          PRESENCE mandatory } |
    { ID id-CriticalityDiagnostics      CRITICALITY ignore TYPE CriticalityDiagnostics      PRESENCE optional } |
    { ID id-GlobalRNC-ID                CRITICALITY ignore TYPE GlobalRNC-ID                PRESENCE mandatory },
    ...
}

CN-InformationBroadcastConfirmExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- CN Information Broadcast Reject
--
-- *****

CN-InformationBroadcastReject ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { {CN-InformationBroadcastRejectIEs} },
    protocolExtensions   ProtocolExtensionContainer { {CN-InformationBroadcastRejectExtensions} } OPTIONAL,
    ...
}

CN-InformationBroadcastRejectIEs RANAP-PROTOCOL-IES ::= {
    { ID id-CN-DomainIndicator          CRITICALITY ignore TYPE CN-DomainIndicator          PRESENCE mandatory } |
    { ID id-Cause                      CRITICALITY ignore TYPE Cause                      PRESENCE mandatory } |
    { ID id-CriticalityDiagnostics      CRITICALITY ignore TYPE CriticalityDiagnostics      PRESENCE optional } |
    { ID id-GlobalRNC-ID                CRITICALITY ignore TYPE GlobalRNC-ID                PRESENCE mandatory },
    ...
}

```

```

CN-InformationBroadcastRejectExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- RESET ELEMENTARY PROCEDURE
--
-- *****

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

Reset ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { {ResetIEs} },
    protocolExtensions   ProtocolExtensionContainer { {ResetExtensions} } OPTIONAL,
    ...
}

ResetIEs RANAP-PROTOCOL-IES ::= {
    { ID id-Cause          CRITICALITY ignore TYPE Cause          PRESENCE mandatory } |
    { ID id-CN-DomainIndicator CRITICALITY ignore TYPE CN-DomainIndicator PRESENCE mandatory } |
    { ID id-GlobalRNC-ID    CRITICALITY ignore TYPE GlobalRNC-ID    PRESENCE conditional
    -- This IE is always used in the uplink direction --
    } |
    ...
}

ResetExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

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

ResetAcknowledge ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { {ResetAcknowledgeIEs} },
    protocolExtensions   ProtocolExtensionContainer { {ResetAcknowledgeExtensions} } OPTIONAL,
    ...
}

ResetAcknowledgeIEs RANAP-PROTOCOL-IES ::= {
    { ID id-CN-DomainIndicator CRITICALITY ignore TYPE CN-DomainIndicator PRESENCE mandatory } |
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional } |

```

```

    { ID id-GlobalRNC-ID          CRITICALITY ignore  TYPE GlobalRNC-ID          PRESENCE conditional
      -- This IE is always used in the uplink direction --
    },
    ...
  ]

ResetAcknowledgeExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- RESET RESOURCE ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Reset Resource
--
-- *****

ResetResource ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          { {ResetResourceIEs} },
  protocolExtensions   ProtocolExtensionContainer { {ResetResourceExtensions} } OPTIONAL,
  ...
}

ResetResourceIEs RANAP-PROTOCOL-IES ::= {
  { ID id-CN-DomainIndicator    CRITICALITY ignore  TYPE CN-DomainIndicator    PRESENCE mandatory } |
  { ID id-Cause                  CRITICALITY ignore  TYPE Cause                  PRESENCE mandatory } |
  { ID id-IuSigConIdList        CRITICALITY ignore  TYPE ResetResourceList     PRESENCE mandatory } |
  { ID id-GlobalRNC-ID          CRITICALITY ignore  TYPE GlobalRNC-ID          PRESENCE conditional
    -- This IE is always used in the uplink direction --
  },
  ...
}

ResetResourceList ::= IuSigConId-IE-ContainerList { {ResetResourceItemIEs} }

ResetResourceItemIEs RANAP-PROTOCOL-IES ::= {
  { ID id-IuSigConIdItem        CRITICALITY ignore  TYPE ResetResourceItem     PRESENCE mandatory },
  ...
}

ResetResourceItem ::= SEQUENCE {
  iuSigConId              IuSignallingConnectionIdentifier,
  iE-Extensions           ProtocolExtensionContainer { { ResetResourceItem-ExtIEs} } OPTIONAL,
  ...
}

ResetResourceItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {

```

```

    ...
}

ResetResourceExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

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

ResetResourceAcknowledge ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { {ResetResourceAcknowledgeIEs} },
    protocolExtensions   ProtocolExtensionContainer { {ResetResourceAcknowledgeExtensions} } OPTIONAL,
    ...
}

ResetResourceAcknowledgeIEs RANAP-PROTOCOL-IES ::= {
    { ID id-CN-DomainIndicator          CRITICALITY ignore TYPE CN-DomainIndicator          PRESENCE mandatory } |
    { ID id-IuSigConIdList              CRITICALITY ignore TYPE ResetResourceAckList        PRESENCE mandatory } |
    { ID id-GlobalRNC-ID                CRITICALITY ignore TYPE GlobalRNC-ID          PRESENCE conditional
    -- This IE is always used in the uplink direction --
    } |
    { ID id-CriticalityDiagnostics      CRITICALITY ignore TYPE CriticalityDiagnostics    PRESENCE optional },
    ...
}

ResetResourceAckList ::= IuSigConId-IE-ContainerList{ {ResetResourceAckItemIEs} }

ResetResourceAckItemIEs RANAP-PROTOCOL-IES ::= {
    { ID id-IuSigConIdItem              CRITICALITY ignore TYPE ResetResourceAckItem          PRESENCE mandatory },
    ...
}

ResetResourceAckItem ::= SEQUENCE {
    iuSigConId          IuSignallingConnectionIdentifier,
    iE-Extensions       ProtocolExtensionContainer { { ResetResourceAckItem-ExtIEs } } OPTIONAL,
    ...
}

ResetResourceAckItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

ResetResourceAcknowledgeExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--

```

```

-- RAB RELEASE REQUEST ELEMENTARY PROCEDURE
--
-- *****
-- *****
-- RAB Release Request
--
-- *****

RAB-ReleaseRequest ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container    { {RAB-ReleaseRequestIEs} },
  protocolExtensions  ProtocolExtensionContainer { {RAB-ReleaseRequestExtensions} } OPTIONAL,
  ...
}

RAB-ReleaseRequestIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-ReleaseList          CRITICALITY ignore TYPE RAB-ReleaseList          PRESENCE mandatory },
  ...
}

RAB-ReleaseList ::= RAB-IE-ContainerList { {RAB-ReleaseItemIEs} }

RAB-ReleaseItemIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-ReleaseItem          CRITICALITY ignore TYPE RAB-ReleaseItem          PRESENCE mandatory },
  ...
}

RAB-ReleaseItem ::= SEQUENCE {
  rAB-ID              RAB-ID,
  cause              Cause,
  iE-Extensions      ProtocolExtensionContainer { {RAB-ReleaseItem-ExtIEs} } OPTIONAL,
  ...
}

RAB-ReleaseItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

RAB-ReleaseRequestExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- Iu RELEASE REQUEST ELEMENTARY PROCEDURE
--
-- *****
-- *****

```



```

--
-- Iu Release Request
--
-- *****
Iu-ReleaseRequest ::= SEQUENCE {
  protocolIEs      ProtocolIE-Container { {Iu-ReleaseRequestIEs} },
  protocolExtensions ProtocolExtensionContainer { {Iu-ReleaseRequestExtensions} } OPTIONAL,
  ...
}

Iu-ReleaseRequestIEs RANAP-PROTOCOL-IES ::= {
  { ID id-Cause      CRITICALITY ignore TYPE Cause      PRESENCE mandatory },
  ...
}

Iu-ReleaseRequestExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- RELOCATION DETECT ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Relocation Detect
--
-- *****

RelocationDetect ::= SEQUENCE {
  protocolIEs      ProtocolIE-Container { {RelocationDetectIEs} },
  protocolExtensions ProtocolExtensionContainer { {RelocationDetectExtensions} } OPTIONAL,
  ...
}

RelocationDetectIEs RANAP-PROTOCOL-IES ::= {
  ...
}

RelocationDetectExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- RELOCATION COMPLETE ELEMENTARY PROCEDURE
--

```

```

-- *****
-- *****
--
-- Relocation Complete
--
-- *****

RelocationComplete ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { {RelocationCompleteIEs} },
    protocolExtensions   ProtocolExtensionContainer { {RelocationCompleteExtensions} } OPTIONAL,
    ...
}

RelocationCompleteIEs RANAP-PROTOCOL-IES ::= {
    ...
}

RelocationCompleteExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- PAGING ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Paging
--
-- *****

Paging ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { {PagingIEs} },
    protocolExtensions   ProtocolExtensionContainer { {PagingExtensions} } OPTIONAL,
    ...
}

PagingIEs RANAP-PROTOCOL-IES ::= {
    { ID id-CN-DomainIndicator          CRITICALITY ignore TYPE CN-DomainIndicator          PRESENCE mandatory } |
    { ID id-PermanentNAS-UE-ID          CRITICALITY ignore TYPE PermanentNAS-UE-ID          PRESENCE mandatory } |
    { ID id-TemporaryUE-ID              CRITICALITY ignore TYPE TemporaryUE-ID              PRESENCE optional } |
    { ID id-PagingAreaID                CRITICALITY ignore TYPE PagingAreaID                PRESENCE optional } |
    { ID id-PagingCause                  CRITICALITY ignore TYPE PagingCause                  PRESENCE optional } |
    { ID id-NonSearchingIndication       CRITICALITY ignore TYPE NonSearchingIndication       PRESENCE optional } |
    { ID id-DRX-CycleLengthCoefficient   CRITICALITY ignore TYPE DRX-CycleLengthCoefficient   PRESENCE optional } ,
    ...
}

```

```

PagingExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- COMMON ID ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Common ID
--
-- *****

CommonID ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      { {CommonID-IEs} },
    protocolExtensions      ProtocolExtensionContainer { {CommonIDExtensions} } OPTIONAL,
    ...
}

CommonID-IEs RANAP-PROTOCOL-IES ::= {
    { ID id-PermanentNAS-UE-ID      CRITICALITY ignore TYPE PermanentNAS-UE-ID      PRESENCE mandatory },
    ...
}

CommonIDExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- CN INVOKE TRACE ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- CN Invoke Trace
--
-- *****

CN-InvokeTrace ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container      { {CN-InvokeTraceIEs} },
    protocolExtensions      ProtocolExtensionContainer { {CN-InvokeTraceExtensions} } OPTIONAL,
    ...
}

```

```

CN-InvokeTraceIEs RANAP-PROTOCOL-IES ::= {
  { ID id-TraceType          CRITICALITY ignore TYPE TraceType          PRESENCE mandatory } |
  { ID id-TraceReference     CRITICALITY ignore TYPE TraceReference     PRESENCE mandatory } |
  { ID id-TriggerID          CRITICALITY ignore TYPE TriggerID          PRESENCE optional } |
  { ID id-UE-ID              CRITICALITY ignore TYPE UE-ID              PRESENCE optional } |
  { ID id-OMC-ID             CRITICALITY ignore TYPE OMC-ID             PRESENCE optional } |
  ...
}

CN-InvokeTraceExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- CN DEACTIVATE TRACE ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- CN Deactivate Trace
--
-- *****

CN-DeactivateTrace ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          { {CN-DeactivateTraceIEs} },
  protocolExtensions   ProtocolExtensionContainer { {CN-DeactivateTraceExtensions} } OPTIONAL,
  ...
}

CN-DeactivateTraceIEs RANAP-PROTOCOL-IES ::= {
  { ID id-TraceReference     CRITICALITY ignore TYPE TraceReference     PRESENCE mandatory } |
  { ID id-TriggerID          CRITICALITY ignore TYPE TriggerID          PRESENCE optional } |
  ...
}

CN-DeactivateTraceExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- LOCATION REPORTING CONTROL ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Location Reporting Control

```

```

--
-- *****
LocationReportingControl ::= SEQUENCE {
  protocolIEs      ProtocolIE-Container { {LocationReportingControlIEs} },
  protocolExtensions ProtocolExtensionContainer { {LocationReportingControlExtensions} } OPTIONAL,
  ...
}

LocationReportingControlIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RequestType      CRITICALITY ignore TYPE RequestType      PRESENCE mandatory },
  ...
}

LocationReportingControlExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- LOCATION REPORT ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Location Report
--
-- *****

LocationReport ::= SEQUENCE {
  protocolIEs      ProtocolIE-Container { {LocationReportIEs} },
  protocolExtensions ProtocolExtensionContainer { {LocationReportExtensions} } OPTIONAL,
  ...
}

LocationReportIEs RANAP-PROTOCOL-IES ::= {
  { ID id-AreaIdentity      CRITICALITY ignore TYPE AreaIdentity      PRESENCE optional } |
  { ID id-Cause             CRITICALITY ignore TYPE Cause             PRESENCE optional },
  ...
}

LocationReportExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- INITIAL UE MESSAGE ELEMENTARY PROCEDURE
--

```

```

-- *****
-- *****
--
-- Initial UE Message
--
-- *****

InitialUE-Message ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { {InitialUE-MessageIEs} },
    protocolExtensions   ProtocolExtensionContainer { {InitialUE-MessageExtensions} } OPTIONAL,
    ...
}

InitialUE-MessageIEs RANAP-PROTOCOL-IES ::= {
    { ID id-CN-DomainIndicator          CRITICALITY ignore TYPE CN-DomainIndicator          PRESENCE mandatory } |
    { ID id-LAI                         CRITICALITY ignore TYPE LAI                     PRESENCE mandatory } |
    { ID id-RAC                         CRITICALITY ignore TYPE RAC                     PRESENCE conditional } |
    -- This IE is only present for RABs towards the PS domain --
    { ID id-SAI                         CRITICALITY ignore TYPE SAI                     PRESENCE mandatory } |
    { ID id-NAS-PDU                     CRITICALITY ignore TYPE NAS-PDU                 PRESENCE mandatory } |
    { ID id-IuSigConId                 CRITICALITY ignore TYPE IuSignallingConnectionIdentifier PRESENCE mandatory } |
    { ID id-GlobalRNC-ID               CRITICALITY ignore TYPE GlobalRNC-ID             PRESENCE mandatory },
    ...
}

InitialUE-MessageExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- DIRECT TRANSFER ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Direct Transfer
--
-- *****

DirectTransfer ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { {DirectTransferIEs} },
    protocolExtensions   ProtocolExtensionContainer { {DirectTransferExtensions} } OPTIONAL,
    ...
}

DirectTransferIEs RANAP-PROTOCOL-IES ::= {

```

```

    { ID id-NAS-PDU          CRITICALITY ignore  TYPE NAS-PDU          PRESENCE mandatory } |
    { ID id-LAI             CRITICALITY ignore  TYPE LAI              PRESENCE conditional } |
    -- This IE is only present if the message is directed to the PS domain --
    { ID id-RAC            CRITICALITY ignore  TYPE RAC              PRESENCE conditional } |
    -- This IE is only present if the message is directed to the PS domain --
    { ID id-SAPI           CRITICALITY ignore  TYPE SAPI            PRESENCE conditional } |
    -- This IE is always used in downlink direction--
    },
    ...
}

DirectTransferExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- OVERLOAD CONTROL ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Overload
--
-- *****

Overload ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container    { {OverloadIEs} },
    protocolExtensions   ProtocolExtensionContainer { {OverloadExtensions} } OPTIONAL,
    ...
}

OverloadIEs RANAP-PROTOCOL-IES ::= {
    { ID id-NumberOfSteps CRITICALITY ignore  TYPE NumberOfSteps          PRESENCE optional } |
    { ID id-GlobalRNC-ID  CRITICALITY ignore  TYPE GlobalRNC-ID            PRESENCE conditional } |
    -- This IE is always used in the uplink direction --
    },
    ...
}

OverloadExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- ERROR INDICATION ELEMENTARY PROCEDURE
--
-- *****

```

```

--
-- Error Indication
--
-- *****
ErrorIndication ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          { {ErrorIndicationIEs} },
  protocolExtensions  ProtocolExtensionContainer { {ErrorIndicationExtensions} } OPTIONAL,
  ...
}

ErrorIndicationIEs RANAP-PROTOCOL-IES ::= {
  { ID id-Cause          CRITICALITY ignore TYPE Cause          PRESENCE conditional } |
  -- At least either of Cause IE or Criticality IE shall be present --
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE conditional } |
  -- At least either of Cause IE or Criticality IE shall be present --
  { ID id-CN-DomainIndicator CRITICALITY ignore TYPE CN-DomainIndicator PRESENCE optional } |
  { ID id-TransportLayerAddress CRITICALITY ignore TYPE TransportLayerAddress PRESENCE optional } |
  { ID id-IuTransportAssociation CRITICALITY ignore TYPE IuTransportAssociation PRESENCE optional } |
  { ID id-GlobalRNC-ID CRITICALITY ignore TYPE GlobalRNC-ID PRESENCE conditional } |
  -- This IE is always used in the uplink direction when message is sent connectionless --
  ...
}

ErrorIndicationExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-- *****
--
-- SRNS DATA FORWARD ELEMENTARY PROCEDURE
--
-- *****
--
-- SRNS Data Forward Command
--
-- *****

SRNS-DataForwardCommand ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container          { {SRNS-DataForwardCommandIEs} },
  protocolExtensions  ProtocolExtensionContainer { {SRNS-DataForwardCommandExtensions} } OPTIONAL,
  ...
}

SRNS-DataForwardCommandIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-DataForwardingList CRITICALITY ignore TYPE RAB-DataForwardingList PRESENCE conditional } |
  -- This group is only present for RABs towards the PS domain --
  ...
}

```



```

}
SRNS-DataForwardCommandExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}
-- *****
--
-- FORWARD SRNS CONTEXT ELEMENTARY PROCEDURE
--
-- *****
--
-- Forward SRNS Context
--
-- *****

ForwardSRNS-Context ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container    { {ForwardSRNS-ContextIEs} },
  protocolExtensions   ProtocolExtensionContainer { {ForwardSRNS-ContextExtensions} } OPTIONAL,
  ...
}

ForwardSRNS-ContextIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-ContextList          CRITICALITY ignore  TYPE RAB-ContextList          PRESENCE mandatory },
  ...
}

ForwardSRNS-ContextExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}
-- *****
--
-- RAB ASSIGNMENT ELEMENTARY PROCEDURE
--
-- *****
--
-- RAB Assignment Request
--
-- *****

RAB-AssignmentRequest ::= SEQUENCE {
  protocolIEs          ProtocolIE-Container    { {RAB-AssignmentRequestIEs} },
  protocolExtensions   ProtocolExtensionContainer { {RAB-AssignmentRequestExtensions} } OPTIONAL,
  ...
}

```

```

RAB-AssignmentRequestIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-SetupOrModifyList          CRITICALITY ignore  TYPE RAB-SetupOrModifyList          PRESENCE conditional
  -- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
  { ID id-RAB-ReleaseList                CRITICALITY ignore  TYPE RAB-ReleaseList                PRESENCE conditional
  -- This group must be present at least when no other group is present, ie. at least one group must be present -- } ,
  ...
}

RAB-SetupOrModifyList ::= RAB-IE-ContainerPairList { {RAB-SetupOrModifyItem-IEs} }

