**3GPP TSG-RAN WG3 Meeting #115-e  *R3-222907***

**E-meeting, -, 21**.02. **- 3**.03.2022

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **36.423** | **CR** | **1610** | **rev** | **8** | **Current version:** | **16.8.**0 |  |
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| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | CPAC BL CR to TS 36.423 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | R3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | LTE\_NR\_DC\_enh2-Core | | | | |  | ***Date:*** | | | 4.03.2022 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | RAN3 has been assigned a task to enable a conditional PSCell Change/Addition (CPAC). This work covers all DC options, including EN-DC. | | | | | | | | |
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| ***Summary of change:*** | | In order to enable the feature, following functionality has been added:   * CPAC may be indicated with a new IE in the Addition and SN Change procedures (which are also excluded from the DC timer). * The Early Status Transfer may be used also for CPAC. | | | | | | | | |
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| ***Consequences if not approved:*** | | The conditional PSCell Change/Addition is not supported. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 3.3, 8.2.7, 8.7.4, 8.7.5, 8.7.8, 8.7.A1 (new), 9.1.1.9, 9.1.4.1, 9.1.4.2, 9.1.4.17, 9.1.4.18, 9.1.4.A2 (new), ASN.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev.0: Changes introduced at RAN3 #112-e (ASN.1 tested):  R3-212781 (exclusion of CPAC from the DC timer)  R3-212969 (CPAC indicator)  Rapporteur’s edits  Rev.1: Resubmission to RAN3 #113-e (ASN.1 tested):  Addition of the endorsed new procedure to the list of procedures  Rev.2: Changes introduced at RAN3 #113-e (ASN.1 not changed):  R3-214386 (enabling usage of the Early Status Transfer)  Rapporteur’s edits  Rev.3: Resubmission to RAN3 #114-e (ASN.1 tested).  Correction of the node namies in the Early Status Transfer.  Rev.4: Changes introduced at RAN3 #114-e (ASN.1 tested):  R3-214747  R3-216148  Rapporteur’s edits  Rev.5: Resubmission to RAN3 #114-bis-e (ASN.1 tested).  Rev.6: Changes introduced at RAN3 #114-bis-e (ASN.1 tested):  R3-220152 (correction of handling execution of CPC)  R3-220391 (addition of the Arrival Probability)  R3-221126 (rapporteur’s clean-up)  R3-221363 (implelentation of the 2nd step of CPC preparation)  R3-221391 (agreements from RAN3 #114)  Rapporteur’s edits  Rev.7: Edits at the RAN3 #115 meeting.  Rev.8: Changes introduced at RAN3 #115-e (ASN.1 tested):  R3-222780 (enabling using one procedure for CPC, corrections) | | | | | | | | |

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## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

ABS Almost Blank Subframe

ARPI Additional RRM Policy Index

ACL Access Control List

BBF Broadband Forum

BL Bandwidth reduced Low complexity

CCO Cell Change Order

CE Coverage Enhancement

CHO Conditional Handover

CoMP Coordinated Multi Point

CPAC Conditional PSCell Addition or Change.

DAPS Dual Active Protocol Stacks

DC Dual Connectivity

DL Downlink

EARFCN E-UTRA Absolute Radio Frequency Channel Number

E-CID Enhanced Cell-ID (positioning method)

eNB E-UTRAN NodeB

EN-DC E-UTRA-NR Dual Connectivity

EP Elementary Procedure

EPC Evolved Packet Core

E-RAB E-UTRAN Radio Access Bearer

E-UTRAN Evolved UTRAN

GNSS Global Navigation Satellite System

GUMMEI Globally Unique MME Identifier

HFN Hyper Frame Number

IAB Integrated Access and Backhaul

IE Information Element

L-GW Local GateWay

LWA LTE-WLAN Aggregation

MCG Master Cell Group

MDT Minimization of Drive Tests

MeNB Master eNB

MME Mobility Management Entity

MTSI Multimedia Telephony Service for IMS

NAICS Network-Assisted Interference Cancellation and Suppression

NR New Radio

PDCP Packet Data Convergence Protocol

PLMN Public Land Mobile Network

ProSe Proximity Service

QMC QoE Measurement Collection

QoE Quality of Experience

SCG Secondary Cell Group

S-GW Serving Gateway

SeNB Secondary eNB

SgNB Secondary gNB

SIPTO Selected IP Traffic Offload

SIPTO@LN Selected IP Traffic Offload at the Local Network

SN Sequence Number

SSID Service Set Identifier

TAC Tracking Area Code

UE User Equipment

UL Uplink

V2X Vehicle-to-Everything

WLAN Wireless Local Area Network

WT WLAN Termination

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## 8.1 Elementary procedures

In the following tables, all EPs are divided into Class 1 and Class 2 EPs.

Table 8.1-1: Class 1 Elementary Procedures

| Elementary Procedure | Initiating Message | Successful Outcome | Unsuccessful Outcome | |
| --- | --- | --- | --- | --- |
| Response message | Response message | |
| Handover Preparation | HANDOVER REQUEST | HANDOVER REQUEST ACKNOWLEDGE | HANDOVER PREPARATION FAILURE |
| Reset | RESET REQUEST | RESET RESPONSE |  |
| X2 Setup | X2 SETUP REQUEST | X2 SETUP RESPONSE | X2 SETUP FAILURE |
| eNB Configuration Update | ENB CONFIGURATION UPDATE | ENB CONFIGURATION UPDATE ACKNOWLEDGE | ENB CONFIGURATION UPDATE FAILURE |
| Resource Status Reporting Initiation | RESOURCE STATUS REQUEST | RESOURCE STATUS RESPONSE | RESOURCE STATUS FAILURE |
| Mobility Settings Change | MOBILITY CHANGE REQUEST | MOBILITY CHANGE ACKNOWLEDGE | MOBILITY CHANGE FAILURE |
| Cell Activation | CELL ACTIVATION REQUEST | CELL ACTIVATION RESPONSE | CELL ACTIVATION FAILURE |
| SeNB Addition Preparation | SENB ADDITION REQUEST | SENB ADDITION REQUEST ACKNOWLEDGE | SENB ADDITION REQUEST REJECT |
| MeNB initiated SeNB Modification Preparation | SENB MODIFICATION REQUEST | SENB MODIFICATION REQUEST ACKNOWLEDGE | SENB MODIFICATION REQUEST REJECT |
| SeNB initiated SeNB Modification | SENB MODIFICATION REQUIRED | SENB MODIFICATION CONFIRM | SENB MODIFICATION REFUSE |
| SeNB initiated SeNB Release | SENB RELEASE REQUIRED | SENB RELEASE CONFIRM |  |
| X2 Removal | X2 REMOVAL REQUEST | X2 REMOVAL RESPONSE | X2 REMOVAL FAILURE |
| Retrieve UE Context | RETRIEVE UE CONTEXT REQUEST | RETRIEVE UE CONTEXT RESPONSE | RETRIEVE UE CONTEXT FAILURE |
| SgNB Addition Preparation | SGNB ADDITION REQUEST | SGNB ADDITION REQUEST ACKNOWLEDGE | SGNB ADDITION REQUEST REJECT |
| MeNB initiated SgNB Modification Preparation | SGNB MODIFICATION REQUEST | SGNB MODIFICATION REQUEST ACKNOWLEDGE | SGNB MODIFICATION REQUEST REJECT |
| SgNB initiated SgNB Modification | SGNB MODIFICATION REQUIRED | SGNB MODIFICATION CONFIRM | SGNB MODIFICATION REFUSE |
| SgNB change | SGNB CHANGE REQUIRED | SGNB CHANGE CONFIRM | SGNB CHANGE REFUSE |
| MeNB initiated SgNB Release | SGNB RELEASE REQUEST | SGNB RELEASE REQUEST ACKNOWLEDGE | SGNB RELEASE REQUEST REJECT |
| SgNB initiated SgNB Release | SGNB RELEASE REQUIRED | SGNB RELEASE CONFIRM |  |
| EN-DC X2 Setup | EN-DC X2 SETUP REQUEST | EN-DC X2 SETUP RESPONSE | EN-DC X2 SETUP FAILURE |
| EN-DC Configuration Update | EN-DC CONFIGURATION UPDATE | EN-DC CONFIGURATION UPDATE ACKNOWLEDGE | EN-DC CONFIGURATION UPDATE FAILURE |
| EN-DC Cell Activation | EN-DC CELL ACTIVATION REQUEST | EN-DC CELL ACTIVATION RESPONSE | EN-DC CELL ACTIVATION FAILURE |
| E-UTRA - NR Cell Resource Coordination | E-UTRA - NR CELL RESOURCE COORDINATION REQUEST | E-UTRA - NR CELL RESOURCE COORDINATION RESPONSE |  |
| EN-DC X2 Removal | EN-DC X2 REMOVAL REQUEST | EN-DC X2 REMOVAL RESPONSE | EN-DC X2 REMOVAL FAILURE |
| EN-DC Resource Status Reporting Initiation | EN-DC RESOURCE STATUS REQUEST | EN-DC RESOURCE STATUS RESPONSE | EN-DC RESOURCE STATUS FAILURE |
| UE Radio Capability ID Mapping | UE RADIO CAPABILITY ID MAPPING REQUEST | UE RADIO CAPABILITY ID MAPPING RESPONSE |  |

Table 8.1-2: Class 2 Elementary Procedures

| Elementary Procedure | Initiating Message |
| --- | --- |
| Load Indication | LOAD INFORMATION |
| Handover Cancel | HANDOVER CANCEL |
| SN Status Transfer | SN STATUS TRANSFER |
| UE Context Release | UE CONTEXT RELEASE |
| Resource Status Reporting | RESOURCE STATUS UPDATE |
| Error Indication | ERROR INDICATION |
| Radio Link Failure Indication | RLF INDICATION |
| Handover Report | HANDOVER REPORT |
| X2 Release | X2 RELEASE |
| X2AP Message Transfer | X2AP MESSAGE TRANSFER |
| SeNB Reconfiguration Completion | SENB RECONFIGURATION COMPLETE |
| MeNB initiated SeNB Release | SENB RELEASE REQUEST |
| SeNB Counter Check | SENB COUNTER CHECK REQUEST |
| SgNB Reconfiguration Completion | SGNB RECONFIGURATION COMPLETE |
| SgNB Counter Check | SGNB COUNTER CHECK REQUEST |
| RRC Transfer | RRC TRANSFER |
| Secondary RAT Data Usage Report | SECONDARY RAT DATA USAGE REPORT |
| SgNB Activity Notification | SGNB ACTIVITY NOTIFICATION |
| Data Forwarding Address Indication | DATA FORWARDING ADDRESS INDICATION |
| gNB Status Indication | GNB STATUS INDICATION |
| EN-DC Configuration Transfer | EN-DC CONFIGURATION TRANSFER |
| Trace Start | TRACE START |
| Deactivate Trace | DEACTIVATE TRACE |
| Handover Success | HANDOVER SUCCESS |
| Conditional Handover Cancel | CONDITIONAL HANDOVER CANCEL |
| Early Status Transfer | EARLY STATUS TRANSFER |
| EN-DC Resource Status Reporting | EN-DC RESOURCE STATUS UPDATE |
| Cell Traffic Trace | CELL TRAFFIC TRACE |
| F1-C Traffic Transfer | F1-C TRAFFIC TRANSFER |
| Conditional PSCell Change Cancel | CONDITIONAL PSCELL CHANGE CANCEL |

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### 8.2.7 Early Status Transfer

#### 8.2.7.1 General

The purpose of the Early Status Transfer procedure is to transfer the COUNT of the first downlink SDU that the source eNB forwards to the target eNB or the COUNT for discarding already forwarded downlink SDUs for respective E-RAB during DAPS Handover or Conditional Handover.

For Dual Connectivity or EN-DC, the Early Status Transfer procedure is also used, during a Conditional Handover, from the SeNB to the MeNB as specified in TS 36.300 [15], or from the en-gNB to the MeNB as specified in TS 37.340 [32].

For Conditional PSCell Addition in EN-DC, the Early Status Transfer procedure is also used, from the MeNB to the en-gNB as specified in TS 37.340 [32].

For Conditional PSCell Change in EN-DC, the Early Status Transfer procedure is also used, from the source en-gNB to the MeNB, and from the MeNB to the target en-gNB, as specified in TS 37.340 [32].

The procedure uses UE-associated signalling.

#### 8.2.7.2 Successful Operation



Figure 8.2.7.2-1: Early Status Transfer during DAPS Handover or Conditional Handover, successful operation



Figure 8.2.7.2-2: Early Status Transfer during Conditional Handover in dual connectivity or EN-DC operation, successful operation



Figure 8.2.7.2-x: Early Status Transfer during CPAC in EN-DC operation, successful operation

**From source eNB to target eNB**

The *E-RABs Subject To Early Status Transfer List* IE included in the EARLY STATUS TRANSFER message contains the E-RAB ID(s) corresponding to the E-RAB(s) subject to be simultaneously served by the source and the target eNBs during DAPS Handover or the E-RAB(s) transferred during Conditional Handover.

For each E-RAB for which the *FIRST DL COUNT Value* IE is received in the EARLY STATUS TRANSFER message, the target eNB shall use it as the COUNT of the first downlink SDU that the source eNB forwards to the target eNB. If the *FIRST DL COUNT Value Extended* IE or *FIRST DL COUNT Value for PDCP SN Length 18* IE is included in the *E-RABs Subject To Early Status Transfer Item* IE, the target eNB shall, if supported, use this value instead of the value contained in the *FIRST DL COUNT Value* IE.

For each E-RAB for which the *DISCARD DL COUNT Value* IE is received in the EARLY STATUS TRANSFER message, the target eNB does not transmit forwarded downlink SDUs to the UE whose COUNT is less than the provided and discards them if transmission has not been attempted. If the *DISCARD DL COUNT Value Extended* IE or *DISCARD DL COUNT Value for PDCP SN Length 18* IE is included in the *E-RABs Subject To Early Status Transfer Item* IE, the target eNB shall, if supported, use this value instead of the value contained in the *DISCARD DL COUNT Value* IE.

**From SeNB (respectively, en-gNB) to MeNB, the source eNB for Conditional Handover**

**From MeNB to en-gNB for Conditional PSCell Addition**

**From source en-gNB to MeNB, and from MeNB to target en-gNB, for CPAC**

The *E-RABs Subject To Early Status Transfer List* IE included in the EARLY STATUS TRANSFER message contains the E-RAB ID(s) corresponding to the E-RAB(s) transferred during Conditional Handover or during CPAC.

For each E-RAB in the *E-RABs Subject To Early Status Transfer List* IE, the source eNB shall forward to the target during Conditional Handover, or the sending node shall forward to the receiving node during CPAC, the value of the received *FIRST DL COUNT Value* IE or *DISCARD DL COUNT Value* IE. If the *FIRST DL COUNT Value Extended* IE or *FIRST DL COUNT Value for PDCP SN Length 18* IE is included, if supported, this value is forwarded instead of the value contained in the *FIRST DL COUNT Value* IE. If the *DISCARD DL COUNT Value Extended* IE or *DISCARD DL COUNT Value for PDCP SN Length 18* IE is included, if supported, this value is forwarded instead of the value contained in the *DISCARD DL COUNT Value* IE.

If the en-gNB sends the message to the MeNB, then the *SgNB UE X2AP ID* IE shall be included in the EARLY STATUS TRANSFER message, while the *Old eNB UE X2AP ID* IE is ignored. The *SgNB UE X2AP ID* IE is used as the old UE ID.

#### 8.2.7.3 Abnormal Conditions

If the target eNB receives this message for a UE for which no prepared DAPS Handover or Conditional Handover exists at the target eNB, the target eNB shall ignore the message.

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### 8.3.15 Data Forwarding Address Indication

#### 8.3.15.1 General

The purpose of the Data Forwarding Address Indication procedure is to allow the new eNB to provide data forwarding addresses to the old eNB in case the RRC connection has been re-established, as specified in TS 36.300 [15].

For Dual Connectivity or EN-DC, the Data Forwarding Address Indication procedure is used during a Conditional Handover to provide data forwarding related information from the MeNB to the SeNB as specified in TS 36.300 [15], or from the MeNB to the en-gNB as specified in TS 37.340 [32].

The procedure uses UE-associated signalling.

#### 8.3.15.2 Successful Operation



Figure 8.3.15.2-1: Data Forwarding Address Indication, successful operation

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Figure 8.3.15.2-2: Data Forwarding Address Indication for Conditional Handover, successful operation

The new eNB initiates the procedure by sending a DATA FORWARDING ADDRESS INDICATION message to the old eNB.

For each E-RAB included in *E-RABs Data Forwarding Address List* IE, the new eNB indicates that it requests data forwarding of downlink packets to the GTP TEID indicated in the *DL GTP Tunnel Endpoint* IE.

If the DATA FORWARDING ADDRESS INDICATION message includes the *CHO DC Indicator* IE, the SeNB (respectively, the en-gNB for EN-DC) shall, if supported, consider that the DATA FORWARDING ADDRESS INDICATION message concerns a Conditional Handover, and act as specified in TS 36.300 [15] for dual connectivity (respectively, act as specified in TS 37.340 [32] for EN-DC).

If the DATA FORWARDING ADDRESS INDICATION message includes the *CHO DC Early Data Forwarding Indicator* IE set to “stop”, the SeNB (respectively, the en-gNB for EN-DC) shall, if supported and if already initiated, stop early data forwarding for the provided E-RABs Data Forwarding Address information.

If the DATA FORWARDING ADDRESS INDICATION message includes the *CPC Indicator* IE set to “triggered”, the en-gNB for EN-DC shall, if supported, consider that the DATA FORWARDING ADDRESS INDICATION message concerns a Conditional PSCell Change, and act as specified in TS 37.340 [32]. If the *CPC Indicator* IE is set to "early data transmission stop", the en-gNB shall, if supported and if already initiated, stop early data forwarding for the provided Data Forwarding Address information.

**EN-DC**

If the MeNB sends the message to the en-gNB, then the *SgNB UE X2AP ID* IE shall be included in the DATA FORWARDING ADDRESS INDICATION message, while the *New eNB UE X2AP ID* IE is ignored. The *SgNB UE X2AP ID* IE is used as the new UE ID.

#### 8.3.15.3 Unsuccessful Operation

Not applicable.

#### 8.3.15.4 Abnormal Conditions

Void.

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### 8.7.4 SgNB Addition Preparation

#### 8.7.4.1 General

The purpose of the SgNB Addition Preparation procedure is to request the en-gNB to allocate resources for EN-DC connectivity operation for a specific UE.

The procedure uses UE-associated signalling.

#### 8.7.4.2 Successful Operation



Figure 8.7.4.2-1: SgNB Addition Preparation, successful operation

The MeNB initiates the procedure by sending the SGNB ADDITION REQUEST message to the en-gNB. When the MeNB sends the SGNB ADDITION REQUEST message, it shall start the timer TDCprep.

The allocation of resources according to the values of the *Allocation and Retention Priority* IE included in the *Full E-RAB Level QoS Parameters* IE or in the *Requested MCG E-RAB Level QoS Parameters IE* or in the *Requested SCG E-RAB Level QoS Parameters* IE shall follow the principles described for the E-RAB Setup procedure in TS 36.413 [4].

If the SGNB ADDITION REQUEST message contains the *Serving PLMN* IE, the en-gNB may use it for RRM purposes.

If the SGNB ADDITION REQUEST message contains the *Expected UE Behaviour* IE, the en-gNB shall, if supported, store this information and may use it to optimize resource allocation.

If the SGNB ADDITION REQUEST message contains the *Handover Restriction List* IE, the en-gNB node, if supported, shall store this information and use it to select an appropriate NR cell.

If the SGNB ADDITION REQUEST message contains the *MeNB Resource Coordination Information* IE, the en-gNB should forward it to lower layers and it may use it for the purpose of resource coordination with the MeNB, or to coordinate with sidelink resources used in the MeNB. The en-gNB shall consider the received *UL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. The en-gNB shall consider the received *DL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. If the *MeNB Coordination Assistance Information* IE is contained in the *MeNB Resource Coordination Information* IE, the en-gNB shall, if supported, use the information to determine further coordination of resource utilisation between the en-gNB and the MeNB.

The en-gNB shall choose the ciphering algorithm based on the information in the *NR UE Security Capabilities* IE and locally configured priority list of AS encryption algorithms and apply the key indicated in the *SgNB Security Key* IE as specified in the TS 33.401 [18].

If the SGNB ADDITION REQUEST message contains the *Subscriber Profile ID for RAT/Frequency Priority* IE, the en-gNB may use it for RRM purposes.

If the SGNB ADDITION REQUEST message contains the *Additional RRM Policy Index* IE, the en-gNB may use it for RRM purposes.

The en-gNB shall search for the target NR cell among the NR neighbour cells of the E-UTRAN cell indicated in *MeNB Cell ID* IE, as specified in the TS 37.340 [32].

If the *Masked IMEISV* IE is contained in the SGNB ADDITION REQUEST message the en-gNB shall, if supported, use it to determine the characteristics of the UE for subsequent handling.

The en-gNB shall report to the MeNB, in the SGNB ADDITION REQUEST ACKNOWLEDGE message, the result for all the requested E-RABs in the following way:

- a list of E-RABs which are successfully established shall be included in the *E-RABs Admitted To Be Added List* IE;

- a list of E-RABs which failed to be established shall be included in the *E-RABs Not Admitted List* IE.

NOTE: The MeNB may trigger the SgNB Addition Preparation procedure in the course of the Inter-MeNB handover without SgNB change procedure as described in TS 37.340 [32]. The deleted E-RABs are not included in the *E-RABs To Be Added List* IE in the SGNB ADDITION REQUEST message, from MeNB point of view. If the en-gNB reports a certain E-RAB to be successfully established, respective SCG resources, from an en-gNB point of view, may be actually successfully established or modified or kept; if a certain E-RAB is reported to be failed to be established, respective SCG resources, from an en-gNB point of view, may be actually failed to be established or modified or kept.

For each E-RAB successfully established in the en-gNB, the en-gNB shall report to the MeNB, in the SGNB ADDITION REQUEST ACKNOWLEDGE message, the same value in the *EN-DC Resource Configuration* IE as received in the SGNB ADDITION REQUEST message.

For each E-RAB for which allocation of the PDCP entity is requested at the en-gNB:

- the MeNB may propose to apply forwarding of downlink data by including the *DL Forwarding* IE within the *E-RABs To be Added Item* IE of the SGNB ADDITION REQUEST message. For each E-RAB that it has decided to admit, the en-gNB may include the *DL Forwarding GTP Tunnel Endpoint* IE within the *E-RABs Admitted To Be Added Item* IE of the SGNB ADDITION REQUEST ACKNOWLEDGE message to indicate that it accepts the proposed forwarding of downlink data for this bearer. This GTP tunnel endpoint may be different from the corresponding GTP tunnel endpoint, i.e the information contained in the *Transport Layer Address* IE and the *DL GTP TEID* IE in the *E-RAB To Be Modified List* IE of the E-RAB MODIFICATION INDICATION message (see TS 36.413 [4]) depending on implementation choice;

- the en-gNB may include for each bearer in the *E-RABs Admitted To Be Added List* IE the *UL Forwarding GTP Tunnel Endpoint* IE to indicate that it requests data forwarding of uplink packets to be performed for that bearer.

- the en-gNB shall use the *S1 UL GTP Tunnel Endpoint* IE of the SGNB ADDITION REQUEST message as the UL S1-U address.

- the MeNB shall use the *SgNB UL GTP Tunnel Endpoint at PDCP* IE of the SGNB ADDITION REQUEST ACKNOWLEDGE message as the UL X2-U address.

- if the SGNB ADDITION REQUEST message contains for an E-RAB to be added which is requested to be configured with MCG resources the *MeNB DL GTP Tunnel Endpoint at MCG* IE the en-gNB shall use it as the DL X2-U address for delivery of DL PDCP PDUs.

- the en-gNB shall include in the SGNB ADDITION REQUEST ACKNOWLEDGE message the *S1 DL GTP Tunnel Endpoint at the SgNB* IE.

- the en-gNB shall include in the SGNB ADDITION REQUEST ACKNOWLEDGE message the *RLC Mode* IE.

- the en-gNB may include for each bearer in the *E-RABs Admitted To Be Added List* IE in the SGNB ADDITION REQUEST ACKNOWLEDGE the *PDCP SN Length* IE to indicate the PDCP SN length for that bearer.

- If the *RLC Mode* IE is included for an E-RAB within the *E-RABs To be Added List* IE in the SGNB ADDITION REQUEST message, it indicates the mode that the MeNB used for the E-RAB when it was hosted at the MeNB.