RAB-SetupOrModifyItem-IEs RANAP-PROTOCOL-IES-PAIR ::= {
  { ID id-RAB-SetupOrModifyItem          FIRST CRITICALITY reject  FIRST TYPE RAB-SetupOrModifyItemFirst
  SECOND CRITICALITY ignore  SECOND TYPE RAB-SetupOrModifyItemSecond
  PRESENCE mandatory },
  ...
}

RAB-SetupOrModifyItemFirst ::= SEQUENCE {
  rAB-ID                                RAB-ID,
  nAS-SynchronisationIndicator          NAS-SynchronisationIndicator  OPTIONAL
  -- This IE is present if the relevant NAS information is provided by the CN --,
  rAB-Parameters                        RAB-Parameters,
  userPlaneInformation                  UserPlaneInformation,
  transportLayerAddress                  TransportLayerAddress,
  iuTransportAssociation                 IuTransportAssociation,
  iE-Extensions                          ProtocolExtensionContainer { {RAB-SetupOrModifyItemFirst-ExtIEs} }  OPTIONAL,
  ...
}

RAB-SetupOrModifyItemFirst-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

RAB-SetupOrModifyItemSecond ::= SEQUENCE {
  pDP-TypeInformation                   PDP-TypeInformation
  -- This IE is only present for RABs towards the PS domain -- OPTIONAL,
  dataVolumeReportingIndication          DataVolumeReportingIndication  OPTIONAL
  -- This IE, if applicable, is only present for RABs towards the PS domain --,
  dl-GTP-PDU-SequenceNumber              DL-GTP-PDU-SequenceNumber  OPTIONAL
  -- This IE, if applicable, is only present for RABs towards the PS domain --,
  ul-GTP-PDU-SequenceNumber              UL-GTP-PDU-SequenceNumber  OPTIONAL
  -- This IE, if applicable, is only present for RABs towards the PS domain --,
  dl-N-PDU-SequenceNumber                 DL-N-PDU-SequenceNumber  OPTIONAL
  -- This IE, if applicable, is only present for RABs towards the PS domain --,
  ul-N-PDU-SequenceNumber                 UL-N-PDU-SequenceNumber  OPTIONAL
  -- This IE, if applicable, is only present for RABs towards the PS domain --,
  iE-Extensions                          ProtocolExtensionContainer { {RAB-SetupOrModifyItemSecond-ExtIEs} }  OPTIONAL,
  ...
}

```

```

RAB-SetupOrModifyItemSecond-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RAB-AssignmentRequestExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-- *****
--
-- RAB Assignment Response
--
-- *****

RAB-AssignmentResponse ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { {RAB-AssignmentResponseIEs} },
    protocolExtensions  ProtocolExtensionContainer { {RAB-AssignmentResponseExtensions} } OPTIONAL,
    ...
}

RAB-AssignmentResponseIEs RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-SetupOrModifiedList          CRITICALITY ignore TYPE RAB-SetupOrModifiedList          PRESENCE conditional
      -- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
    { ID id-RAB-ReleasedList                CRITICALITY ignore TYPE RAB-ReleasedList                PRESENCE conditional
      -- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
    { ID id-RAB-QueuedList                  CRITICALITY ignore TYPE RAB-QueuedList                  PRESENCE conditional
      -- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
    { ID id-RAB-FailedList                  CRITICALITY ignore TYPE RAB-FailedList                  PRESENCE conditional
      -- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
    { ID id-RAB-ReleaseFailedList          CRITICALITY ignore TYPE RAB-ReleaseFailedList          PRESENCE conditional
      -- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
    { ID id-CriticalityDiagnostics          CRITICALITY ignore TYPE CriticalityDiagnostics          PRESENCE optional },
    ...
}

RAB-SetupOrModifiedList ::= RAB-IE-ContainerList { {RAB-SetupOrModifiedItemIEs} }

RAB-SetupOrModifiedItemIEs RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-SetupOrModifiedItem          CRITICALITY ignore TYPE RAB-SetupOrModifiedItem          PRESENCE mandatory },
    ...
}

RAB-SetupOrModifiedItem ::= SEQUENCE {
    rAB-ID          RAB-ID,
    chosenUP-Version          ChosenUP-Version          OPTIONAL,
    transportLayerAddress          TransportLayerAddress          OPTIONAL
    -- This IE is only present for RABs towards the PS domain --,
    iuTransportAssociation          IuTransportAssociation          OPTIONAL
}

```

```

-- This IE is only present for RABs towards the PS domain --,
dl-dataVolumes          DataVolumeList          OPTIONAL
-- This IE is only present if the RAB has been modified and --
-- RAB data volume reporting for PS domain is required --,
iE-Extensions          ProtocolExtensionContainer { {RAB-SetupOrModifiedItem-ExtIEs} }          OPTIONAL,
...
}

RAB-SetupOrModifiedItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
...
}

RAB-ReleasedList ::= RAB-IE-ContainerList { {RAB-ReleasedItemIEs} }

RAB-ReleasedItemIEs RANAP-PROTOCOL-IES ::= {
{ ID id-RAB-ReleasedItem          CRITICALITY ignore          TYPE RAB-ReleasedItem          PRESENCE mandatory },
...
}

RAB-ReleasedItem ::= SEQUENCE {
rAB-ID          RAB-ID,
dl-dataVolumes          DataVolumeList          OPTIONAL
-- This IE is only present if data volume reporting for PS domain is required --,
dL-GTP-PDU-SequenceNumber          DL-GTP-PDU-SequenceNumber          OPTIONAL
-- This IE is only present for RABs towards the PS domain when the release is UTRAN initiated --,
uL-GTP-PDU-SequenceNumber          UL-GTP-PDU-SequenceNumber          OPTIONAL
-- This IE is only present for RABs towards the PS domain when the release is UTRAN initiated --,
iE-Extensions          ProtocolExtensionContainer { {RAB-ReleasedItem-ExtIEs} }          OPTIONAL,
...
}

RAB-ReleasedItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
...
}

DataVolumeList ::= SEQUENCE (SIZE (1..maxNrOfVol)) OF
SEQUENCE {
dl-UnsuccessfullyTransmittedDataVolume          UnsuccessfullyTransmittedDataVolume,
dataVolumeReference          DataVolumeReference          OPTIONAL,
iE-Extensions          ProtocolExtensionContainer { {DataVolumeList-ExtIEs} }          OPTIONAL,
...
}

DataVolumeList-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
...
}

RAB-QueuedList ::= RAB-IE-ContainerList { {RAB-QueuedItemIEs} }

RAB-QueuedItemIEs RANAP-PROTOCOL-IES ::= {

```

```

    { ID id-RAB-QueuedItem          CRITICALITY ignore  TYPE RAB-QueuedItem          PRESENCE mandatory },
    ...
}

RAB-QueuedItem ::= SEQUENCE {
    rAB-ID          RAB-ID,
    iE-Extensions  ProtocolExtensionContainer { {RAB-QueuedItem-ExtIEs} }          OPTIONAL,
    ...
}

RAB-QueuedItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RAB-ReleaseFailedList ::= RAB-FailedList

RAB-AssignmentResponseExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

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

PrivateMessage ::= SEQUENCE {
    privateIEs      PrivateIE-Container { {PrivateMessage-IEs} },
    ...
}

PrivateMessage-IEs RANAP-PRIVATE-IES ::= {
    ...
}

-- *****
--
-- RANAP RELOCATION INFORMATION ELEMENTARY PROCEDURE
--
-- *****

RANAP-RelocationInformation ::= SEQUENCE {
    protocolIEs      ProtocolIE-Container { {RANAP-RelocationInformationIEs} },
    protocolExtensions  ProtocolExtensionContainer { {RANAP-RelocationInformationExtensions} }          OPTIONAL,
    ...
}

RANAP-RelocationInformationIEs RANAP-PROTOCOL-IES ::= {
    { ID id-DirectTransferInformationList-RANAP-RelocInf
    CRITICALITY ignore  TYPE DirectTransferInformationList-RANAP-RelocInf

```

```

        PRESENCE optional } |
        { ID id-RAB-ContextList-RANAP-RelocInf CRITICALITY ignore TYPE RAB-ContextList-RANAP-RelocInf PRESENCE optional },
        ...
    ]

DirectTransferInformationList-RANAP-RelocInf ::= DirectTransfer-IE-ContainerList { {DirectTransferInformationItemIEs-RANAP-RelocInf} }

DirectTransferInformationItemIEs-RANAP-RelocInf RANAP-PROTOCOL-IES ::= {
    { ID id-DirectTransferInformationItem-RANAP-RelocInf
        CRITICALITY ignore TYPE DirectTransferInformationItem-RANAP-RelocInf
        PRESENCE mandatory },
    ...
}

DirectTransferInformationItem-RANAP-RelocInf ::= SEQUENCE {
    nAS-PDU NAS-PDU,
    sAPI SAPI,
    iE-Extensions ProtocolExtensionContainer { {RANAP-DirectTransferInformationItem-ExtIEs-RANAP-RelocInf} } OPTIONAL,
    ...
}

RANAP-DirectTransferInformationItem-ExtIEs-RANAP-RelocInf RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RAB-ContextList-RANAP-RelocInf ::= RAB-IE-ContainerList { {RAB-ContextItemIEs-RANAP-RelocInf} }

RAB-ContextItemIEs-RANAP-RelocInf RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-ContextItem-RANAP-RelocInf CRITICALITY ignore TYPE RAB-ContextItem-RANAP-RelocInf PRESENCE mandatory },
    ...
}

RAB-ContextItem-RANAP-RelocInf ::= SEQUENCE {
    rAB-ID RAB-ID,
    dl-GTP-PDU-SequenceNumber DL-GTP-PDU-SequenceNumber,
    ul-GTP-PDU-SequenceNumber UL-GTP-PDU-SequenceNumber,
    dl-N-PDU-SequenceNumber DL-N-PDU-SequenceNumber,
    ul-N-PDU-SequenceNumber UL-N-PDU-SequenceNumber,
    iE-Extensions ProtocolExtensionContainer { {RAB-ContextItem-ExtIEs-RANAP-RelocInf} } OPTIONAL,
    ...
}

RAB-ContextItem-ExtIEs-RANAP-RelocInf RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RANAP-RelocationInformationExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```
END
-----
--
-- PDU definitions for RANAP.
--
-----

RANAP-PDU-Contents --- { object identifier to be allocated } ---
DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS
  DataVolumeReference,
  AreaIdentity,
  CN-DomainIndicator,
  Cause,
  CriticalityDiagnostics,
  ChosenEncryptionAlgorithm,
  ChosenIntegrityProtectionAlgorithm,
  ChosenUP-Version,
  ClassmarkInformation2,
  ClassmarkInformation3,
  DL-GTP-PDU-SequenceNumber,
  DL-N-PDU-SequenceNumber,
  DataVolumeReportingIndication,
  DRX-CycleLengthCoefficient,
  EncryptionInformation,
  IntegrityProtectionInformation,
  IuSignallingConnectionIdentifier,
  IuTransportAssociation,
  L3-Information,
  LAI,
  NAS-BindingInformation,
  NAS-BroadcastInformation,
  InformationIdentity,
  InformationPriority,
  InformationControl,
  NAS-PDU,
  NonSearchingIndication,
  NumberOfSteps,
  OMC-ID,
  OldBSS-ToNewBSS-Information,
  PagingAreaID,
```

—— PagingCause₇
 —— PermanentNAS-UE-ID₇
 —— RAB-ID₇
 —— RAB-Parameters₇
 —— RAC₇
 —— RelocationType₇
 —— RequestType₇
 —— SAI₇
 —— SAPI₇
 —— SourceID₇
 —— SourceRNC-ToTargetRNC-TransparentContainer₇
 —— TargetID₇
 —— TargetRNC-ToSourceRNC-TransparentContainer₇
 —— TemporaryUE-ID₇
 —— TraceReference₇
 —— TraceType₇
 —— UnsuccessfullyTransmittedDataVolume₇
 —— TransportLayerAddress₇
 —— TriggerID₇
 —— UE-ID₇
 —— UL-GTP-PDU-SequenceNumber₇
 —— UL-N-PDU-SequenceNumber₇
 —— UP-ModeVersions₇
 —— UserPlaneMode
 FROM RANAP-IES

—— PrivateIE-Container{ }₇
 —— ProtocolExtensionContainer{ }₇
 —— ProtocolIE-ContainerList{ }₇
 —— ProtocolIE-ContainerPair{ }₇
 —— ProtocolIE-ContainerPairList{ }₇
 —— ProtocolIE-Container{ }₇
 —— RANAP-PRIVATE-IES₇
 —— RANAP-PROTOCOL-EXTENSION₇
 —— RANAP-PROTOCOL-IES₇
 —— RANAP-PROTOCOL-IES-PAIR
 FROM RANAP-Containers

—— maxNrOfDTS₇
 —— maxNrOfErrors₇
 —— maxNrOfPieces₇
 —— maxNrOfRABs₇
 —— maxNrOfVol₇
 —— maxNrOfIuSigConIds₇

—— id-AreaIdentity₇
 —— id-CN-BroadcastInformationPiece₇
 —— id-CN-BroadcastInformationPieceList₇
 —— id-CN-DomainIndicator₇

~~id-Cause,~~
~~id-ChosenEncryptionAlgorithm,~~
~~id-ChosenIntegrityProtectionAlgorithm,~~
~~id-ClassmarkInformation2,~~
~~id-ClassmarkInformation3,~~
~~id-CriticalityDiagnostics,~~
~~id-DirectTransferInformationItem-RANAP-RelocInf,~~
~~id-DirectTransferInformationList-RANAP-RelocInf,~~
~~id-DL-GTP-PDU-SequenceNumber,~~
~~id-EncryptionInformation,~~
~~id-IntegrityProtectionInformation,~~
~~id-IuSigConId,~~
~~id-IuSigConIdItem,~~
~~id-IuSigConIdList,~~
~~id-IuTransportAssociation,~~
~~id-L3-Information,~~
~~id-LAI,~~
~~id-NAS-PDU,~~
~~id-NonSearchingIndication,~~
~~id-NumberOfSteps,~~
~~id-OMC-ID,~~
~~id-OldBSS-ToNewBSS-Information,~~
~~id-PagingAreaID,~~
~~id-PagingCause,~~
~~id-PermanentNAS-UE-ID,~~
~~id-RAB-ContextItem,~~
~~id-RAB-ContextList,~~
~~id-RAB-ContextFailedtoTransferItem,~~
~~id-RAB-ContextFailedtoTransferList,~~
~~id-RAB-ContextItem-RANAP-RelocInf,~~
~~id-RAB-ContextList-RANAP-RelocInf,~~
~~id-RAB-DataForwardingItem,~~
~~id-RAB-DataForwardingItem-SRNS-CtxReq,~~
~~id-RAB-DataForwardingList,~~
~~id-RAB-DataForwardingList-SRNS-CtxReq,~~
~~id-RAB-DataVolumeReportItem,~~
~~id-RAB-DataVolumeReportList,~~
~~id-RAB-DataVolumeReportRequestItem,~~
~~id-RAB-DataVolumeReportRequestList,~~
~~id-RAB-FailedItem,~~
~~id-RAB-FailedList,~~
~~id-RAB-FailedtoReportItem,~~
~~id-RAB-FailedtoReportList,~~
~~id-RAB-ID,~~
~~id-RAB-QueuedItem,~~
~~id-RAB-QueuedList,~~
~~id-RAB-ReleaseFailedList,~~
~~id-RAB-ReleaseItem,~~
~~id-RAB-ReleaseList,~~
~~id-RAB-ReleasedItem,~~

```

id-RAB-ReleasedList,
id-RAB-ReleasedList-IuRelComp,
id-RAB-RelocationReleaseItem,
id-RAB-RelocationReleaseList,
id-RAB-SetupItem-RelocReq,
id-RAB-SetupItem-RelocReqAck,
id-RAB-SetupList-RelocReq,
id-RAB-SetupList-RelocReqAck,
id-RAB-SetupOrModifiedItem,
id-RAB-SetupOrModifiedList,
id-RAB-SetupOrModifyItem,
id-RAB-SetupOrModifyList,
id-RAC,
id-RelocationType,
id-RequestType,
id-SAI,
id-SAPI,
id-SourceID,
id-SourceRNC-ToTargetRNC-TransparentContainer,
id-TargetID,
id-TargetRNC-ToSourceRNC-TransparentContainer,
id-TemporaryUE-ID,
id-TraceReference,
id-TraceType,
id-TransportLayerAddress,
id-TriggerID,
id-UE-ID,
id-UL-CTP-PDU-SequenceNumber
FROM-RANAP-Constants+

*****
--
-- Common Container Lists
--
*****

RAB-IE-ContainerList { RANAP-PROTOCOL-IES : IEsSetParam } ::= ProtocolIE-ContainerList { 1, maxNrOfRABs, {IEsSetParam} }
RAB-IE-ContainerPairList { RANAP-PROTOCOL-IES-PAIR : IEsSetParam } ::= ProtocolIE-ContainerPairList { 1, maxNrOfRABs, {IEsSetParam} }
ProtocolError-IE-ContainerList { RANAP-PROTOCOL-IES : IEsSetParam } ::= ProtocolIE-ContainerList { 1, maxNrOfRABs, {IEsSetParam} }
CN-BroadcastInfPiece-IE-ContainerList { RANAP-PROTOCOL-IES : IEsSetParam } ::= ProtocolIE-ContainerList { 1, maxNrOfPieces, {IEsSetParam} }
IuSigConId-IE-ContainerList { RANAP-PROTOCOL-IES : IEsSetParam } ::= ProtocolIE-ContainerList { 1, maxNrOfIuSigConIds, {IEsSetParam} }
DirectTransfer-IE-ContainerList { RANAP-PROTOCOL-IES : IEsSetParam } ::= ProtocolIE-ContainerList { 1, maxNrOfDTs, {IEsSetParam} }

*****
--
-- Iu RELEASE-ELEMENTARY-PROCEDURE
--
*****

```

```

-----
----- *****
-----
----- Iu-Release-Command
-----
----- *****
-----
Iu-ReleaseCommand ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {Iu-ReleaseCommandIEs} },
  protocolExtensions ProtocolExtensionContainer { {Iu-ReleaseCommandExtensions} } OPTIONAL,
  ...
}

Iu-ReleaseCommandIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory },
  ...
}

Iu-ReleaseCommandExtensions-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
----- *****
-----
----- Iu-Release-Complete
-----
----- *****
-----
Iu-ReleaseComplete ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {Iu-ReleaseCompleteIEs} },
  protocolExtensions ProtocolExtensionContainer { {Iu-ReleaseCompleteExtensions} } OPTIONAL,
  ...
}

Iu-ReleaseCompleteIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-DataVolumeReportList CRITICALITY ignore TYPE RAB-DataVolumeReportList PRESENCE conditional
    This group is only present if data volume reporting for PS domain is required } |
  { ID id-RAB-ReleasedList-IuRelComp CRITICALITY ignore TYPE RAB-ReleasedList-IuRelComp PRESENCE conditional
    This group is only present for RABs towards the PS domain when the release was initiated by UTRAN } |
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
  ...
}

RAB-DataVolumeReportList ::= RAB-IE-ContainerList { {RAB-DataVolumeReportItemIEs} }

RAB-DataVolumeReportItemIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-DataVolumeReportItem CRITICALITY ignore TYPE RAB-DataVolumeReportItem PRESENCE mandatory },
  ...
}

RAB-DataVolumeReportItem ::= SEQUENCE {

```

```

--- rAB-ID --- RAB-ID,
--- dl UnsuccessfullyTransmittedDataVolume --- DataVolumeList --- OPTIONAL
--- This IE is only present if data volume reporting for PS domain is required ---,
--- IE-Extensions --- ProtocolExtensionContainer { {RAB-DataVolumeReportItem-ExtIEs} } --- OPTIONAL,
--- ...
}

RAB-DataVolumeReportItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
--- ...
}

RAB-ReleasedList-IuRelComp ::= RAB-IE-ContainerList { {RAB-ReleasedItem-IuRelComp-IEs} }

RAB-ReleasedItem-IuRelComp-IEs RANAP-PROTOCOL-IES ::= {
--- { ID id-RAB-ID --- CRITICALITY ignore --- TYPE RAB-ID --- PRESENCE mandatory } ---|
--- { ID id-DL-GTP-PDU-SequenceNumber --- CRITICALITY ignore --- TYPE DL-GTP-PDU-SequenceNumber --- PRESENCE mandatory } ---|
--- { ID id-UL-GTP-PDU-SequenceNumber --- CRITICALITY ignore --- TYPE UL-GTP-PDU-SequenceNumber --- PRESENCE mandatory } ---,
--- ...
}

Iu-ReleaseCompleteExtensions RANAP-PROTOCOL-EXTENSION ::= {
--- ...
}

*****
---
--- RELOCATION PREPARATION ELEMENTARY PROCEDURE
---
--- *****
---
--- *****
---
--- Relocation Required
---
--- *****

RelocationRequired ::= SEQUENCE {
--- protocolIEs --- ProtocolIE-Container { {RelocationRequiredIEs} },
--- protocolExtensions --- ProtocolExtensionContainer { {RelocationRequiredExtensions} } --- OPTIONAL,
--- ...
}

RelocationRequiredIEs RANAP-PROTOCOL-IES ::= {
--- { ID id-RelocationType --- CRITICALITY ignore --- TYPE RelocationType --- PRESENCE mandatory } ---|
--- { ID id-Cause --- CRITICALITY ignore --- TYPE Cause --- PRESENCE mandatory } ---|
--- { ID id-SourceID --- CRITICALITY ignore --- TYPE SourceID --- PRESENCE mandatory } ---|
--- { ID id-TargetID --- CRITICALITY reject --- TYPE TargetID --- PRESENCE mandatory } ---|
--- { ID id-ClassmarkInformation2 --- CRITICALITY ignore --- TYPE ClassmarkInformation2 --- PRESENCE conditional ---|
--- This is only present when initiating an inter system handover towards GSM BSC --- } ---|
--- { ID id-ClassmarkInformation3 --- CRITICALITY ignore --- TYPE ClassmarkInformation3 --- PRESENCE conditional ---

```

```

----- This is only present when initiating an inter-system handover towards GSM-BSC ----- }+
{ ID id-SourceRNC-ToTargetRNC-TransparentContainer
----- CRITICALITY reject TYPE SourceRNC-ToTargetRNC-TransparentContainer PRESENCE conditional
----- This IE shall be present when initiating relocation of SRNS ----- }+
{ ID id-OldBSS-ToNewBSS-Information CRITICALITY ignore TYPE OldBSS-ToNewBSS-Information PRESENCE conditional
----- This is only present when initiating an inter-system handover towards GSM-BSC ----- },
...
}

RelocationRequiredExtensions-RANAP-PROTOCOL-EXTENSION ::= {
...
}

----- *****
-----
----- Relocation Command
-----
----- *****

RelocationCommand ::= SEQUENCE {
protocolIEs ProtocolIE-Container { {RelocationCommandIEs} },
protocolExtensions ProtocolExtensionContainer { {RelocationCommandExtensions} } OPTIONAL,
...
}

RelocationCommandIEs-RANAP-PROTOCOL-IES ::= {
{ ID id-TargetRNC-ToSourceRNC-TransparentContainer
----- CRITICALITY reject TYPE TargetRNC-ToSourceRNC-TransparentContainer PRESENCE conditional
----- This IE shall be included if it is received by the CN from the relocation target. ----- }+
{ ID id-L3-Information CRITICALITY ignore TYPE L3-Information PRESENCE conditional
----- This IE shall be included if it is received by the CN from the relocation target. ----- }+
{ ID id-RAB-RelocationReleaseList CRITICALITY ignore TYPE RAB-RelocationReleaseList PRESENCE optional }+
{ ID id-RAB-DataForwardingList CRITICALITY ignore TYPE RAB-DataForwardingList PRESENCE conditional
----- This group if applicable is only present for RABs towards the PS domain ----- }+
{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
...
}

RAB-RelocationReleaseList ::= RAB-IE-ContainerList { {RAB-RelocationReleaseItemIEs} }

RAB-RelocationReleaseItemIEs-RANAP-PROTOCOL-IES ::= {
{ ID id-RAB-RelocationReleaseItem CRITICALITY ignore TYPE RAB-RelocationReleaseItem PRESENCE mandatory },
...
}

RAB-RelocationReleaseItem ::= SEQUENCE {
rAB-ID RAB-ID,
iE-Extensions ProtocolExtensionContainer { {RAB-RelocationReleaseItem-ExtIEs} } OPTIONAL,
...
}

```

```

RAB-RelocationReleaseItem-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

RAB-DataForwardingList ::= RAB-IE-ContainerList { {RAB-DataForwardingItemIEs} }

RAB-DataForwardingItemIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-DataForwardingItem CRITICALITY ignore TYPE RAB-DataForwardingItem PRESENCE mandatory },
  ...
}

RAB-DataForwardingItem ::= SEQUENCE {
  rAB-ID RAB-ID,
  transportLayerAddress TransportLayerAddress,
  iuTransportAssociation IuTransportAssociation,
  iE-Extensions ProtocolExtensionContainer { {RAB-DataForwardingItem-ExtIEs} } OPTIONAL,
  ...
}

RAB-DataForwardingItem-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

RelocationCommandExtensions-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
-----
Relocation-Preparation-Failure
-----
-----

RelocationPreparationFailure ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {RelocationPreparationFailureIEs} },
  protocolExtensions ProtocolExtensionContainer { {RelocationPreparationFailureExtensions} } OPTIONAL,
  ...
}

RelocationPreparationFailureIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory } |
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
  ...
}

RelocationPreparationFailureExtensions-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

```



```

----- { ID id-RAB-SetupItem-RelocReqAck ----- CRITICALITY reject TYPE RAB-SetupItem-RelocReqAck ----- PRESENCE mandatory } ,
----- ...
}

RAB-SetupItem-RelocReqAck ::= SEQUENCE {
----- rAB-ID ----- RAB-ID ,
----- chosenUP-Version ----- ChosenUP-Version ----- OPTIONAL ,
----- transportLayerAddress ----- TransportLayerAddress ----- OPTIONAL ,
----- This IE is only present for RABS towards the PS Domain
----- IuTransportAssociation ----- IuTransportAssociation ----- OPTIONAL ,
----- This IE is only present for RABS towards the PS Domain
----- IE-Extensions ----- ProtocolExtensionContainer { {RAB-SetupItem-RelocReqAck-ExtIEs} } ----- OPTIONAL ,
----- ...
}

RAB-SetupItem-RelocReqAck-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
----- ...
}

RAB-FailedList ----- ::= RAB-IE-ContainerList { {RAB-FailedItemIEs} }

RAB-FailedItemIEs-RANAP-PROTOCOL-IES ::= {
----- { ID id-RAB-FailedItem ----- CRITICALITY ignore TYPE RAB-FailedItem ----- PRESENCE mandatory } ,
----- ...
}

RAB-FailedItem ::= SEQUENCE {
----- rAB-ID ----- RAB-ID ,
----- cause ----- Cause ,
----- IE-Extensions ----- ProtocolExtensionContainer { {RAB-FailedItem-ExtIEs} } ----- OPTIONAL ,
----- ...
}

RAB-FailedItem-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
----- ...
}

RelocationRequestAcknowledgeExtensions-RANAP-PROTOCOL-EXTENSION ::= {
----- ...
}

----- *****
-----
----- Relocation Failure
-----
----- *****

RelocationFailure ::= SEQUENCE {
----- protocolIEs ----- ProtocolIE-Container { {RelocationFailureIEs} } ,
----- protocolExtensions ----- ProtocolExtensionContainer { {RelocationFailureExtensions} } ----- OPTIONAL ,

```

```

-----
}

RelocationFailureIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory },
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
  ...
}

RelocationFailureExtensions-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
RELOCATION_CANCEL_ELEMENTARY_PROCEDURE
-----
-----
Relocation-Cancel
-----

RelocationCancel ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {RelocationCancelIEs} },
  protocolExtensions ProtocolExtensionContainer { {RelocationCancelExtensions} } OPTIONAL,
  ...
}

RelocationCancelIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory },
  ...
}

RelocationCancelExtensions-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
Relocation-Cancel-Acknowledge
-----

RelocationCancelAcknowledge ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {RelocationCancelAcknowledgeIEs} },
  protocolExtensions ProtocolExtensionContainer { {RelocationCancelAcknowledgeExtensions} } OPTIONAL,
  ...
}

```

```

}

RelocationCancelAcknowledgeIEs RANAP-PROTOCOL-IES ::= {
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
  ...
}

RelocationCancelAcknowledgeExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
SRNS-CONTEXT-TRANSFER-OPEARATION
-----

-----
SRNS-Context-Request
-----

SRNS-ContextRequest ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {SRNS-ContextRequestIEs} },
  protocolExtensions ProtocolExtensionContainer { {SRNS-ContextRequestExtensions} } OPTIONAL,
  ...
}

SRNS-ContextRequestIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-DataForwardingList-SRNS-CtxReq CRITICALITY ignore TYPE RAB-DataForwardingList-SRNS-CtxReq PRESENCE mandatory },
  ...
}

RAB-DataForwardingList-SRNS-CtxReq ::= RAB-IE-ContainerList { {RAB-DataForwardingItem-SRNS-CtxReq-IEs} }

RAB-DataForwardingItem-SRNS-CtxReq-IEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-DataForwardingItem-SRNS-CtxReq CRITICALITY ignore TYPE RAB-DataForwardingItem-SRNS-CtxReq PRESENCE mandatory },
  ...
}

RAB-DataForwardingItem-SRNS-CtxReq ::= SEQUENCE {
  rAB-ID RAB-ID,
  iE-Extensions ProtocolExtensionContainer { {RAB-DataForwardingItem-SRNS-CtxReq-ExtIEs} } OPTIONAL,
  ...
}

RAB-DataForwardingItem-SRNS-CtxReq-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

```

```

SRNS-ContextRequestExtensions-RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-----
*****
-----
SRNS-Context-Response
-----
*****

SRNS-ContextResponse ::= SEQUENCE {
    protocolIEs ProtocolIE-Container { {SRNS-ContextResponseIEs} },
    protocolExtensions ProtocolExtensionContainer { {SRNS-ContextResponseExtensions} } OPTIONAL,
    ...
}

SRNS-ContextResponseIEs-RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-ContextList CRITICALITY ignore TYPE RAB-ContextList PRESENCE conditional
    -- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
    { ID id-RAB-ContextFailedtoTransferList CRITICALITY ignore TYPE RAB-ContextFailedtoTransferList PRESENCE conditional
    -- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
    { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
    ...
}

RAB-ContextList ::= RAB-IE-ContainerList { {RAB-ContextItemIEs} }

RAB-ContextItemIEs-RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-ContextItem CRITICALITY ignore TYPE RAB-ContextItem PRESENCE mandatory },
    ...
}

RAB-ContextItem ::= SEQUENCE {
    rAB-ID RAB-ID,
    dl-GTP-PDU-SequenceNumber DL-GTP-PDU-SequenceNumber,
    ul-GTP-PDU-SequenceNumber UL-GTP-PDU-SequenceNumber,
    dl-N-PDU-SequenceNumber DL-N-PDU-SequenceNumber,
    ul-N-PDU-SequenceNumber UL-N-PDU-SequenceNumber,
    iE-Extensions ProtocolExtensionContainer { {RAB-ContextItem-ExtIEs} } OPTIONAL,
    ...
}

RAB-ContextItem-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RAB-ContextFailedtoTransferList ::= RAB-IE-ContainerList { {RABs-ContextFailedtoTransferItemIEs} }

```

```

RABs-ContextFailedtoTransferItemIES-RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-ContextFailedtoTransferItem CRITICALITY ignore TYPE RABs-ContextFailedtoTransferItem PRESENCE mandatory },
  ...
}

RABs-ContextFailedtoTransferItem ::= SEQUENCE {
  rAB-ID RAB-ID,
  cause Cause,
  iE-Extensions ProtocolExtensionContainer { { RABs-ContextFailedtoTransferItem-ExtIEs } } OPTIONAL,
  ...
}

RABs-ContextFailedtoTransferItem-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

SRNS-ContextResponseExtensions-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
-----
SECURITY MODE CONTROL ELEMENTARY PROCEDURE
-----
-----
-----
-----
Security Mode Command
-----
-----

SecurityModeCommand ::= SEQUENCE {
  protocolIES ProtocolIE-Container { { SecurityModeCommandIES } },
  protocolExtensions ProtocolExtensionContainer { { SecurityModeCommandExtensions } } OPTIONAL,
  ...
}

SecurityModeCommandIES-RANAP-PROTOCOL-IES ::= {
  { ID id-IntegrityProtectionInformation CRITICALITY ignore TYPE IntegrityProtectionInformation PRESENCE mandatory } |
  { ID id-EncryptionInformation CRITICALITY ignore TYPE EncryptionInformation PRESENCE optional } |
  { ID id-KeyStatus CRITICALITY ignore TYPE KeyStatus PRESENCE mandatory },
  ...
}

SecurityModeCommandExtensions-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

```



```

-----
--
-- Data Volume Report Request
--
-----

DataVolumeReportRequest ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {DataVolumeReportRequestIEs} },
  protocolExtensions ProtocolExtensionContainer { {DataVolumeReportRequestExtensions} } OPTIONAL,
  ...
}

DataVolumeReportRequestIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-DataVolumeReportRequestList CRITICALITY ignore TYPE RAB-DataVolumeReportRequestList PRESENCE mandatory },
  ...
}

RAB-DataVolumeReportRequestList ::= RAB-IE-ContainerList { {RAB-DataVolumeReportRequestItemIEs} }

RAB-DataVolumeReportRequestItemIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-DataVolumeReportRequestItem CRITICALITY ignore TYPE RAB-DataVolumeReportRequestItem PRESENCE mandatory },
  ...
}

RAB-DataVolumeReportRequestItem ::= SEQUENCE {
  rAB-ID RAB-ID,
  IE-Extensions ProtocolExtensionContainer { {RAB-DataVolumeReportRequestItem-ExtIEs} } OPTIONAL,
  ...
}

RAB-DataVolumeReportRequestItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

DataVolumeReportRequestExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
--
-- Data Volume Report
--
-----

DataVolumeReport ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {DataVolumeReportIEs} },
  protocolExtensions ProtocolExtensionContainer { {DataVolumeReportExtensions} } OPTIONAL,
  ...
}

```

```

DataVolumeReportIEs RANAP-PROTOCOL-IES ::= {
  { ID id RAB-DataVolumeReportList CRITICALITY ignore TYPE RAB-DataVolumeReportList PRESENCE conditional
  -- This group must be present at least when no other group is present, ie. at least one group must be present } +
  { ID id RAB-FailedtoReportList CRITICALITY ignore TYPE RAB-FailedtoReportList PRESENCE conditional
  -- This group must be present at least when no other group is present, ie. at least one group must be present } +
  { ID id CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
  ...
}

DataVolumeReportExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

RAB-FailedtoReportList ::= RAB-IE-ContainerList { {RABs-failed-to-reportItemIEs} }

RABs-failed-to-reportItemIEs RANAP-PROTOCOL-IES ::= {
  { ID id RAB-FailedtoReportItem CRITICALITY ignore TYPE RABs-failed-to-reportItem PRESENCE mandatory },
  ...
}

RABs-failed-to-reportItem ::= SEQUENCE {
  rAB-ID RAB-ID,
  cause Cause,
  iE-Extensions ProtocolExtensionContainer { { RABs-failed-to-reportItem-ExtIEs} } OPTIONAL,
  ...
}

RABs-failed-to-reportItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
--
-- CN-INFORMATION-BROADCAST
--
-----
-----
--
-- CN-Information-Broadcast-Request
--
-----

CN-InformationBroadcastRequest ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {CN-InformationBroadcastRequestIEs} },
  protocolExtensions ProtocolExtensionContainer { {CN-InformationBroadcastRequestExtensions} } OPTIONAL,
  ...
}

```



```

CN-InformationBroadcastRequestIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-CN-DomainIndicator CRITICALITY ignore TYPE-CN-DomainIndicator PRESENCE mandatory } |
  { ID id-CN-BroadcastInformationPieceList CRITICALITY ignore TYPE-CN-BroadcastInformationPieceList PRESENCE mandatory },
  ...
}

CN-BroadcastInformationPieceList ::= CN-BroadcastInfPiece-IE-ContainerList { {CN-BroadcastInformationPieceIEs} }

CN-BroadcastInformationPieceIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-CN-BroadcastInformationPiece CRITICALITY ignore TYPE-CN-BroadcastInformationPiece PRESENCE mandatory },
  ...
}

CN-BroadcastInformationPiece ::= SEQUENCE {
  informationIdentity InformationIdentity,
  nAS-BroadcastInformation NAS-BroadcastInformation OPTIONAL
  -- Included if CN requests UTRAN to broadcast the information piece --,
  areaIdentity AreaIdentity OPTIONAL
  -- Included if CN requests UTRAN to broadcast the information piece --,
  informationPriority InformationPriority OPTIONAL
  -- Included if CN requests UTRAN to broadcast the information piece --,
  informationControl InformationControl,
  IE-Extensions ProtocolExtensionContainer { {CN-BroadcastInformationPiece-ExtIEs} } OPTIONAL,
  ...
}

CN-BroadcastInformationPiece-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

CN-InformationBroadcastRequestExtensions-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
-- CN-Information-Broadcast-Confirm
-----

CN-InformationBroadcastConfirm ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {CN-InformationBroadcastConfirmIEs} },
  protocolExtensions ProtocolExtensionContainer { {CN-InformationBroadcastConfirmExtensions} } OPTIONAL,
  ...
}

CN-InformationBroadcastConfirmIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-CN-DomainIndicator CRITICALITY ignore TYPE-CN-DomainIndicator PRESENCE mandatory } |
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE-CriticalityDiagnostics PRESENCE optional },

```

```

-----
}

CN-InformationBroadcastConfirmExtensions-RANAP-PROTOCOL-EXTENSION ::= {
-----
}

-----
--
-- CN-Information-Broadcast-Reject
--
-----

CN-InformationBroadcastReject ::= SEQUENCE {
-----
  protocolIEs ProtocolIE-Container { {CN-InformationBroadcastRejectIEs} },
  protocolExtensions ProtocolExtensionContainer { {CN-InformationBroadcastRejectExtensions} } OPTIONAL,
-----
}