- If the *Bearer Type* IE for the concerned E-RAB is received by the en-gNB and is set to "non IP", the en-gNB shall, if supported, not perform IP header compression for the concerned E-RAB.

- If the *Ethernet Type* IE for the concerned E-RAB is received by the en-gNB and is set to "True", the en-gNB shall, if supported, take this into account to perform header compression appropriately for the concerned E-RAB.

Upon reception of the SGNB ADDITION REQUEST ACKNOWLEDGE message the MeNB shall stop the timer TDCprep.

If the SGNB ADDITION ACKNOWLEDGE message contains the *SgNB Resource Coordination Information* IE, the MeNB may use it for the purpose of resource coordination with the en-gNB. The MeNB shall consider the received *UL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. The MeNB shall consider the received *DL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. If the *SgNB Coordination Assistance Information* IE is contained in the *SgNB Resource Coordination Information* IE, the MeNB shall, if supported, use the information to determine further coordination of resource utilisation between the en-gNB and the MeNB.

If the *SgNB UE X2AP ID* IE is contained in the SGNB ADDITION REQUEST message, the en-gNB shall, if supported, store this information and use it as defined in TS 37.340 [32].

If the SGNB ADDITION REQUEST message contains the *SGNB Addition Trigger Indication*, the en-gNB shall include the *RRC config indication* IE in the SGNB ADDITION REQUEST ACKNOWLEDGE message to inform the MeNB if the en-gNB applied full or delta configuration, as specified in TS 37.340 [32].

If the en-gNB receives for an E-RAB for which the PDCP entiy is allocated at the MeNB the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE and the *Duplication Activation* IE in the SGNB ADDITION REQUEST message, it may provide the *Secondary SgNB DL GTP Tunnel Endpoint at SCG* IE and the *LCID* IE to the MeNB in the SGNB ADDITION REQUEST ACKNOWLEDGE message if PDCP duplication is configured at the en-gNB.

If the SGNB ADDITION REQUEST message contains the *UL PDCP SN Length* IE and the *DL PDCP SN Length* IE, the en-gNB shall, if supported, store this information and use it for lower layer configuration of the concerned MN terminated bearer.

The SgNB may include the *Location Information at SgNB* IE in the SGNB ADDITION REQUEST ACKNOWLEDGE message, if respective information is available at the SgNB.

If the *Location Information at SgNB Reporting* IE set to "pscell" is included in the SGNB ADDITION REQUEST, the SgNB shall start providing information about the current location of the UE. If the *Location Information at SgNB* IE is included in the SGNB ADDITION REQUEST ACKNOWLEDGE, the MeNB shall store the included information so that it may be transferred towards the MME.

If *Trace Activation* IE has previously been received for this UE, it shall be included in the SGNB ADDITION REQUEST message. If the *Trace Activation* IE is included in the SGNB ADDITION REQUEST message, the en-gNB shall, if supported, initiate the requested trace function as described in TS 32.422 [6]. If the *Trace Activation* IE includes the *MDT Configuration NR* IE, the en-gNB shall take it into account for MDT function as described in TS 37.320 [31].

If the *Management Based MDT Allowed* IE only or the *Management Based MDT Allowed* IE and the *Management Based MDT PLMN List* IE is contained in the SGNB ADDITION REQUEST message, the en-gNB shall, if supported, store the received information in the UE context, and use this information to allow subsequent selection of the UE for management based MDT defined in TS 32.422 [6].

The MeNB shall, if supported and available in the UE context, include the *Management Based MDT Allowed* IE and the *Management Based MDT PLMN List* IE in the SGNB ADDITION REQUEST message.

If the *UE Context Reference at Source NG-RAN* IE is contained in the SGNB ADDITION REQUEST message, the en-gNB shall, if supported, store this information and use it for UE context retrieval and allocate data forwarding resources as specified in TS 37.340 [32].

If the *Requested Fast MCG recovery via SRB3* IE set to "true" is included in the SGNB ADDITION REQUEST message and the en-gNB decides to configure fast MCG link recovery via SRB3 as specified in TS 37.340 [32], the en-gNB shall, if supported, include the *Available fast MCG recovery via SRB3* IE set to "true" in the SGNB ADDITION REQUEST ACKNOWLEDGE message.

If the *UE Radio Capability ID* IE is contained in the SGNB ADDITION REQUEST message, the en-gNB shall, if supported, store this information and use it as specified in TS 23.401 [12].

If the SGNB ADDITION REQUEST message contains the *IAB Node Indication* IE, the en-gNB shall, if supported, consider that the request is for an IAB node.

For each requested E-RAB configured as MN-terminated split bearer/SCG bearer, if the *QoS Mapping Information* IE is contained in the *GTP Tunnel Endpoint* IE in the SGNB ADDITION REQUEST ACKNOWLEDGE message, the MeNB shall, if supported, use it to set DSCP and/or flow label fields for the downlink IP packets which are transmitted from MeNB to en-gNB through the GTP tunnels indicated by the *GTP Tunnel Endpoint* IE.

If the *Source NG-RAN Node ID* IE is included in the SGNB ADDITION REQUEST message, the en-gNB shall, if supported, use it to decide the direct data forwarding path availability with the indicated source NG-RAN node, and if the direct data forwarding path is available, include the *Direct Forwarding Path Availability* IE in the SGNB ADDITION REQUEST ACKNOWLEDGE message.

If the *Conditional PSCell Addition Information Request* IE is included in the SGNB ADDITION REQUEST message, the en-gNB shall, if supported, consider that the request concerns CPAC, as described in TS 37.340 [32]. Accordingly, the en-gNB shall, if supported, include the *Conditional PSCell Addition Acknowledge* IE in the SGNB ADDITION REQUEST ACKNOWLEDGE message.

If the *CG-CandidateList* is included in the *SgNB to MeNB Container* IE in the SGNB ADDITION REQUEST ACKNOWLEDGE message, the MeNB shall, if supported, use it for the purpose of CPAC.

If the *Estimated Arrival Probability* IE is contained in the *Conditional PSCell Addition Information Request* IE included in the SGNB ADDITION REQUEST message, then the candidate target en-gNB may use the information to allocate necessary resources for the incoming CPAC procedure.

**Interactions with the MeNB initiated SgNB Modification procedure:**

If the en-gNB provides for an E-RAB for which the PDCP entiy is allocated at the MeNB the *Secondary SgNB DL GTP Tunnel Endpoint at SCG* IE to the MeNB in the SGNB ADDITION REQUEST ACKNOWLEDGE message and the MeNB has not provided the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE in the SGNB ADDITION REQUEST message, the MeNB shall trigger the MeNB initiated SgNB Modification procedure to provide the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE to the SgNB.

**Interactions with the SgNB Reconfiguration Completion procedure:**

If the en-gNB admits at least one E-RAB, the en-gNB shall start the timer TDCoverall when sending the SGNB ADDITION REQUEST ACKNOWLEDGE message to the MeNB except for a CPAC request. The reception of the SGNB RECONFIGURATION COMPLETE message shall stop the timer TDCoverall if TDCoverall is running.

**Interaction with the Activity Notification procedure**

Upon receiving an SGNB ADDITION REQUEST message containing the *Desired Activity Notification Level* IE, the en-gNB shall, if supported, use this information to decide whether to trigger subsequent SgNB Activitity Notification procedures according to the requested notification level.

#### 8.7.4.3 Unsuccessful Operation



Figure 8.7.4.3-1: SgNB Addition Preparation, unsuccessful operation

If the en-gNB is not able to accept any of the bearers or a failure occurs during the SgNB Addition Preparation, the en-gNB sends the SGNB ADDITION REQUEST REJECT message with an appropriate cause value to the MeNB.

#### 8.7.4.4 Abnormal Conditions

If the en-gNB receives a SGNB ADDITION REQUEST message containing multiple *E-RAB ID* IEs (in the *E-RABs To Be Added List* IE) set to the same value, the en-gNB shall consider the establishment of the corresponding E-RAB as failed.

If the en-gNB receives a SGNB ADDITION REQUEST message containing a *E-RAB Level QoS Parameters* IE which contains a *QCI* IE indicating a GBR bearer (as defined in TS 23.203 [13]), and which does not contain the *GBR QoS Information* IE, the en-gNB shall consider the establishment of the corresponding E-RAB as failed.

If the supported algorithms for encryption defined in the *NR* *Encryption Algorithms* IE in the *NR* *UE Security Capabilities* IE, plus the mandated support of NEA0 in all UEs (TS 33.401 [18]), do not match any algorithms defined in the configured list of allowed encryption algorithms in the en-gNB (TS 33.401 [18]), the en-gNB shall reject the procedure using the SGNB ADDITION REQUEST REJECT message.

If the supported algorithms for integrity defined in the *NR Integrity Protection Algorithms* IE in the *NR* *UE Security Capabilities* IE do not match any algorithms defined in the configured list of allowed integrity protection algorithms in the en-gNB (TS 33.401 [18]), the en-gNB shall reject the procedure using the SGNB ADDITION REQUEST REJECT message.

If the en-gNB receives a SGNB ADDITION REQUEST message containing a *SgNB UE X2AP ID* IE that does not match any existing UE Context that has such ID, the en-gNB shall reject the procedure using the SGNB ADDITION REQUEST REJECT message.

If the MeNB has provided the en-gNB for an E-RAB for which the PDCP entiy is allocated at the MeNB the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE and the *Duplication Activation* IE in the SGNB ADDITION REQUEST message, and the en-gNB does not provide the *Secondary SgNB DL GTP Tunnel Endpoint at SCG* IE and the *LCID* IE to the MeNB in the SGNB ADDITION REQUEST ACKNOWLEDGE message, the MeNB shall assume that PDCP duplication was not configured at the en-gNB and releases duplication resources.

If the en-gNB provides for an E-RAB for which the PDCP entiy is allocated at the MeNB the *Secondary SgNB DL GTP Tunnel Endpoint at SCG* IE and the *LCID* IE to the MeNB in the SGNB ADDITION REQUEST ACKNOWLEDGE message and the MeNB has not provided the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE and the *Duplication Activation* IE in the SGNB ADDITION REQUEST message, and the MeNB does not trigger the MeNB initiated SgNB Modification procedure to provide the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE and the *Duplication Activation* IE to the SgNB the en-gNB before the SgNB Reconfigurationi Completion procedure was triggered, the en-gNB shall trigger the release of the concerned E-RAB.

**Interactions with the SgNB Reconfiguration Completion and SgNB initiated SgNB Release procedure:**

If the timer TDCoverall expires before the en-gNB has received the SGNB RECONFIGURATION COMPLETE or the SGNB RELEASE REQUEST message, the en-gNB shall regard the requested RRC connection reconfiguration as being not applied by the UE and shall trigger the SgNB initiated SgNB Release procedure.

**Interactions with the MeNB initiated SgNB Release procedure:**

If the timer TDCprep expires before the MeNB has received the SGNB ADDITION REQUEST ACKNOWLEDGE message, the MeNB shall regard the SgNB Addition Preparation procedure as being failed and shall trigger the MeNB initiated SgNB Release procedure.

### 8.7.5 SgNB Reconfiguration Completion

#### 8.7.5.1 General

The purpose of the SgNB Reconfiguration Completion procedure is to provide information to the en-gNB whether the requested configuration was successfully applied by the UE.

The procedure uses UE-associated signalling.

#### 8.7.5.2 Successful Operation



Figure 8.7.5.2-1: SgNB Reconfiguration Complete procedure, successful operation.

The MeNB initiates the procedure by sending the SGNB RECONFIGURATION COMPLETE message to the en-gNB.

The SGNB RECONFIGURATION COMPLETE message may contain information that

- either the UE has successfully applied the configuration requested by the en-gNB. The MeNB may also provide NR *RRCReconfigurationComplete* message in the *MeNB to SgNB Container* IE.

- or the configuration requested by the en-gNB has been rejected. The MeNB shall provide information with sufficient precision in the included *Cause* IE to enable the en-gNB to know the reason for an unsuccessful reconfiguration.

Upon reception of the SGNB RECONFIGURATION COMPLETE message the en-gNB shall stop the timer TDCoverall if TDCoverall is running.

#### 8.7.5.3 Abnormal Conditions

Void.

### 8.7.6 MeNB initiated SgNB Modification Preparation

#### 8.7.6.1 General

This procedure is used to enable an MeNB to request an en-gNB to modify the UE context at the en-gNB, or to query the current SCG configuration for supporting delta signalling in MeNB initiated SgNB change, or to provide the S-RLF-related information to the en-gNB.

The procedure uses UE-associated signalling.

#### 8.7.6.2 Successful Operation



Figure 8.7.6.2-1: MeNB initiated SgNB Modification Preparation, successful operation

The MeNB initiates the procedure by sending the SGNB MODIFICATION REQUEST message to the en-gNB. When the MeNB sends the SGNB MODIFICATION REQUEST message, it shall start the timer TDCprep.

The SGNB MODIFICATION REQUEST message may contain:

- within the *UE Context Information* IE (if the modification of the UE context at the en-gNB is requested);

- E-RABs to be added within the *E-RABs To Be Added Item* IE;

- E-RABs to be modified within the *E-RABs To Be Modified Item* IE;

- E-RABs to be released within the *E-RABs To Be Released Item* IE;

- the *SgNB UE Aggregate Maximum Bit Rate* IE;

- the *MeNB to SgNB Container* IE;

- the *SCG Configuration Query* IE;

- the *MeNB Resource Coordination Information* IE;

- the *Requested split SRBs IE*;

- the *Requested split SRBs release* IE;

- the *Requested fast MCG recovery via SRB3 IE*;

- the *Requested fast MCG recovery via SRB3 Release* IE.

If the SGNB MODIFICATION REQUEST message contains the *Serving PLMN* IE, the en-gNB may use it for RRM purposes.

If the SGNB MODIFICATION REQUEST message contains the *Handover Restriction List* IE, the en-gNB shall

- replace the previously provided Handover Restriction List by the received Handover Restriction List in the UE context;

- use this information to select an appropriate NR cell.

If the *SgNB UE Aggregate Maximum Bit Rate* IE is included in the SGNB MODIFICATION REQUEST message, the en-gNB shall:

- replace the previously provided SgNB UE Aggregate Maximum Bit Rate by the received SgNB UE Aggregate Maximum Bit Rate in the UE context;

- use the received SgNB UE Aggregate Maximum Bit Rate for non-GBR Bearers for the concerned UE as defined in TS 37.340 [32].

The allocation of resources according to the values of the *QCI* IE, *Allocation and Retention Priority* IE or *GBR QoS Information* IE included in the *Full E-RAB Level QoS Parameters* IE or in the *Requested SCG E-RAB Level QoS Parameters* IE shall follow the principles described for the E-RAB Setup procedure in TS 36.413 [4].

If the SGNB MODIFICATION REQUEST message contains the *MeNB Resource Coordination Information* IE, the en-gNB should forward it to lower layers and it may use it for the purpose of resource coordination with the MeNB, or to coordinate with sidelink resources used in the MeNB. The en-gNB shall consider the received *UL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. The en-gNB shall consider the received *DL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. If the *MeNB Coordination Assistance Information* IE is contained in the *MeNB Resource Coordination Information* IE, the en-gNB shall, if supported, use the information to determine further coordination of resource utilisation between the en-gNB and the MeNB.

If at least one of the requested modifications is admitted by the en-gNB, the en-gNB shall modify the related part of the UE context accordingly and send the SGNB MODIFICATION REQUEST ACKNOWLEDGE message back to the MeNB.

The en-gNB shall include the E-RABs for which resources have been either added or modified or released at the en-gNB either in the *E-RABs Admitted To Be Added List* IE or the *E-RABs Admitted To Be Modified List* IE or the *E-RABs Admitted To Be Released List* IE. The en-gNB shall include the E-RABs that have not been admitted in the *E-RABs Not Admitted List* IE with an appropriate cause value.

For each E-RAB successfully established or modified or released in the en-gNB, the en-gNB shall report to the MeNB, in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message, the same value in the *EN-DC Resource Configuration* IE as received in the SGNB MODIFICATION REQUEST message.

The en-gNB shall, if included, choose the ciphering algorithm based on the information in the *NR* *UE Security Capabilities* IE and locally configured priority list of AS encryption algorithms and apply the key indicated in the *SgNB Security Key* IE as specified in the TS 33.401 [18].

For each E-RAB for which allocation of the PDCP entity is requested at the en-gNB:

- if applicable, the MeNB may propose to apply forwarding of downlink data by including the *DL Forwarding* IE within the *E-RABs To Be Added Item* IE of the SGNB MODIFICATION REQUEST message. For each E-RAB that it has decided to admit, the en-gNB may include the *DL Forwarding GTP Tunnel Endpoint* IE within the *E-RABs Admitted To Be Added Item* IE of the SGNB MODIFICATION REQUEST ACKNOWLEDGE message to indicate that it accepts the proposed forwarding of downlink data for this bearer. The MeNB may also provide for an applicable E-RAB to be released the *DL Forwarding GTP Tunnel Endpoint* IE and the *UL Forwarding GTP Tunnel Endpoint* IE within the *E-RABs To Be Released Item* IE of the SGNB MODIFICATION REQUEST message.

- if applicable, the en-gNB may include for each bearer in the *E-RABs Admitted To Be Added List* IE in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message the *UL Forwarding GTP Tunnel Endpoint* IE to indicate that it requests data forwarding of uplink packets to be performed for that bearer.

- if applicable, the en-gNB may include for each bearer in the *E-RABs Admitted To Be Modified* List IE which is configured with the SN terminated split bearer option in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message the *UL Configuration* IE to indicate that the MCG UL configuration of the UE has changed.

- if applicable, the en-gNB may include for each bearer in the *E-RABs Admitted To Be Added List* IE in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message the *UL* *PDCP SN Length* IE and the *DL PDCP SN Length* IE to indicate the PDCP SN length for that bearer.

- If the *Bearer Type* IE for the concerned E-RAB is received by the en-gNB and is set to"non IP", then the en-gNB shall, if supported, not perform IP header compression for the concerned E-RAB.

- If the *Ethernet Type* IE for the concerned E-RAB is received by the en-gNB and is set to "True", the en-gNB shall take this into account to perform header compression appropriately for the concerned E-RAB.

For each E-RAB configured with SCG resources and the PDCP entity is hosted by the MeNB and

- requested to be modified,

- if the SGNB MODIFICATION REQUEST message includes the *MeNB UL GTP Tunnel Endpoint at PDCP* IE in the *E-RABs To Be Modified Item* IE, the en-gNB shall act as specified in TS 37.340 [32].

- if the SGNB MODIFICATION REQUEST message contains the *MeNB UL GTP Tunnel Endpoint at PDCP* IE the en-gNB shall use it as the new UL X2-U address.

- the en-gNB may include in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message the *SgNB DL GTP Tunnel Endpoint at SCG* IE.

If, dependent on the configured bearer type, the *Full E-RAB Level QoS Parameters* IE or the *Maximum MCG admittable E-RAB Level QoS Parameters* IE or the *Requested SCG E-RAB level QoS Parameters* IE are included in the SGNB MODIFICATION REQUEST message for an E-RAB to be modified the en-gNB shall allocate respective resources and provide corresponding radio configuration information within the *SgNB to MeNB Container* IE as described in TS 37.340 [32].

If the SGNB MODIFICATION REQUEST message contains, for an E-RAB to be modified which is configured with the PDCP entity in the en-gNB, the *S1 UL GTP Tunnel Endpoint* IE, the en-gNB shall use it as the new UL S1-U address.

If the SGNB MODIFICATION REQUEST message contains an E-RAB to be modified which is configured with the MN terminated split bearer option, the MeNB may include the *UL Configuration* IEto indicate that the SCG UL configuration of the UE has changed.

If the SGNB MODIFICATION REQUEST message contains for an E-RAB to be modified which is configured with the PDCP enitiy in the en-gNB and MCG resources the *MeNB DL GTP Tunnel Endpoint at MCG* IE the en-gNB shall use it as the DL X2-U address.

If the SGNB MODIFICATION REQUEST message contains the *Subscriber Profile ID for RAT/Frequency Priority* IE, the en-gNB may use it for RRM purposes.

If the SGNB MODIFICATION REQUEST message contains the *Additional RRM Policy Index* IE, the en-gNB may use it for RRM purposes.

For an E-RAB to be modified which is configured with the PDCP entity in the en-gNB the en-gNB may include in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message the *S1 DL GTP Tunnel Endpoint at the SgNB* IE.

If the SGNB MODIFICATION REQUEST ACKNOWLEDGE message contains the *SgNB Resource Coordination Information* IE, the MeNB may use it for the purpose of resource coordination with the en-gNB. The MeNB shall consider the received *UL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. The MeNB shall consider the received *DL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. If the *SgNB Coordination Assistance Information* IE is contained in the *SgNB Resource Coordination Information* IE, the MeNB shall, if supported, use the information to determine further coordination of resource utilisation between the en-gNB and the MeNB.

Upon reception of the SGNB MODIFICATION REQUEST ACKNOWLEDGE message the MeNB shall stop the timer TDCprep. If the SGNB MODIFICATION REQUEST ACKNOWLEDGE message has included the *SgNB to MeNB Container* IE the MeNB is then defined to have a Prepared SgNB Modification for that X2 UE-associated signalling.

If the *SCG Configuration Query* IE is included in the SGNB MODIFICATION REQUEST message, the en-gNB shall provide corresponding radio configuration information within the *SgNB to MeNB Container* IE as described in TS 37.340 [32].

If the SGNB MODIFICATION REQUEST message contains the *Requested split SRBs* IE, the en-gNB may use it to add split SRBs. If the SGNB MODIFICATION REQUEST message contains the *Requested split SRBs* *release* IE, the en-gNB may use it to release split SRBs.

If the *Requested Fast MCG recovery via SRB3* IE set to "true" is included in the SGNB MODIFICATION REQUEST message and the en-gNB decides to configure fast MCG link recovery via SRB3 as specified in TS 37.340 [32], the en-gNB shall, if supported, include the *Available fast MCG recovery via SRB3* IE set to "true" in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message. If the *Requested Fast MCG recovery via SRB3 Release* IE set to "true" is included in the SGNB MODIFICATION REQUEST message and the en-gNB decides to release fast MCG link recovery via SRB3, the en-gNB shall, if supported, include the *Release fast MCG recovery via SRB3* IE set to "true" in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message.

If the en-gNB receives for an E-RAB to be setup for which the PDCP entiy is allocated at the MeNB the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE and the *Duplication Activation* IE in the SGNB MODIFICATION REQUEST message, it may provide the *Secondary SgNB DL GTP Tunnel Endpoint at SCG* IE and the *LCID* IE to the MeNB in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message if PDCP duplication is configured at the en-gNB.

If the SGNB MODIFICATION REQUEST message contains the *RLC Status* IE, the en-gNB shall assume that RLC has been reestablished at the MeNB and may trigger PDCP data recovery.

If the en-gNB applied a full configuration or delta configuration, e.g. as part of a mobility procedure involving a change of DU, the en-gNB shall inform the MeNB by including the *RRC config indication* IE in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message.

If SGNB MODIFICATION REQUEST message contains the *UL PDCP SN Length* IE and the *DL PDCP SN Length* IE, the en-gNB shall, if supported, store this information and use it for lower layer configuration of the concerned MN terminated bearer.

If the *RLC Mode* IE is included for an E-RAB within the *E-RABs To be Added List* IE in the SGNB MODIFICATION REQUEST message, it indicates the mode that the MeNB used for the E-RAB when it was hosted at the MeNB.

If the SGNB MODIFICATION REQUEST message contains the *MeNB Cell ID* IE, the en-gNB may search for the target NR cell among the NR neighbour cells of the E-UTRAN cell indicated in *MeNB Cell ID* IE, as specified in the TS 37.340 [32].

If the SGNB MODIFICATION REQUEST ACKNOWLEDGE message contains the *RLC Status* IE, the MeNB shall assume that RLC has been reestablished at the en-gNB and may trigger PDCP data recovery.

The en-gNB may include the *Location Information at SgNB* IE in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message, if respective information is available at the en-gNB.

If the *Location Information at* en-gNB *Reporting* IE set to "pscell" is included in the SGNB MODIFICATION REQUEST, the SgNB shall start providing information about the current location of the UE. If the *Location Information* *at SgNB* IE is included in the SGNB MODIFICATION REQUEST ACKNOWLEDGE, the MeNB shall store the included information so that it may be transferred towards the MME.