CN-InformationBroadcastRejectIEs-RANAP-PROTOCOL-IES ::= {
-----
  { ID id-CN-DomainIndicator CRITICALITY ignore TYPE CN-DomainIndicator PRESENCE mandatory } +
  { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory } +
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },
-----
}

CN-InformationBroadcastRejectExtensions-RANAP-PROTOCOL-EXTENSION ::= {
-----
}

-----
--
-- RESET-ELEMENTARY-PROCEDURE
--
-----

-----
--
-- Reset
--
-----

Reset ::= SEQUENCE {
-----
  protocolIEs ProtocolIE-Container { {ResetIEs} },
  protocolExtensions ProtocolExtensionContainer { {ResetExtensions} } OPTIONAL,
-----
}

ResetIEs-RANAP-PROTOCOL-IES ::= {
-----
  { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory } +

```

```

----- { ID id-CN-DomainIndicator ----- CRITICALITY ignore TYPE CN-DomainIndicator ----- PRESENCE mandatory },
-----
-----
}

ResetExtensions RANAP-PROTOCOL-EXTENSION ::= {
-----
-----
}

-----
-----
----- Reset Acknowledge
-----
-----

ResetAcknowledge ::= SEQUENCE {
----- protocolIEs ----- ProtocolIE-Container ----- { {ResetAcknowledgeIEs} },
----- protocolExtensions ----- ProtocolExtensionContainer { {ResetAcknowledgeExtensions} } ----- OPTIONAL,
-----
-----
}

ResetAcknowledgeIEs RANAP-PROTOCOL-IES ::= {
----- { ID id-CN-DomainIndicator ----- CRITICALITY ignore TYPE CN-DomainIndicator ----- PRESENCE mandatory } |
----- { ID id-CriticalityDiagnostics ----- CRITICALITY ignore TYPE CriticalityDiagnostics ----- PRESENCE optional },
-----
-----
}

ResetAcknowledgeExtensions RANAP-PROTOCOL-EXTENSION ::= {
-----
-----
}

-----
-----
----- Reset Resource
-----
-----

ResetResource ::= SEQUENCE {
----- protocolIEs ----- ProtocolIE-Container ----- { {ResetResourceIEs} },
----- protocolExtensions ----- ProtocolExtensionContainer { {ResetResourceExtensions} } ----- OPTIONAL,
-----
-----
}

ResetResourceIEs RANAP-PROTOCOL-IES ::= {
----- { ID id-Cause ----- CRITICALITY ignore TYPE Cause ----- PRESENCE mandatory } |
----- { ID id-IuSigConIdList ----- CRITICALITY ignore TYPE ResetResourceList ----- PRESENCE mandatory },
-----
-----
}

ResetResourceList ::= IuSigConId-IE-ContainerList { {ResetResourceItemIEs} }

```

```

ResetResourceItemIEs RANAP-PROTOCOL-IES ::= {
  { ID id IuSigConIdItem CRITICALITY ignore TYPE ResetResourceItem PRESENCE mandatory },
  ...
}

ResetResourceItem ::= SEQUENCE {
  iuSigConId IuSignallingConnectionIdentifier,
  IE-Extensions ProtocolExtensionContainer { { ResetResourceItem-ExtIEs } } OPTIONAL,
  ...
}

ResetResourceItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

ResetResourceExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
--
-- Reset-Resource-Acknowledge
--
-----

ResetResourceAcknowledge ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {ResetResourceAcknowledgeIEs} },
  protocolExtensions ProtocolExtensionContainer { {ResetResourceAcknowledgeExtensions} } OPTIONAL,
  ...
}

ResetResourceAcknowledgeIEs RANAP-PROTOCOL-IES ::= {
  { ID id IuSigConIdList CRITICALITY ignore TYPE ResetResourceAckList PRESENCE mandatory },
  ...
}

ResetResourceAckList ::= IuSigConId-IE-ContainerList { {ResetResourceAckItemIEs} }

ResetResourceAckItemIEs RANAP-PROTOCOL-IES ::= {
  { ID id IuSigConIdItem CRITICALITY ignore TYPE ResetResourceAckItem PRESENCE mandatory },
  ...
}

ResetResourceAckItem ::= SEQUENCE {
  iuSigConId IuSignallingConnectionIdentifier,
  IE-Extensions ProtocolExtensionContainer { { ResetResourceAckItem-ExtIEs } } OPTIONAL,
  ...
}

ResetResourceAckItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

```

```

}

ResetResourceAcknowledgeExtensions-RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

-----
*****
--- RAB-RELEASE-REQUEST-ELEMENTARY-PROCEDURE
---
*****

-----
*****
--- RAB-Release-Request
---
*****

RAB-ReleaseRequest ::= SEQUENCE {
    protocolIEs ProtocolIE-Container { {RAB-ReleaseRequestIEs} },
    protocolExtensions ProtocolExtensionContainer { {RAB-ReleaseRequestExtensions} } OPTIONAL,
    ...
}

RAB-ReleaseRequestIEs-RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-ReleaseList CRITICALITY ignore TYPE RAB-ReleaseList PRESENCE mandatory },
    ...
}

RAB-ReleaseList ::= RAB-IE-ContainerList { {RAB-ReleaseItemIEs} }

RAB-ReleaseItemIEs-RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-ReleaseItem CRITICALITY ignore TYPE RAB-ReleaseItem PRESENCE mandatory },
    ...
}

RAB-ReleaseItem ::= SEQUENCE {
    rAB-ID RAB-ID,
    cause Cause,
    iE-Extensions ProtocolExtensionContainer { {RAB-ReleaseItem-ExtIEs} } OPTIONAL,
    ...
}

RAB-ReleaseItem-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RAB-ReleaseRequestExtensions-RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

-----
--
-- Iu-RELEASE-REQUEST-ELEMENTARY-PROCEDURE
--
-----
-----
--
-- Iu-Release-Request
--
-----

Iu-ReleaseRequest ::= SEQUENCE {
  protocolIEs      ProtocolIE-Container { {Iu-ReleaseRequestIEs} },
  protocolExtensions ProtocolExtensionContainer { {Iu-ReleaseRequestExtensions} } OPTIONAL,
  ...
}

Iu-ReleaseRequestIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-Cause      CRITICALITY ignore TYPE Cause      PRESENCE mandatory },
  ...
}

Iu-ReleaseRequestExtensions-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
--
-- RELOCATION-DETECT-ELEMENTARY-PROCEDURE
--
-----
-----
--
-- Relocation-Detect
--
-----

RelocationDetect ::= SEQUENCE {
  protocolIEs      ProtocolIE-Container { {RelocationDetectIEs} },
  protocolExtensions ProtocolExtensionContainer { {RelocationDetectExtensions} } OPTIONAL,
  ...
}

RelocationDetectIEs-RANAP-PROTOCOL-IES ::= {
  ...
}

```

```

RelocationDetectExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
RELOCATION COMPLETE ELEMENTARY PROCEDURE
-----
*****
*****
-----
Relocation Complete
-----
*****

RelocationComplete ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {RelocationCompleteIEs} },
  protocolExtensions ProtocolExtensionContainer { {RelocationCompleteExtensions} } OPTIONAL,
  ...
}

RelocationCompleteIEs RANAP-PROTOCOL-IES ::= {
  ...
}

RelocationCompleteExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
PAGING ELEMENTARY PROCEDURE
-----
*****
*****
-----
Paging
-----
*****

Paging ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {PagingIEs} },
  protocolExtensions ProtocolExtensionContainer { {PagingExtensions} } OPTIONAL,
  ...
}

PagingIEs RANAP-PROTOCOL-IES ::= {
  { ID id-CN-DomainIndicator CRITICALITY ignore TYPE-CN-DomainIndicator PRESENCE-mandatory } }

```



```

-----
*****
CN-InvokeTrace ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {CN-InvokeTraceIEs} },
  protocolExtensions ProtocolExtensionContainer { {CN-InvokeTraceExtensions} } OPTIONAL,
  ...
}

CN-InvokeTraceIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-TraceType CRITICALITY ignore TYPE TraceType PRESENCE mandatory } |
  { ID id-TraceReference CRITICALITY ignore TYPE TraceReference PRESENCE mandatory } |
  { ID id-TriggerID CRITICALITY ignore TYPE TriggerID PRESENCE optional } |
  { ID id-UE-ID CRITICALITY ignore TYPE UE-ID PRESENCE optional } |
  { ID id-OMC-ID CRITICALITY ignore TYPE OMC-ID PRESENCE optional },
  ...
}

CN-InvokeTraceExtensions-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
*****
--
-- CN-DEACTIVATE TRACE ELEMENTARY PROCEDURE
--
-----
*****
--
-- CN-Deactivate Trace
--
-----
*****

CN-DeactivateTrace ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {CN-DeactivateTraceIEs} },
  protocolExtensions ProtocolExtensionContainer { {CN-DeactivateTraceExtensions} } OPTIONAL,
  ...
}

CN-DeactivateTraceIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-TraceReference CRITICALITY ignore TYPE TraceReference PRESENCE mandatory } |
  { ID id-TriggerID CRITICALITY ignore TYPE TriggerID PRESENCE optional },
  ...
}

CN-DeactivateTraceExtensions-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
*****

```

```

--
--LOCATION REPORTING CONTROL ELEMENTARY PROCEDURE
--
-----
-----
--
--Location Reporting Control
--
-----

LocationReportingControl ::= SEQUENCE {
--protocolIEs ProtocolIE-Container { {LocationReportingControlIEs} },
--protocolExtensions ProtocolExtensionContainer { {LocationReportingControlExtensions} } OPTIONAL,
--...
}

LocationReportingControlIEs RANAP-PROTOCOL-IES ::= {
--{ ID id RequestType CRITICALITY ignore TYPE RequestType PRESENCE mandatory },
--...
}

LocationReportingControlExtensions RANAP-PROTOCOL-EXTENSION ::= {
--...
}

-----
--
--LOCATION REPORT ELEMENTARY PROCEDURE
--
-----
-----
--
--Location Report
--
-----

LocationReport ::= SEQUENCE {
--protocolIEs ProtocolIE-Container { {LocationReportIEs} },
--protocolExtensions ProtocolExtensionContainer { {LocationReportExtensions} } OPTIONAL,
--...
}

LocationReportIEs RANAP-PROTOCOL-IES ::= {
--{ ID id AreaIdentity CRITICALITY ignore TYPE AreaIdentity PRESENCE optional } |
--{ ID id Cause CRITICALITY ignore TYPE Cause PRESENCE optional },
--...
}

```

```

LocationReportExtensions-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
-----
INITIAL-UE-MESSAGE-ELEMENTARY-PROCEDURE
-----
-----
-----
-----
Initial-UE-Message
-----
-----

InitialUE-Message ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {InitialUE-MessageIEs} },
  protocolExtensions ProtocolExtensionContainer { {InitialUE-MessageExtensions} } OPTIONAL,
  ...
}

InitialUE-MessageIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-CN-DomainIndicator CRITICALITY ignore TYPE CN-DomainIndicator PRESENCE mandatory } |
  { ID id-LAI CRITICALITY ignore TYPE LAI PRESENCE mandatory } |
  { ID id-RAC CRITICALITY ignore TYPE RAC PRESENCE conditional
  -- This IE is only present for RABS towards the PS domain --
  } |
  { ID id-SAI CRITICALITY ignore TYPE SAI PRESENCE mandatory } |
  { ID id-NAS-PDU CRITICALITY ignore TYPE NAS-PDU PRESENCE mandatory } |
  ...
}

InitialUE-MessageExtensions-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
-----
DIRECT-TRANSFER-ELEMENTARY-PROCEDURE
-----
-----
-----
-----
Direct-Transfer
-----
-----

DirectTransfer ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {DirectTransferIEs} },

```

```

-----protocolExtensions----- ProtocolExtensionContainer { {DirectTransferExtensions} }----- OPTIONAL,
-----
-----
}

DirectTransferIEs-RANAP-PROTOCOL-IES ::= {
----- { ID id-NAS-PDU----- CRITICALITY ignore TYPE NAS-PDU----- PRESENCE mandatory } |
----- { ID id-LAI----- CRITICALITY ignore TYPE LAI----- PRESENCE conditional
----- This IE is only present if the message is directed to the PS domain----- } |
----- { ID id-RAC----- CRITICALITY ignore TYPE RAC----- PRESENCE conditional
----- This IE is only present if the message is directed to the PS domain----- } |
----- { ID id-SAPI----- CRITICALITY ignore TYPE SAPI----- PRESENCE conditional
----- This IE is always used in downlink direction----- },
-----
-----
}

DirectTransferExtensions-RANAP-PROTOCOL-EXTENSION ::= {
-----
-----
}

-----
-----
----- *****
-----
----- OVERLOAD CONTROL ELEMENTARY PROCEDURE
-----
----- *****
-----
----- *****
-----
----- Overload
-----
----- *****

Overload ::= SEQUENCE {
----- protocolIEs----- ProtocolIE-Container { {OverloadIEs} },
----- protocolExtensions----- ProtocolExtensionContainer { {OverloadExtensions} }----- OPTIONAL,
-----
-----
}

OverloadIEs-RANAP-PROTOCOL-IES ::= {
----- { ID id-NumberOfSteps----- CRITICALITY ignore TYPE NumberOfSteps----- PRESENCE optional },
-----
-----
}

OverloadExtensions-RANAP-PROTOCOL-EXTENSION ::= {
-----
-----
}

-----
-----
----- *****
-----
----- ERROR INDICATION ELEMENTARY PROCEDURE
-----
-----

```

```

-----
*****
-----
Error Indication
-----
*****

ErrorIndication ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {ErrorIndicationIEs} },
  protocolExtensions ProtocolExtensionContainer { {ErrorIndicationExtensions} } OPTIONAL,
  ...
}

ErrorIndicationIEs RANAP-PROTOCOL-IES ::= {
  { ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE conditional
    At least either of Cause IE or Criticality IE shall be present } |
  { ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE conditional
    At least either of Cause IE or Criticality IE shall be present } |
  { ID id-CN-DomainIndicator CRITICALITY ignore TYPE CN-DomainIndicator PRESENCE optional } |
  { ID id-IuTransportAssociation CRITICALITY ignore TYPE IuTransportAssociation PRESENCE optional } |
  { ID id-TransportLayerAddress CRITICALITY ignore TYPE TransportLayerAddress PRESENCE optional },
  ...
}

ErrorIndicationExtensions RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

-----
*****
-----
SRNS DATA FORWARD ELEMENTARY PROCEDURE
-----
*****

SRNS Data Forward Command
-----
*****

SRNS-DataForwardCommand ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {SRNS-DataForwardCommandIEs} },
  protocolExtensions ProtocolExtensionContainer { {SRNS-DataForwardCommandExtensions} } OPTIONAL,
  ...
}

SRNS-DataForwardCommandIEs RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-DataForwardingList CRITICALITY ignore TYPE RAB-DataForwardingList PRESENCE conditional
    This group is only present for RABs towards the PS-domain },
}

```

```

-----
}
SRNS-DataForwardCommandExtensions-RANAP-PROTOCOL-EXTENSION ::= {
-----
}

-----
--
-- FORWARD-SRNS-CONTEXT-ELEMENTARY-PROCEDURE
--
-----

-----
--
-- Forward-SRNS-Context
--
-----

ForwardSRNS-Context ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {ForwardSRNS-ContextIEs} },
  protocolExtensions ProtocolExtensionContainer { {ForwardSRNS-ContextExtensions} } OPTIONAL,
  ...
}

ForwardSRNS-ContextIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-ContextList CRITICALITY ignore TYPE RAB-ContextList PRESENCE mandatory },
  ...
}

ForwardSRNS-ContextExtensions-RANAP-PROTOCOL-EXTENSION ::= {
-----
}

-----
--
-- RAB-ASSIGNMENT-ELEMENTARY-PROCEDURE
--
-----

-----
--
-- RAB-Assignment-Request
--
-----

RAB-AssignmentRequest ::= SEQUENCE {
  protocolIEs ProtocolIE-Container { {RAB-AssignmentRequestIEs} },
  protocolExtensions ProtocolExtensionContainer { {RAB-AssignmentRequestExtensions} } OPTIONAL,
  ...
}

```

```

}

RAB-AssignmentRequestIEs-RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-SetupOrModifyList CRITICALITY ignore TYPE RAB-SetupOrModifyList PRESENCE conditional
    This group must be present at least when no other group is present, ie. at least one group must be present } |
  { ID id-RAB-ReleaseList CRITICALITY ignore TYPE RAB-ReleaseList PRESENCE conditional
    This group must be present at least when no other group is present, ie. at least one group must be present } ,
  ...
}

RAB-SetupOrModifyList ::= RAB-IE-ContainerPairList { {RAB-SetupOrModifyItem-IEs} }

RAB-SetupOrModifyItem-IEs-RANAP-PROTOCOL-IES-PAIR ::= {
  { ID id-RAB-SetupOrModifyItem FIRST CRITICALITY reject FIRST TYPE RAB-SetupOrModifyItemFirst
    SECOND CRITICALITY ignore SECOND TYPE RAB-SetupOrModifyItemSecond
    PRESENCE mandatory } ,
  ...
}

RAB-SetupOrModifyItemFirst ::= SEQUENCE {
  rAB-ID RAB-ID ,
  rAB-Parameters RAB-Parameters ,
  userPlaneInformation UserPlaneInformation ,
  transportLayerAddress TransportLayerAddress ,
  iuTransportAssociation IuTransportAssociation ,
  iE-Extensions ProtocolExtensionContainer { {RAB-SetupOrModifyItemFirst-ExtIEs} } OPTIONAL ,
  ...
}

RAB-SetupOrModifyItemFirst-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

RAB-SetupOrModifyItemSecond ::= SEQUENCE {
  nAS-BindingInformation NAS-BindingInformation ,
  dataVolumeReportingIndication DataVolumeReportingIndication OPTIONAL
  This IE, if applicable, is only present for RABs towards the PS domain ,
  dl-GTP-PDU-SequenceNumber DL-GTP-PDU-SequenceNumber OPTIONAL
  This IE, if applicable, is only present for RABs towards the PS domain ,
  ul-GTP-PDU-SequenceNumber UL-GTP-PDU-SequenceNumber OPTIONAL
  This IE, if applicable, is only present for RABs towards the PS domain ,
  dl-N-PDU-SequenceNumber DL-N-PDU-SequenceNumber OPTIONAL
  This IE, if applicable, is only present for RABs towards the PS domain ,
  ul-N-PDU-SequenceNumber UL-N-PDU-SequenceNumber OPTIONAL
  This IE, if applicable, is only present for RABs towards the PS domain ,
  iE-Extensions ProtocolExtensionContainer { {RAB-SetupOrModifyItemSecond-ExtIEs} } OPTIONAL ,
  ...
}

RAB-SetupOrModifyItemSecond-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {

```

```


...
}

RAB-AssignmentRequestExtensions RANAP-PROTOCOL-EXTENSION ::= {
...
}

*****
--
-- RAB Assignment Response
--
*****

RAB-AssignmentResponse ::= SEQUENCE {

protocolIEs ProtocolIE-Container { {RAB-AssignmentResponseIEs} },
protocolExtensions ProtocolExtensionContainer { {RAB-AssignmentResponseExtensions} } OPTIONAL,
...
}

RAB-AssignmentResponseIEs RANAP-PROTOCOL-IES ::= {

{ ID id-RAB-SetupOrModifiedList CRITICALITY ignore TYPE RAB-SetupOrModifiedList PRESENCE conditional
-- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
{ ID id-RAB-ReleasedList CRITICALITY ignore TYPE RAB-ReleasedList PRESENCE conditional
-- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
{ ID id-RAB-QueuedList CRITICALITY ignore TYPE RAB-QueuedList PRESENCE conditional
-- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
{ ID id-RAB-FailedList CRITICALITY ignore TYPE RAB-FailedList PRESENCE conditional
-- This group must be present at least when no other group is present, ie. at least one group must be present -- } |
{ ID id-RAB-ReleaseFailedList CRITICALITY ignore TYPE RAB-ReleaseFailedList PRESENCE conditional
-- This group must be present at least when no other group is present, ie. at least one group must be present -- },
...
}

RAB-SetupOrModifiedList ::= RAB-IE-ContainerList { {RAB-SetupOrModifiedItemIEs} }

RAB-SetupOrModifiedItemIEs RANAP-PROTOCOL-IES ::= {

{ ID id-RAB-SetupOrModifiedItem CRITICALITY ignore TYPE RAB-SetupOrModifiedItem PRESENCE mandatory },
...
}

RAB-SetupOrModifiedItem ::= SEQUENCE {

rAB-ID RAB-ID,
chosenUP-Version ChosenUP-Version OPTIONAL,
transportLayerAddress TransportLayerAddress OPTIONAL
-- This IE is only present for RABs towards the PS domain --,
iuTransportAssociation IuTransportAssociation OPTIONAL
-- This IE is only present for RABs towards the PS domain --,
iE-Extensions ProtocolExtensionContainer { {RAB-SetupOrModifiedItem-ExtIEs} } OPTIONAL,
...
}


```



```

}
RAB-SetupOrModifiedItem-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
    ...
}
RAB-ReleasedList ::= RAB-IE-ContainerList { {RAB-ReleasedItemIEs} }
RAB-ReleasedItemIEs-RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-ReleasedItem CRITICALITY ignore TYPE RAB-ReleasedItem PRESENCE mandatory },
    ...
}
RAB-ReleasedItem ::= SEQUENCE {
    rAB-ID RAB-ID,
    dl-dataVolumes DataVolumeList OPTIONAL
    -- This IE is only present if data volume reporting for PS domain is required --,
    dl-GTP-PDU-SequenceNumber DL-GTP-PDU-SequenceNumber OPTIONAL
    -- This IE is only present for RABs towards the PS domain when the release is UTRAN initiated --,
    ul-GTP-PDU-SequenceNumber UL-GTP-PDU-SequenceNumber OPTIONAL
    -- This IE is only present for RABs towards the PS domain when the release is UTRAN initiated --,
    iE-Extensions ProtocolExtensionContainer { {RAB-ReleasedItem-ExtIEs} } OPTIONAL,
    ...
}
RAB-ReleasedItem-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
    ...
}
DataVolumeList ::= SEQUENCE (SIZE (1..maxNrOfVol)) OF
    SEQUENCE {
        dl-UnsuccessfullyTransmittedDataVolume UnsuccessfullyTransmittedDataVolume,
        dataVolumeReference DataVolumeReference OPTIONAL,
        iE-Extensions ProtocolExtensionContainer { {DataVolumeList-ExtIEs} } OPTIONAL,
        ...
    }
DataVolumeList-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
    ...
}
RAB-QueuedList ::= RAB-IE-ContainerList { {RAB-QueuedItemIEs} }
RAB-QueuedItemIEs-RANAP-PROTOCOL-IES ::= {
    { ID id-RAB-QueuedItem CRITICALITY ignore TYPE RAB-QueuedItem PRESENCE mandatory },
    ...
}
RAB-QueuedItem ::= SEQUENCE {
    rAB-ID RAB-ID,

```

```

----- iE-Extensions ----- ProtocolExtensionContainer { { RAB-QueuedItem-ExtIEs } } ----- OPTIONAL,
-----
-----
}

RAB-QueuedItem-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
-----
-----
}

RAB-ReleaseFailedList ::= RAB-FailedList

RAB-AssignmentResponseExtensions RANAP-PROTOCOL-EXTENSION ::= {
-----
-----
}

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

PrivateMessage ::= SEQUENCE {
----- privateIEs ----- PrivateIE-Container { { PrivateMessage-IEs } },
-----
-----
}

PrivateMessage-IEs RANAP-PRIVATE-IES ::= {
-----
-----
}

-----
-----
----- *****
-----
----- RANAP RELOCATION ELEMENTARY PROCEDURE
-----
----- *****
-----

RANAP-RelocationInformation ::= SEQUENCE {
----- protocolIEs ----- ProtocolIE-Container { { RANAP-RelocationInformationIEs } },
----- protocolExtensions ----- ProtocolExtensionContainer { { RANAP-RelocationInformationExtensions } } ----- OPTIONAL,
-----
-----
}

RANAP-RelocationInformationIEs RANAP-PROTOCOL-IES ::= {
----- { ID id-DirectTransferInformationList RANAP-RelocInf -----
----- CRITICALITY ignore TYPE-DirectTransferInformationList-RANAP-RelocInf -----
----- PRESENCE mandatory } -----
----- { ID id-RAB-ContextList-RANAP-RelocInf ----- CRITICALITY ignore TYPE-RAB-ContextList-RANAP-RelocInf ----- PRESENCE mandatory } -----
-----
-----
}

DirectTransferInformationList RANAP-RelocInf ::= DirectTransfer-IE-ContainerList { { DirectTransferInformationItemIEs RANAP-RelocInf } }

```

```

DirectTransferInformationItemIEs-RANAP-RelocInf-RANAP-PROTOCOL-IES ::= {
  { ID id-DirectTransferInformationItem-RANAP-RelocInf
    CRITICALITY ignore TYPE DirectTransferInformationItem-RANAP-RelocInf
    PRESENCE mandatory },
  ...
}

DirectTransferInformationItem-RANAP-RelocInf ::= SEQUENCE {
  nAS-PDU NAS-PDU,
  SAPI SAPI,
  IE-Extensions ProtocolExtensionContainer { {RANAP-DirectTransferInformationItem-ExtIEs-RANAP-RelocInf} } OPTIONAL,
  ...
}

RANAP-DirectTransferInformationItem-ExtIEs-RANAP-RelocInf-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

RAB-ContextList-RANAP-RelocInf ::= RAB-IE-ContainerList { {RAB-ContextItemIEs-RANAP-RelocInf} }

RAB-ContextItemIEs-RANAP-RelocInf-RANAP-PROTOCOL-IES ::= {
  { ID id-RAB-ContextItem-RANAP-RelocInf CRITICALITY ignore TYPE RAB-ContextItem-RANAP-RelocInf PRESENCE mandatory },
  ...
}

RAB-ContextItem-RANAP-RelocInf ::= SEQUENCE {
  nAS-BindingInformation NAS-BindingInformation,
  dl-GTP-PDU-SequenceNumber DL-GTP-PDU-SequenceNumber,
  ul-GTP-PDU-SequenceNumber UL-GTP-PDU-SequenceNumber,
  dl-N-PDU-SequenceNumber DL-N-PDU-SequenceNumber,
  ul-N-PDU-SequenceNumber UL-N-PDU-SequenceNumber,
  IE-Extensions ProtocolExtensionContainer { {RAB-ContextItem-ExtIEs-RANAP-RelocInf} } OPTIONAL,
  ...
}

RAB-ContextItem-ExtIEs-RANAP-RelocInf-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

RANAP-RelocationInformationExtensions-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

END

```

9.3.4 Information Element Definitions

```

-- *****
--

```

```

-- Information Element Definitions
--
-- *****
RANAP-IEs -- { object identifier to be allocated }--
DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
    maxNrOfErrors,
    maxNrOfPDPDirections,
    maxNrOfPoints,
    maxNrOfRABs,
    maxNrOfSeparateTrafficDirections,
    maxRAB-Subflows,
    maxRAB-SubflowCombination

FROM RANAP-Constants

    Criticality,
    ProcedureCode,
    ProtocolIE-ID,
    TriggeringMessage
FROM RANAP-CommonDataTypes

    ProtocolExtensionContainer{},
    RANAP-PROTOCOL-EXTENSION
FROM RANAP-Containers;

-- A

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

AllocationOrRetentionPriority-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

AreaIdentity ::= CHOICE {
    sAI          SAI,
    geographicalArea  GeographicalArea,
    ...
}

```

```
-- B
BindingID ::= OCTET STRING (SIZE (4))

-- C

Cause ::= CHOICE {
    radioNetwork      CauseRadioNetwork,
    transmissionNetwork CauseTransmissionNetwork,
    nAS               CauseNAS,
    protocol          CauseProtocol,
    misc              CauseMisc,
    non-Standard      CauseNon-Standard,
    ...
}

CauseMisc ::= INTEGER {
    om-intervention (113),
    no-resource-available (114),
    unspecified-failure (115),
    network-optimisation (116)
} (113..128)

CauseNAS ::= INTEGER {
    user-restriction-start-indication (81),
    user-restriction-end-indication (82),
    normal-release (83)
} (81..96)

CauseProtocol ::= INTEGER {
    transfer-syntax-error (97),
    semantic-error (98),
    message-not-compatible-with-receiver-state (99),
    abstract-syntax-error-reject (100),
    abstract-syntax-error-ignore-and-notify (101)
} (97..112)

CauseRadioNetwork ::= INTEGER {
    rab-pre-empted (1),
    trelocoverall-expiry (2),
    trelocprep-expiry (3),
    treloccomplete-expiry (4),
    tqueing-expiry (5),
    relocation-triggered (6),
    trellocalloc-expiry(7),
    unable-to-establish-during-relocation (8),
    unknown-target-rnc (9),

```

```

    relocation-cancelled (10),
    successful-relocation (11),
    requested-ciphering-and-or-integrity-protection-algorithms-not-supported (12),
    change-of-ciphering-and-or-integrity-protection-is-not-supported (13),
    failure-in-the-radio-interface-procedure (14),
    release-due-to-utran-generated-reason (15),
    user-inactivity (16),
    time-critical-relocation (17),
    requested-traffic-class-not-available (18),
    invalid-rab-parameters-value (19),
    requested-maximum-bit-rate-not-available (20),
    requested-guaranteed-bit-rate-not-available (21),
    requested-transfer-delay-not-achievable (22),
    invalid-rab-parameters-combination (23),
    condition-violation-for-sdu-parameters (24),
    condition-violation-for-traffic-handling-priority (25),
    condition-violation-for-guaranteed-bit-rate (26),
    user-plane-versions-not-supported (27),
    iu-up-failure (28),
    relocation-failure-in-target-CN-RNC-or-target-system(29),
    invalid-RAB-ID (30),
    no-remaining-rab (31),
    interaction-with-other-procedure (32),
    requested-maximum-bit-rate-for-dl-not-available (33),
    requested-maximum-bit-rate-for-ul-not-available (34),
    requested-guaranteed-bit-rate-for-dl-not-available (35),
    requested-guaranteed-bit-rate-for-ul-not-available (36),
    repeated-integrity-checking-failure (37),
    requested-report-type-not-supported (38),
    request-superseded (39),
    release-due-to-UE-generated-signalling-connection-release (40)
} (1..64)

CauseNon-Standard ::= INTEGER (129..256)

CauseTransmissionNetwork ::= INTEGER {
    logical-error-unknown-iu-transport-association (65)
} (65..80)

CriticalityDiagnostics ::= SEQUENCE {
    procedureCode          ProcedureCode          OPTIONAL,
    triggeringMessage      TriggeringMessage      OPTIONAL,
    criticalityResponse    Criticality             OPTIONAL,
    iEsCriticalityResponses CriticalityDiagnostics-IE-List OPTIONAL,
    iE-Extensions         ProtocolExtensionContainer { {CriticalityDiagnostics-ExtIEs} } OPTIONAL,
    ...
}

CriticalityDiagnostics-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {

```

```

    ...
}

CriticalityDiagnostics-IE-List ::= SEQUENCE (SIZE (1..maxNrOfErrors)) OF
    SEQUENCE {
        criticalityResponse Criticality,
        iE-ID ProtocolIE-ID,
        repetitionNumber RepetitionNumber OPTIONAL,
        iE-Extensions ProtocolExtensionContainer { {CriticalityDiagnostics-IE-List-ExtIEs} } OPTIONAL,
    }
    ...
}

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

CGI ::= SEQUENCE {
    pLMN-ID PLMN-ID,
    LAC LAC,
    cI CI,
    iE-Extensions ProtocolExtensionContainer { {CGI-ExtIEs} } OPTIONAL
}

CGI-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

ChosenEncryptionAlgorithm ::= EncryptionAlgorithm

ChosenIntegrityProtectionAlgorithm ::= IntegrityProtectionAlgorithm

ChosenUP-Version ::= ENUMERATED {
    version1,
    version2,
    ...
}

CI ::= OCTET STRING (SIZE (2))

ClassmarkInformation2 ::= OCTET STRING

ClassmarkInformation3 ::= OCTET STRING

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

CN-BroadcastArea ::= CHOICE {

```

```

    LAI                LAI,
    rAI                RAI,
    sAI                SAI,
    geographicalArea   GeographicalArea,
    ...
}

-- D

DataVolumeReference ::= INTEGER (0..255)

DataVolumeReportingIndication ::= ENUMERATED {
    do-report,
    do-not-report
}

DCH-ID ::= INTEGER (0..255)

DCH ID List ::= SEQUENCE (SIZE (1..maxRAB-Subflows)) OF
    DCH ID

DeliveryOfErroneousSDU ::= ENUMERATED {
    yes,
    no,
    no-error-detection-consideration
}

DeliveryOrder ::= ENUMERATED {
    delivery-order-requested,
    delivery-order-not-requested
}

DL-GTP-PDU-SequenceNumber ::= INTEGER (0..65535)
-- Reference: xx.xxx

DL-N-PDU-SequenceNumber ::= INTEGER (0..65535)
-- Reference: xx.xxx

D-RNTI ::= INTEGER (0..1048575)

DRX-CycleLengthCoefficient ::= INTEGER (2..12)

DSCH-ID ::= INTEGER (0..255)

-- E

EncryptionAlgorithm ::= INTEGER { no-encryption (0), standard-UMTS-encryption-algorithm-UEA1 (1) } (0..15)

EncryptionInformation ::= SEQUENCE {
    permittedAlgorithms PermittedEncryptionAlgorithms,
```



```

    key          EncryptionKey,
    iE-Extensions ProtocolExtensionContainer { {EncryptionInformation-ExtIEs} } OPTIONAL
}

EncryptionInformation-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

EncryptionKey ::= BIT STRING (SIZE (128))
-- Reference: 33.102

Event ::= ENUMERATED {
    stop,
    direct,
    change-of-servicearea,
    ...
}

-- F
-- G

GeographicalArea ::= CHOICE {
    point          GA-Point,
    pointWithUnCertainty GA-PointWithUnCertainty,
    polygon        GA-Polygon,
    ...
}

GeographicalCoordinates ::= SEQUENCE {
    latitudeSign    ENUMERATED { north, south },
    latitude        INTEGER (0..8388607),
    longitude       INTEGER (-8388608..8388607),
    iE-Extensions  ProtocolExtensionContainer { {GeographicalCoordinates-ExtIEs} } OPTIONAL,
    ...
}

GeographicalCoordinates-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

GA-Point ::= SEQUENCE {
    geographicalCoordinates GeographicalCoordinates,
    iE-Extensions          ProtocolExtensionContainer { {GA-Point-ExtIEs} } OPTIONAL,
    ...
}

GA-Point-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

GA-PointWithUnCertainty ::=SEQUENCE {
    geographicalCoordinates GeographicalCoordinates,
    iE-Extensions ProtocolExtensionContainer { {GA-PointWithUnCertainty-ExtIEs} } OPTIONAL,
    uncertaintyCode INTEGER (0..127)
}

GA-PointWithUnCertainty-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

GA-Polygon ::= SEQUENCE (SIZE (1..maxNrOfPoints)) OF
    SEQUENCE {
        geographicalCoordinates GeographicalCoordinates,
        iE-Extensions ProtocolExtensionContainer { {GA-Polygon-ExtIEs} } OPTIONAL,
        ...
    }

GA-Polygon-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

GlobalRNC-ID ::= SEQUENCE {
    pLMN-ID PLMN-ID,
    rNC-ID RNC-ID
}

GTP-TEI ::= OCTET STRING (SIZE (4))
-- Reference: xx.xxx

GuaranteedBitrate ::= INTEGER (0..16000000)
-- Unit is bits per sec

-- H

-- I
InformationIdentity ::= INTEGER (0..255)

InformationPriority ::= INTEGER (0..15)

InformationControl ::= ENUMERATED {
    on,
    off
}

IMEI ::= TBCD-OCTET STRING (SIZE (8))
-- Reference: 23.003

IMSI ::= TBCD-STRING (SIZE (3..8))
-- Reference: 23.003

```

```
IntegrityProtectionAlgorithm ::= INTEGER { standard-UMTS-integrity-algorithm-UIA1 (0) } (0..15)

IntegrityProtectionInformation ::= SEQUENCE {
    permittedAlgorithms PermittedIntegrityProtectionAlgorithms,
    key IntegrityProtectionKey,
    iE-Extensions ProtocolExtensionContainer { {IntegrityProtectionInformation-ExtIEs} } OPTIONAL
}

IntegrityProtectionInformation-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

IntegrityProtectionKey ::= BIT STRING (SIZE (128))

IuSignallingConnectionIdentifier ::= BIT STRING (SIZE (24))

IuTransportAssociation ::= CHOICE {
    gTP-TEI GTP-TEI,
    bindingID BindingID,
    ...
}

-- J
-- K

KeyStatus ::= ENUMERATED {
    old,
    new,
    ...
}

-- L

LAC ::= OCTET STRING (SIZE (2))

LAI ::= SEQUENCE {
    pLMN-ID PLMN-ID,
    LAC LAC,
    iE-Extensions ProtocolExtensionContainer { {LAI-ExtIEs} } OPTIONAL
}

LAI-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

L3-Information ::= OCTET STRING

-- M

MaxBitrate ::= INTEGER (1..16000000)
```

```
-- Unit is bits per sec
MaxSDU-Size ::= INTEGER (0..32768)
-- MaxSDU-Size ::= INTEGER (0..32768)
-- Unit is bit

MCC ::= TBCD-STRING (SIZE (2))
-- Reference: 24.008

MNC ::= TBCD-STRING (SIZE (2))
-- Reference: 24.008

-- N

NAS-BroadcastInformation ::= OCTET STRING

NAS-PDU ::= OCTET STRING

NAS-SynchronisationIndicator ::= BIT STRING (SIZE (4))

NonSearchingIndication ::= ENUMERATED {
    non-searching,
    searching
}

NumberOfIuInstances ::= INTEGER (1..2)

NumberOfSteps ::= INTEGER (1..16)