If the *Lower Layer presence status change* IE set to "release lower layers" is included in the SGNB MODIFICATION REQUEST message, the en-gNB shall act as specified in TS 37.340 [32].

If the *Lower Layer presence status change* IE set to "re-establish lower layers" is included in the SGNB MODIFICATION REQUEST message, the en-gNB shall act as specified in TS 37.340 [32].

If the *Lower Layer presence status change* IE set to "suspend lower layers" is included in the SGNB MODIFICATION REQUEST message, the en-gNB shall act as specified in TS 37.340 [32].

If the *Lower Layer presence status change* IE set to "resume lower layers" is included in the SGNB MODIFICATION REQUEST message, the en-gNB shall act as specified in TS 37.340 [32].

If the SGNB MODIFICATION REQUEST message contains the *IAB Node Indication* IE, the en-gNB shall, if supported, consider that the request is for an IAB node.

For each requested E-RAB configured as MN-terminated split bearer/SCG bearer, if the *QoS Mapping Information* IE is contained in the *GTP Tunnel Endpoint* IE in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message, the MeNB shall, if supported, use it to set DSCP and/or flow label fields for the downlink IP packets which are transmitted from MeNB to SgNB through the GTP tunnels indicated by the *GTP Tunnel Endpoint* IE.

If the *Conditional PSCell Change Information Update* IE is included in the SGNB MODIFICATION REQUEST message, the en-gNB shall, if supported, consider that the request provides the list of PSCells prepared at the target en-gNB, as described in TS 37.340 [32].

If the *Conditional PSCell Addition Information Modification Request* IE is included in the SGNB MODIFICATION REQUEST message, the en-gNB shall, if supported, consider that the request concerns an update of the previous CPAC preparation, as described in TS 37.340 [32]. Accordingly, the en-gNB shall, if supported, include the *Conditional PSCell Addition Information Modification Acknowledge* IE in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message.

If the *CG-CandidateList* is included in the *SgNB to MeNB Container* IE in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message, the MeNB shall, if supported, use it for the purpose of CPAC.

If the *Estimated Arrival Probability* IE is contained in the *Conditional PSCell Modification Information Request* IE included in the SGNB MODIFICATION REQUEST message, then the candidate target en-gNB node may use the information to allocate necessary resources for the incoming CPAC procedure.

**Interactions with the MeNB initiated SgNB Modification procedure:**

If the en-gNB provides for an E-RAB to be setup for which the PDCP entiy is allocated at the MeNB the *Secondary SgNB DL GTP Tunnel Endpoint at SCG* IE and the *LCID* IE to the MeNB in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message and the MeNB has not provided the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE and the *Duplication Activation* IE in the SGNB MODIFICATION REQUEST message, the MeNB shall trigger the MeNB initiated SgNB Modification procedure to provide the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE and the *Duplication Activation* IE to the SgNB.

**Interactions with the SgNB Reconfiguration Completion procedure:**

If the en-gNB admits a modification of the UE context requiring the MeNB to report about the success of the RRC connection reconfiguration procedure, the en-gNB shall start the timer TDCoverall when sending the SGNB MODIFICATION REQUEST ACKNOWLEDGE message to the MeNB except for a CPAC request. The reception of the SGNB RECONFIGURATION COMPLETE message shall stop the timer TDCoverall if TDCoverall is running.

**Interaction with the Activity Notification procedure**

Upon receiving an SGNB MODIFICATION REQUEST message containing the *Desired Activity Notification Level* IE, the en-gNB shall, if supported, use this information to decide whether to trigger subsequent SgNB Activity Notification procedures, or stop or modify ongoing triggering of these procedures due to a previous request.

**Interaction with the SgNB initiated SgNB Modification Preparation procedure:**

If the MeNB receives the SGNB MODIFICATION REQUIRED message and the requested SN modification procedure needs further information from MeNB, the MeNB shall send SGNB MODIFICATION REQUEST message to en-gNB in response to a previously SgNB initiated SgNB Modification procedure.

#### 8.7.6.3 Unsuccessful Operation



Figure 8.7.6.3-1: MeNB initiated SgNB Modification Preparation, unsuccessful operation

If the en-gNB does not admit any modification requested by the MeNB, or a failure occurs during the MeNB initiated SgNB Modfication Preparation, the en-gNB shall send the SGNB MODIFICATION REQUEST REJECT message to the MeNB. The message shall contain the *Cause* IE with an appropriate value.

If the en-gNB receives a SGNB MODIFICATION REQUEST message containing the *MeNB to SgNB Container* IE that does not include required information as specified in TS 38.331 [31], the en-gNB shall send the SGNB MODIFICATION REQUEST REJECT message to the MeNB.

#### 8.7.6.4 Abnormal Conditions

If the en-gNB receives a SGNB MODIFICATION REQUEST message containing multiple *E-RAB ID* IEs (in the *E-RABs To Be Added List* IE and/or the *E-RABs To Be Modified List* IE) set to the same value, the en-gNB shall not admit the action requested for the corresponding E-RABs.

If the en-gNB receives an SGNB MODIFICATION REQUEST message containing multiple *E-RAB ID* IEs (in the *E-RAB To Be Released List* IE) set to the same value, the en-gNB shall initiate the release of one corresponding E-RAB and ignore the duplication of the instances of the selected corresponding E-RABs.

If the en-gNB receives a SGNB MODIFICATION REQUEST message containing, dependent on the configured bearer type, the *Full E-RAB Level QoS Parameters* IE or the *Requested SCG E-RAB Level QoS Parameters* IE which contains a *QCI* IE indicating a GBR bearer (as defined in TS 23.203 [13]), and which does not contain the *GBR QoS Information* IE, the en-gNB shall not admit the corresponding E-RAB.

If the supported algorithms for encryption defined in the *NR Encryption Algorithms* IE in the *NR* *UE Security Capabilities* IE in the *UE Context Information* IE, plus the mandated support of NEA0 in all UEs (TS 33.401 [18]), do not match any algorithms defined in the configured list of allowed encryption algorithms in the en-gNB (TS 33.401 [18]), the en-gNB shall reject the procedure using the SGNB MODIFICATION REQUEST REJECT message.

If the supported algorithms for integrity defined in the *NR Integrity Protection Algorithms* IE in the *NR* *UE Security Capabilities* IE in the *UE Context Information* IE do not match any algorithms defined in the configured list of allowed integrity protection algorithms in the en-gNB (TS 33.401 [18]), the en-gNB shall reject the procedure using the SGNB MODIFICATION REQUEST REJECT message.

If the timer TDCprep expires before the MeNB has received the SGNB MODIFICATION REQUEST ACKNOWLEDGE message, the MeNB shall regard the MeNB initiated SgNB Modification Preparation procedure as being failed and shall release the UE Context at the en-gNB.

If the MeNB has provided the en-gNB for an E-RAB to be setupr which the PDCP entiy is allocated at the MeNB the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE in the SGNB MODIFICATION REQUEST message, and the en-gNB does not provide the *Secondary SgNB DL GTP Tunnel Endpoint at SCG* IE to the MeNB in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message, the MeNB shall assume that PDCP duplication was not configured at the en-gNB and releases duplication resources.

If the en-gNB provides for an E-RAB to be setup for which the PDCP entiy is allocated at the MeNB the *Secondary SgNB DL GTP Tunnel Endpoint at SCG* IE to the MeNB in the SGNB MODIFICATION REQUEST ACKNOWLEDGE message and the MeNB has not provided the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE in the SGNB MODIFICATION REQUEST message, and the MeNB does not trigger the MeNB initiated SgNB Modification procedure to provide the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE to the SgNB the en-gNB before the SgNB Reconfigurationi Completion procedure was triggered, the en-gNB shall trigger the release of the concerned E-RAB.

**Interactions with the SgNB Reconfiguration Completion and SgNB initiated SgNB Release procedure:**

If the timer TDCoverall expires before the en-gNB has received the SGNB RECONFIGURATION COMPLETE or the SGNB RELEASE REQUEST message, the en-gNB shall regard the requested modification RRC connection reconfiguration as being not applied by the UE and shall trigger the SgNB initiated SgNB Release procedure.

**Interaction with the SgNB initiated SgNB Modification Preparation procedure:**

If the MeNB, after having initiated the MeNB initiated SgNB Modification procedure, receives the SGNB MODIFICATION REQUIRED message, the MeNB shall refuse the SgNB initiated SgNB Modification procedure with an appropriate cause value in the *Cause* IE.

If the MeNB has a Prepared SgNB Modification and receives the SGNB MODIFICATION REQUIRED message, the MeNB shall respond with the SGNB MODIFICATION REFUSE message to the en-gNB with an appropriate cause value in the *Cause* IE.

**Interactions with the MeNB initiated SgNB Release procedure:**

If the timer TDCprep expires before the MeNB has received the SGNB MODIFICATION REQUEST ACKNOWLEDGE message, the MeNB shall regard the SgNB Modification Preparation procedure as being failed and may trigger the MeNB initiated SgNB Release procedure.

### 8.7.7 SgNB initiated SgNB Modification

#### 8.7.7.1 General

This procedure is used by the en-gNB to modify the UE context in the en-gNB.

The procedure uses UE-associated signalling.

#### 8.7.7.2 Successful Operation



Figure 8.7.7.2-1: SgNB initiated SgNB Modification, successful operation.

The en-gNB initiates the procedure by sending the SGNB MODIFICATION REQUIRED message to the MeNB. When the en-gNB sends the SGNB MODIFICATION REQUIRED message, it shall start the timer TDCoverall.

The SGNB MODIFICATION REQUIRED message may contain

- the *PDCP Change Indication* IE;

- the *SgNB to MeNB Container* IE.

- E-RABs to be modified within the *E-RABs To Be Modified Item* IE;

- E-RABs to be released within the *E-RABs To Be Released Item* IE;

- the *SgNB Resource Coordination Information* IE.

For the SN terminated split bearers, the en-gNB may include in the SGNB MODIFICATION REQUIRED message the *UL Configuration* IE to indicate that the MCG UL configuration of the UE has changed.

The en-gNB may include for each bearer in the *E-RABs to Be Modified* *List* IE in the SGNB MODIFICATION REQUIRED message the *New DRB ID Request* IE to request the MeNB to assign a new DRB ID for that bearer.

If the MeNB is able to perform the change requested by the en-gNB, the MeNB shall send the SGNB MODIFICATION CONFIRM message to the en-gNB. The SGNB MODIFICATION CONFIRM message may contain the *MeNB to SgNB Container* IE.

If the SGNB MODIFICATION REQUIRED message contains the *SgNB Resource Coordination Information* IE, the MeNB may use it for the purpose of resource coordination with the en-gNB. The MeNB shall consider the received *UL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. The MeNB shall consider the received *DL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. If the *SgNB Coordination Assistance Information* IE is contained in the *SgNB Resource Coordination Information* IE, the MeNB shall, if supported, use the information to determine further coordination of resource utilisation between the en-gNB and the MeNB.

If the en-gNB applied a full configuration or delta configuration, e.g. as part of a mobility procedure involving a change of DU, the en-gNB shall inform the MeNB by including the *RRC config indication* IE in the SGNB MODIFICATION REQUIRED message.

For each E-RAB successfully modified as requested by the en-gNB, the MeNB shall inform the en-gNB, in the SGNB MODIFICATION CONFIRM message, the same value in the *EN-DC Resource Configuration* IE as received in the SGNB MODIFICATION REQUIRED message.

If the *SCG resources* IE in the *EN-DC Resource Configuration* IE in the SGNB MODIFICATION REQUIRED message for all the E-RABs of the UE are set to “not present”, the MeNB shall, if supported, deduce that the SCG resources are removed.

Upon reception of the SGNB MODIFICATION CONFIRM message the en-gNB shall stop the timer TDCoverall.

If the SGNB MODIFICATION CONFIRM message contains the *MeNB Resource Coordination Information* IE, the en-gNB should forward it to lower layers and it may use it for the purpose of resource coordination with the MeNB, or to coordinate with sidelink resources used in the MeNB. The en-gNB shall consider the received *UL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. The en-gNB shall consider the received *DL Coordination Information* IE value valid until reception of a new update of the IE for the same UE. If the *MeNB Coordination Assistance Information* IE is contained in the *MeNB Resource Coordination Information* IE, the en-gNB shall, if supported, use the information to determine further coordination of resource utilisation between the en-gNB and the MeNB.

If the MeNB receives for an E-RAB for which the PDCP entiy is allocated at the MeNB the *Secondary SgNB DL GTP Tunnel Endpoint at SCG* IE in the SGNB MODIFICATION REQUIRED message, it shall provide the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE to the en-gNB in the SGNB MODIFICATION CONFIRM message. If the *LCID* IE is included in the SGNB MODIFICATION REQUIRED message, the MeNB should take it into account.

If the SGNB MODIFICATION REQUIRED message contains the *RLC Status* IE, the MeNB shall assume that RLC has been reestablished at the en-gNB and may trigger PDCP data recovery.

If the *RLC Mode* IE is included for an E-RAB within the *E-RABs To Be Released List* IE (for E-RABs hosted at the en-gNB) in the SGNB MODIFICATION REQUIRED message, it indicates the mode that the en-gNB used for the E-RAB when it was hosted at the en-gNB.

The MeNB shall include only E-RABs with the following IE in *E-RABs Admitted To Be Modified List* IE:

- the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE.

If the *Location Information* *at SgNB* IE is included in the SGNB MODIFICATION REQUIRED, the MeNB shall store the included information so that it may be transferred towards the MME.

If the *Conditional PSCell Addition Information Required* IE is included in the SGNB MODIFICATION REQUIRED message, the MeNB shall, if supported, consider that the request provides the configuration update for the list of PSCells prepared at the target en-gNB, as described in TS 37.340 [32].

If the *CG-CandidateList* is included in the *SgNB to MeNB Container* IE in the SGNB MODIFICATION REQUIRED message, the MeNBshall, if supported, use it for the purpose of CPAC.

**Interaction with the MeNB initiated SgNB Modification Preparation procedure:**

If applicable, as specified in TS 37.340 [32], the en-gNB may receive, after having initiated the SgNB initiated SgNB Modification procedure, the SGNB MODIFICATION REQUEST message including the *DL Forwarding GTP Tunnel Endpoint* IE and the *UL Forwarding GTP Tunnel Endpoint* IE within the *E-RABs To Be Released List* IE.

If applicable, as specified in TS 37.340 [32], the en-gNB may receive, after having initiated the SgNB initiated SgNB Modification procedure, the SGNB MODIFICATION REQUEST message including the *SgNB Security Key* IE within the *UE Context Information* IE.

If applicable, as specified in TS 37.340 [32], the en-gNB may receive, after having initiated the SgNB initiated SgNB Modification procedure, the SGNB MODIFICATION REQUEST message including the *measGapConfig* IE as defined in TS 38.331 [31] within the *MeNB to SgNB Container* IE.

The en-gNB may receive, after having initiated the SgNB initiated SgNB modification procedure including the *New DRB ID Request* IE for an SN terminated bearer within the *E-RABs To Be Modified List* IE, the SGNB MODIFICATION REQUEST message to release and add the same bearer with a new DRB ID or with the same DRB ID but together with the *SgNB Security Key* IE within the *UE Context Information* IE.

The en-gNB may receive, after having initiated the SgNB initiated SgNB modification procedure, the SGNB MODIFICATION REQUEST message including the *SN triggered* IE.

#### 8.7.7.3 Unsuccessful Operation



Figure 8.7.7.3-1: SgNB initiated SgNB Modification, unsuccessful operation.

In case the requested modification cannot be performed successfully the MeNB shall respond with the SGNB MODIFICATION REFUSE message to the en-gNB with an appropriate cause value in the *Cause* IE.

The MeNB may also provide configuration information in the *MeNB to SgNB Container* IE.

#### 8.7.7.4 Abnormal Conditions

If the timer TDCoverall expires before the en-gNB has received the SGNB MODIFICATION CONFIRM or the SGNB MODIFICATION REFUSE message, the en-gNB shall regard the requested modification as failed and may take further actions like triggering the SgNB initiated SgNB Release procedure to release all en-gNB resources allocated for the UE.

If the value received in the *E-RAB ID* IE of any of the *E-RABs To Be Released Items* IE is not known at the MeNB, the MeNB shall regard the procedure as failed and may take appropriate actions like triggering the MeNB initiated SgNB Release procedure.

If the en-gNB does not receives for an E-RAB for which the PDCP entiy is allocated at the MeNB the *Secondary MeNB UL GTP Tunnel Endpoint at PDCP* IE to the en-gNB in the SGNB MODIFICATION CONFIRM message although the *Secondary SgNB DL GTP Tunnel Endpoint at SCG* IE was provided to the MeNB in the SGNB MODIFICATION REQUIRED message, it shall assume the setup of the secondary X2-U bearer as being failed.

**Interaction with the MeNB initiated SgNB Modification Preparation procedure:**

If the en-gNB, after having initiated the SgNB initiated SgNB Modification procedure, receives the SGNB MODIFICATION REQUEST message including other IEs than an applicable *SgNB Security Key* IE and/or applicable forwarding addresses or applicable measurement gap pattern or information applicable to release and add the same bearer with different DRB ID and/or the *SN triggered* IE set to "True"*,* the en-gNB shall

- regard the SgNB initiated SgNB Modification Procedure as being failed;

- stop the TDCoverall, which was started to supervise the SgNB initiated SgNB Modification procedure;

- be prepared to receive the SGNB MODIFICATION REFUSE message from the MeNB and;

- continue with the MeNB initiated SgNB Modification Preparation procedure as specified in section 8.7.6.

**Interaction with the MeNB initiated handover procedure:**

If the MeNB, after having initiated the handover procedure, receives the SGNB MODIFICATION REQUIRED message, the MeNB shall refuse the SgNB modification procedure with an appropriate cause value in the *Cause* IE.

### 8.7.8 SgNB Change

#### 8.7.8.1 General

This procedure is used by the en-gNB to change to another en-gNB.

The procedure uses UE-associated signalling.

#### 8.7.8.2 Successful Operation



Figure 8.7.8.2-1: SgNB Change, successful operation.

The en-gNB initiates the procedure by sending the SGNB CHANGE REQUIRED message to the MeNB including the *Target SgNB ID Information IE*. When the en-gNB sends the SGNB CHANGE REQUIRED message, it shall start the timer TDCoverall.

The SGNB CHANGE REQUIRED message may contain

- the *SgNB to MeNB Container* IE.

If the MeNB is able to perform the change requested by the en-gNB, the MeNB shall send the SGNB CHANGE CONFIRM message to the en-gNB. For each E-RAB configured with the PDCP entity in the en-gNB, the MeNB may include the *DL Forwarding GTP Tunnel Endpoint* IE and the *UL Forwarding GTP Tunnel Endpoint* IE within the *E-RABs To Be Released Item* IE to indicate that it requests data forwarding of uplink and downlink packets to be performed for that bearer.

The en-gNB may start data forwarding and stop providing user data to the UE and shall stop the timer TDCoverall upon reception of the SGNB CHANGE CONFIRM message.

If the *Conditional PSCell Change Information Required* IE is included in the SGNB CHANGE REQUIRED message, the MeNB shall, if supported, consider that the requirement concerns CPAC, as described in TS 37.340 [32]. Accordingly, the MeNB shall, if supported, include the *Conditional PSCell Change Information Confirm* IE in the SGNB CHANGE CONFIRM message.

If the *Estimated Arrival Probability* IE is contained in the *Conditional PSCell Change Information Required* IE included in the SGNB CHANGE REQUIRED message, the MeNB shall, if supported, forward this information to the candidate target en-gNB, then the candidate target en-gNB may use the information to allocate necessary resources for the incoming CPAC procedure.

**Interaction with MeNB initiated SgNB Release:**

If the MeNB receives the SGNB CHANGE REQUIRED message releasing target en-gNB and cancelling all prepared PSCells in the target en-gNB(s), the MeNB shall, if supported, trigger the MeNB initiated en-gNB release procedure to the target en-gNB(s) and cancel all the prepared PSCells at the target en-gNB(s).

#### 8.7.8.3 Unsuccessful Operation



Figure 8.7.8.3-1: SgNB Change, unsuccessful operation.

In case the request change cannot be performed successfully the MeNB shall respond with the SGNB CHANGE REFUSE message to the en-gNB with an appropriate cause value in the *Cause* IE.

#### 8.7.8.4 Abnormal Conditions

If the timer TDCoverall expires before the en-gNB has received the SGNB CHANGE CONFIRM or the SGNB CHANGE REFUSE message, the en-gNB shall regard the requested change as failed and may take further actions like triggering the SgNB initiated SgNB Release procedure to release all en-gNB resources allocated for the UE.

**Interaction with the MeNB initiated handover procedure:**

If the MeNB, after having initiated the handover procedure, receives the SGNB CHANGE REQUIRED message, the MeNB shall refuse the SgNB change procedure with an appropriate cause value in the Cause IE.

### 8.7.9 MeNB initiated SgNB Release

#### 8.7.9.1 General

The MeNB initiated SgNB Release procedure is triggered by the MeNB to initiate the release of the resources for a specific UE.

The procedure uses UE-associated signalling.

#### 8.7.9.2 Successful Operation



Figure 8.7.9.2-1: MeNB initiated SgNB Release, successful operation

The MeNB initiates the procedure by sending the SGNB RELEASE REQUEST message. Upon reception of the SGNB RELEASE REQUEST message the en-gNB shall stop providing user data to the UE. The *SgNB UE X2AP ID* IE shall be included if it has been obtained from the en-gNB.

If the bearer context in the en-gNB was configured with the PDCP entity in the en-gNB, for E-RAB for which the MeNB requests forwarding of uplink/downlink data, the MeNB includes the *UL Forwarding GTP Tunnel Endpoint*/ *DL Forwarding GTP Tunnel Endpoint* IE within the *E-RABs To Be Released Item* IE of the SGNB RELEASE REQUEST message to indicate that the en-gNB should perform data forwarding of uplink/downlink packets for that E-RAB.

Upon reception of the SGNB RELEASE REQUEST message containing *UE Context Kept Indicator* IE set to "True", the en-gNB shall, if supported, only initiate the release of the resources related to the UE-associated signalling connection between the MeNB and the en-gNB.

If the en-gNB confirms the request to release en-gNB resources it shall send the SGNB RELEASE REQUEST ACKNOWLEDGE message to the MeNB.

If the *RLC Mode* IE is included for an E-RAB within the *E-RABs Admitted To Be Released List* IE (for E-RABs hosted at the en-gNB) in the SGNB RELEASE REQUEST ACKNOWLEDGE message, it indicates the mode that the en-gNB used for the E-RAB when it was hosted at the en-gNB.

If the MeNB did not include the *SgNB UE X2AP ID* IE in the SGNB RELEASE REQUEST message, the MeNB shall ignore the *SgNB UE X2AP ID* IE in the SGNB RELEASE REQUEST ACKNOWLEDGE message.

Upon successful completion of the procedure, the MeNB shall start counting time, so that information regarding time since Secondary Node Release may be transferred towards the MME as specified in TS 36.413 [4].

**Interaction with SN Status Transfer procedure:**

If the *UE Context Kept Indicator* IE set to "True" and the *E-RABs transferred to MeNB* IE are included in the SGNB RELEASE REQUEST message, then the en-gNB shall, if supported, include the uplink/downlink PDCP SN and HFN status for the listed E-RABs, as specified in TS 37.340 [32].

**Interaction with Data Forwarding Address Indication procedure:**

If the SGNB RELEASE REQUEST message concerns UE for which a CPC has been triggered, the en-gNB shall, if supported, consider that the triggered Conditional PSCell Change has been executed, and act as specified in TS 37.340 [32].

#### 8.7.9.3 Unsuccessful Operation



Figure 8.7.9.3-1: MeNB initiated SgNB Release, unsuccessful operation

If the en-gNB cannot confirm the request to release en-gNB resources it shall send the SGNB RELEASE REQUEST REJECT message to the MeNB with an appropriate cause indicated in the *Cause* IE.

If the MeNB did not include the *SgNB UE X2AP ID* IE in the SGNB RELEASE REQUEST message, the MeNB shall ignore the *SgNB UE X2AP ID* IE in the SGNB RELEASE REQUEST REJECT message.

#### 8.7.9.4 Abnormal Conditions

If the SGNB RELEASE REQUEST message refer to a context that does not exist, the en-gNB shall ignore the message.

When the MeNB has initiated the procedure and did not include the *SgNB UE X2AP ID* IE the MeNB shall regard the resources for the UE at the en-gNB as being fully released.