-- O

OldBSS-ToNewBSS-Information ::= OCTET STRING

OMC-ID ::= OCTET STRING (SIZE (3..22))
-- Reference: GSM TS 12.20

-- P

PagingAreaID ::= CHOICE {
    lAI LAI,
    rAI RAI,
    ...
}

PagingCause ::= ENUMERATED {
    speech-call,
    cs-data-call,
    ps-data-call,
    sms,
```

```
    ...
  ]
PDP-TypeInformation ::= SEQUENCE (SIZE (1..maxNrOfPDPDirections)) OF
  PDP-Type
PDP-Type ::= ENUMERATED {
  empty,
  PPP,
  osp-ihoss -- this value is used for OSP:IHOSS -- ,
  ipv4,
  ipv6,
  ...
}
PermanentNAS-UE-ID ::= CHOICE {
  IMSI
  IMSI,
  ...
}
PermittedEncryptionAlgorithms ::= SEQUENCE (SIZE (1..16)) OF
  EncryptionAlgorithm
PermittedIntegrityProtectionAlgorithms ::= SEQUENCE (SIZE (1..16)) OF
  IntegrityProtectionAlgorithm
PLMN-ID ::= TBCD-STRING (SIZE (3))
Pre-emptionCapability ::= ENUMERATED {
  can-not-trigger-pre-emption,
  can-trigger-pre-emption
}
Pre-emptionVulnerability ::= ENUMERATED {
  not-vulnerable-to-pre-emption,
  vulnerable-to-pre-emption
}
PriorityLevel ::= INTEGER { spare (0), highest (1), lowest (14), no-priority (15) } (0..15)
P-TMSI ::= OCTET STRING (SIZE (4))
-- Q
QueuingAllowed ::= ENUMERATED {
  queueing-not-allowed,
  queueing-allowed
}
-- R
```

```

RAB-AsymmetryIndicator ::= ENUMERATED {
    symmetric-bidirectional,
    asymmetric-unidirectional-downlink,
    asymmetric-unidirectional-uplink,
    asymmetric-bidirectional,
    ...
}

RAB-DCH-Mapping ::= SEQUENCE (SIZE (1..maxNrOfRABs)) OF
----- RAB-DCH-MappingItem

RAB-DCH-MappingItem ::= SEQUENCE {
----- rAB-ID RAB-ID,
----- dCH-ID-List DCH-ID-List,
----- ...
}

RAB-ID ::= BIT STRING (SIZE (8))

RAB-Parameter-GuaranteedBitrateList ::= SEQUENCE (SIZE (1..maxNrOfSeparateTrafficDirections)) OF GuaranteedBitrate

RAB-Parameter-MaxBitrateList ::= SEQUENCE (SIZE (1..maxNrOfSeparateTrafficDirections)) OF MaxBitrate

RAB-Parameters ::= SEQUENCE {
    trafficClass TrafficClass,
    rAB-AsymmetryIndicator RAB-AsymmetryIndicator,
    maxBitrate RAB-Parameter-MaxBitrateList,
    guaranteedBitRate RAB-Parameter-GuaranteedBitrateList OPTIONAL
    -- This IE is only present when traffic class indicates Conversational or Streaming --,
    deliveryOrder DeliveryOrder,
    maxSDU-Size MaxSDU-Size,
    sDU-Parameters SDU-Parameters,
    transferDelay TransferDelay OPTIONAL
    -- This IE is only present when traffic class indicates Conversational or Streaming --,
    trafficHandlingPriority TrafficHandlingPriority OPTIONAL
    -- This IE is only present when traffic class indicates Interactiv --,
    allocationOrRetentionPriority AllocationOrRetentionPriority OPTIONAL,
    sourceStatisticsDescriptor SourceStatisticsDescriptor OPTIONAL
    -- This IE is only present when traffic class indicates Conversational or Streaming --,
    iE-Extensions ProtocolExtensionContainer { {RAB-Parameters-ExtIEs} } OPTIONAL,
    ...
}

RAB-Parameters-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RAB-SubflowCombinationBitrate ::= INTEGER (0..16000000)

RAB-TrCH-Mapping ::= SEQUENCE ( SIZE (1..maxNrOfRABs)) OF

```

```
RAB-TrCH-MappingItem
RAB-TrCH-MappingItem ::= SEQUENCE {
    rAB-ID          RAB-ID,
    trCH-ID-List   TrCH-ID-List,
    ...
}

RAC ::= OCTET STRING (SIZE (1))

RAI ::= SEQUENCE {
    LAI          LAI,
    rAC          RAC,
    iE-Extensions ProtocolExtensionContainer { {RAI-ExtIEs} } OPTIONAL,
    ...
}

RAI-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RateControlAllowed ::= ENUMERATED {
    not-allowed,
    allowed
}

RelocationType ::= ENUMERATED {
    ue-not-involved,
    ue-involved,
    ...
}

RepetitionNumber ::= INTEGER (0..255)

ReportArea ::= ENUMERATED {
    service-area,
    geographical-coordinates,
    ...
}

RequestType ::= SEQUENCE {
    event          Event,
    reportArea     ReportArea,
    accuracyCode   INTEGER (0..127) OPTIONAL,
    -- To be used if Geographical Coordinates shall be reported with a requested accuracy. --
    ...
}

ResidualBitErrorRatio ::= SEQUENCE {
    mantissa       INTEGER (1..9),
```

```

    exponent          INTEGER (1..8),
    iE-Extensions     ProtocolExtensionContainer { {ResidualBitErrorRatio-ExtIEs} } OPTIONAL
  }
  -- ResidualBitErrorRatio = mantissa * 10^-exponent

ResidualBitErrorRatio-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

RNC-ID              ::= INTEGER (0..4095)
-- RNC-ID            ::= BIT STRING (SIZE (12))
-- Harmonized with RNSAP and NBAP definitions

RRC-Container       ::= OCTET STRING

-- S

SAC                 ::= OCTET STRING (SIZE (2))

SAI ::= SEQUENCE {
  pLMN-ID            PLMN-ID,
  LAC                LAC,
  sAC                SAC,
  iE-Extensions     ProtocolExtensionContainer { {SAI-ExtIEs} } OPTIONAL
}

SAI-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

SAPI ::= ENUMERATED {
  normal-priority,
  low-priority,
  ...
}

SDU-ErrorRatio ::= SEQUENCE {
  mantissa           INTEGER (1..9),
  exponent           INTEGER (1..6),
  iE-Extensions     ProtocolExtensionContainer { {SDU-ErrorRatio-ExtIEs} } OPTIONAL
}
-- SDU-ErrorRatio = mantissa * 10^-exponent

SDU-ErrorRatio-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}
SDU-FormatInformationParameters ::= SEQUENCE (SIZE (1..maxRAB-SubflowCombination)) OF
  SEQUENCE {
    subflowSDU-Size  SubflowSDU-Size  OPTIONAL
    -- This IE is only present for RABs that have predefined SDU size(s) --,

```



```

rAB-SubflowCombinationBitRate  RAB-SubflowCombinationBitRate  OPTIONAL
-- At least either of subflowSDU-Size or rABsubflowCombinationBitRate --
-- shall be present when SDUformatInformationParameter is present --,
iE-Extensions          ProtocolExtensionContainer { {SDU-FormatInformationParameters-ExtIEs} } OPTIONAL,
...
}

SDU-FormatInformationParameters-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
...
}

SDU-Parameters ::= SEQUENCE (SIZE (1..maxRAB-Subflows)) OF
SEQUENCE {
sDU-ErrorRatio          SDU-ErrorRatio  OPTIONAL
-- This IE is not present when DeliveryOfErroneousSDU is set to no-error-detection-consideration --,
residualBitErrorRatio  ResidualBitErrorRatio,
deliveryOfErroneousSDU DeliveryOfErroneousSDU,
sDU-FormatInformationParameters SDU-FormatInformationParameters OPTIONAL
-- When signalled, this IE indicates that the RAB is rate controllable --,
iE-Extensions          ProtocolExtensionContainer { {SDU-Parameters-ExtIEs} } OPTIONAL,
...
}

SDU-Parameters-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
...
}

SourceID ::= CHOICE {
sourceRNC-ID            SourceRNC-ID, -- If UMTS target
sAI                     SAI,         -- if GSM target
...
}

SourceRNC-ID ::= SEQUENCE {
pLMN-ID                PLMN-ID,
rNC-ID                 RNC-ID,
iE-Extensions          ProtocolExtensionContainer { {SourceRNC-ID-ExtIEs} } OPTIONAL
}

SourceRNC-ID-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
...
}

SourceRNC-ToTargetRNC-TransparentContainer ::= SEQUENCE {
rRC-Container          RRC-Container,
numberOfIuInstances    NumberOfIuInstances,
relocationType         RelocationType,
chosenIntegrityProtectionAlgorithm ChosenIntegrityProtectionAlgorithm  OPTIONAL
-- Must be present for intra UMTS Handovers if available --,

```

```

    integrityProtectionKey      IntegrityProtectionKey      OPTIONAL
    -- Must be present for intra UMTS Handovers if available --,
    chosenEncryptionAlgorithmForSignalling ChosenEncryptionAlgorithm OPTIONAL
    -- Must be present for intra UMTS Handovers if ciphering is active --,
    cipheringKey                EncryptionKey              OPTIONAL
    -- Must be present for intra UMTS Handovers if ciphering is active --,
    chosenEncryptionAlgorithmForCS  ChosenEncryptionAlgorithm  OPTIONAL
    -- Must be present for intra UMTS Handovers if ciphering is active --,
    chosenEncryptionAlgorithmForPS  ChosenEncryptionAlgorithm  OPTIONAL
    -- Must be present for intra UMTS Handovers if ciphering is active --,
    d-RNTI                       D-RNTI                  OPTIONAL
    -- Included for SRNS Relocation without UE involvement --,
    targetCellId                 TargetCellId            OPTIONAL
    -- Included for SRNS Relocation with UE involvement --,
    rAB-DTrCH-Mapping           RAB-DTrCH-Mapping      OPTIONAL
    -- Included for SRNS Relocation without UE involvement and --
    -- if RABs are carried on DCH, USCH or DSCH transport channels exist for a UE in Cell_DCH state --,
    iE-Extensions               ProtocolExtensionContainer { {SourceRNC-ToTargetRNC-TransparentContainer-ExtIEs} } OPTIONAL,
    ...
}

SourceRNC-ToTargetRNC-TransparentContainer-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

SourceStatisticsDescriptor ::= ENUMERATED {
    speech,
    unknown,
    ...
}

SubflowSDU-Size ::= INTEGER (0..4095)
-- Unit is bit

-- T

TargetCellId ::= INTEGER (0..268435455)

TargetID ::= CHOICE {
    targetRNC-ID      TargetRNC-ID, -- If UMTS target
    CGI,              -- If GSM target
    ...
}

TargetRNC-ID ::= SEQUENCE {
    LAI      LAI,

```

```

    rAC                RAC                OPTIONAL
    -- Must always be present towards the PS domain and never towards the CS domain --,
    rNC-ID              RNC-ID,
    iE-Extensions      ProtocolExtensionContainer { {TargetRNC-ID-ExtIEs} } OPTIONAL
}

TargetRNC-ID-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

TargetRNC-ToSourceRNC-TransparentContainer ::= SEQUENCE {
    rRC-Container       RRC-Container,
    d-RNTI              D-RNTI                OPTIONAL
    -- May be included to allow the triggering of the Relocation Detect procedure from the Iur Interface --,
    iE-Extensions      ProtocolExtensionContainer { {TargetRNC-ToSourceRNC-TransparentContainer-ExtIEs} } OPTIONAL,
    ...
}

TargetRNC-ToSourceRNC-TransparentContainer-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

TBCD-STRING          ::= OCTET STRING

TemporaryUE-ID ::= CHOICE {
    tMSI              TMSI,
    p-TMSI            P-TMSI,
    ...
}

TMSI                  ::= OCTET STRING (SIZE (4))

TraceReference        ::= OCTET STRING (SIZE (2..3))

TraceType             ::= OCTET STRING (SIZE (1))
-- Reference: GSM TS 12.08

TrafficClass ::= ENUMERATED {
    conversational,
    streaming,
    interactive,
    background,
    ...
}

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

TransferDelay         ::= INTEGER (0..65535)
-- Unit is millisecond
```

```

UnsuccessfullyTransmittedDataVolume ::= INTEGER (0..4294967295)

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

TrCH-ID ::= SEQUENCE {
    dCH-ID          DCH-ID          OPTIONAL
    -- At least one of these IEs shall be included --,
    dSCH-ID          DSCH-ID          OPTIONAL
    -- At least one of these IEs shall be included --,
    uSCH-ID          USCH-ID          OPTIONAL
    -- At least one of these IEs shall be included --,
    ...
}

TrCH-ID-List ::= SEQUENCE (SIZE (1..maxRAB-Subflows)) OF
    TrCH-ID

TriggerID ::= OCTET STRING (SIZE (3..22))

-- U

UE-ID ::= CHOICE {
    imsi             IMSI,
    imei             IMEI,
    ...
}

UL-GTP-PDU-SequenceNumber ::= INTEGER (0..65535)

UL-N-PDU-SequenceNumber ::= INTEGER (0..65535)

UP-ModeVersions ::= BIT STRING (SIZE (16))

USCH-ID ::= INTEGER (0..255)

UserPlaneMode ::= ENUMERATED {
    transparent-mode,
    support-mode-for-predefined-SDU-sizes,
    ...
}

END
*****
--
-- Information Element Definitions
--
*****

-- DRX CycleLengthCoefficient
DRX CycleLengthCoefficient ::= INTEGER (2..12)

```

```

RANAP-IEs { object identifier to be allocated }
DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS
  maxNrOfErrors,
  maxNrOfRABs,
  maxNrOfPoints,
  maxRAB-Subflows,
  maxRAB-SubflowCombination
FROM RANAP-Constants

  Criticality,
  ProcedureCode,
  ProtocolIE-ID,
  TriggeringMessage
FROM RANAP-CommonDataTypes

  ProtocolExtensionContainer {},
  RANAP-PROTOCOL-EXTENSION
FROM RANAP-Containers;

--A

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

AllocationOrRetentionPriority-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

AreaIdentity ::= CHOICE {
  sAI SAI,
  geographicalArea GeographicalArea,
  ...
}

--B

BindingID ::= OCTET-STRING (SIZE (4))

--C

```

```

Cause ::= CHOICE {
  radioNetwork CauseRadioNetwork,
  transmissionNetwork CauseTransmissionNetwork,
  nAS CauseNAS,
  protocol CauseProtocol,
  misc CauseMisc,
  non-Standard CauseNon-Standard,
  ...
}

```

```

CauseMisc ::= INTEGER {
  om-intervention (113),
  no-resource-available (114),
  unspecified-failure (115),
  network-optimisation (116)
} (113..128)

```

```

CauseNAS ::= INTEGER {
  user-restriction-start-indication (81),
  user-restriction-end-indication (82),
  normal-release (83)
} (81..96)

```

```

CauseProtocol ::= INTEGER {
  transfer-syntax-error (97),
  semantic-error (98),
  message-not-compatible-with-receiver-state (99)
} (97..112)

```

```

CauseRadioNetwork ::= INTEGER {
  rab-pre-empted (1),
  trelocoverall-expiry (2),
  trelocprep-expiry (3),
  treloccomplete-expiry (4),
  tqueing-expiry (5),
  relocation-triggered (6),
  trellocalloc-expiry (7),
  unable-to-establish-during-relocation (8),
  unknown-target-rnc (9),
  relocation-cancelled (10),
  successful-relocation (11),
  requested-ciphering-and-or-integrity-protection-algorithms-not-supported (12),
  change-of-ciphering-and-or-integrity-protection-is-not-supported (13),
  failure-in-the-radio-interface-procedure (14),
  release-due-to-utran-generated-reason (15),
  user-inactivity (16),
  time-critical-relocation (17),
  requested-traffic-class-not-available (18),
}

```

```

invalid-rab-parameters-value (19),
requested-maximum-bit-rate-not-available (20),
requested-guaranteed-bit-rate-not-available (21),
requested-transfer-delay-not-achievable (22),
invalid-rab-parameters-combination (23),
condition-violation-for-sdu-parameters (24),
condition-violation-for-traffic-handling-priority (25),
condition-violation-for-guaranteed-bit-rate (26),
user-plane-versions-not-supported (27),
iu-up-failure (28),
relocation-failure-in-target-CN-RNC-or-target-system(29),
invalid-RAB-ID (30),
no-remaining-rab (31),
interaction-with-other-procedure (32),
requested-maximum-bit-rate-for-dl-not-available (33),
requested-maximum-bit-rate-for-ul-not-available (34),
requested-guaranteed-bit-rate-for-dl-not-available (35),
requested-guaranteed-bit-rate-for-ul-not-available (36),
repeated-integrity-checking-failure (37)
} (1..64)

CauseNon-Standard ::= INTEGER (129..256)

CauseTransmissionNetwork ::= INTEGER {
logical-error-unknown-iu-transport-association (65)
} (65..80)

CriticalityDiagnostics ::= SEQUENCE {
procedureCode ProcedureCode OPTIONAL,
triggeringMessage TriggeringMessage OPTIONAL,
criticalityResponse Criticality OPTIONAL,
iEsCriticalityResponses CriticalityDiagnostics-IE-List OPTIONAL,
IE-Extensions ProtocolExtensionContainer { {CriticalityDiagnostics-ExtIEs} } OPTIONAL,
...
}

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

CriticalityDiagnostics-IE-List ::= SEQUENCE (SIZE (1..maxNrOfErrors)) OF
SEQUENCE {
criticalityResponse Criticality,
IE-ID ProtocolIE-ID,
repetitionNumber RepetitionNumber OPTIONAL,
IE-Extensions ProtocolExtensionContainer { {CriticalityDiagnostics-IE-List-ExtIEs} } OPTIONAL,
...
}

```

```

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

CGI ::= SEQUENCE {
    plmn-ID PLMN-ID,
    lac LAC,
    ci CI,
    iE-Extensions ProtocolExtensionContainer { {CGI-ExtIEs} } OPTIONAL
}

CGI-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

ChosenEncryptionAlgorithm ::= EncryptionAlgorithm

ChosenIntegrityProtectionAlgorithm ::= IntegrityProtectionAlgorithm

ChosenUP-Version ::= ENUMERATED {
    version1,
    version2,
    ...
}

CI ::= OCTET STRING (SIZE (2))

ClassmarkInformation2 ::= OCTET STRING

ClassmarkInformation3 ::= OCTET STRING

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

D

DataVolumeReference ::= INTEGER (0..255)

DataVolumeReportingIndication ::= ENUMERATED {
    do-report,
    do-not-report
}

DeliveryOfErroneousSDU ::= ENUMERATED {
    yes,
    no,
    no-error-detection-consideration
}

```



```

DeliveryOrder ::= ENUMERATED {
  delivery-order-requested,
  delivery-order-not-requested
}

DL-GTP-PDU-SequenceNumber ::= INTEGER (0..65535)
Reference: xx.xxx

DL-N-PDU-SequenceNumber ::= INTEGER (0..65535)
Reference: xx.xxx

D-RNTI ::= INTEGER (0..1048575)

E

EncryptionAlgorithm ::= INTEGER { no-encryption (0), standard-UMTS-encryption-algorith-UEAl (1) } (0..15)

EncryptionInformation ::= SEQUENCE {
  permittedAlgorithms PermittedEncryptionAlgorithms,
  key EncryptionKey,
  iE-Extensions ProtocolExtensionContainer { {EncryptionInformation-ExtIEs} } OPTIONAL
}

EncryptionInformation-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

EncryptionKey ::= BIT-STRING (SIZE (128))
Reference: 33.102

Event ::= ENUMERATED {
  stop,
  direct,
  change-of-servicearea,
  ...
}

F
G

GeographicalArea ::= CHOICE {
  point GA-Point,
  pointWithUnCertainty GA-PointWithUnCertainty,
  polygon GA-Polygon,
  ...
}

GeographicalCoordinates ::= SEQUENCE {
  latitudeSign ENUMERATED { north, south },

```

```

--- latitude --- INTEGER (0..8388607),
--- longitude --- INTEGER (-8388608..8388607),
--- iE-Extensions --- ProtocolExtensionContainer { {GeographicalCoordinates-ExtIEs} } OPTIONAL,
--- ...
}

GeographicalCoordinates-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
--- ...
}

GA-Point ::= SEQUENCE {
--- geographicalCoordinates --- GeographicalCoordinates,
--- iE-Extensions --- ProtocolExtensionContainer { {GA-Point-ExtIEs} } OPTIONAL,
--- ...
}

GA-Point-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
--- ...
}

GA-PointWithUncertainty ::= SEQUENCE {
--- geographicalCoordinates --- GeographicalCoordinates,
--- iE-Extensions --- ProtocolExtensionContainer { {GA-PointWithUncertainty-ExtIEs} } OPTIONAL,
--- uncertaintyCode --- INTEGER (0..127)
}

GA-PointWithUncertainty-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
--- ...
}

GA-Polygon ::= SEQUENCE (SIZE (1..maxNrOfPoints)) OF
--- SEQUENCE {
--- geographicalCoordinates --- GeographicalCoordinates,
--- iE-Extensions --- ProtocolExtensionContainer { {GA-Polygon-ExtIEs} } OPTIONAL,
--- ...
--- }

GA-Polygon-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
--- ...
}

GTP-FEI ::= OCTET-STRING (SIZE (4))
-- Reference: xx.xxx

GuaranteedBitrate ::= INTEGER (0..16000000)
-- Unit is bits per sec

--- H

```

```

---I
InformationIdentity ::= INTEGER (0..255)

InformationPriority ::= INTEGER (0..15)

InformationControl ::= ENUMERATED {
  ---on,
  ---off
}

IMEI ::= TBCD-STRING (SIZE (8))
  ---Reference: 23.003

IMSI ::= TBCD-STRING (SIZE (3..8))
  ---Reference: 23.003

IntegrityProtectionAlgorithm ::= INTEGER { standard-UMTS-integrity-algorithm-UIA1 (0) } (0..15)

IntegrityProtectionInformation ::= SEQUENCE {
  ---permittedAlgorithms PermittedIntegrityProtectionAlgorithms,
  ---key IntegrityProtectionKey,
  ---iE-Extensions ProtocolExtensionContainer { {IntegrityProtectionInformation-ExtIEs} } OPTIONAL
}

IntegrityProtectionInformation-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
  ---...
}

IntegrityProtectionKey ::= BIT-STRING (SIZE (128))

IuSignallingConnectionIdentifier ::= INTEGER (1..16000000)

IuTransportAssociation ::= CHOICE {
  ---gTP-TEI GTP-TEI,
  ---bindingID BindingID,
  ---...
}

---J
---K

KeyStatus ::= ENUMERATED {
  ---old,
  ---new,
  ---...
}
  ---L

LAC ::= OCTET-STRING (SIZE (2))

```

```
LAI ::= SEQUENCE {
  PLMN-ID PLMN-ID,
  LAC LAC,
  IE-Extensions ProtocolExtensionContainer { {LAI-ExtIEs} } OPTIONAL
}

LAI-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

L3-Information ::= OCTET-STRING
  -- M

MaxBitrate ::= INTEGER (1..1600000)
  -- Unit is bits per sec

MaxSDU-Size ::= INTEGER
  -- MaxSDU-Size ::= INTEGER (0..32768)
  -- Unit is bit

MCC ::= TBCD-STRING (SIZE (2))
  -- Reference: 24.008

MNC ::= TBCD-STRING (SIZE (2))
  -- Reference: 24.008
  -- N

NAS-BindingInformation ::= OCTET-STRING (SIZE (2))

NAS-BroadcastInformation ::= OCTET-STRING

NAS-PDU ::= OCTET-STRING

NonSearchingIndication ::= ENUMERATED {
  non-searching,
  searching
}

NumberOfIuInstances ::= INTEGER (1..2)

NumberOfSteps ::= INTEGER (1..16)
  -- 0

OldBSS-ToNewBSS-Information ::= OCTET-STRING

OMC-ID ::= OCTET-STRING (SIZE (3..22))
```

```
--- Reference: GSM TS 12.20

--- P

PagingAreaID ::= CHOICE {
--- LAI LAI,
--- RAI RAI,
--- ...
}

PagingCause ::= ENUMERATED {
--- speech-call,
--- cs-data-call,
--- ps-data-call,
--- sms,
--- ...
}

PermanentNAS-UE-ID ::= CHOICE {
--- IMSI IMSI,
--- ...
}

PermittedEncryptionAlgorithms ::= SEQUENCE (SIZE (1..16)) OF
--- EncryptionAlgorithm

PermittedIntegrityProtectionAlgorithms ::= SEQUENCE (SIZE (1..16)) OF
--- IntegrityProtectionAlgorithm

PLMN-ID ::= TBCD-STRING (SIZE (3))

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

Pre-emptionVulnerability ::= ENUMERATED {
--- not-vulnerable-to-pre-emption,
--- vulnerable-to-pre-emption
}

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

P-TMSI ::= OCTET-STRING (SIZE (4))

--- Q

QueuingAllowed ::= ENUMERATED {
--- queuing-not-allowed,
--- queuing-allowed
}
```

```

}
--R
RAB-AsymmetryIndicator ::= ENUMERATED {
-- symmetric-bidirectional,
-- asymmetric-unidirectional-downlink,
-- asymmetric-unidirectional-uplink,
-- asymmetric-bidirectional,
-- ...
}

RAB-ID ::= INTEGER (1..maxNrOfRABs)

RAB-Parameters ::= SEQUENCE {
-- trafficClass TrafficClass,
-- rAB-AsymmetryIndicator RAB-AsymmetryIndicator,
-- maxBitrate MaxBitrate,
-- guaranteedBitrate GuaranteedBitrate OPTIONAL
-- This IE is only present when traffic class indicates Conversational or Streaming --,
-- deliveryOrder DeliveryOrder,
-- maxSDU-Size MaxSDU-Size,
-- sDU-Parameters SDU-Parameters,
-- transferDelay TransferDelay OPTIONAL
-- -- This IE is only present when traffic class indicates Conversational or Streaming --,
-- trafficHandlingPriority TrafficHandlingPriority OPTIONAL
-- This IE is only present when traffic class indicates Interactiv --,
-- allocationOrRetentionPriority AllocationOrRetentionPriority OPTIONAL,
-- sourceStatisticsDescriptor SourceStatisticsDescriptor OPTIONAL
-- -- This IE is only present when traffic class indicates Conversational or Streaming --,
-- iE-Extensions ProtocolExtensionContainer { [RAB-Parameters-ExtIEs] } OPTIONAL,
-- ...
}

RAB-Parameters-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
-- ...
}

RAB-SubflowCombinationBitrate ::= INTEGER (0..16000000)

RAC ::= OCTET STRING (SIZE (1))

RAI ::= SEQUENCE {
-- LAI LAI,
-- rAC RAC,
-- iE-Extensions ProtocolExtensionContainer { [RAI-ExtIEs] } OPTIONAL,
-- ...
}

RAI-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
-- ...
}

```

```

}

RateControlAllowed ::= ENUMERATED {
  not-allowed,
  allowed
}

RelocationType ::= ENUMERATED {
  ue-not-involved,
  ue-involved,
  ...
}

RepetitionNumber ::= INTEGER (0..255)

ReportArea ::= ENUMERATED {
  service-area,
  geographical-coordinates,
  ...
}

RequestType ::= SEQUENCE {
  event Event,
  reportArea ReportArea,
  ...
}

ResidualBitErrorRatio ::= SEQUENCE {
  mantissa INTEGER (1..9),
  exponent INTEGER (1..8),
  iE-Extensions ProtocolExtensionContainer { [ResidualBitErrorRatioIE-ExtIEs] } OPTIONAL
}
-- ResidualBitErrorRatio = mantissa * 10^exponent

ResidualBitErrorRatio-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

RNC-ID ::= INTEGER (0..4095)
-- RNC-ID ::= BIT-STRING (SIZE (12))
-- Harmonized with RNSAP and NBAP definitions

RRC-Container ::= OCTET-STRING

--S

SAC ::= OCTET-STRING (SIZE (2))

SAI ::= SEQUENCE {
  PLMN-ID PLMN-ID,
  LAC LAC
}

```

```


sAC
iE-Extensions ProtocolExtensionContainer { {SAI-ExtIEs} } OPTIONAL
}

SAI-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
...
}

SAPI ::= ENUMERATED {
normal-priority,
low-priority,
...
}

SDU-ErrorRatio ::= SEQUENCE {
mantissa INTEGER (1..9),
exponent INTEGER (1..6),
iE-Extensions ProtocolExtensionContainer { {SDU-ErrorRatio-ExtIEs} } OPTIONAL
}
SDU-ErrorRatio = mantissa * 10^exponent

SDU-ErrorRatio-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
...
}

SDU-FormatInformationParameters ::= SEQUENCE (SIZE (1..maxRAB-SubflowCombination)) OF
SEQUENCE {
subflowSDU-Size SubflowSDU-Size OPTIONAL
-- This IE is only present for RABs that have predefined SDU size(s) --,
rAB-SubflowCombinationBitRate RAB-SubflowCombinationBitRate OPTIONAL
-- At least either of subflowSDU-Size or rABsubflowCombinationBitRate
-- shall be present when SDUformatInformationParameter is present --,
iE-Extensions ProtocolExtensionContainer { {SDU-FormatInformationParameters-ExtIEs} } OPTIONAL,
...
}

SDU-FormatInformationParameters-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
...
}

SDU-Parameters ::= SEQUENCE (SIZE (1..maxRAB-Subflows)) OF
SEQUENCE {
sDU-ErrorRatio SDU-ErrorRatio OPTIONAL
-- This IE is not present when DeliveryOfErroneousSDU is set to no-error-detection-consideration --,
residualBitErrorRatio ResidualBitErrorRatio,
deliveryOfErroneousSDU DeliveryOfErroneousSDU,
sDU-FormatInformationParameters SDU-FormatInformationParameters OPTIONAL
-- When signalled, this IE indicates that the RAB is rate-controllable --,
iE-Extensions ProtocolExtensionContainer { {SDU-Parameters-ExtIEs} } OPTIONAL,
...
}


```



```

SDU-Parameters-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

SourceID ::= CHOICE {
    sourceRNC-ID SourceRNC-ID, -- If UMTS target
    SAI SAI, -- if GSM target
    ...
}

SourceRNC-ID ::= SEQUENCE {
    PLMN-ID PLMN-ID,
    rnc-ID RNC-ID,
    IE-Extensions ProtocolExtensionContainer { {SourceRNC-ID-ExtIEs} } OPTIONAL
}

SourceRNC-ID-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

SourceRNC-ToTargetRNC-TransparentContainer ::= SEQUENCE {
    rrc-Container RRC-Container,
    numberOfIuInstances NumberOfIuInstances,
    relocationType RelocationType,
    chosenIntegrityProtectionAlgorithm ChosenIntegrityProtectionAlgorithm OPTIONAL
    -- Must be present for intra UMTS Handovers if available --,
    integrityProtectionKey IntegrityProtectionKey OPTIONAL
    -- Must be present for intra UMTS Handovers if available --,
    chosenEncryptionAlgorithmForSignalling ChosenEncryptionAlgorithm OPTIONAL
    -- Must be present for intra UMTS Handovers if ciphering is active --,
    cipheringKey EncryptionKey OPTIONAL
    -- Must be present for intra UMTS Handovers if ciphering is active --,
    chosenEncryptionAlgorithmForCS ChosenEncryptionAlgorithm OPTIONAL
    -- Must be present for intra UMTS Handovers if ciphering is active --,
    chosenEncryptionAlgorithmForPS ChosenEncryptionAlgorithm OPTIONAL
    -- Must be present for intra UMTS Handovers if ciphering is active --,
    d-RNTI D-RNTI OPTIONAL
    -- Included for SRNS Relocation without UE involvement --,
    targetCellId TargetCellId OPTIONAL
    -- Included for SRNS Relocation with UE involvement --,
    IE-Extensions ProtocolExtensionContainer { {SourceRNC-ToTargetRNC-TransparentContainer-ExtIEs} } OPTIONAL,
    ...
}

SourceRNC-ToTargetRNC-TransparentContainer-ExtIEs-RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

```

```

SourceStatisticsDescriptor ::= ENUMERATED {
  speech,
  unknown,
  ...
}

SubflowSDU-Size ::= INTEGER (0..4095)
Unit is bit

T

TargetCellId ::= INTEGER (0..268435455)

TargetID ::= CHOICE {
  targetRNC-ID TargetRNC-ID, -- If UMTS target
  cGI CGI, -- If GSM target
  ...
}

TargetRNC-ID ::= SEQUENCE {
  lAI LAI,
  rAC RAC OPTIONAL
  -- Must always be present towards the PS domain and never towards the CS domain --,
  rNC-ID RNC-ID,
  iE-Extensions ProtocolExtensionContainer { {SourceRNC-ID-ExtIEs} } OPTIONAL
}

SourceRNC-ID-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

TargetRNC-ToSourceRNC-TransparentContainer ::= SEQUENCE {
  rRC-Container RRC-Container,
  iE-Extensions ProtocolExtensionContainer { {TargetRNC-ToSourceRNC-TransparentContainer-ExtIEs} } OPTIONAL,
  ...
}

TargetRNC-ToSourceRNC-TransparentContainer-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}

TBCD-STRING ::= OCTET-STRING

TemporaryUE-ID ::= CHOICE {
  tMSI TMSI,
  p-TMSI P-TMSI,

```

```

    ...
}

TMSI ::= OCTET STRING (SIZE (4))

TraceReference ::= OCTET STRING (SIZE (2..3))

TraceType ::= OCTET STRING (SIZE (1))
-- Reference: GSM TS 12.08

TrafficClass ::= ENUMERATED {
    conversational,
    streaming,
    interactive,
    background,
    ...
}

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

TransferDelay ::= INTEGER (0..65535)
-- Unit is millisecond

UnsuccessfullyTransmittedDataVolume ::= INTEGER (0..4294967295)

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

TriggerID ::= OCTET STRING (SIZE (3..22))

-- U

UE-ID ::= CHOICE {
    imsi IMSI,
    imei IMEI,
    ...
}

UL-GTP-PDU-SequenceNumber ::= INTEGER (0..65535)

UL-N-PDU-SequenceNumber ::= INTEGER (0..65535)

UP-ModeVersions ::= BIT STRING (SIZE (16))

UserPlaneMode ::= ENUMERATED {
    transparent-mode,
    support-mode-for-predefined-SDU-sizes,
    ...
}

END
```

9.3.5 Common Definitions

```

-- *****
--
-- Common definitions
--
-- *****

RANAP-CommonDataTypes -- { object identifier to be allocated }--
DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

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

PrivateIE-ID    ::= CHOICE {
    local          INTEGER (0..65535),
    global         OBJECT IDENTIFIER
}

ProcedureCode   ::= INTEGER (0..255)

ProtocolExtensionID ::= INTEGER (0..65535)

ProtocolIE-ID   ::= INTEGER (0..65535)

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

END

-----
-----
----- Common definitions
-----
----- *****

RANAP-CommonDataTypes --- { object identifier to be allocated } ---
DEFINITIONS AUTOMATIC TAGS --- ::=

BEGIN

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

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

PrivateIE-ID --- ::= CHOICE {
    local --- INTEGER (0..65535),
    global --- OBJECT IDENTIFIER
}

```

```

}
ProcedureCode ::= INTEGER (0..255)
ProtocolExtensionID ::= INTEGER (0..65535)
ProtocolIE ID ::= INTEGER (0..65535)
TriggeringMessage ::= ENUMERATED { initiating-message, successful-outcome, unsuccessful-outcome, outcome }
END

```

9.3.6 Constant Definitions

```

-- *****
--
-- Constant definitions
--
-- *****

RANAP-Constants -- { object identifier to be allocated }--
DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

id-RAB-Assignment          INTEGER ::= 0
id-Iu-Release              INTEGER ::= 1
id-RelocationPreparation  INTEGER ::= 2
id-RelocationResourceAllocation  INTEGER ::= 3
id-RelocationCancel       INTEGER ::= 4
id-SRNS-ContextTransfer   INTEGER ::= 5
id-SecurityModeControl    INTEGER ::= 6
id-DataVolumeReport       INTEGER ::= 7
id-CN-InformationBroadcast  INTEGER ::= 8
id-Reset                  INTEGER ::= 9
id-RAB-ReleaseRequest     INTEGER ::= 10
id-Iu-ReleaseRequest      INTEGER ::= 11
id-RelocationDetect       INTEGER ::= 12
id-RelocationComplete     INTEGER ::= 13
id-Paging                 INTEGER ::= 14
id-CommonID               INTEGER ::= 15
id-CN-InvokeTrace         INTEGER ::= 16
id-LocationReportingControl  INTEGER ::= 17
id-LocationReport         INTEGER ::= 18

```

```
id-InitialUE-Message          INTEGER ::= 19
id-DirectTransfer             INTEGER ::= 20
id-OverloadControl           INTEGER ::= 21
id-ErrorIndication           INTEGER ::= 22
id-SRNS-DataForward          INTEGER ::= 23
id-ForwardSRNS-Context       INTEGER ::= 24
id-privateMessage            INTEGER ::= 25
id-CN-DeactivateTrace        INTEGER ::= 26
id-ResetResource             INTEGER ::= 27
id-RANAP-Relocation          INTEGER ::= 28

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

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

-- *****
--
-- Lists
--
-- *****

maxNrOfDTs                   INTEGER ::= 15
maxNrOfErrors                 INTEGER ::= 256
maxNrOfIuSigConIds           INTEGER ::= 1000
maxNrOfPDPDirections         INTEGER ::= 2
maxNrOfPieces                 INTEGER ::= 16
maxNrOfPoints                 INTEGER ::= 15
maxNrOfRABs                   INTEGER ::= 256
maxNrOfSeparateTrafficDirections INTEGER ::= 2
maxNrOfVol                    INTEGER ::= 2

maxRAB-Subflows              INTEGER ::= 7
maxRAB-SubflowCombination    INTEGER ::= 64