**Interactions with the UE Context Release procedure:**

If the MeNB does not receive the reply from the en-gNB before it has to relase the EN-DC connection, or it receives SGNB RELEASE REQUEST REJECT, it may trigger the UE Context Release procedure. If the en-gNB received the UE CONTEXT RELEASE right after receiving the SGNB RELEASE REQUEST (and before or after responding to it), the en-gNB shall consider the related MeNB initiated SgNB Release procedure as being the resolution of abnormal conditions and release the related UE context immediately.

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| **Next change, ommited text not changed** |

### 8.7.A1 Conditional PSCell Change Cancel

#### 8.7.A1.1 General

This procedure is used by the MeNB to inform the source en-gNB that all of the prepared PSCells are cancelled in the Target en-gNB during a Conditional PSCell Change.

The procedure uses UE-associated signalling.

#### 8.7.A1.2 Successful Operation



Figure 8.7.A1.2-1: Conditional PSCell Change Cancel

The MeNB initiates the procedure by sending the CONDITIONAL PSCELL CHANGE CANCEL message to the en-gNB including the *Target en-gNB ID* IE.

#### 8.7.A1.3 Unsuccessful Operation

Not applicable.

#### 8.7.A1.4 Abnormal Conditions

Void.

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| **Next change, ommited text not changed** |

#### 9.1.1.9 EARLY STATUS TRANSFER

This message is sent by the source eNB to the target eNB to transfer the COUNT value related to the forwarded downlink SDUs during DAPS Handover or Conditional Handover.

During a Conditional Handover with EN-DC or Dual Connectivity, or CPAC in EN-DC, this message is also used to transfer the COUNT value related to the forwarded downlink SDUs. In case of EN-DC, the COUNT value is transferred from the en-gNB to the eNB, while in case of Dual Connectivity, the COUNT value is transferred from the SeNB to the MeNB. In case of Conditional PSCell Addition, the COUNT value is transferred from the eNB to the en-gNB. In case of Conditional PSCell Change, the COUNT value is transferred from the source en-gNB to the eNB, and from eNB to the target en-gNB.

Direction: source eNB → target eNB (DAPS Handover or Conditional Handover).

Direction: en-gNB → MeNB (Conditional Handover with EN-DC), SeNB → MeNB (Conditional Handover with Dual Connectivity)

Direction: eNB → en-gNB (Conditional PSCell Addition)

Direction: source en-gNB → eNB, eNB → target en-gNB (Conditional PSCell Change)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.13 |  | YES | ignore |
| Old eNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated for DAPS handover or Conditional handover at the source eNB | YES | reject |
| New eNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated for DAPS handover or Conditional handover at the target eNB | YES | reject |
| Old eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated for DAPS handover or Conditional handover at the source eNB | YES | reject |
| New eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated for DAPS handover or Conditional handover at the target eNB | YES | reject |
| CHOICE Procedure Stage | M |  |  |  | YES | reject |
| *>First DL COUNT* |  |  |  |  |  |  |
| >>**E-RABs Subject To Early Status Transfer List** |  | *1 .. <maxnoofBearers>* |  |  | – |  |
| >>>**E-RABs Subject To Early Status Transfer Item** |  |  |  |  | – |  |
| >>>>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>>>FIRST DL COUNT Value | M |  | COUNT Value  9.2.15 | PDCP-SN and Hyper frame number of the first DL SDU that the source eNB/MeNB forwards to the target eNB/en-gNB in case of 12 bit long PDCP-SN | – |  |
| >>>>FIRST DL COUNT Value Extended | O |  | COUNT Value Extended 9.2.66 | PDCP-SN and Hyper frame number of the first DL SDU that the source eNB/MeNB forwards to the target eNB/en-gNB in case of 15 bit long PDCP-SN | – |  |
| >>>>FIRST DL COUNT Value for PDCP SN Length 18 | O |  | COUNT Value for PDCP SN Length 18  9.2.82 | PDCP-SN and Hyper frame number of the first DL SDU that the source eNB/MeNB forwards to the target eNB/en-gNB in case of 18 bit long PDCP-SN | – |  |
| *>DL Discarding* |  |  |  |  |  |  |
| >>**E-RABs Subject To DL Discarding List** | M | *1* |  |  | – |  |
| >>>**E-RABs Subject To DL Discarding Item** |  | *1 .. <maxnoofBearers>* |  |  | – |  |
| >>>>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>>>DISCARD DL COUNT Value | M |  | COUNT Value  9.2.15 | PDCP-SN and Hyper frame number for which the target eNB/en-gNB should discard forwarded DL SDUs associated with lower values in case of 12 bit long PDCP-SN | – |  |
| >>>>DISCARD DL COUNT Value Extended | O |  | COUNT Value Extended 9.2.66 | PDCP-SN and Hyper frame number for which the target eNB/en-gNB should discard forwarded DL SDUs associated with lower values in case of 15 bit long PDCP-SN | – |  |
| >>>>DISCARD DL COUNT Value for PDCP SN Length 18 | O |  | COUNT Value for PDCP SN Length 18  9.2.82 | PDCP-SN and Hyper frame number for which the target eNB/en-gNB should discard forwarded DL SDUs associated with lower values in case of 18 bit long PDCP-SN | – |  |

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| --- | --- |
| Range bound | Explanation |
| maxnoofBearers | Maximum no. of E-RABs. Value is 256. |

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| **Next change, ommited text not changed** |

#### 9.1.2.43 DATA FORWARDING ADDRESS INDICATION

This message is sent by the new eNB to indicate to the old eNB forwarding addresses for each E-RAB for which it admits data forwarding.

During a Conditional Handover with EN-DC or Dual Connectivity or Conditional PSCell Change, this message is also used to provide data forwarding related information. In case of EN-DC, the data forwarding related information is transferred from the eNB to the en-gNB, while in case of Dual Connectivity, the data forwarding related information is transferred from the MeNB to the SeNB.

Direction: new eNB → old eNB.

Direction: MeNB → en-gNB (Conditional Handover with EN-DC, Conditional PSCell Change), MeNB → SeNB (Conditional Handover with Dual Connectivity)

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| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.13 |  | YES | ignore |
| New eNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the new eNB | YES | ignore |
| New eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the new eNB | YES | ignore |
| Old eNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the old eNB | YES | ignore |
| Old eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the old eNB | YES | ignore |
| **E-RABs Data Forwarding Address List** |  | *1* |  |  | YES | ignore |
| **> E-RABs Data Forwarding Address Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | ignore |
| >>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>DL GTP Tunnel Endpoint | M |  | GTP Tunnel Endpoint 9.2.1 | Identifies the X2 transport bearer used for forwarding of DL PDUs | – |  |
| CHO DC Indicator | O |  | ENUMERATED (true, ...) | Indicating that the DATA FORWARDING ADDRESS INDICATION message is for a Conditional Handover. | YES | reject |
| CHO DC Early Data Forwarding Indicator | O |  | ENUMERATED (stop, ...) |  | YES | ignore |
| SgNB UE X2AP ID | O |  | en-gNB UE X2AP ID  9.2.100 | Allocated for EN-DC at the en-gNB. | YES | ignore |
| CPC Data Forwarding Indicator | O |  | ENUMERATED (triggered,early data transmission stop, ...) | Indicates that the DATA FORWARDING ADDRESS INDICATION message is for a Conditional PSCell Change. | YES | reject |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofBearers | Maximum no. of E-RABs. Value is 256 |

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| --- |
| **Next change, ommited text not changed** |

#### 9.1.4.1 SGNB ADDITION REQUEST

This message is sent by the MeNB to the en-gNB to request the preparation of resources for EN-DC operation for a specific UE

Direction: MeNB → en-gNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.13 |  | YES | reject |
| MeNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the MeNB | YES | reject |
| NR UE Security Capabilities | M |  | 9.2.107 |  | YES | reject |
| SgNB Security Key | M |  | 9.2.101 | The S-KgNB which is provided by the MeNB, see TS 33.401 [18]. | YES | reject |
| SgNB UE Aggregate Maximum Bit Rate | M |  | UE Aggregate Maximum Bit Rate  9.2.12 | The UE Aggregate Maximum Bit Rate is split into MeNB UE Aggregate Maximum Bit Rate and SgNB UE Aggregate Maximum Bit Rate which are enforced by MeNB and en-gNB respectively. | YES | reject |
| Selected PLMN | O |  | PLMN Identity  9.2.4 | The selected PLMN of the SCG in the en-gNB. | YES | ignore |
| Handover Restriction List | O |  | 9.2.3 |  | YES | ignore |
| **E-RABs To Be Added List** |  | *1* |  |  | YES | reject |
| **>E-RABs To Be Added Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | reject |
| >>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>DRB ID | M |  | 9.2.122 |  | – |  |
| >>EN-DC Resource Configuration | M |  | EN-DC Resource Configuration 9.2.108 | Indicates the PDCP and Lower Layer MCG/SCG configuration. | – |  |
| >>CHOICE *Resource Configuration* | M |  |  |  |  |  |
| >>>*PDCP present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "present". |  |  |
| >>>>Full E-RAB Level QoS Parameters | M |  | E-RAB Level QoS Parameters 9.2.9 | Includes the E-RAB level QoS parameters as received on S1-MME. | – |  |
| >>>>Maximum MCG admittable E-RAB Level QoS Parameters | C-ifMCGandSCGpresent\_GBR |  | GBR QoS Information 9.2.10 | Includes the GBR QoS Information admittable by the MCG. | – |  |
| >>>>DL Forwarding | O |  | 9.2.5 |  | – |  |
| >>>>MeNB DL GTP Tunnel Endpoint at MCG | C-ifMCGpresent |  | GTP Tunnel Endpoint 9.2.1 | MeNB endpoint of the X2-U transport bearer at MCG. For delivery of DL PDCP PDUs. | – |  |
| >>>>S1 UL GTP Tunnel Endpoint | M |  | GTP Tunnel Endpoint 9.2.1 | SGW endpoint of the S1-U transport bearer. For delivery of UL PDUs from the en-gNB. | – |  |
| >>>>RLC Mode | O |  | RLC Mode  9.2.119 | Indicates the RLC mode at the MeNB for PDCP transfer to en-gNB. | YES | ignore |
| >>>>Bearer Type | O |  | 9.2.92 |  | YES | ignore |
| >>>>Ethernet Type | O |  | 9.2.157 |  | YES | ignore |
| >>>*PDCP not present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "not present". |  |  |
| >>>>Requested SCG E-RAB Level QoS Parameters | M |  | E-RAB Level QoS Parameters 9.2.9 | Includes E-RAB level QoS parameters requested to be provided by the SCG. | – |  |
| >>>>MeNB UL GTP Tunnel Endpoint at PDCP | M |  | GTP Tunnel Endpoint 9.2.1 | MeNB endpoint of the X2-U transport bearer. For delivery of UL PDCP PDUs. | – |  |
| >>>>Secondary MeNB UL GTP Tunnel Endpoint at PDCP | O |  | GTP Tunnel Endpoint 9.2.1 | MeNB endpoint of the X2-U transport bearer. For delivery of UL PDCP PDUs in case of PDCP duplication. | – |  |
| >>>>RLC Mode | M |  | RLC Mode  9.2.119 | Indicates the RLC mode to be used in the assisting node. | – |  |
| >>>>UL Configuration | C-ifMCGandSCGpresent |  | 9.2.118 | Information about UL usage in the en-gNB. | – |  |
| >>>>UL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Indicates the PDCP SN length of the bearer for the UL. | YES | ignore |
| >>>>DL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Indicates the PDCP SN length of the bearer for the DL. | YES | ignore |
| >>>>Duplication activation | O |  | 9.2.137 | Indicated the initial staus of PDCP duplication. | YES | ignore |
| MeNB to SgNB Container | M |  | OCTET STRING | Includes the *CG-ConfigInfo* message as defined in TS 38.331 [31]. | YES | reject |
| SgNB UE X2AP ID | O |  | en-gNB UE X2AP ID  9.2.100 | Allocated at the en-gNB. | YES | reject |
| Expected UE Behaviour | O |  | 9.2.70 |  | YES | ignore |
| MeNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the MeNB. | YES | reject |
| Requested split SRBs | O |  | ENUMERATED (srb1, srb2, srb1&2, ...) | Indicates that resources for Split SRB are requested. | YES | reject |
| MeNB Resource Coordination Information | O |  | 9.2.116 | Information used to coordinate resources utilisation between MeNB and en-gNB. | YES | ignore |
| SGNB Addition Trigger Indication | O |  | ENUMERATED (SN change, inter-eNB HO, intra-eNB HO, ...) | This IE indicates the trigger for SGNB Addition procedure. | YES | reject |
| Subscriber Profile ID for RAT/Frequency priority | O |  | 9.2.25 |  | YES | ignore |
| MeNB Cell ID | M |  | ECGI  9.2.14 | Indicates the cell ID for PCell in MeNB. | YES | reject |
| Desired Activity Notification Level | O |  | 9.2.141 |  | YES | ignore |
| Trace Activation | O |  | 9.2.2 |  | YES | ignore |
| Location Information at SgNB reporting | O |  | ENUMERATED (pscell, ...) | Indicates that the user’s location information is to be provided. | YES | ignore |
| Masked IMEISV | O |  | 9.2.69 |  | YES | ignore |
| Additional RRM Policy Index | O |  | 9.2.25a |  | YES | ignore |
| Requested Fast MCG recovery via SRB3 | O |  | ENUMERATED (true, ...) | Indicates that the resources for fast MCG recovery via SRB3 are requested. | YES | ignore |
| UE Context Reference at Source NG-RAN | O |  | RAN UE NGAP ID 9.2.152 |  | YES | ignore |
| Management Based MDT Allowed | O |  | 9.2.59 |  | YES | ignore |
| Management Based MDT PLMN List | O |  | MDT PLMN List  9.2.64 |  | YES | ignore |
| UE Radio Capability ID | O |  | 9.2.171 |  | YES | reject |
| IAB Node Indication | O |  | ENUMERATED (true, ...) |  | YES | reject |
| Source NG-RAN Node ID | O |  | Global RAN Node ID  9.2.176 |  | YES | ignore |
| **Conditional PSCell Addition Information Request** | O |  |  |  | YES | reject |
| >Maximum Number of PSCells To Prepare | M |  | INTEGER (1..8, …) | Indicates the maximum number of PSCells that the target may prepare. | - | - |
| >Estimated Arrival Probability | O |  | INTEGER (1..100) | Indicates the arrival probability for the UE towards the candidate target en-gNB. | - | - |

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| --- | --- |
| Range bound | Explanation |
| maxnoofBearers | Maximum no. of E-RABs. Value is 256. |

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| Condition | Explanation |
| ifMCGandSCGpresent | This IE shall be present if, for the E-RAB requested to be added, the *MCG resources* and *SCG resources* IEs in the *EN-DC Resource Configuration* IE are set to the value "present". |
| ifMCGpresent | This IE shall be present if, for the E-RAB requested to be added, the *MCG resources* IE in the *EN-DC Resource Configuration* IE is set to the value "present". |
| C-ifMCGandSCGpresent\_GBR | This IE shall be present if, for the E-RAB requested to be added, the *MCG resources* and *SCG resources* IEs in the *EN-DC Resource Configuration* IE are set to the value "present", and *GBR QoS Information* IE is present in *Full E-RAB Level QoS Parameters* IE. |

#### 9.1.4.2 SGNB ADDITION REQUEST ACKNOWLEDGE

This message is sent by the en-gNB to confirm the MeNB about the SgNB addition preparation.

Direction: en-gNB → MeNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.13 |  | YES | reject |
| MeNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the MeNB. | YES | reject |
| SgNB UE X2AP ID | M |  | en-gNB UE X2AP ID  9.2.100 | Allocated at the en-gNB. | YES | reject |
| **E-RABs Admitted To Be Added List** |  | *1* |  |  | YES | ignore |
| **>E-RABs Admitted To Be Added Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | ignore |
| >>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>EN-DC Resource Configuration | M |  | EN-DC Resource Configuration 9.2.108 | Indicates the PDCP and Lower Layer MCG/SCG configuration. | – |  |
| >>CHOICE *Resource Configuration* | M |  |  |  |  |  |
| *>>>PDCP present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "present". |  |  |
| >>>>S1 DL GTP Tunnel Endpoint at the SgNB | M |  | GTP Tunnel Endpoint 9.2.1 | en-gNB endpoint of the S1 transport bearer. For delivery of DL PDUs. | – |  |
| >>>>SgNB UL GTP Tunnel Endpoint at PDCP | C-ifMCGpresent |  | GTP Tunnel Endpoint 9.2.1 | en-gNB endpoint of the X2-U transport bearer at PDCP. For delivery of UL PDCP PDUs. | – |  |
| >>>>RLC Mode | C-ifMCGpresent |  | RLC Mode  9.2.119 | Indicates the RLC mode. | – |  |
| >>>>DL Forwarding GTP Tunnel Endpoint | O |  | GTP Tunnel Endpoint 9.2.1 | Identifies the X2 transport bearer used for forwarding of DL PDUs | – |  |
| >>>>UL Forwarding GTP Tunnel Endpoint | O |  | GTP Tunnel Endpoint 9.2.1 | Identifies the X2 transport bearer used for forwarding of UL PDUs | – |  |
| >>>>Requested MCG E-RAB Level QoS Parameters | C-ifMCGandSCGpresent\_GBRpresent |  | E-RAB Level QoS Parameters 9.2.9 | Includes E-RAB level QoS parameters requested to be provided by the MCG. | – |  |
| >>>>UL Configuration | C-ifMCGandSCGpresent |  | 9.2.118 | Information about UL usage in the MeNB. | – |  |
| >>>>UL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Indicates the PDCP SN length of the bearer for the UL. | YES | ignore |
| >>>>DL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Indicates the PDCP SN length of the bearer for the DL. | YES | ignore |
| >>>*PDCP not present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "not present". |  |  |
| >>>>SgNB DL GTP Tunnel Endpoint at SCG | M |  | GTP Tunnel Endpoint 9.2.1 | SgNB endpoint of the X2-U transport bearer at the SCG. For delivery of DL PDCP PDUs. | – |  |
| >>>>Secondary SgNB DL GTP Tunnel Endpoint at SCG | O |  | GTP Tunnel Endpoint 9.2.1 | SgNB endpoint of the X2-U transport bearer at the SCG. For delivery of DL PDCP PDUs in case of PDCP duplication | – |  |
| >>>>LCID | O |  | 9.2.138 | LCID for the primary path in case of PDCP duplication | YES | ignore |
| E-RABs Not Admitted List | O |  | E-RAB List  9.2.28 | A value for *E-RAB ID* shall only be present once in*E-RABs Admitted**List* IE and in *E-RABs Not Admitted List* IE. | YES | ignore |
| SgNB to MeNB Container | M |  | OCTET STRING | Includes the *CG-Config* message or the *CG-CandidateList* message, as defined in TS 38.331[31]. | YES | reject |
| Criticality Diagnostics | O |  | 9.2.7 |  | YES | ignore |
| MeNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the MeNB | YES | reject |
| Admitted split SRBs | O |  | ENUMERATED (srb1, srb2, srb1&2, ...) | Indicates admitted SRBs | YES | reject |
| SgNB Resource Coordination Information | O |  | 9.2.117 | Information used to coordinate resources utilisation between en-gNB and MeNB. | YES | ignore |
| RRC config indication | O |  | 9.2.132 | Indicates the type of RRC configuration used at the en-gNB. | YES | reject |
| Location Information at SgNB | O |  | 9.2.142 | Contains information to support localisation of the UE | YES | ignore |
| Available fast MCG recovery via SRB3 | O |  | ENUMERATED (true, ...) | Indicates the fast MCG recovery via SRB3 is enabled. | YES | ignore |
| Direct Forwarding Path Availability | O |  | ENUMERATED (direct path available, …) | Indicates direct forwarding path is available between the target en-gNB and source NG-RAN node for SA to EN-DC handover. | YES | ignore |
| **Conditional PSCell Addition Information Acknowledge** | O |  |  |  | YES | ignore |
| **>Candidate PSCell ID List** |  | *1* |  |  | - | - |
| **>>Candidate PSCell ID Item** |  | *1 .. <maxnoofPSCellCandidate>* |  |  | - | - |
| >>>PSCell ID | M |  | NR CGI  9.2.111 |  | - | - |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofBearers | Maximum no. of E-RABs. Value is 256 |
| maxnoofPSCellCandidate | Maximum no. of PSCells for CPAC. Value is 8. |

|  |  |
| --- | --- |
| Condition | Explanation |
| ifMCGpresent | This IE shall be present if, for the E-RAB admitted to be added, the *MCG resources* IE in the *EN-DC Resource Configuration* IE is set to the value "present". |
| ifMCGandSCGpresent | This IE shall be present if, for the E-RAB admitted to be added, the *MCG resources* and *SCG resources* IEs in the *EN-DC Resource Configuration* IE are set to the value "present". |
| C-ifMCGandSCGpresent\_GBRpresent | This IE shall be present if, for the E-RAB admitted to be added, the *MCG resources* and *SCG resources* IEs in the *EN-DC Resource Configuration* IE are set to the value "present", and the *GBR QoS Information* IE is present in the *Requested MCG E-RAB Level QoS Parameters* IE. |

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| **Next change, ommited text not changed** |

#### 9.1.4.5 SGNB MODIFICATION REQUEST

This message is sent by the MeNB to the en-gNB to request the preparation to modify en-gNB resources for a specific UE, to query for the current SCG configuration, or to provide the S-RLF-related information to the en-gNB.

Direction: MeNB → en-gNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.13 |  | YES | reject |
| MeNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the MeNB. | YES | reject |
| SgNB UE X2AP ID | M |  | en-gNB UE X2AP ID  9.2.100 | Allocated at the en-gNB. | YES | reject |
| Cause | M |  | 9.2.6 |  | YES | ignore |
| Selected PLMN | O |  | PLMN Identity  9.2.4 | The selected PLMN of the SCG in the en-gNB. | YES | ignore |
| Handover Restriction List | O |  | 9.2.3 |  | YES | ignore |
| SCG Configuration Query | O |  | 9.2.103 |  | YES | ignore |
| **UE Context Information** |  | *0..1* |  |  | YES | reject |
| >NR UE Security Capabilities | O |  | 9.2.107 |  | – |  |
| >SgNB Security Key | O |  | 9.2.101 |  | – |  |
| >SgNB UE Aggregate Maximum Bit Rate | O |  | UE Aggregate Maximum Bit Rate  9.2.12 |  | – |  |
| >Lower Layer presence status change | O |  | 9.2.145 |  | – |  |
| **>E-RABs To Be Added List** |  | *0..1* |  |  | – |  |
| **>>E-RABs To Be Added Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | ignore |
| >>>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>>DRB ID | M |  | 9.2.122 |  | – |  |
| >>>EN-DC Resource Configuration | M |  | EN-DC Resource Configuration 9.2.108 | Indicates the PDCP and Lower Layer MCG/SCG configuration. | – |  |
| >>>CHOICE *Resource Configuration* | M |  |  |  |  |  |
| >>>>*PDCP present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "present". | – |  |
| >>>>>Full E-RAB Level QoS Parameters | M |  | E-RAB Level QoS Parameters 9.2.9 | Includes E-RAB level QoS parameters as received on S1-MME. | – |  |
| >>>>>Maximum MCG admittable E-RAB Level QoS Parameters | C-ifMCGandSCGpresent\_GBR |  | GBR QoS Information 9.2.10 | Includes the GBR QoS Information admittable by the MCG. | – |  |
| >>>>>DL Forwarding | O |  | 9.2.5 |  | – |  |
| >>>>>MeNB DL GTP Tunnel Endpoint at MCG | C-ifMCGpresent |  | GTP Tunnel Endpoint 9.2.1 | MeNB endpoint of the X2-U transport bearer at MCG. For delivery of DL PDCP PDUs. | – |  |
| >>>>>S1 UL GTP Tunnel Endpoint | M |  | GTP Tunnel Endpoint 9.2.1 | SGW endpoint of the S1-U transport bearer. For delivery of UL PDUs from the en-gNB. | – |  |
| >>>>>RLC Mode | O |  | RLC Mode  9.2.119 | Indicates the RLC mode at the MeNB for PDCP transfer to en-gNB. | YES | ignore |
| >>>>>Bearer Type | O |  | 9.2.92 |  | YES | ignore |
| >>>>>Ethernet Type | O |  | 9.2.157 |  | YES | ignore |
| >>>>*PDCP not present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "present". |  |  |
| >>>>>Requested SCG E-RAB Level QoS Parameters | M |  | E-RAB Level QoS Parameters 9.2.9 | Includes necessary E-RAB level QoS parameters requested to be provided by the SCG. | – |  |
| >>>>>MeNB UL GTP Tunnel Endpoint at PDCP | M |  | GTP Tunnel Endpoint 9.2.1 | MeNB endpoint of the X2-U transport bearer. For delivery of UL PDCP PDUs. | – |  |
| >>>>>Secondary MeNB UL GTP Tunnel Endpoint at PDCP | O |  | GTP Tunnel Endpoint 9.2.1 | MeNB endpoint of the X2-U transport bearer. For delivery of UL PDCP PDUs in case of PDCP duplication. | – |  |
| >>>>>RLC Mode | M |  | RLC Mode  9.2.119 | Indicates the RLC mode to be used in the assisting node. | – |  |
| >>>>>UL Configuration | C-ifMCGandSCGpresent |  | 9.2.118 | Information about UL usage in the en-gNB. | – |  |
| >>>>>UL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Indicates the PDCP SN length of the bearer for the UL. | YES | ignore |
| >>>>>DL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Indicates the PDCP SN length of the bearer for the DL. | YES | ignore |
| >>>>>Duplication activation | O |  | 9.2.137 | Indicated the initial staus of PDCP duplication. | YES | ignore |
| **>E-RABs To Be Modified List** |  | *0..1* |  |  | – |  |
| **>>E-RABs To Be Modified Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | ignore |
| >>>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>>EN-DC Resource Configuration | M |  | EN-DC Resource Configuration 9.2.108 | Indicates the PDCP and Lower Layer MCG/SCG configuration. | – |  |
| >>>CHOICE *Resource Configuration* | M |  |  |  |  |  |
| >>>>*PDCP present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "present". |  |  |
| >>>>>Full E-RAB Level QoS Parameters | O |  | E-RAB Level QoS Parameters 9.2.9 | Includes E-RAB level QoS parameters to be modified as received on S1-MME | – |  |
| >>>>>Maximum MCG admittable E-RAB Level QoS Parameters | O |  | GBR QoS Information 9.2.10 | Includes the GBR QoS information admittable by the MCG | – |  |
| >>>>>MeNB GTP Tunnel Endpoint at MCG | O |  | GTP Tunnel Endpoint 9.2.1 | MeNB endpoint of the X2-U transport bearer at MCG. For delivery of DL PDCP PDUs. | – |  |
| >>>>>S1 UL GTP Tunnel Endpoint | O |  | GTP Tunnel Endpoint 9.2.1 | SGW endpoint of the S1-U transport bearer. For delivery of UL PDUs from the en-gNB. | – |  |
| >>>>>RLC Status | O |  | 9.2.131 | Indicates the RLC has been re-established.. |  |  |
| >>>>*PDCP not present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "not present". |  |  |
| >>>>>Requested SCG E-RAB Level QoS Parameters | O |  | E-RAB Level QoS Parameters 9.2.9 | Includes E-RAB level QoS parameters requested to be provided by the SCG. | – |  |
| >>>>>MeNB UL GTP Tunnel Endpoint at PDCP | O |  | GTP Tunnel Endpoint 9.2.1 | MeNB endpoint of the X2-U transport bearer. For delivery of UL PDCP PDUs. | – |  |
| >>>>>UL Configuration | O |  | 9.2.118 | Information about UL usage in the en-gNB. | – |  |
| >>>>>UL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Shall be ignored by the en-gNB if received. | YES | ignore |
| >>>>>DL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Shall be ignored by the en-gNB if received. | YES | ignore |
| >>>>>Secondary MeNB UL GTP Tunnel Endpoint at PDCP | O |  | GTP Tunnel Endpoint 9.2.1 | MeNB endpoint of the X2-U transport bearer. For delivery of UL PDCP PDUs in case of PDCP duplication. | YES | ignore |
| **>E-RABs To Be Released List** |  | *0..1* |  |  | – |  |
| **>>E-RABs To Be Released Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | ignore |
| >>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>>EN-DC Resource Configuration | M |  | EN-DC Resource Configuration 9.2.108 | Indicates the PDCP and Lower Layer MCG/SCG configuration. | – |  |
| >>>CHOICE *Resource Configuration* | M |  |  |  |  |  |
| >>>>*PDCP present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "present". |  |  |
| >>>>>DL Forwarding GTP Tunnel Endpoint | O |  | GTP Tunnel Endpoint 9.2.1 | Identifies the X2 transport bearer used for forwarding of DL PDUs | – |  |
| >>>>>UL Forwarding GTP Tunnel Endpoint | O |  | GTP Tunnel Endpoint 9.2.1 | Identifies the X2 transport bearer. used for forwarding of UL PDUs | – |  |
| >>>>*PDCP not present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "not present". |  |  |
| >Subscriber Profile ID for RAT/Frequency priority | O |  | 9.2.25 |  | YES | ignore |
| >Additional RRM Policy Index | O |  | 9.2.25a |  | YES | ignore |
| MeNB to SgNB Container | O |  | OCTET STRING | Includes the *CG-ConfigInfo* message as defined in TS 38.331 [31]. | YES | reject |
| MeNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the MeNB | YES | reject |
| MeNB Resource Coordination Information | O |  | 9.2.116 | Information used to coordinate resources utilisation between MeNB and en-gNB. | YES | ignore |
| Requested split SRBs | O |  | ENUMERATED (srb1, srb2, srb1&2, ...) | Indicates that resources for Split SRB are requested. | YES | ignore |
| Requested split SRBs release | O |  | ENUMERATED (srb1, srb2, srb1&2, ...) | Indicates that resources for Split SRB are requested to be released. | YES | ignore |
| Desired Activity Notification Level | O |  | 9.2.141 |  | YES | ignore |
| Location Information at SgNB reporting | O |  | ENUMERATED (pscell, ...) | Indicates that the user’s location information is to be provided. | YES | ignore |
| MeNB Cell ID | O |  | ECGI  9.2.14 | Indicates the cell ID for PCell in MeNB. | YES | ignore |
| Requested Fast MCG recovery via SRB3 | O |  | ENUMERATED (true, ...) | Indicates that the resources for fast MCG recovery via SRB3 are requested. | YES | ignore |
| Requested Fast MCG recovery via SRB3 Release | O |  | ENUMERATED (true, ...) | Indicates that the resources for fast MCG recovery via SRB3 are requested to be released. | YES | ignore |
| SN triggered | O |  | ENUMERATED (True, ...) |  | YES | ignore |
| IAB Node Indication | O |  | ENUMERATED (true, ...) |  | YES | reject |
| **Conditional PSCell Addition Information Modification Request** | O |  |  |  | YES | ignore |
| >Maximum Number of PSCells To Prepare | M |  | INTEGER (1..8, ...) | Indicates the maximum number of PSCells that the target SN may prepare. | - | - |
| >Estimated Arrival Probability | O |  | INTEGER (1..100) | Indicates the arrival probability for the UE towards the candidate target SN. |  |  |
| **Conditional PSCell Change Information Update** | O |  |  |  | YES | ignore |
| **>Candidate PSCell ID List** |  | *1* |  |  | - | - |
| **>>Candidate PSCell ID Item** |  | *1 .. <maxnoofPSCellCandidate>* |  |  | - | - |
| >>>PSCell ID | M |  | NR CGI  9.2.111 |  | - | - |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofBearers | Maximum no. of E-RABs. Value is 256 |
| maxnoofPSCellCandidate | Maximum no. of PSCells for CPAC. Value is 8. |

|  |  |
| --- | --- |
| Condition | Explanation |
| ifMCGandSCGpresent | This IE shall be present if, for the E-RAB requested to be added, the *MCG resources* and *SCG resources* IEs in the *EN-DC Resource Configuration* IE are set to the value "present". |
| ifMCGpresent | This IE shall be present if, for the E-RAB requested to be added, the *MCG resources* IE in the *EN-DC Resource Configuration* IE is set to the value "present". |
| C-ifMCGandSCGpresent\_GBR | This IE shall be present if, for the E-RAB requested to be added, the *MCG resources* and *SCG resources* IEs in the *EN-DC Resource Configuration* IE are set to the value "present", and *GBR QoS Information* IE is present in *Full E-RAB Level QoS Parameters* IE. |

#### 9.1.4.6 SGNB MODIFICATION REQUEST ACKNOWLEDGE

This message is sent by the en-gNB to confirm the MeNB’s request to modify the en-gNB resources for a specific UE.

Direction: en-gNB → MeNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.13 |  | YES | reject |
| MeNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the MeNB. | YES | ignore |
| SgNB UE X2AP ID | M |  | en-gNB UE X2AP ID  9.2.100 | Allocated at the en-gNB. | YES | ignore |
| **E-RABs Admitted To Be Added List** |  | *0..1* |  |  | YES | ignore |
| **>E-RABs Admitted To Be Added Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | ignore |
| >>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>EN-DC Resource Configuration | M |  | EN-DC Resource Configuration 9.2.108 | Indicates the PDCP and Lower Layer MCG/SCG configuration. | – |  |
| >>CHOICE *Resource Configuration* | M |  |  |  |  |  |
| >>>*PDCP present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "present". |  |  |
| >>>>S1 DL GTP Tunnel Endpoint at the SgNB | M |  | GTP Tunnel Endpoint 9.2.1 | SgNB endpoint of the S1 transport bearer. For delivery of DL PDUs. | – |  |
| >>>>SgNB UL GTP Tunnel Endpoint at PDCP | C-ifMCGpresent |  | GTP Tunnel Endpoint 9.2.1 | SgNB endpoint of the X2-U transport bearer at PDCP. For delivery of UL PDCP PDUs. | – |  |
| >>>>RLC Mode | C-ifMCGpresent |  | RLC Mode  9.2.119 | Indicates the RLC mode to be used at the assisting node. | – |  |
| >>>>DL Forwarding GTP Tunnel Endpoint | O |  | GTP Tunnel Endpoint 9.2.1 | Identifies the X2 transport bearer used for forwarding of DL PDUs | – |  |
| >>>>UL Forwarding GTP Tunnel Endpoint | O |  | GTP Tunnel Endpoint 9.2.1 | Identifies the X2 transport bearer used for forwarding of UL PDUs | – |  |
| >>>>Requested MCG E-RAB Level QoS Parameters | C-ifMCGandSCGpresent\_GBRpresent |  | E-RAB Level QoS Parameters 9.2.9 | Includes E-RAB level QoS parameters requested to be provided by the MCG. | – |  |
| >>>>UL Configuration | C-ifMCGandSCGpresent |  | 9.2.118 | Information about UL usage in the MeNB. | – |  |
| >>>>UL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Indicates the PDCP SN length of the bearer for the UL. | YES | ignore |
| >>>>DL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Indicates the PDCP SN length of the bearer for the DL. | YES | ignore |
| >>>*PDCP not present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "not present". |  |  |
| >>>>SgNB DL GTP Tunnel Endpoint at SCG | M |  | GTP Tunnel Endpoint 9.2.1 | Endpoint of the X2-U transport bearer at the SCG. For delivery of DL PDCP PDUs. | – |  |
| >>>>Secondary SgNB DL GTP Tunnel Endpoint at SCG | O |  | GTP Tunnel Endpoint 9.2.1 | Endpoint of the X2-U transport bearer at the SCG. For delivery of DL PDCP PDUs in case of PDCP duplication. | – |  |
| >>>>LCID | O |  | 9.2.138 | LCID for the primary path in case of PDCP duplication configured. | YES | ignore |
| **E-RABs Admitted To Be Modified List** |  | *0..1* |  |  | YES | ignore |
| **>E-RABs Admitted To Be Modified Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | ignore |
| >>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>EN-DC Resource Configuration | M |  | EN-DC Resource Configuration 9.2.108 | Indicates the PDCP and Lower Layer MCG/SCG configuration. | – |  |
| >>CHOICE *Resource Configuration* | M |  |  |  |  |  |
| >>>*PDCP present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "present". |  |  |
| >>>>S1 DL GTP Tunnel Endpoint | O |  | GTP Tunnel Endpoint 9.2.1 | SgNB endpoint of the S1 transport bearer. For delivery of DL PDUs. | – |  |
| >>>>SgNB UL GTP Tunnel Endpoint at PDCP | O |  | GTP Tunnel Endpoint 9.2.1 | SgNB endpoint of the X2-U transport bearer at PDCP. For delivery of UL PDCP PDUs. | – |  |
| >>>>Requested MCG E-RAB Level QoS Parameters | O |  | E-RAB Level QoS Parameters 9.2.9 | Includes E-RAB level QoS parameters requested to be provided by the MCG. | – |  |
| >>>>UL Configuration | O |  | 9.2.118 | Information about UL usage in the MeNB. | – |  |
| >>>>UL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Shall be ignored by the MeNB if received. | YES | ignore |
| >>>>DL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Shall be ignored by the MeNB if received. | YES | ignore |
| >>>*PDCP not present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "not present". |  |  |
| >>>>SgNB DL GTP Tunnel Endpoint at SCG | O |  | GTP Tunnel Endpoint 9.2.1 | SgNB endpoint of the X2-U transport bearer at the SCG. For delivery of DL PDCP PDUs. | – |  |
| >>>>Secondary SgNB DL GTP Tunnel Endpoint at SCG | O |  | GTP Tunnel Endpoint 9.2.1 | Endpoint of the X2-U transport bearer at the SCG. For delivery of DL PDCP PDUs in case of PDCP duplication. | YES | ignore |
| >>>>RLC Status | O |  | 9.2.131 | Indicates the RLC has been re-established. | YES | ignore |
| **E-RABs Admitted To Be Released List** |  | *0..1* |  |  | YES | ignore |
| **>E-RABs Admitted To Be Released Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | ignore |
| >>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>EN-DC Resource Configuration | M |  | EN-DC Resource Configuration 9.2.108 | Indicates the PDCP and Lower Layer MCG/SCG configuration. | – |  |
| >>CHOICE *Resource Configuration* | M |  |  | Note: no further information contained in the IE container |  |  |
| E-RABs Not Admitted List | O |  | E-RAB List  9.2.28 | A value for *E-RAB ID* shall only be present once in*E-RABs Admitted**List* IE and in *E-RABs Not Admitted List* IE. | YES | ignore |
| SgNB to MeNB Container | O |  | OCTET STRING | Includes the NR *CG-Config* message or the *CG-CandidateList* message, as defined in TS 38.331 [31]. | YES | ignore |
| Criticality Diagnostics | O |  | 9.2.7 |  | YES | ignore |
| MeNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the MeNB | YES | ignore |
| SgNB Resource Coordination Information | O |  | 9.2.117 | Information used to coordinate resources utilisation between en-gNB and MeNB. | YES | ignore |
| Admitted split SRBs | O |  | ENUMERATED (srb1, srb2, srb1&2, ...) | Indicates admitted SRBs | YES | ignore |
| Admitted split SRBs release | O |  | ENUMERATED (srb1, srb2, srb1&2, ...) | Indicates admitted SRBs release | YES | ignore |
| RRC config indication | O |  | 9.2.132 | Indicates the type of RRC configuration used at the en-gNB. | YES | reject |
| Location Information at SgNB | O |  | 9.2.142 | Contains information to support localisation of the UE | YES | ignore |
| Available fast MCG recovery via SRB3 | O |  | ENUMERATED (true, ...) | Indicates the fast MCG recovery via SRB3 isenabled. | YES | ignore |
| Release fast MCG recovery via SRB3 | O |  | ENUMERATED (true, ...) | Indicates the fast MCG recovery via SRB3 is released. | YES | ignore |
| **Conditional PSCell Addition Information Modification Acknowledge** | O |  |  |  | YES | reject |
| **>Candidate PSCell ID List** |  | *1* |  |  | - | - |
| **>>Candidate PSCell ID Item** |  | *1 .. <maxnoofPSCellCandidate>* |  |  | - | - |
| >>>PSCell ID | M |  | NR CGI  9.2.111 |  | - | - |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofBearers | Maximum no. of E-RABs. Value is 256 |
| maxnoofPSCellCandidate | Maximum no. of PSCells for CPAC. Value is 8. |

|  |  |
| --- | --- |
| Condition | Explanation |
| ifMCGandSCGpresent | This IE shall be present if, for the E-RAB admitted to be added, the *MCG resources* and *SCG resources* IEs in the *EN-DC Resource Configuration* IE are set to the value "present". |
| ifMCGpresent | This IE shall be present if, for the E-RAB admitted to be added, the *MCG resources* IE in the *EN-DC Resource Configuration* IE is set to the value "present". |
| C-ifMCGandSCGpresent\_GBRpresent | This IE shall be present if, for the E-RAB admitted to be added, the *MCG resources* and *SCG resources* IEs in the *EN-DC Resource Configuration* IE are set to the value "present", and the *GBR QoS Information* IE is present in the *Requested MCG E-RAB Level QoS Parameters* IE. |

|  |
| --- |
| **Next change, ommited text not changed** |

#### 9.1.4.8 SGNB MODIFICATION REQUIRED

This message is sent by the en-gNB to the MeNB to request the modification of en-gNB resources for a specific UE.

Direction: en-gNB → MeNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.13 |  | YES | reject |
| MeNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the MeNB. | YES | reject |
| SgNB UE X2AP ID | M |  | en-gNB UE X2AP ID  9.2.100 | Allocated at the en-gNB. | YES | reject |
| Cause | M |  | 9.2.6 |  | YES | ignore |
| PDCP Change Indication | O |  | 9.2.109 |  | YES | ignore |
| **E-RABs To Be Released List** |  | *0..1* |  |  | YES | ignore |
| **>E-RABs To Be Released Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | ignore |
| >>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>Cause | M |  | 9.2.6 |  | – |  |
| >>RLC Mode | O |  | RLC Mode  9.2.119 | Indicates the RLC mode at the en-gNB for PDCP transfer to MeNB. | YES | ignore |
| SgNB to MeNB Container | O |  | OCTET STRING | Includes the NR *CG-Config* message or the *CG-CandidateList* message, as defined in TS 38.331 [31]. | YES | ignore |
| MeNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the MeNB | YES | reject |
| **E-RABs To Be Modified List** |  | *0..1* |  |  | YES | ignore |
| **>E-RABs To Be Modified Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | ignore |
| >>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>EN-DC Resource Configuration | M |  | EN-DC Resource Configuration 9.2.108 | Indicates the PDCP and Lower Layer MCG/SCG configuration. | – |  |
| >>CHOICE *Resource Configuration* | M |  |  |  |  |  |
| >>>*PDCP present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "present". |  |  |
| >>>>Requested MCG E-RAB Level QoS Parameters | O |  | E-RAB Level QoS Parameters 9.2.9 | Includes E-RAB level QoS parameters requested to be provided by the MCG. | – |  |
| >>>>UL Configuration | O |  | 9.2.118 | Information about UL usage in the MeNB. | – |  |
| >>>>UL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Shall be ignored by the MeNB if received. | YES | ignore |
| >>>>DL PDCP SN Length | O |  | PDCP SN Length  9.2.133 | Shall be ignored by the MeNB if received. | YES | ignore |
| >>>>SgNB UL GTP Tunnel Endpoint at PDCP | O |  | GTP Tunnel Endpoint 9.2.1 | SgNB endpoint of the X2-U transport bearer at PDCP. For delivery of UL PDCP PDUs. | – |  |
| >>>>S1 DL GTP Tunnel Endpoint at the SgNB | O |  | GTP Tunnel Endpoint 9.2.1 | en-gNB endpoint of the S1 transport bearer. For delivery of DL PDUs. | – |  |
| >>>>New DRB ID Request | O |  | ENUMERATED (True, …,) |  | YES | ignore |
| *>>>PDCP not present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "not present". |  |  |
| >>>>SgNB DL GTP Tunnel Endpoint at SCG | O |  | GTP Tunnel Endpoint 9.2.1 | SgNB endpoint of the X2-U transport bearer at the SCG. For delivery of DL PDCP PDUs. | – |  |
| >>>>Secondary SgNB DL GTP Tunnel Endpoint at SCG | O |  | GTP Tunnel Endpoint 9.2.1 | SgNB endpoint of the X2-U transport bearer at the SCG. For delivery of DL PDCP PDUs for PDCP duplication. | – |  |
| >>>>RLC Status | O |  | 9.2.131 | Indicates the RLC has been re-established.. |  |  |
| >>>>LCID | O |  | 9.2.138 | Indicate the LCID of the primary path in case of PDCP duplication | YES | ignore |
| SgNB Resource Coordination Information | O |  | 9.2.117 | Information used to coordinate resources utilisation between the en-gNB and the MeNB. | YES | ignore |
| RRC config indication | O |  | 9.2.132 | Indicates the type of RRC configuration used at the en-gNB. | YES | reject |
| Location Information at SgNB | O |  | 9.2.142 | Contains information to support localisation of the UE | YES | ignore |
| **Conditional PSCell Addition Information Required** | O |  |  |  | YES | ignore |
| **>Candidate PSCell ID List** |  | *1* |  |  | - | - |
| **>>Candidate PSCell ID Item** |  | *1 .. <maxnoofPSCellCandidate>* |  |  | - | - |
| >>>PSCell ID | M |  | NR CGI 9.2.111 |  | - | - |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofBearers | Maximum no. of E-RABs. Value is 256 |
| maxnoofPSCellCandidate | Maximum no. of PSCells for CPAC. Value is 8. |

|  |
| --- |
| **Next change, ommited text not changed** |

#### 9.1.4.17 SGNB CHANGE REQUIRED

This message is sent by the en-gNB to the MeNB to request the change of en-gNB for a specific UE.

Direction: en-gNB → MeNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.13 |  | YES | reject |
| MeNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the MeNB. | YES | reject |
| SgNB UE X2AP ID | M |  | en-gNB UE X2AP ID  9.2.100 | Allocated at the en-gNB. | YES | reject |
| Target SgNB ID Information | M |  | 9.2.102 |  | YES | reject |
| Cause | M |  | 9.2.6 |  | YES | ignore |
| SgNB to MeNB Container | O |  | OCTET STRING | Includes the *CG-Config* message as defined in TS 38.331 [31]. | YES | reject |
| MeNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the MeNB. | YES | reject |
| **Conditional PSCell Change Information Required** | O |  |  | If this IE is present, then the Target SgNB ID Information IE shall be ignored. | YES | reject |
| **>Multiple Target S-NG-RAN Node List** |  | *1* |  |  | - | - |
| **>>Multiple Target S-NG-RAN Node Item** |  | *1 .. <maxnoofTargetSNs>* |  |  | - | - |
| >>>Target SgNB ID | M |  | Target SgNB ID Information  9.2.102 |  | - | - |
| >>>CPAC Indicator | M |  | ENUMERATED (CPAC-initiation, CPAC-modification, CPAC-cancel,...) |  | - | - |
| >>>Maximum Number of PSCells To Prepare | O |  | INTEGER (1..8, …) | Indicates the maximum number of PSCells that the target may prepare. | - | - |
| >>>Estimated Arrival Probability | O |  | INTEGER (1..100) | Indicates the arrival probability for the UE towards the candidate target en-gNB. | - | - |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofTargetSNs | Maximum no. of the target S-NG-RAN nodes. Value is 8 |

#### 9.1.4.18 SGNB CHANGE CONFIRM

This message is sent by the MeNB to inform the en-gNB about the successful change.