-- *****
--
-- IEs
--
-- *****

id-AreaIdentity               INTEGER ::= 0
id-CN-BroadcastInformationPiece INTEGER ::= 1
id-CN-BroadcastInformationPieceList INTEGER ::= 2
id-CN-DomainIndicator         INTEGER ::= 3
```

id-Cause	INTEGER ::= 4
id-ChosenEncryptionAlgorithm	INTEGER ::= 5
id-ChosenIntegrityProtectionAlgorithm	INTEGER ::= 6
id-ClassmarkInformation2	INTEGER ::= 7
id-ClassmarkInformation3	INTEGER ::= 8
id-CriticalityDiagnostics	INTEGER ::= 9
id-DL-GTP-PDU-SequenceNumber	INTEGER ::= 10
id-EncryptionInformation	INTEGER ::= 11
id-IntegrityProtectionInformation	INTEGER ::= 12
id-IuTransportAssociation	INTEGER ::= 13
id-L3-Information	INTEGER ::= 14
id-LAI	INTEGER ::= 15
id-NAS-PDU	INTEGER ::= 16
id-NonSearchingIndication	INTEGER ::= 17
id-NumberOfSteps	INTEGER ::= 18
id-OMC-ID	INTEGER ::= 19
id-OldBSS-ToNewBSS-Information	INTEGER ::= 20
id-PagingAreaID	INTEGER ::= 21
id-PagingCause	INTEGER ::= 22
id-PermanentNAS-UE-ID	INTEGER ::= 23
id-RAB-ContextItem	INTEGER ::= 24
id-RAB-ContextList	INTEGER ::= 25
id-RAB-DataForwardingItem	INTEGER ::= 26
id-RAB-DataForwardingItem-SRNS-CtxReq	INTEGER ::= 27
id-RAB-DataForwardingList	INTEGER ::= 28
id-RAB-DataForwardingList-SRNS-CtxReq	INTEGER ::= 29
id-RAB-DataVolumeReportItem	INTEGER ::= 30
id-RAB-DataVolumeReportList	INTEGER ::= 31
id-RAB-DataVolumeReportRequestItem	INTEGER ::= 32
id-RAB-DataVolumeReportRequestList	INTEGER ::= 33
id-RAB-FailedItem	INTEGER ::= 34
id-RAB-FailedList	INTEGER ::= 35
id-RAB-ID	INTEGER ::= 36
id-RAB-QueuedItem	INTEGER ::= 37
id-RAB-QueuedList	INTEGER ::= 38
id-RAB-ReleaseFailedList	INTEGER ::= 39
id-RAB-ReleaseItem	INTEGER ::= 40
id-RAB-ReleaseList	INTEGER ::= 41
id-RAB-ReleasedItem	INTEGER ::= 42
id-RAB-ReleasedList	INTEGER ::= 43
id-RAB-ReleasedList-IuRelComp	INTEGER ::= 44
id-RAB-RelocationReleaseItem	INTEGER ::= 45
id-RAB-RelocationReleaseList	INTEGER ::= 46
id-RAB-SetupItem-RelocReq	INTEGER ::= 47
id-RAB-SetupItem-RelocReqAck	INTEGER ::= 48
id-RAB-SetupList-RelocReq	INTEGER ::= 49
id-RAB-SetupList-RelocReqAck	INTEGER ::= 50
id-RAB-SetupOrModifiedItem	INTEGER ::= 51
id-RAB-SetupOrModifiedList	INTEGER ::= 52
id-RAB-SetupOrModifyItem	INTEGER ::= 53

```

id-RAB-SetupOrModifyList          INTEGER ::= 54
id-RAC                            INTEGER ::= 55
id-RelocationType                 INTEGER ::= 56
id-RequestType                    INTEGER ::= 57
id-SAI                             INTEGER ::= 58
id-SAPI                           INTEGER ::= 59
id-SourceID                       INTEGER ::= 60
id-SourceRNC-ToTargetRNC-TransparentContainer INTEGER ::= 61
id-TargetID                       INTEGER ::= 62
id-TargetRNC-ToSourceRNC-TransparentContainer INTEGER ::= 63
id-TemporaryUE-ID                 INTEGER ::= 64
id-TraceReference                 INTEGER ::= 65
id-TraceType                      INTEGER ::= 66
id-TransportLayerAddress          INTEGER ::= 67
id-TriggerID                      INTEGER ::= 68
id-UE-ID                          INTEGER ::= 69
id-UL-GTP-PDU-SequenceNumber      INTEGER ::= 70
id-RAB-FailedtoReportItem         INTEGER ::= 71
id-RAB-FailedtoReportList         INTEGER ::= 72
id-KeyStatus                      INTEGER ::= 75
id-DRX-CycleLengthCoefficient     INTEGER ::= 76
id-IuSigConIdList                INTEGER ::= 77
id-IuSigConIdItem                 INTEGER ::= 78
id-IuSigConId                     INTEGER ::= 79
id-DirectTransferInformationItem-RANAP-RelocInf INTEGER ::= 80
id-DirectTransferInformationList-RANAP-RelocInf INTEGER ::= 81
id-RAB-ContextItem-RANAP-RelocInf INTEGER ::= 82
id-RAB-ContextList-RANAP-RelocInf INTEGER ::= 83
id-RAB-ContextFailedtoTransferItem INTEGER ::= 84
id-RAB-ContextFailedtoTransferList INTEGER ::= 85
id-GlobalRNC-ID                  INTEGER ::= 86
id-RAB-ReleasedItem-IuRelComp     INTEGER ::= 87

```

```
END
```

```
-----
```

```
--- Constant definitions
```

```
-----
```

```
RANAP-Constants --- { object identifier to be allocated } ---
```

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

```
BEGIN
```

```
-----
```

```
--- Elementary Procedures
```

```
-----
```



```
id-RAB-Assignment-----INTEGER ::= 0
id-Iu-Release-----INTEGER ::= 1
id-RelocationPreparation-----INTEGER ::= 2
id-RelocationResourceAllocation-----INTEGER ::= 3
id-RelocationCancel-----INTEGER ::= 4
id-SRNS-ContextTransfer-----INTEGER ::= 5
id-SecurityModeControl-----INTEGER ::= 6
id-DataVolumeReport-----INTEGER ::= 7
id-CN-InformationBroadcast-----INTEGER ::= 8
id-Reset-----INTEGER ::= 9
id-RAB-ReleaseRequest-----INTEGER ::= 10
id-Iu-ReleaseRequest-----INTEGER ::= 11
id-RelocationDetect-----INTEGER ::= 12
id-RelocationComplete-----INTEGER ::= 13
id-Paging-----INTEGER ::= 14
id-CommonID-----INTEGER ::= 15
id-CN-InvokeTrace-----INTEGER ::= 16
id-LocationReportingControl-----INTEGER ::= 17
id-LocationReport-----INTEGER ::= 18
id-InitialUE-Message-----INTEGER ::= 19
id-DirectTransfer-----INTEGER ::= 20
id-OverloadControl-----INTEGER ::= 21
id-ErrorIndication-----INTEGER ::= 22
id-SRNS-DataForward-----INTEGER ::= 23
id-ForwardSRNS-Context-----INTEGER ::= 24
id-privateMessage-----INTEGER ::= 25
id-CN-DeactivateTrace-----INTEGER ::= 26
id-ResetResource-----INTEGER ::= 27
id-RANAP-Relocation-----INTEGER ::= 28

-----
--
-- Extension constants
--
-----

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

-----
--
-- Lists
--
-----

maxNrOfErrors-----INTEGER ::= 256
maxNrOfPieces-----INTEGER ::= 16
maxNrOfRABs-----INTEGER ::= 256
```

```
maxNrOfVols _____ INTEGER ::= 2
maxNrOfPoints _____ INTEGER ::= 15
maxNrOfIuSigConIds _____ INTEGER ::= 1000
maxNrOfDFTs _____ INTEGER ::= 15

maxRAB-Subflows _____ INTEGER ::= 7
maxRAB-SubflowCombination _____ INTEGER ::= 64

-----
-----
----- IEs
-----
-----
-----

id-AreaIdentity _____ INTEGER ::= 0
id-CN-BroadcastInformationPiece _____ INTEGER ::= 1
id-CN-BroadcastInformationPieceList _____ INTEGER ::= 2
id-CN-DomainIndicator _____ INTEGER ::= 3
id-Cause _____ INTEGER ::= 4
id-ChosenEncryptionAlgorithm _____ INTEGER ::= 5
id-ChosenIntegrityProtectionAlgorithm _____ INTEGER ::= 6
id-ClassmarkInformation2 _____ INTEGER ::= 7
id-ClassmarkInformation3 _____ INTEGER ::= 8
id-CriticalityDiagnostics _____ INTEGER ::= 9
id-DL-GTP-PDU-SequenceNumber _____ INTEGER ::= 10
id-EncryptionInformation _____ INTEGER ::= 11
id-IntegrityProtectionInformation _____ INTEGER ::= 12
id-IuTransportAssociation _____ INTEGER ::= 13
id-L3-Information _____ INTEGER ::= 14
id-LAI _____ INTEGER ::= 15
id-NAS-PDU _____ INTEGER ::= 16
id-NonSearchingIndication _____ INTEGER ::= 17
id-NumberOfSteps _____ INTEGER ::= 18
id-OMC-ID _____ INTEGER ::= 19
id-OldBSS-ToNewBSS-Information _____ INTEGER ::= 20
id-PagingAreaID _____ INTEGER ::= 21
id-PagingCause _____ INTEGER ::= 22
id-PermanentNAS-UE-ID _____ INTEGER ::= 23
id-RAB-ContextItem _____ INTEGER ::= 24
id-RAB-ContextList _____ INTEGER ::= 25
id-RAB-DataForwardingItem _____ INTEGER ::= 26
id-RAB-DataForwardingItem-SRNS-CtxReq _____ INTEGER ::= 27
id-RAB-DataForwardingList _____ INTEGER ::= 28
id-RAB-DataForwardingList-SRNS-CtxReq _____ INTEGER ::= 29
id-RAB-DataVolumeReportItem _____ INTEGER ::= 30
id-RAB-DataVolumeReportList _____ INTEGER ::= 31
id-RAB-DataVolumeReportRequestItem _____ INTEGER ::= 32
id-RAB-DataVolumeReportRequestList _____ INTEGER ::= 33
id-RAB-FailedItem _____ INTEGER ::= 34
id-RAB-FailedList _____ INTEGER ::= 35
```

```
id-RAB-ID INTEGER ::= 36
id-RAB-QueuedItem INTEGER ::= 37
id-RAB-QueuedList INTEGER ::= 38
id-RAB-ReleaseFailedList INTEGER ::= 39
id-RAB-ReleaseItem INTEGER ::= 40
id-RAB-ReleaseList INTEGER ::= 41
id-RAB-ReleasedItem INTEGER ::= 42
id-RAB-ReleasedList INTEGER ::= 43
id-RAB-ReleasedList-IuRelComp INTEGER ::= 44
id-RAB-RelocationReleaseItem INTEGER ::= 45
id-RAB-RelocationReleaseList INTEGER ::= 46
id-RAB-SetupItem-RelocReq INTEGER ::= 47
id-RAB-SetupItem-RelocReqAck INTEGER ::= 48
id-RAB-SetupList-RelocReq INTEGER ::= 49
id-RAB-SetupList-RelocReqAck INTEGER ::= 50
id-RAB-SetupOrModifiedItem INTEGER ::= 51
id-RAB-SetupOrModifiedList INTEGER ::= 52
id-RAB-SetupOrModifyItem INTEGER ::= 53
id-RAB-SetupOrModifyList INTEGER ::= 54
id-RAC INTEGER ::= 55
id-RelocationType INTEGER ::= 56
id-RequestType INTEGER ::= 57
id-SAI INTEGER ::= 58
id-SAPI INTEGER ::= 59
id-SourceID INTEGER ::= 60
id-SourceRNC-ToTargetRNC-TransparentContainer INTEGER ::= 61
id-TargetID INTEGER ::= 62
id-TargetRNC-ToSourceRNC-TransparentContainer INTEGER ::= 63
id-TemporaryUE-ID INTEGER ::= 64
id-TraceReference INTEGER ::= 65
id-TraceType INTEGER ::= 66
id-TransportLayerAddress INTEGER ::= 67
id-TriggerID INTEGER ::= 68
id-UE-ID INTEGER ::= 69
id-UL-GTP-PDU-SequenceNumber INTEGER ::= 70
id-RAB-FailedtoReportItem INTEGER ::= 71
id-RAB-FailedtoReportList INTEGER ::= 72
id-KeyStatus INTEGER ::= 75
id-DRX-CycleLengthCoefficient INTEGER ::= 76
id-IuSigConIdList INTEGER ::= 77
id-IuSigConIdItem INTEGER ::= 78
id-IuSigConId INTEGER ::= 79
id-DirectTransferInformationItem-RANAP-RelocInf INTEGER ::= 80
id-DirectTransferInformationList-RANAP-RelocInf INTEGER ::= 81
id-RAB-ContextItem-RANAP-RelocInf INTEGER ::= 82
id-RAB-ContextList-RANAP-RelocInf INTEGER ::= 83
```

END

9.3.7 Container Definitions

```

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

RANAP-Containers -- { object identifier to be allocated }--
DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

IMPORTS
    Criticality,
    Presence,
    PrivateIE-ID,
    ProtocolExtensionID,
    ProtocolIE-ID
FROM RANAP-CommonDataTypes

    maxPrivateIEs,
    maxProtocolExtensions,
    maxProtocolIEs
FROM RANAP-Constants;

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

RANAP-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 IEs  
--  
-- *****  
  
RANAP-PROTOCOL-IES-PAIR ::= CLASS {  
    &id ProtocolIE-ID UNIQUE,  
    &firstCriticality Criticality,  
    &FirstValue,  
    &secondCriticality Criticality,  
    &SecondValue,  
    &presence Presence  
}  
WITH SYNTAX {  
    ID &id  
    FIRST CRITICALITY &firstCriticality  
    FIRST TYPE &FirstValue  
    SECOND CRITICALITY &secondCriticality  
    SECOND TYPE &SecondValue  
    PRESENCE &presence  
}  
  
-- *****  
--  
-- Class Definition for Protocol Extensions  
--  
-- *****  
  
RANAP-PROTOCOL-EXTENSION ::= CLASS {  
    &id ProtocolExtensionID UNIQUE,  
    &criticality Criticality,  
    &Extension,  
    &presence Presence  
}  
WITH SYNTAX {  
    ID &id  
    CRITICALITY &criticality  
    EXTENSION &Extension  
    PRESENCE &presence  
}  
  
-- *****  
--  
-- Class Definition for Private IEs  
--  
-- *****  
  
RANAP-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 {RANAP-PROTOCOL-IES : IEsSetParam} ::=
    SEQUENCE (SIZE (0..maxProtocolIEs)) OF
    ProtocolIE-Field {{IEsSetParam}}

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

-- *****
--
-- Container for Protocol IE Pairs
--
-- *****

ProtocolIE-ContainerPair {RANAP-PROTOCOL-IES-PAIR : IEsSetParam} ::=
    SEQUENCE (SIZE (0..maxProtocolIEs)) OF
    ProtocolIE-FieldPair {{IEsSetParam}}

ProtocolIE-FieldPair {RANAP-PROTOCOL-IES-PAIR : IEsSetParam} ::= SEQUENCE {
    id          RANAP-PROTOCOL-IES-PAIR.&id          ({IEsSetParam}),
    firstCriticality RANAP-PROTOCOL-IES-PAIR.&firstCriticality  ({IEsSetParam}{@id}),
    firstValue     RANAP-PROTOCOL-IES-PAIR.&FirstValue          ({IEsSetParam}{@id}),
    secondCriticality RANAP-PROTOCOL-IES-PAIR.&secondCriticality ({IEsSetParam}{@id}),
    secondValue     RANAP-PROTOCOL-IES-PAIR.&SecondValue        ({IEsSetParam}{@id})
}

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

```

```

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

ProtocolIE-ContainerPairList {INTEGER : lowerBound, INTEGER : upperBound, RANAP-PROTOCOL-IES-PAIR : IEsSetParam} ::=
  SEQUENCE (SIZE (lowerBound..upperBound)) OF
  ProtocolIE-ContainerPair {{IEsSetParam}}

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

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

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

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

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

PrivateIE-Field {RANAP-PRIVATE-IES : IEsSetParam} ::= SEQUENCE {
  id          RANAP-PRIVATE-IES.&id          ({IEsSetParam}),
  criticality RANAP-PRIVATE-IES.&criticality  ({IEsSetParam}@id)},
  value       RANAP-PRIVATE-IES.&Value       ({IEsSetParam}@id)}
}

END
-- *****
--
-- Container definitions
--
-- *****

RANAP-Containers --- { object identifier to be allocated } ---

```

```

DEFINITIONS AUTOMATIC TAGS ::=
BEGIN

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

IMPORTS
-----
Criticality,
Presence,
PrivateIE-ID,
ProtocolExtensionID,
ProtocolIE-ID
FROM RANAP-CommonDataTypes

-----
maxPrivateIEs,
maxProtocolExtensions,
maxProtocolIEs
FROM RANAP-Constants;

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

RANAP_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 IEs
-----
-----

RANAP_PROTOCOL_IES_PAIR ::= CLASS {
-----
&id ProtocolIE-ID UNIQUE,

```



```

--- &firstCriticality Criticality,
--- &FirstValue,
--- &secondCriticality Criticality,
--- &SecondValue,
--- &presence Presence
}
WITH SYNTAX {
--- ID &id
--- FIRST_CRITICALITY &firstCriticality
--- FIRST_TYPE &FirstValue
--- SECOND_CRITICALITY &secondCriticality
--- SECOND_TYPE &SecondValue
--- PRESENCE &presence
}

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

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

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

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

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

-----
--
-- Container for Protocol IE Pairs
--
-----

ProtocolIE-ContainerPair {RANAP-PROTOCOL-IES-PAIR : IEsSetParam} ::=
--- SEQUENCE (SIZE (0..maxProtocolIEs)) OF
--- ProtocolIE-FieldPair {{IEsSetParam}}

ProtocolIE-FieldPair {RANAP-PROTOCOL-IES-PAIR : IEsSetParam} ::= SEQUENCE {
--- id RANAP-PROTOCOL-IES-PAIR.&id {{IEsSetParam}},
--- firstCriticality RANAP-PROTOCOL-IES-PAIR.&firstCriticality {{IEsSetParam}}{@id}},
--- firstValue RANAP-PROTOCOL-IES-PAIR.&FirstValue {{IEsSetParam}}{@id}},
--- secondCriticality RANAP-PROTOCOL-IES-PAIR.&secondCriticality {{IEsSetParam}}{@id}},
--- secondValue RANAP-PROTOCOL-IES-PAIR.&SecondValue {{IEsSetParam}}{@id}}
}

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

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

ProtocolIE-ContainerPairList {INTEGER : lowerBound, INTEGER : upperBound, RANAP-PROTOCOL-IES-PAIR : IEsSetParam} ::=
--- SEQUENCE (SIZE (lowerBound..upperBound)) OF
--- ProtocolIE-ContainerPair {{IEsSetParam}}

```

```

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

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

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

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

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

PrivateIE-Field {RANAP-PRIVATE-IES : IEsSetParam} ::= SEQUENCE {
-- id RANAP-PRIVATE-IES.&id ({IEsSetParam}),
-- criticality RANAP-PRIVATE-IES.&criticality ({IEsSetParam}{@id}),
-- value RANAP-PRIVATE-IES.&Value ({IEsSetParam}{@id})
}

END

```