Direction: MeNB → en-gNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.13 |  | YES | reject |
| MeNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the MeNB. | YES | ignore |
| SgNB UE X2AP ID | M |  | en-gNB UE X2AP ID  9.2.100 | Allocated at the en-gNB. | YES | ignore |
| **E-RABs to be Released List** |  | *0..1* |  |  | YES | ignore |
| **>E-RABs To Be Released Item** |  | *1 .. <maxnoofBearers>* |  |  | – |  |
| >>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>EN-DC Resource Configuration | M |  | EN-DC Resource Configuration 9.2.108 | Indicates the PDCP and Lower Layer MCG/SCG configuration. | – |  |
| >>CHOICE *Resource Configuration* | M |  |  |  |  |  |
| >>>*PDCP present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "present". |  |  |
| >>>>UL Forwarding GTP Tunnel Endpoint | O |  | GTP Tunnel Endpoint 9.2.1 | Identifies the X2 transport bearer used for forwarding of UL PDUs | – |  |
| >>>>DL Forwarding GTP Tunnel Endpoint | O |  | GTP Tunnel Endpoint 9.2.1 | Identifies the X2 transport bearer used for forwarding of DL PDUs | – |  |
| >>>*PDCP not present in SN* |  |  |  | This choice tag is used if the *PDCP at SgNB* IE in the *EN-DC Resource Configuration* IE is set to the value "not present". |  |  |
| Criticality Diagnostics | O |  | 9.2.7 |  | YES | ignore |
| MeNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the MeNB | YES | ignore |
| **Conditional PSCell Change Information Confirm** | O |  |  |  | YES | reject |
| **>Multiple Target S-NG-RAN Node List** |  | *1* |  |  | - | - |
| **>>Multiple Target S-NG-RAN Node Item** |  | *1 .. <maxnoofTargetSNs>* |  |  | - | - |
| >>>Target SgNB ID | M |  | Target SgNB ID Information  9.2.102 |  | - | - |
| **>>>Candidate PSCell ID List** |  | *1* |  |  | - | - |
| **>>>>Candidate PSCell ID Item** |  | *1 .. <maxnoofPSCellCandidate>* |  |  | - | - |
| >>>>>PSCell ID | M |  | NR CGI  9.2.111 |  | - | - |
| MeNB to SgNB Container | O |  | OCTET STRING | Includes the *RRCReconfigurationComplete* message as defined in subclause 6.2.2 of TS 38.331 [10]. | YES | ignore |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofBearers | Maximum no. of E-RABs. Value is 256 |
| maxnoofTargetSNs | Maximum no. of the target S-NG-RAN nodes. Value is 8 |
| maxnoofPSCellCandidate | Maximum no. of PSCells for CPAC. Value is 8. |

|  |
| --- |
| **Next change, ommited text not changed** |

#### 9.1.4.A2 CONDITIONAL PSCELL CHANGE CANCEL

This message is sent by the MeNB to the source en-gNB to inform the cancellation of all of the prepared PSCells in the target en-gNB during a Conditional PSCell Change.

Direction: MeNB → en-gNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.13 |  | YES | reject |
| MeNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the MeNB. | YES | reject |
| SgNB UE X2AP ID | M |  | en-gNB UE X2AP ID  9.2.100 | Allocated at the en-gNB. | YES | reject |
| MeNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the MeNB | YES | reject |
| Cause | M |  | 9.2.6 |  | YES | ignore |
| Target en-gNB ID Information | M |  | 9.2.102 |  | YES | reject |

|  |
| --- |
| **Next change, ommited text not changed** |

### 9.3.3 Elementary Procedure Definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Elementary Procedure definitions

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2AP-PDU-Descriptions {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

eps-Access (21) modules (3) x2ap (2) version1 (1) x2ap-PDU-Descriptions (0) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- IE parameter types from other modules.

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

IMPORTS

Criticality,

ProcedureCode

FROM X2AP-CommonDataTypes

CellActivationRequest,

CellActivationResponse,

CellActivationFailure,

ENBConfigurationUpdate,

ENBConfigurationUpdateAcknowledge,

ENBConfigurationUpdateFailure,

ErrorIndication,

HandoverCancel,

HandoverReport,

HandoverPreparationFailure,

HandoverRequest,

HandoverRequestAcknowledge,

LoadInformation,

PrivateMessage,

ResetRequest,

ResetResponse,

ResourceStatusFailure,

ResourceStatusRequest,

ResourceStatusResponse,

ResourceStatusUpdate,

RLFIndication,

SNStatusTransfer,

UEContextRelease,

X2SetupFailure,

X2SetupRequest,

X2SetupResponse,

MobilityChangeRequest,

MobilityChangeAcknowledge,

MobilityChangeFailure,

X2Release,

X2APMessageTransfer,

SeNBAdditionRequest,

SeNBAdditionRequestAcknowledge,

SeNBAdditionRequestReject,

SeNBReconfigurationComplete,

SeNBModificationRequest,

SeNBModificationRequestAcknowledge,

SeNBModificationRequestReject,

SeNBModificationRequired,

SeNBModificationConfirm,

SeNBModificationRefuse,

SeNBReleaseRequest,

SeNBReleaseRequired,

SeNBReleaseConfirm,

SeNBCounterCheckRequest,

X2RemovalFailure,

X2RemovalRequest,

X2RemovalResponse,

RetrieveUEContextRequest,

RetrieveUEContextResponse,

RetrieveUEContextFailure,

SgNBAdditionRequest,

SgNBAdditionRequestAcknowledge,

SgNBAdditionRequestReject,

SgNBReconfigurationComplete,

SgNBModificationRequest,

SgNBModificationRequestAcknowledge,

SgNBModificationRequestReject,

SgNBModificationRequired,

SgNBModificationConfirm,

SgNBModificationRefuse,

SgNBReleaseRequest,

SgNBReleaseRequestAcknowledge,

SgNBReleaseRequestReject,

SgNBReleaseRequired,

SgNBReleaseConfirm,

SgNBCounterCheckRequest,

SgNBChangeRequired,

SgNBChangeConfirm,

SgNBChangeRefuse,

RRCTransfer,

ENDCX2SetupRequest,

ENDCX2SetupResponse,

ENDCX2SetupFailure,

ENDCConfigurationUpdate,

ENDCConfigurationUpdateAcknowledge,

ENDCConfigurationUpdateFailure,

SecondaryRATDataUsageReport,

ENDCCellActivationRequest,

ENDCCellActivationResponse,

ENDCCellActivationFailure,

ENDCPartialResetRequired,

ENDCPartialResetConfirm,

EUTRANRCellResourceCoordinationRequest,

EUTRANRCellResourceCoordinationResponse,

SgNBActivityNotification,

ENDCX2RemovalRequest,

ENDCX2RemovalResponse,

ENDCX2RemovalFailure,

DataForwardingAddressIndication,

GNBStatusIndication,

ENDCConfigurationTransfer,

DeactivateTrace,

TraceStart,

HandoverSuccess,

EarlyStatusTransfer,

ConditionalHandoverCancel,

ENDCResourceStatusRequest,

ENDCResourceStatusResponse,

ENDCResourceStatusFailure,

ENDCResourceStatusUpdate,

CellTrafficTrace,

F1CTrafficTransfer,

UERadioCapabilityIDMappingRequest,

UERadioCapabilityIDMappingResponse,

CPC-cancel

FROM X2AP-PDU-Contents

id-cellActivation,

id-eNBConfigurationUpdate,

id-errorIndication,

id-handoverCancel,

id-handoverReport,

id-handoverPreparation,

id-loadIndication,

id-privateMessage,

id-reset,

id-resourceStatusReporting,

id-resourceStatusReportingInitiation,

id-rLFIndication,

id-snStatusTransfer,

id-uEContextRelease,

id-x2Setup,

id-mobilitySettingsChange,

id-x2Release,

id-x2APMessageTransfer,

id-seNBAdditionPreparation,

id-seNBReconfigurationCompletion,

id-meNBinitiatedSeNBModificationPreparation,

id-seNBinitiatedSeNBModification,

id-meNBinitiatedSeNBRelease,

id-seNBinitiatedSeNBRelease,

id-seNBCounterCheck,

id-x2Removal,

id-retrieveUEContext,

id-sgNBAdditionPreparation,

id-sgNBReconfigurationCompletion,

id-meNBinitiatedSgNBModificationPreparation,

id-sgNBinitiatedSgNBModification,

id-meNBinitiatedSgNBRelease,

id-sgNBinitiatedSgNBRelease,

id-sgNBChange,

id-sgNBCounterCheck,

id-rRCTransfer,

id-endcX2Setup,

id-endcConfigurationUpdate,

id-secondaryRATDataUsageReport,

id-endcCellActivation,

id-endcPartialReset,

id-eUTRANRCellResourceCoordination,

id-SgNBActivityNotification,

id-endcX2Removal,

id-dataForwardingAddressIndication,

id-gNBStatusIndication,

id-endcConfigurationTransfer,

id-deactivateTrace,

id-traceStart,

id-handoverSuccess,

id-earlyStatusTransfer,

id-conditionalHandoverCancel,

id-endcresourceStatusReporting,

id-endcresourceStatusReportingInitiation,

id-cellTrafficTrace,

id-f1CTrafficTransfer,

id-UERadioCapabilityIDMapping,

id-CPC-cancel

FROM X2AP-Constants;

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Interface Elementary Procedure Class

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2AP-ELEMENTARY-PROCEDURE ::= CLASS {

&InitiatingMessage ,

&SuccessfulOutcome OPTIONAL,

&UnsuccessfulOutcome OPTIONAL,

&procedureCode ProcedureCode UNIQUE,

&criticality Criticality DEFAULT ignore

}

WITH SYNTAX {

INITIATING MESSAGE &InitiatingMessage

[SUCCESSFUL OUTCOME &SuccessfulOutcome]

[UNSUCCESSFUL OUTCOME &UnsuccessfulOutcome]

PROCEDURE CODE &procedureCode

[CRITICALITY &criticality]

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Interface PDU Definition

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2AP-PDU ::= CHOICE {

initiatingMessage InitiatingMessage,

successfulOutcome SuccessfulOutcome,

unsuccessfulOutcome UnsuccessfulOutcome,

...

}

InitiatingMessage ::= SEQUENCE {

procedureCode X2AP-ELEMENTARY-PROCEDURE.&procedureCode ({X2AP-ELEMENTARY-PROCEDURES}),

criticality X2AP-ELEMENTARY-PROCEDURE.&criticality ({X2AP-ELEMENTARY-PROCEDURES}{@procedureCode}),

value X2AP-ELEMENTARY-PROCEDURE.&InitiatingMessage ({X2AP-ELEMENTARY-PROCEDURES}{@procedureCode})

}

SuccessfulOutcome ::= SEQUENCE {

procedureCode X2AP-ELEMENTARY-PROCEDURE.&procedureCode ({X2AP-ELEMENTARY-PROCEDURES}),

criticality X2AP-ELEMENTARY-PROCEDURE.&criticality ({X2AP-ELEMENTARY-PROCEDURES}{@procedureCode}),

value X2AP-ELEMENTARY-PROCEDURE.&SuccessfulOutcome ({X2AP-ELEMENTARY-PROCEDURES}{@procedureCode})

}

UnsuccessfulOutcome ::= SEQUENCE {

procedureCode X2AP-ELEMENTARY-PROCEDURE.&procedureCode ({X2AP-ELEMENTARY-PROCEDURES}),

criticality X2AP-ELEMENTARY-PROCEDURE.&criticality ({X2AP-ELEMENTARY-PROCEDURES}{@procedureCode}),

value X2AP-ELEMENTARY-PROCEDURE.&UnsuccessfulOutcome ({X2AP-ELEMENTARY-PROCEDURES}{@procedureCode})

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Interface Elementary Procedure List

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2AP-ELEMENTARY-PROCEDURES X2AP-ELEMENTARY-PROCEDURE ::= {

X2AP-ELEMENTARY-PROCEDURES-CLASS-1 |

X2AP-ELEMENTARY-PROCEDURES-CLASS-2 ,

...

}

X2AP-ELEMENTARY-PROCEDURES-CLASS-1 X2AP-ELEMENTARY-PROCEDURE ::= {

handoverPreparation |

reset |

x2Setup |

resourceStatusReportingInitiation |

eNBConfigurationUpdate |

mobilitySettingsChange |

cellActivation |

seNBAdditionPreparation |

meNBinitiatedSeNBModificationPreparation |

seNBinitiatedSeNBModification |

seNBinitiatedSeNBRelease |

x2Removal |

retrieveUEContext |

sgNBAdditionPreparation |

meNBinitiatedSgNBModificationPreparation |

sgNBinitiatedSgNBModification |

meNBinitiatedSgNBRelease |

sgNBinitiatedSgNBRelease |

sgNBChange |

endcX2Setup |

endcConfigurationUpdate |

endcCellActivation |

endcPartialReset |

eUTRANRCellResourceCoordination |

endcX2Removal |

endcresourceStatusReportingInitiation |

uERadioCapabilityIDMapping ,

...

}

X2AP-ELEMENTARY-PROCEDURES-CLASS-2 X2AP-ELEMENTARY-PROCEDURE ::= {

snStatusTransfer |

uEContextRelease |

handoverCancel |

errorIndication |

resourceStatusReporting |

loadIndication |

privateMessage |

rLFIndication |

handoverReport |

x2Release |

x2APMessageTransfer |

seNBReconfigurationCompletion |

meNBinitiatedSeNBRelease |

seNBCounterCheck |

sgNBReconfigurationCompletion |

sgNBCounterCheck |

rRCTransfer |

secondaryRATDataUsageReport |

sgNBActivityNotification |

dataForwardingAddressIndication |

gNBStatusIndication |

endcConfigurationTransfer |

deactivateTrace |

traceStart |

handoverSuccess |

earlyStatusTransfer |

conditionalHandoverCancel |

endcresourceStatusReporting |

cellTrafficTrace |

f1CTrafficTransfer |

cPC-cancel ,

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Interface Elementary Procedures

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

handoverPreparation X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE HandoverRequest

SUCCESSFUL OUTCOME HandoverRequestAcknowledge

UNSUCCESSFUL OUTCOME HandoverPreparationFailure

PROCEDURE CODE id-handoverPreparation

CRITICALITY reject

}

snStatusTransfer X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SNStatusTransfer

PROCEDURE CODE id-snStatusTransfer

CRITICALITY ignore

}

uEContextRelease X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE UEContextRelease

PROCEDURE CODE id-uEContextRelease

CRITICALITY ignore

}

handoverCancel X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE HandoverCancel

PROCEDURE CODE id-handoverCancel

CRITICALITY ignore

}

handoverReport X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE HandoverReport

PROCEDURE CODE id-handoverReport

CRITICALITY ignore

}

errorIndication X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE ErrorIndication

PROCEDURE CODE id-errorIndication

CRITICALITY ignore

}

reset X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE ResetRequest

SUCCESSFUL OUTCOME ResetResponse

PROCEDURE CODE id-reset

CRITICALITY reject

}

x2Setup X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE X2SetupRequest

SUCCESSFUL OUTCOME X2SetupResponse

UNSUCCESSFUL OUTCOME X2SetupFailure

PROCEDURE CODE id-x2Setup

CRITICALITY reject

}

loadIndication X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE LoadInformation

PROCEDURE CODE id-loadIndication

CRITICALITY ignore

}

eNBConfigurationUpdate X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE ENBConfigurationUpdate

SUCCESSFUL OUTCOME ENBConfigurationUpdateAcknowledge

UNSUCCESSFUL OUTCOME ENBConfigurationUpdateFailure

PROCEDURE CODE id-eNBConfigurationUpdate

CRITICALITY reject

}

resourceStatusReportingInitiation X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE ResourceStatusRequest

SUCCESSFUL OUTCOME ResourceStatusResponse

UNSUCCESSFUL OUTCOME ResourceStatusFailure

PROCEDURE CODE id-resourceStatusReportingInitiation

CRITICALITY reject

}

resourceStatusReporting X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE ResourceStatusUpdate

PROCEDURE CODE id-resourceStatusReporting

CRITICALITY ignore

}

rLFIndication X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE RLFIndication

PROCEDURE CODE id-rLFIndication

CRITICALITY ignore

}

privateMessage X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE PrivateMessage

PROCEDURE CODE id-privateMessage

CRITICALITY ignore

}

mobilitySettingsChange X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE MobilityChangeRequest

SUCCESSFUL OUTCOME MobilityChangeAcknowledge

UNSUCCESSFUL OUTCOME MobilityChangeFailure

PROCEDURE CODE id-mobilitySettingsChange

CRITICALITY reject

}

cellActivation X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE CellActivationRequest

SUCCESSFUL OUTCOME CellActivationResponse

UNSUCCESSFUL OUTCOME CellActivationFailure

PROCEDURE CODE id-cellActivation

CRITICALITY reject

}

x2Release X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE X2Release

PROCEDURE CODE id-x2Release

CRITICALITY reject

}

x2APMessageTransfer X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE X2APMessageTransfer

PROCEDURE CODE id-x2APMessageTransfer

CRITICALITY reject

}

seNBAdditionPreparation X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SeNBAdditionRequest

SUCCESSFUL OUTCOME SeNBAdditionRequestAcknowledge

UNSUCCESSFUL OUTCOME SeNBAdditionRequestReject

PROCEDURE CODE id-seNBAdditionPreparation

CRITICALITY reject

}

seNBReconfigurationCompletion X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SeNBReconfigurationComplete

PROCEDURE CODE id-seNBReconfigurationCompletion

CRITICALITY ignore

}

meNBinitiatedSeNBModificationPreparation X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SeNBModificationRequest

SUCCESSFUL OUTCOME SeNBModificationRequestAcknowledge

UNSUCCESSFUL OUTCOME SeNBModificationRequestReject

PROCEDURE CODE id-meNBinitiatedSeNBModificationPreparation

CRITICALITY reject

}

seNBinitiatedSeNBModification X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SeNBModificationRequired

SUCCESSFUL OUTCOME SeNBModificationConfirm

UNSUCCESSFUL OUTCOME SeNBModificationRefuse

PROCEDURE CODE id-seNBinitiatedSeNBModification

CRITICALITY reject

}

meNBinitiatedSeNBRelease X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SeNBReleaseRequest

PROCEDURE CODE id-meNBinitiatedSeNBRelease

CRITICALITY ignore

}

seNBinitiatedSeNBRelease X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SeNBReleaseRequired

SUCCESSFUL OUTCOME SeNBReleaseConfirm

PROCEDURE CODE id-seNBinitiatedSeNBRelease

CRITICALITY reject

}

seNBCounterCheck X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SeNBCounterCheckRequest

PROCEDURE CODE id-seNBCounterCheck

CRITICALITY reject

}

x2Removal X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE X2RemovalRequest

SUCCESSFUL OUTCOME X2RemovalResponse

UNSUCCESSFUL OUTCOME X2RemovalFailure

PROCEDURE CODE id-x2Removal

CRITICALITY reject

}

retrieveUEContext X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE RetrieveUEContextRequest

SUCCESSFUL OUTCOME RetrieveUEContextResponse

UNSUCCESSFUL OUTCOME RetrieveUEContextFailure

PROCEDURE CODE id-retrieveUEContext

CRITICALITY reject

}

sgNBAdditionPreparation X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SgNBAdditionRequest

SUCCESSFUL OUTCOME SgNBAdditionRequestAcknowledge

UNSUCCESSFUL OUTCOME SgNBAdditionRequestReject

PROCEDURE CODE id-sgNBAdditionPreparation

CRITICALITY reject

}

sgNBReconfigurationCompletion X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SgNBReconfigurationComplete

PROCEDURE CODE id-sgNBReconfigurationCompletion

CRITICALITY ignore

}

meNBinitiatedSgNBModificationPreparation X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SgNBModificationRequest

SUCCESSFUL OUTCOME SgNBModificationRequestAcknowledge

UNSUCCESSFUL OUTCOME SgNBModificationRequestReject

PROCEDURE CODE id-meNBinitiatedSgNBModificationPreparation

CRITICALITY reject

}

sgNBinitiatedSgNBModification X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SgNBModificationRequired

SUCCESSFUL OUTCOME SgNBModificationConfirm

UNSUCCESSFUL OUTCOME SgNBModificationRefuse

PROCEDURE CODE id-sgNBinitiatedSgNBModification

CRITICALITY reject

}

meNBinitiatedSgNBRelease X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SgNBReleaseRequest

SUCCESSFUL OUTCOME SgNBReleaseRequestAcknowledge

UNSUCCESSFUL OUTCOME SgNBReleaseRequestReject

PROCEDURE CODE id-meNBinitiatedSgNBRelease

CRITICALITY ignore

}

sgNBinitiatedSgNBRelease X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SgNBReleaseRequired

SUCCESSFUL OUTCOME SgNBReleaseConfirm

PROCEDURE CODE id-sgNBinitiatedSgNBRelease

CRITICALITY reject

}

sgNBCounterCheck X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SgNBCounterCheckRequest

PROCEDURE CODE id-sgNBCounterCheck

CRITICALITY reject

}

sgNBChange X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SgNBChangeRequired

SUCCESSFUL OUTCOME SgNBChangeConfirm

UNSUCCESSFUL OUTCOME SgNBChangeRefuse

PROCEDURE CODE id-sgNBChange

CRITICALITY reject

}

rRCTransfer X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE RRCTransfer

PROCEDURE CODE id-rRCTransfer

CRITICALITY reject

}

endcX2Setup X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE ENDCX2SetupRequest

SUCCESSFUL OUTCOME ENDCX2SetupResponse

UNSUCCESSFUL OUTCOME ENDCX2SetupFailure

PROCEDURE CODE id-endcX2Setup

CRITICALITY reject

}

endcConfigurationUpdate X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE ENDCConfigurationUpdate

SUCCESSFUL OUTCOME ENDCConfigurationUpdateAcknowledge

UNSUCCESSFUL OUTCOME ENDCConfigurationUpdateFailure

PROCEDURE CODE id-endcConfigurationUpdate

CRITICALITY reject

}

secondaryRATDataUsageReport X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SecondaryRATDataUsageReport

PROCEDURE CODE id-secondaryRATDataUsageReport

CRITICALITY reject

}

endcCellActivation X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE ENDCCellActivationRequest

SUCCESSFUL OUTCOME ENDCCellActivationResponse

UNSUCCESSFUL OUTCOME ENDCCellActivationFailure

PROCEDURE CODE id-endcCellActivation

CRITICALITY reject

}

endcPartialReset X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE ENDCPartialResetRequired

SUCCESSFUL OUTCOME ENDCPartialResetConfirm

PROCEDURE CODE id-endcPartialReset

CRITICALITY reject

}

eUTRANRCellResourceCoordination X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE EUTRANRCellResourceCoordinationRequest

SUCCESSFUL OUTCOME EUTRANRCellResourceCoordinationResponse

PROCEDURE CODE id-eUTRANRCellResourceCoordination

CRITICALITY reject

}

sgNBActivityNotification X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE SgNBActivityNotification

PROCEDURE CODE id-SgNBActivityNotification

CRITICALITY reject

}

endcX2Removal X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE ENDCX2RemovalRequest

SUCCESSFUL OUTCOME ENDCX2RemovalResponse

UNSUCCESSFUL OUTCOME ENDCX2RemovalFailure

PROCEDURE CODE id-endcX2Removal

CRITICALITY reject

}

dataForwardingAddressIndication X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE DataForwardingAddressIndication

PROCEDURE CODE id-dataForwardingAddressIndication

CRITICALITY ignore

}

gNBStatusIndication X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE GNBStatusIndication

PROCEDURE CODE id-gNBStatusIndication

CRITICALITY ignore

}

endcConfigurationTransfer X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE ENDCConfigurationTransfer

PROCEDURE CODE id-endcConfigurationTransfer

CRITICALITY ignore

}

deactivateTrace X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE DeactivateTrace

PROCEDURE CODE id-deactivateTrace

CRITICALITY ignore

}

traceStart X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE TraceStart

PROCEDURE CODE id-traceStart

CRITICALITY ignore

}

handoverSuccess X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE HandoverSuccess

PROCEDURE CODE id-handoverSuccess

CRITICALITY ignore

}

earlyStatusTransfer X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE EarlyStatusTransfer

PROCEDURE CODE id-earlyStatusTransfer

CRITICALITY ignore

}

conditionalHandoverCancel X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE ConditionalHandoverCancel

PROCEDURE CODE id-conditionalHandoverCancel

CRITICALITY ignore

}

endcresourceStatusReportingInitiation X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE ENDCResourceStatusRequest

SUCCESSFUL OUTCOME ENDCResourceStatusResponse

UNSUCCESSFUL OUTCOME ENDCResourceStatusFailure

PROCEDURE CODE id-endcresourceStatusReportingInitiation

CRITICALITY reject

}

endcresourceStatusReporting X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE ENDCResourceStatusUpdate

PROCEDURE CODE id-endcresourceStatusReporting

CRITICALITY ignore

}

cellTrafficTrace X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE CellTrafficTrace

PROCEDURE CODE id-cellTrafficTrace

CRITICALITY ignore

}

f1CTrafficTransfer X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE F1CTrafficTransfer

PROCEDURE CODE id-f1CTrafficTransfer

CRITICALITY ignore

}

uERadioCapabilityIDMapping X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE UERadioCapabilityIDMappingRequest

SUCCESSFUL OUTCOME UERadioCapabilityIDMappingResponse

PROCEDURE CODE id-UERadioCapabilityIDMapping

CRITICALITY reject

}

cPC-cancel X2AP-ELEMENTARY-PROCEDURE ::= {

INITIATING MESSAGE CPC-cancel

PROCEDURE CODE id-CPC-cancel

CRITICALITY reject

}

END

-- ASN1STOP

### 9.3.4 PDU Definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- PDU definitions for X2AP.

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2AP-PDU-Contents {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

eps-Access (21) modules (3) x2ap (2) version1 (1) x2ap-PDU-Contents (1) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- IE parameter types from other modules.

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

IMPORTS

ABSInformation,

ABS-Status,

AS-SecurityInformation,

BearerType,

Cause,

CompositeAvailableCapacityGroup,

Correlation-ID,

COUNTvalue,

CellReportingIndicator,

AerialUEsubscriptionInformation,

CriticalityDiagnostics,

CRNTI,

CSGMembershipStatus,

CSG-Id,

DeactivationIndication,

DL-Forwarding,

DynamicDLTransmissionInformation,

E-RABsSubjectToDLDiscarding-List,

E-RABsSubjectToEarlyStatusTransfer-List,

ECGI,

E-RAB-ID,

E-RAB-Level-QoS-Parameters,

E-RAB-List,

EUTRANTraceID,

GlobalENB-ID,

GTPtunnelEndpoint,

GUGroupIDList,

GUMMEI,

HandoverReportType,

HandoverRestrictionList,

Masked-IMEISV,

InvokeIndication,

LocationReportingInformation,

LowerLayerPresenceStatusChange,

MDT-Configuration,

ManagementBasedMDTallowed,

MDTPLMNList,

Neighbour-Information,

PCI,

PDCP-SN,

PLMN-Identity,

ReceiveStatusofULPDCPSDUs,

Registration-Request,

RelativeNarrowbandTxPower,

RadioResourceStatus,

RLC-Status,

RRCConnReestabIndicator,

RRCConnSetupIndicator,

UE-RLF-Report-Container,

UEAppLayerMeasConfig,

RRC-Context,

ServedCell-Information,

ServedCells,

ShortMAC-I,

SRVCCOperationPossible,

SubscriberProfileIDforRFP,

TargetCellInUTRAN,

TargeteNBtoSource-eNBTransparentContainer,

TimeToWait,

TraceActivation,

TraceDepth,

TransportLayerAddress,

UEAggregateMaximumBitRate,

UE-HistoryInformation,

UE-HistoryInformationFromTheUE,

UE-S1AP-ID,

UESecurityCapabilities,

UEsToBeResetList,

UE-X2AP-ID,

UL-HighInterferenceIndicationInfo,

UL-InterferenceOverloadIndication,

HWLoadIndicator,

S1TNLLoadIndicator,

Measurement-ID,

ReportCharacteristics,

MobilityParametersInformation,

MobilityParametersModificationRange,

ReceiveStatusOfULPDCPSDUsExtended,

COUNTValueExtended,

SubframeAssignment,

ExtendedULInterferenceOverloadInfo,

ExpectedUEBehaviour,

SeNBSecurityKey,

MeNBtoSeNBContainer,

SeNBtoMeNBContainer,

SCGChangeIndication,

CoMPInformation,

ReportingPeriodicityRSRPMR,

RSRPMRList,

UE-RLF-Report-Container-for-extended-bands,

ProSeAuthorized,

CoverageModificationList,

ReportingPeriodicityCSIR,

CSIReportList,

ReceiveStatusOfULPDCPSDUsPDCP-SNlength18,

COUNTvaluePDCP-SNlength18,

LHN-ID,

UE-ContextKeptIndicator,

UE-X2AP-ID-Extension,

SIPTOBearerDeactivationIndication,

TunnelInformation,

V2XServicesAuthorized,

X2BenefitValue,

ResumeID,

EUTRANCellIdentifier,

MakeBeforeBreakIndicator,

WTID,

WT-UE-XwAP-ID,

UESidelinkAggregateMaximumBitRate,

SgNBSecurityKey,

MeNBtoSgNBContainer,

SgNBtoMeNBContainer,

SplitSRBs,

RRCContainer,

SRBType,

GlobalGNB-ID,

GNB-ID,

SCGConfigurationQuery,

SplitSRB,

NRUeReport,

EN-DC-ResourceConfiguration,

TAC,

NRFreqInfo,

NRCGI,

NRPCI,

NRUESecurityCapabilities,

PDCPChangeIndication,

ULConfiguration,

SgNB-UE-X2AP-ID,

SecondaryRATUsageReportList,

ActivationID,

MeNBResourceCoordinationInformation,

SgNBResourceCoordinationInformation,

NR-TxBW,

BroadcastPLMNs-Item,

AdditionalPLMNs-Item,

RLCMode,

GBR-QosInformation,

DRB-ID,

FiveGS-TAC,

SULInformation,

Packet-LossRate,

ResourceType,

DataTrafficResourceIndication,

SpectrumSharingGroupID,

RRC-Config-Ind,

SGNB-Addition-Trigger-Ind,

UserPlaneTrafficActivityReport,

ERABActivityNotifyItemList,

PDCPSnLength,

Subscription-Based-UE-DifferentiationInfo,

LCID,

DuplicationActivation,

GNBOverloadInformation,

NewDRBIDrequest,

DesiredActNotificationLevel,

LocationInformationSgNB,

LocationInformationSgNBReporting,

EndcSONConfigurationTransfer,

NRNeighbour-Information,

InterfaceInstanceIndication,

BPLMN-ID-Info-NR,

SNtriggered,

EPCHandoverRestrictionListContainer,

AdditionalRRMPriorityIndex,

RequestedFastMCGRecoveryViaSRB3,

AvailableFastMCGRecoveryViaSRB3,

RequestedFastMCGRecoveryViaSRB3Release,

ReleaseFastMCGRecoveryViaSRB3,

FastMCGRecovery,

PartialListIndicator,

MaximumCellListSize,

MessageOversizeNotification,

TNLConfigurationInfo,

TNLA-To-Add-List,

TNLA-To-Update-List,

TNLA-To-Remove-List,

TNLA-Setup-List,

TNLA-Failed-To-Setup-List,

RAN-UE-NGAP-ID,

CHOinformation-REQ,

CHOinformation-ACK,

DAPSRequestInfo,

DAPSResponseInfo,

CandidateCellsToBeCancelledList,

CHO-DC-EarlyDataForwarding,

CHO-DC-Indicator,

Ethernet-Type,

NRV2XServicesAuthorized,

NRUESidelinkAggregateMaximumBitRate,

PC5QoSParameters,

TargetCellInNGRAN,

Measurement-ID-ENDC,

Registration-Request-ENDC,

ReportCharacteristics-ENDC,

NRRadioResourceStatus,

TNLCapacityIndicator,

NRCompositeAvailableCapacityGroup,

SSBIndex,

TDDULDLConfigurationCommonNR,

NRCarrierList,

SSB-PositionsInBurst,

NRCellPRACHConfig,

NBIoT-RLF-Report-Container,

PrivacyIndicator,

UERadioCapabilityID,

CSI-RSTransmissionIndication,

IABNodeIndication,

F1CTrafficContainer,

IntendedTDD-DL-ULConfiguration-NR,

UERadioCapability,

SFN-Offset,

IMSvoiceEPSfallbackfrom5G,

Global-RAN-NODE-ID,

DirectForwardingPathAvailability,

CPAinformation-REQ,

CPAinformation-ACK,

CPAinformation-REQD,

CPCinformation-REQD,

CPCinformation-CONF,

CPCinformation-NOTIFY,

CPCupdate-MOD,

CPCupdate-ACK

FROM X2AP-IEs

PrivateIE-Container{},

ProtocolExtensionContainer{},

ProtocolIE-Container{},

ProtocolIE-ContainerList{},

ProtocolIE-ContainerPair{},

ProtocolIE-ContainerPairList{},

ProtocolIE-Single-Container{},

X2AP-PRIVATE-IES,

X2AP-PROTOCOL-EXTENSION,

X2AP-PROTOCOL-IES,

X2AP-PROTOCOL-IES-PAIR

FROM X2AP-Containers

id-ABSInformation,

id-ActivatedCellList,

id-BearerType,

id-Cause,

id-CellInformation,

id-CellInformation-Item,

id-CellMeasurementResult,

id-CellMeasurementResult-NR-ENDC,

id-CellMeasurementResult-Item,

id-CellMeasurementResult-NR-ENDC-Item,

id-CellMeasurementResult-E-UTRA-ENDC,

id-CellMeasurementResult-E-UTRA-ENDC-Item,

id-CellToReport,

id-CellToReport-E-UTRA-ENDC,

id-CellToReport-NR-ENDC,

id-CellToReport-Item,

id-CellToReport-E-UTRA-ENDC-Item,

id-CellToReport-NR-ENDC-Item,

id-CompositeAvailableCapacityGroup,

id-AerialUEsubscriptionInformation,

id-CriticalityDiagnostics,

id-DeactivationIndication,

id-DynamicDLTransmissionInformation,

id-E-RABs-Admitted-Item,

id-E-RABs-Admitted-List,

id-E-RABs-NotAdmitted-List,

id-E-RABs-SubjectToStatusTransfer-List,

id-E-RABs-SubjectToStatusTransfer-Item,

id-E-RABs-ToBeSetup-Item,

id-GlobalENB-ID,

id-GUGroupIDList,

id-GUGroupIDToAddList,

id-GUGroupIDToDeleteList,

id-GUMMEI-ID,

id-Masked-IMEISV,

id-IMSvoiceEPSfallbackfrom5G,

id-InvokeIndication,

id-New-eNB-UE-X2AP-ID,

id-Old-eNB-UE-X2AP-ID,

id-Registration-Request,

id-ReportingPeriodicity,

id-RLC-Status,

id-ServedCells,

id-ServedCellsToActivate,

id-ServedCellsToAdd,

id-ServedCellsToModify,

id-ServedCellsToDelete,

id-SRVCCOperationPossible,

id-TargetCell-ID,

id-TargeteNBtoSource-eNBTransparentContainer,

id-TimeToWait,

id-TraceActivation,

id-UE-ContextInformation,

id-UE-HistoryInformation,

id-UE-X2AP-ID,

id-Measurement-ID,

id-ReportCharacteristics,

id-ENB1-Measurement-ID,

id-ENB2-Measurement-ID,

id-ENB1-Cell-ID,

id-ENB2-Cell-ID,

id-ENB2-Proposed-Mobility-Parameters,

id-ENB1-Mobility-Parameters,

id-ENB2-Mobility-Parameters-Modification-Range,

id-FailureCellPCI,

id-Re-establishmentCellECGI,

id-FailureCellCRNTI,

id-ShortMAC-I,

id-SourceCellECGI,

id-FailureCellECGI,

id-HandoverReportType,

id-UE-RLF-Report-Container,

id-PartialSuccessIndicator,

id-MeasurementInitiationResult-List,

id-MeasurementInitiationResult-Item,

id-MeasurementFailureCause-Item,

id-CompleteFailureCauseInformation-List,

id-CompleteFailureCauseInformation-Item,

id-CSGMembershipStatus,

id-CSG-Id,

id-MDTConfiguration,

id-ManagementBasedMDTallowed,

id-ABS-Status,

id-RRCConnSetupIndicator,

id-RRCConnReestabIndicator,

id-TargetCellInUTRAN,

id-MobilityInformation,

id-SourceCellCRNTI,

id-ManagementBasedMDTPLMNList,

id-ReceiveStatusOfULPDCPSDUsExtended,

id-ULCOUNTValueExtended,

id-DLCOUNTValueExtended,

id-IntendedULDLConfiguration,

id-ExtendedULInterferenceOverloadInfo,

id-RNL-Header,

id-x2APMessage,

id-UE-HistoryInformationFromTheUE,

id-ExpectedUEBehaviour,

id-MeNB-UE-X2AP-ID,

id-SeNB-UE-X2AP-ID,

id-UE-SecurityCapabilities,

id-SeNBSecurityKey,

id-SeNBUEAggregateMaximumBitRate,

id-ServingPLMN,

id-E-RABs-ToBeAdded-List,

id-E-RABs-ToBeAdded-Item,

id-MeNBtoSeNBContainer,

id-E-RABs-Admitted-ToBeAdded-List,

id-E-RABs-Admitted-ToBeAdded-Item,

id-SeNBtoMeNBContainer,

id-ResponseInformationSeNBReconfComp,

id-UE-ContextInformationSeNBModReq,

id-E-RABs-ToBeAdded-ModReqItem,

id-E-RABs-ToBeModified-ModReqItem,

id-E-RABs-ToBeReleased-ModReqItem,

id-E-RABs-Admitted-ToBeAdded-ModAckList,

id-E-RABs-Admitted-ToBeModified-ModAckList,

id-E-RABs-Admitted-ToBeReleased-ModAckList,

id-E-RABs-Admitted-ToBeAdded-ModAckItem,

id-E-RABs-Admitted-ToBeModified-ModAckItem,

id-E-RABs-Admitted-ToBeReleased-ModAckItem,

id-SCGChangeIndication,

id-E-RABs-ToBeReleased-ModReqd,

id-E-RABs-ToBeReleased-ModReqdItem,

id-E-RABs-ToBeReleased-List-RelReq,

id-E-RABs-ToBeReleased-RelReqItem,

id-E-RABs-ToBeReleased-List-RelConf,

id-E-RABs-ToBeReleased-RelConfItem,

id-E-RABs-SubjectToCounterCheck-List,

id-E-RABs-SubjectToCounterCheckItem,

id-CoMPInformation,

id-ReportingPeriodicityRSRPMR,

id-RSRPMRList,

id-UE-RLF-Report-Container-for-extended-bands,

id-ProSeAuthorized,

id-CoverageModificationList,

id-ReportingPeriodicityCSIR,

id-CSIReportList,

id-ReceiveStatusOfULPDCPSDUsPDCP-SNlength18,

id-ULCOUNTValuePDCP-SNlength18,

id-DLCOUNTValuePDCP-SNlength18,

id-LHN-ID,

id-Correlation-ID,

id-SIPTO-Correlation-ID,

id-UE-ContextReferenceAtSeNB,

id-UE-ContextReferenceAtWT,

id-UE-ContextKeptIndicator,

id-UEs-ToBeReset,

id-UEs-Admitted-ToBeReset,

id-WT-UE-ContextKeptIndicator,

id-New-eNB-UE-X2AP-ID-Extension,

id-Old-eNB-UE-X2AP-ID-Extension,

id-MeNB-UE-X2AP-ID-Extension,

id-SeNB-UE-X2AP-ID-Extension,

id-SIPTO-BearerDeactivationIndication,

id-Tunnel-Information-for-BBF,

id-SIPTO-L-GW-TransportLayerAddress,

id-GW-TransportLayerAddress,

id-X2RemovalThreshold,

id-CellReportingIndicator,

id-V2XServicesAuthorized,

id-resumeID,

id-UE-ContextInformationRetrieve,

id-E-RABs-ToBeSetupRetrieve-Item,

id-NewEUTRANCellIdentifier,

id-MakeBeforeBreakIndicator,

id-UESidelinkAggregateMaximumBitRate,

id-uL-GTPtunnelEndpoint,

id-SgNBSecurityKey,

id-SgNBUEAggregateMaximumBitRate,

id-E-RABs-ToBeAdded-SgNBAddReqList,

id-MeNBtoSgNBContainer,

id-SgNB-UE-X2AP-ID,

id-RequestedSplitSRBs,

id-E-RABs-ToBeAdded-SgNBAddReq-Item,

id-E-RABs-Admitted-ToBeAdded-SgNBAddReqAckList,

id-SgNBtoMeNBContainer,

id-AdmittedSplitSRBs,

id-E-RABs-Admitted-ToBeAdded-SgNBAddReqAck-Item,

id-ResponseInformationSgNBReconfComp,

id-UE-ContextInformation-SgNBModReq,

id-E-RABs-ToBeAdded-SgNBModReq-Item,

id-E-RABs-ToBeModified-SgNBModReq-Item,

id-E-RABs-ToBeReleased-SgNBModReq-Item,

id-E-RABs-Admitted-ToBeAdded-SgNBModAckList,

id-E-RABs-Admitted-ToBeModified-SgNBModAckList,

id-E-RABs-Admitted-ToBeReleased-SgNBModAckList,

id-E-RABs-Admitted-ToBeAdded-SgNBModAck-Item,

id-E-RABs-Admitted-ToBeModified-SgNBModAck-Item,

id-E-RABs-Admitted-ToBeReleased-SgNBModAck-Item,

id-E-RABs-Admitted-ToBeReleased-SgNBRelReqAckList,

id-E-RABs-Admitted-ToBeReleased-SgNBRelReqAck-Item,

id-E-RABs-ToBeReleased-SgNBModReqdList,

id-E-RABs-ToBeModified-SgNBModReqdList,

id-E-RABs-ToBeReleased-SgNBModReqd-Item,

id-E-RABs-ToBeModified-SgNBModReqd-Item,

id-E-RABs-ToBeReleased-SgNBChaConfList,

id-E-RABs-ToBeReleased-SgNBChaConf-Item,

id-E-RABs-ToBeReleased-SgNBRelReqList,

id-E-RABs-ToBeReleased-SgNBRelReq-Item,

id-E-RABs-ToBeReleased-SgNBRelConfList,

id-E-RABs-ToBeReleased-SgNBRelConf-Item,

id-E-RABs-ToBeReleased-SgNBRelReqdList,

id-E-RABs-ToBeReleased-SgNBRelReqd-Item,

id-E-RABs-SubjectToSgNBCounterCheck-List,

id-E-RABs-SubjectToSgNBCounterCheck-Item,

id-Target-SgNB-ID,

id-RRCContainer,

id-SRBType,

id-HandoverRestrictionList,

id-SCGConfigurationQuery,

id-SplitSRB,

id-NRUeReport,

id-InitiatingNodeType-EndcX2Setup,

id-InitiatingNodeType-EndcConfigUpdate,

id-RespondingNodeType-EndcX2Setup,

id-RespondingNodeType-EndcConfigUpdate,

id-NRUESecurityCapabilities,

id-PDCPChangeIndication,

id-ServedEUTRAcellsENDCX2ManagementList,

id-ServedEUTRAcellsToModifyListENDCConfUpd,

id-ServedEUTRAcellsToDeleteListENDCConfUpd,

id-ServedNRcellsToModifyListENDCConfUpd,

id-ServedNRcellsToDeleteListENDCConfUpd,

id-CellAssistanceInformation,

id-Globalen-gNB-ID,

id-ServedNRcellsENDCX2ManagementList,

id-Old-SgNB-UE-X2AP-ID,

id-UE-ContextReferenceAtSgNB,

id-SecondaryRATUsageReportList,

id-ActivationID,

id-ServedNRCellsToActivate,

id-ActivatedNRCellList,

id-MeNBResourceCoordinationInformation,

id-SgNBResourceCoordinationInformation,

id-UEAppLayerMeasConfig,

id-SelectedPLMN,

id-SubscriberProfileIDforRFP,

id-InitiatingNodeType-EutranrCellResourceCoordination,

id-RespondingNodeType-EutranrCellResourceCoordination,

id-DataTrafficResourceIndication,

id-SpectrumSharingGroupID,

id-ListofEUTRACellsinEUTRACoordinationReq,

id-ListofEUTRACellsinEUTRACoordinationResp,

id-ListofEUTRACellsinNRCoordinationReq,

id-ListofNRCellsinNRCoordinationReq,

id-ListofNRCellsinNRCoordinationResp,

id-RRCConfigIndication,

id-SGNB-Addition-Trigger-Ind,

id-RequestedSplitSRBsrelease,

id-AdmittedSplitSRBsrelease,

id-E-RABs-AdmittedToBeModified-SgNBModConfList,

id-E-RABs-AdmittedToBeModified-SgNBModConf-Item,

id-UEContextLevelUserPlaneActivity,

id-ERABActivityNotifyItemList,

id-MeNBCell-ID,

id-InitiatingNodeType-EndcX2Removal,

id-RespondingNodeType-EndcX2Removal,

id-uLpDCPSnLength,

id-dL-Forwarding,

id-E-RABs-DataForwardingAddress-List,

id-E-RABs-DataForwardingAddress-Item,

id-Subscription-Based-UE-DifferentiationInfo,

id-RLCMode-transferred,

id-dLPDCPSnLength,

id-secondarysgNBDLGTPTEIDatPDCP,

id-secondarymeNBULGTPTEIDatPDCP,

id-lCID,

id-duplicationActivation,

id-GNBOverloadInformation,

id-new-drb-ID-req,

id-NRNeighbourInfoToModify,

id-DesiredActNotificationLevel,

id-LocationInformationSgNB,

id-LocationInformationSgNBReporting,

id-endcSONConfigurationTransfer,

id-EUTRANTraceID,

id-additionalPLMNs-Item,

id-InterfaceInstanceIndication,

id-BPLMN-ID-Info-NR,

id-SNtriggered,

id-EPCHandoverRestrictionListContainer,

id-ERABs-transferred-to-MeNB,

id-AdditionalRRMPriorityIndex,

id-LowerLayerPresenceStatusChange,

id-FastMCGRecovery-SN-to-MN,

id-FastMCGRecovery-MN-to-SN,

id-RequestedFastMCGRecoveryViaSRB3,

id-AvailableFastMCGRecoveryViaSRB3,

id-RequestedFastMCGRecoveryViaSRB3Release,

id-ReleaseFastMCGRecoveryViaSRB3,

id-PartialListIndicator,

id-MaximumCellListSize,

id-MessageOversizeNotification,

id-CellandCapacityAssistInfo,

id-TNLConfigurationInfo,

id-TNLA-To-Add-List,

id-TNLA-To-Update-List,

id-TNLA-To-Remove-List,

id-TNLA-Setup-List,

id-TNLA-Failed-To-Setup-List,

id-UEContextReferenceatSourceNGRAN,

id-CHOinformation-REQ,

id-CHOinformation-ACK,

id-DAPSRequestInfo,

id-RequestedTargetCellID,

id-CandidateCellsToBeCancelledList,

id-DAPSResponseInfo,

id-ProcedureStage,

id-CHO-DC-EarlyDataForwarding,

id-CHO-DC-Indicator,

id-Ethernet-Type,

id-NRV2XServicesAuthorized,

id-NRUESidelinkAggregateMaximumBitRate,

id-PC5QoSParameters,

id-TargetCellInNGRAN,

id-E-UTRAN-Node1-Measurement-ID,

id-E-UTRAN-Node2-Measurement-ID,

id-TDDULDLConfigurationCommonNR,

id-CarrierList,

id-ULCarrierList,

id-SSB-PositionsInBurst,

id-NRCellPRACHConfig,

id-NBIoT-RLF-Report-Container,

id-MDTConfigurationNR,

id-PrivacyIndicator,

id-TraceCollectionEntityIPAddress,

id-UERadioCapabilityID,

id-CSI-RSTransmissionIndication,

id-DLCarrierList,

id-IABNodeIndication,

id-F1CTrafficContainer,

id-IntendedTDD-DL-ULConfiguration-NR,

id-UERadioCapability,

id-SFN-Offset,

id-DirectForwardingPathAvailability,

id-sourceNG-RAN-node-id,

id-CPAinformation-REQ,

id-CPAinformation-ACK,

id-CPAinformation-REQD,

id-CPCinformation-REQD,

id-CPCinformation-CONF,

id-CPCinformation-NOTIFY,

id-CPCupdate-MOD,

id-CPCupdate-ACK,

maxCellineNB,

maxnoofBearers,

maxnoofPDCP-SN,

maxFailedMeasObjects,

maxnoofCellIDforMDT,

maxnoofTAforMDT,

maxCellinengNB,

maxnoofCellIDforQMC,

maxnoofTAforQMC,

maxnoofPLMNforQMC,

maxnoofProtectedResourcePatterns,

maxnoNRcellsSpectrumSharingWithE-UTRA,

maxnoofNrCellBands,

maxnoofSSBAreas

FROM X2AP-Constants;

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- HANDOVER REQUEST

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

HandoverRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{HandoverRequest-IEs}},

...

}

HandoverRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Old-eNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-TargetCell-ID CRITICALITY reject TYPE ECGI PRESENCE mandatory}|

{ ID id-GUMMEI-ID CRITICALITY reject TYPE GUMMEI PRESENCE mandatory}|

{ ID id-UE-ContextInformation CRITICALITY reject TYPE UE-ContextInformation PRESENCE mandatory}|

{ ID id-UE-HistoryInformation CRITICALITY ignore TYPE UE-HistoryInformation PRESENCE mandatory}|

{ ID id-TraceActivation CRITICALITY ignore TYPE TraceActivation PRESENCE optional}|

{ ID id-SRVCCOperationPossible CRITICALITY ignore TYPE SRVCCOperationPossible PRESENCE optional}|

{ ID id-CSGMembershipStatus CRITICALITY reject TYPE CSGMembershipStatus PRESENCE optional}|

{ ID id-MobilityInformation CRITICALITY ignore TYPE MobilityInformation PRESENCE optional}|

{ ID id-Masked-IMEISV CRITICALITY ignore TYPE Masked-IMEISV PRESENCE optional}|

{ ID id-UE-HistoryInformationFromTheUE CRITICALITY ignore TYPE UE-HistoryInformationFromTheUE PRESENCE optional}|

{ ID id-ExpectedUEBehaviour CRITICALITY ignore TYPE ExpectedUEBehaviour PRESENCE optional}|

{ ID id-ProSeAuthorized CRITICALITY ignore TYPE ProSeAuthorized PRESENCE optional}|

{ ID id-UE-ContextReferenceAtSeNB CRITICALITY ignore TYPE UE-ContextReferenceAtSeNB PRESENCE optional}|

{ ID id-Old-eNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-V2XServicesAuthorized CRITICALITY ignore TYPE V2XServicesAuthorized PRESENCE optional}|

{ ID id-UE-ContextReferenceAtWT CRITICALITY ignore TYPE UE-ContextReferenceAtWT PRESENCE optional}|

{ ID id-NRUESecurityCapabilities CRITICALITY ignore TYPE NRUESecurityCapabilities PRESENCE optional}|

{ ID id-UE-ContextReferenceAtSgNB CRITICALITY ignore TYPE UE-ContextReferenceAtSgNB PRESENCE optional}|

{ ID id-AerialUEsubscriptionInformation CRITICALITY ignore TYPE AerialUEsubscriptionInformation PRESENCE optional}|

{ ID id-Subscription-Based-UE-DifferentiationInfo CRITICALITY ignore TYPE Subscription-Based-UE-DifferentiationInfo PRESENCE optional}|

{ ID id-CHOinformation-REQ CRITICALITY ignore TYPE CHOinformation-REQ PRESENCE optional}|

{ ID id-NRV2XServicesAuthorized CRITICALITY ignore TYPE NRV2XServicesAuthorized PRESENCE optional}|

{ ID id-PC5QoSParameters CRITICALITY ignore TYPE PC5QoSParameters PRESENCE optional }|

{ ID id-IABNodeIndication CRITICALITY reject TYPE IABNodeIndication PRESENCE optional},

...

}

UE-ContextInformation ::= SEQUENCE {

mME-UE-S1AP-ID UE-S1AP-ID,

uESecurityCapabilities UESecurityCapabilities,

aS-SecurityInformation AS-SecurityInformation,

uEaggregateMaximumBitRate UEAggregateMaximumBitRate,

subscriberProfileIDforRFP SubscriberProfileIDforRFP OPTIONAL,

e-RABs-ToBeSetup-List E-RABs-ToBeSetup-List,

rRC-Context RRC-Context,

handoverRestrictionList HandoverRestrictionList OPTIONAL,

locationReportingInformation LocationReportingInformation OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {UE-ContextInformation-ExtIEs} } OPTIONAL,

...

}

UE-ContextInformation-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-ManagementBasedMDTallowed CRITICALITY ignore EXTENSION ManagementBasedMDTallowed PRESENCE optional }|

{ ID id-ManagementBasedMDTPLMNList CRITICALITY ignore EXTENSION MDTPLMNList PRESENCE optional }|

{ ID id-UESidelinkAggregateMaximumBitRate CRITICALITY ignore EXTENSION UESidelinkAggregateMaximumBitRate PRESENCE optional }|

{ ID id-EPCHandoverRestrictionListContainer CRITICALITY ignore EXTENSION EPCHandoverRestrictionListContainer PRESENCE optional }|

{ ID id-AdditionalRRMPriorityIndex CRITICALITY ignore EXTENSION AdditionalRRMPriorityIndex PRESENCE optional}|

{ ID id-NRUESidelinkAggregateMaximumBitRate CRITICALITY ignore EXTENSION NRUESidelinkAggregateMaximumBitRate PRESENCE optional}|

{ ID id-UERadioCapabilityID CRITICALITY reject EXTENSION UERadioCapabilityID PRESENCE optional }|

{ ID id-IMSvoiceEPSfallbackfrom5G CRITICALITY ignore EXTENSION IMSvoiceEPSfallbackfrom5G PRESENCE optional},

...

}

E-RABs-ToBeSetup-List ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeSetup-ItemIEs} }

E-RABs-ToBeSetup-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeSetup-Item CRITICALITY ignore TYPE E-RABs-ToBeSetup-Item PRESENCE mandatory },

...

}

E-RABs-ToBeSetup-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

e-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters,

dL-Forwarding DL-Forwarding OPTIONAL,

uL-GTPtunnelEndpoint GTPtunnelEndpoint,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeSetup-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeSetup-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-BearerType CRITICALITY reject EXTENSION BearerType PRESENCE optional}|

{ ID id-DAPSRequestInfo CRITICALITY ignore EXTENSION DAPSRequestInfo PRESENCE optional}|

{ ID id-Ethernet-Type CRITICALITY ignore EXTENSION Ethernet-Type PRESENCE optional},

...

}

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

UE-ContextReferenceAtSeNB ::= SEQUENCE {

source-GlobalSeNB-ID GlobalENB-ID,

seNB-UE-X2AP-ID UE-X2AP-ID,

seNB-UE-X2AP-ID-Extension UE-X2AP-ID-Extension,

iE-Extensions ProtocolExtensionContainer { {UE-ContextReferenceAtSeNB-ItemExtIEs} } OPTIONAL,

...

}

UE-ContextReferenceAtSeNB-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

UE-ContextReferenceAtWT ::= SEQUENCE {

wTID WTID,

wT-UE-XwAP-ID WT-UE-XwAP-ID,

iE-Extensions ProtocolExtensionContainer { {UE-ContextReferenceAtWT-ItemExtIEs} } OPTIONAL,

...

}

UE-ContextReferenceAtWT-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

UE-ContextReferenceAtSgNB ::= SEQUENCE {

source-GlobalSgNB-ID GlobalGNB-ID,

sgNB-UE-X2AP-ID SgNB-UE-X2AP-ID,

iE-Extensions ProtocolExtensionContainer { {UE-ContextReferenceAtSgNB-ItemExtIEs} } OPTIONAL,

...

}

UE-ContextReferenceAtSgNB-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- HANDOVER REQUEST ACKNOWLEDGE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

HandoverRequestAcknowledge ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{HandoverRequestAcknowledge-IEs}},

...

}

HandoverRequestAcknowledge-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Old-eNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-New-eNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-E-RABs-Admitted-List CRITICALITY ignore TYPE E-RABs-Admitted-List PRESENCE mandatory}|

{ ID id-E-RABs-NotAdmitted-List CRITICALITY ignore TYPE E-RAB-List PRESENCE optional}|

{ ID id-TargeteNBtoSource-eNBTransparentContainer CRITICALITY ignore TYPE TargeteNBtoSource-eNBTransparentContainer PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-UE-ContextKeptIndicator CRITICALITY ignore TYPE UE-ContextKeptIndicator PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}-- The id-SeNB-UE-X2AP-ID-Extension shall not be sent and shall be ignored, if received.--|

{ ID id-Old-eNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-New-eNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-WT-UE-ContextKeptIndicator CRITICALITY ignore TYPE UE-ContextKeptIndicator PRESENCE optional}|

{ ID id-ERABs-transferred-to-MeNB CRITICALITY ignore TYPE E-RAB-List PRESENCE optional}|

{ ID id-CHOinformation-ACK CRITICALITY ignore TYPE CHOinformation-ACK PRESENCE optional},

...

}

E-RABs-Admitted-List ::= SEQUENCE (SIZE (1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-Admitted-ItemIEs} }

E-RABs-Admitted-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-Admitted-Item CRITICALITY ignore TYPE E-RABs-Admitted-Item PRESENCE mandatory }

}

E-RABs-Admitted-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

uL-GTP-TunnelEndpoint GTPtunnelEndpoint OPTIONAL,

dL-GTP-TunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-Item-ExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-DAPSResponseInfo CRITICALITY reject EXTENSION DAPSResponseInfo PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- HANDOVER PREPARATION FAILURE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

HandoverPreparationFailure ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{HandoverPreparationFailure-IEs}},

...

}

HandoverPreparationFailure-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Old-eNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-Old-eNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-RequestedTargetCellID CRITICALITY reject TYPE ECGI PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- HANDOVER REPORT

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

HandoverReport ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{HandoverReport-IEs}},

...

}

HandoverReport-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-HandoverReportType CRITICALITY ignore TYPE HandoverReportType PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-SourceCellECGI CRITICALITY ignore TYPE ECGI PRESENCE mandatory}|

{ ID id-FailureCellECGI CRITICALITY ignore TYPE ECGI PRESENCE mandatory}|

{ ID id-Re-establishmentCellECGI CRITICALITY ignore TYPE ECGI PRESENCE conditional} -- The IE shall be present if the *Handover Report Type* IE is set to “HO to Wrong Cell” -- |

{ ID id-TargetCellInUTRAN CRITICALITY ignore TYPE TargetCellInUTRAN PRESENCE conditional} -- The IE shall be present if the Handover Report Type IE is set to "InterRAT ping-pong" --|

{ ID id-SourceCellCRNTI CRITICALITY ignore TYPE CRNTI PRESENCE optional}|

{ ID id-MobilityInformation CRITICALITY ignore TYPE MobilityInformation PRESENCE optional}|

{ ID id-UE-RLF-Report-Container CRITICALITY ignore TYPE UE-RLF-Report-Container PRESENCE optional}|

{ ID id-UE-RLF-Report-Container-for-extended-bands CRITICALITY ignore TYPE UE-RLF-Report-Container-for-extended-bands PRESENCE optional}|

{ ID id-TargetCellInNGRAN CRITICALITY ignore TYPE TargetCellInNGRAN PRESENCE conditional} -- The IE shall be present if the Handover Report Type IE is set to "interSystemPingpong" --,

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EARLY STATUS TRANSFER

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

EarlyStatusTransfer ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ EarlyStatusTransfer-IEs}},

...

}

EarlyStatusTransfer-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Old-eNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-New-eNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Old-eNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-New-eNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-ProcedureStage CRITICALITY reject TYPE ProcedureStageChoice PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY ignore TYPE SgNB-UE-X2AP-ID PRESENCE optional},

...

}

ProcedureStageChoice ::= CHOICE {

first-dl-count FirstDLCount,

dl-discarding DLDiscarding,

choice-extension ProtocolIE-Single-Container { {ProcedureStageChoice-ExtIEs} }

}

ProcedureStageChoice-ExtIEs X2AP-PROTOCOL-IES ::= {

...

}

FirstDLCount ::= SEQUENCE {

e-RABsSubjectToEarlyStatusTransfer E-RABsSubjectToEarlyStatusTransfer-List,

iE-Extension ProtocolExtensionContainer { {FirstDLCount-ExtIEs} } OPTIONAL,

...

}

FirstDLCount-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

DLDiscarding ::= SEQUENCE {

e-RABsSubjectToDLDiscarding-List E-RABsSubjectToDLDiscarding-List,

iE-Extension ProtocolExtensionContainer { {DLDiscarding-ExtIEs} } OPTIONAL,

...

}

DLDiscarding-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SN STATUS TRANSFER

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SNStatusTransfer ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SNStatusTransfer-IEs}},

...

}

SNStatusTransfer-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Old-eNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-New-eNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-E-RABs-SubjectToStatusTransfer-List CRITICALITY ignore TYPE E-RABs-SubjectToStatusTransfer-List PRESENCE mandatory}|

{ ID id-Old-eNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-New-eNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY ignore TYPE SgNB-UE-X2AP-ID PRESENCE optional},

...

}

E-RABs-SubjectToStatusTransfer-List ::= SEQUENCE (SIZE (1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-SubjectToStatusTransfer-ItemIEs} }

E-RABs-SubjectToStatusTransfer-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-SubjectToStatusTransfer-Item CRITICALITY ignore TYPE E-RABs-SubjectToStatusTransfer-Item PRESENCE mandatory }

}

E-RABs-SubjectToStatusTransfer-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

receiveStatusofULPDCPSDUs ReceiveStatusofULPDCPSDUs OPTIONAL,

uL-COUNTvalue COUNTvalue,

dL-COUNTvalue COUNTvalue,

iE-Extensions ProtocolExtensionContainer { {E-RABs-SubjectToStatusTransfer-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-SubjectToStatusTransfer-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-ReceiveStatusOfULPDCPSDUsExtended CRITICALITY ignore EXTENSION ReceiveStatusOfULPDCPSDUsExtended PRESENCE optional}|

{ ID id-ULCOUNTValueExtended CRITICALITY ignore EXTENSION COUNTValueExtended PRESENCE optional}|

{ ID id-DLCOUNTValueExtended CRITICALITY ignore EXTENSION COUNTValueExtended PRESENCE optional}|

{ ID id-ReceiveStatusOfULPDCPSDUsPDCP-SNlength18 CRITICALITY ignore EXTENSION ReceiveStatusOfULPDCPSDUsPDCP-SNlength18 PRESENCE optional}|

{ ID id-ULCOUNTValuePDCP-SNlength18 CRITICALITY ignore EXTENSION COUNTvaluePDCP-SNlength18 PRESENCE optional}|

{ ID id-DLCOUNTValuePDCP-SNlength18 CRITICALITY ignore EXTENSION COUNTvaluePDCP-SNlength18 PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- UE CONTEXT RELEASE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

UEContextRelease ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{UEContextRelease-IEs}},

...

}

UEContextRelease-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Old-eNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-New-eNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Old-eNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-New-eNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SIPTO-BearerDeactivationIndication CRITICALITY ignore TYPE SIPTOBearerDeactivationIndication PRESENCE optional}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY ignore TYPE SgNB-UE-X2AP-ID PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- HANDOVER CANCEL

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

HandoverCancel ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{HandoverCancel-IEs}},

...

}

HandoverCancel-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Old-eNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-New-eNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE optional}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-Old-eNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-New-eNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-CandidateCellsToBeCancelledList CRITICALITY reject TYPE CandidateCellsToBeCancelledList PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- HANDOVER SUCCESS

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

HandoverSuccess ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{HandoverSuccess-IEs}},

...

}

HandoverSuccess-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Old-eNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-New-eNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Old-eNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-New-eNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-TargetCell-ID CRITICALITY reject TYPE ECGI PRESENCE mandatory},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- CONDITIONAL HANDOVER CANCEL

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ConditionalHandoverCancel ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ConditionalHandoverCancel-IEs}},

...

}

ConditionalHandoverCancel-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Old-eNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-New-eNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE optional}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-Old-eNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-New-eNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-CandidateCellsToBeCancelledList CRITICALITY reject TYPE CandidateCellsToBeCancelledList PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- ERROR INDICATION

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ErrorIndication ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ErrorIndication-IEs}},

...

}

ErrorIndication-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Old-eNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE optional}|

{ ID id-New-eNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE optional}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE optional}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-Old-eNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-New-eNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-Old-SgNB-UE-X2AP-ID CRITICALITY ignore TYPE SgNB-UE-X2AP-ID PRESENCE optional}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- RESET REQUEST

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ResetRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ResetRequest-IEs}},

...

}

ResetRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- RESET RESPONSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ResetResponse ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ResetResponse-IEs}},

...

}

ResetResponse-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional }|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- X2 SETUP REQUEST

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2SetupRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{X2SetupRequest-IEs}},

...

}

X2SetupRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-GlobalENB-ID CRITICALITY reject TYPE GlobalENB-ID PRESENCE mandatory}|

{ ID id-ServedCells CRITICALITY reject TYPE ServedCells PRESENCE mandatory}|

{ ID id-GUGroupIDList CRITICALITY reject TYPE GUGroupIDList PRESENCE optional}|

{ ID id-LHN-ID CRITICALITY ignore TYPE LHN-ID PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- X2 SETUP RESPONSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2SetupResponse ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{X2SetupResponse-IEs}},

...

}

X2SetupResponse-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-GlobalENB-ID CRITICALITY reject TYPE GlobalENB-ID PRESENCE mandatory}|

{ ID id-ServedCells CRITICALITY reject TYPE ServedCells PRESENCE mandatory}|

{ ID id-GUGroupIDList CRITICALITY reject TYPE GUGroupIDList PRESENCE optional}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-LHN-ID CRITICALITY ignore TYPE LHN-ID PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- X2 SETUP FAILURE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2SetupFailure ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{X2SetupFailure-IEs}},

...

}

X2SetupFailure-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory} |

{ ID id-TimeToWait CRITICALITY ignore TYPE TimeToWait PRESENCE optional} |

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- LOAD INFORMATION

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

LoadInformation ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{LoadInformation-IEs}},

...

}

LoadInformation-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-CellInformation CRITICALITY ignore TYPE CellInformation-List PRESENCE mandatory} ,

...

}

CellInformation-List ::= SEQUENCE (SIZE (1..maxCellineNB)) OF ProtocolIE-Single-Container { {CellInformation-ItemIEs} }

CellInformation-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-CellInformation-Item CRITICALITY ignore TYPE CellInformation-Item PRESENCE mandatory }

}

CellInformation-Item ::= SEQUENCE {

cell-ID ECGI,

ul-InterferenceOverloadIndication UL-InterferenceOverloadIndication OPTIONAL,

ul-HighInterferenceIndicationInfo UL-HighInterferenceIndicationInfo OPTIONAL,

relativeNarrowbandTxPower RelativeNarrowbandTxPower OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {CellInformation-Item-ExtIEs} } OPTIONAL,

...

}

CellInformation-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-ABSInformation CRITICALITY ignore EXTENSION ABSInformation PRESENCE optional }|

{ ID id-InvokeIndication CRITICALITY ignore EXTENSION InvokeIndication PRESENCE optional }|

{ ID id-IntendedULDLConfiguration CRITICALITY ignore EXTENSION SubframeAssignment PRESENCE optional }|

{ ID id-ExtendedULInterferenceOverloadInfo CRITICALITY ignore EXTENSION ExtendedULInterferenceOverloadInfo PRESENCE optional }|

{ ID id-CoMPInformation CRITICALITY ignore EXTENSION CoMPInformation PRESENCE optional }|

{ ID id-DynamicDLTransmissionInformation CRITICALITY ignore EXTENSION DynamicDLTransmissionInformation PRESENCE optional },

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- ENB CONFIGURATION UPDATE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENBConfigurationUpdate ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENBConfigurationUpdate-IEs}},

...

}

ENBConfigurationUpdate-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-ServedCellsToAdd CRITICALITY reject TYPE ServedCells PRESENCE optional}|

{ ID id-ServedCellsToModify CRITICALITY reject TYPE ServedCellsToModify PRESENCE optional}|

{ ID id-ServedCellsToDelete CRITICALITY reject TYPE Old-ECGIs PRESENCE optional}|

{ ID id-GUGroupIDToAddList CRITICALITY reject TYPE GUGroupIDList PRESENCE optional}|

{ ID id-GUGroupIDToDeleteList CRITICALITY reject TYPE GUGroupIDList PRESENCE optional}|

{ ID id-CoverageModificationList CRITICALITY reject TYPE CoverageModificationList PRESENCE optional},

...

}

ServedCellsToModify::= SEQUENCE (SIZE (1..maxCellineNB)) OF ServedCellsToModify-Item

ServedCellsToModify-Item::= SEQUENCE {

old-ecgi ECGI,

servedCellInfo ServedCell-Information,

neighbour-Info Neighbour-Information OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {ServedCellsToModify-Item-ExtIEs} } OPTIONAL,

...

}

ServedCellsToModify-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-DeactivationIndication CRITICALITY ignore EXTENSION DeactivationIndication PRESENCE optional }|

{ ID id-NRNeighbourInfoToModify CRITICALITY ignore EXTENSION NRNeighbour-Information PRESENCE optional },

...

}

Old-ECGIs::= SEQUENCE (SIZE (1..maxCellineNB)) OF ECGI

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- ENB CONFIGURATION UPDATE ACKNOWLEDGE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENBConfigurationUpdateAcknowledge ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENBConfigurationUpdateAcknowledge-IEs}},

...

}

ENBConfigurationUpdateAcknowledge-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- ENB CONFIGURATION UPDATE FAIURE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENBConfigurationUpdateFailure ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENBConfigurationUpdateFailure-IEs}},

...

}

ENBConfigurationUpdateFailure-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-TimeToWait CRITICALITY ignore TYPE TimeToWait PRESENCE optional}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- RESOURCE STATUS REQUEST

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ResourceStatusRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ResourceStatusRequest-IEs}},

...

}

ResourceStatusRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-ENB1-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-ENB2-Measurement-ID CRITICALITY ignore TYPE Measurement-ID PRESENCE conditional}|-- The IE shall be present if the *Registration Request* IE is set to “Stop”, “Partial stop” or to “Add”--

{ ID id-Registration-Request CRITICALITY reject TYPE Registration-Request PRESENCE mandatory}|

{ ID id-ReportCharacteristics CRITICALITY reject TYPE ReportCharacteristics PRESENCE optional}|

{ ID id-CellToReport CRITICALITY ignore TYPE CellToReport-List PRESENCE mandatory}|

{ ID id-ReportingPeriodicity CRITICALITY ignore TYPE ReportingPeriodicity PRESENCE optional}|

{ ID id-PartialSuccessIndicator CRITICALITY ignore TYPE PartialSuccessIndicator PRESENCE optional}|

{ ID id-ReportingPeriodicityRSRPMR CRITICALITY ignore TYPE ReportingPeriodicityRSRPMR PRESENCE optional}|

{ ID id-ReportingPeriodicityCSIR CRITICALITY ignore TYPE ReportingPeriodicityCSIR PRESENCE optional},

...

}

CellToReport-List ::= SEQUENCE (SIZE (1..maxCellineNB)) OF ProtocolIE-Single-Container { {CellToReport-ItemIEs} }

CellToReport-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-CellToReport-Item CRITICALITY ignore TYPE CellToReport-Item PRESENCE mandatory}

}

CellToReport-Item ::= SEQUENCE {

cell-ID ECGI,

iE-Extensions ProtocolExtensionContainer { {CellToReport-Item-ExtIEs} } OPTIONAL,

...

}

CellToReport-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ReportingPeriodicity ::= ENUMERATED {

one-thousand-ms,

two-thousand-ms,

five-thousand-ms,

ten-thousand-ms,

...

}

PartialSuccessIndicator ::= ENUMERATED {

partial-success-allowed,

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- RESOURCE STATUS RESPONSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ResourceStatusResponse ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ResourceStatusResponse-IEs}},

...

}

ResourceStatusResponse-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-ENB1-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-ENB2-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeasurementInitiationResult-List CRITICALITY ignore TYPE MeasurementInitiationResult-List PRESENCE optional},

...

}

MeasurementInitiationResult-List ::= SEQUENCE (SIZE (1..maxCellineNB)) OF ProtocolIE-Single-Container { {MeasurementInitiationResult-ItemIEs} }

MeasurementInitiationResult-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeasurementInitiationResult-Item CRITICALITY ignore TYPE MeasurementInitiationResult-Item PRESENCE mandatory}

}

MeasurementInitiationResult-Item ::= SEQUENCE {

cell-ID ECGI,

measurementFailureCause-List MeasurementFailureCause-List OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {MeasurementInitiationResult-Item-ExtIEs} } OPTIONAL,

...

}

MeasurementInitiationResult-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

MeasurementFailureCause-List ::= SEQUENCE (SIZE (1..maxFailedMeasObjects)) OF ProtocolIE-Single-Container { {MeasurementFailureCause-ItemIEs} }

MeasurementFailureCause-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeasurementFailureCause-Item CRITICALITY ignore TYPE MeasurementFailureCause-Item PRESENCE mandatory}

}

MeasurementFailureCause-Item ::= SEQUENCE {

measurementFailedReportCharacteristics ReportCharacteristics,

cause Cause,

iE-Extensions ProtocolExtensionContainer { {MeasurementFailureCause-Item-ExtIEs} } OPTIONAL,

...

}

MeasurementFailureCause-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- RESOURCE STATUS FAILURE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ResourceStatusFailure ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ResourceStatusFailure-IEs}},

...

}

ResourceStatusFailure-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-ENB1-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-ENB2-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-CompleteFailureCauseInformation-List CRITICALITY ignore TYPE CompleteFailureCauseInformation-List PRESENCE optional},

...

}

CompleteFailureCauseInformation-List ::= SEQUENCE (SIZE (1..maxCellineNB)) OF ProtocolIE-Single-Container { {CompleteFailureCauseInformation-ItemIEs} }

CompleteFailureCauseInformation-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-CompleteFailureCauseInformation-Item CRITICALITY ignore TYPE CompleteFailureCauseInformation-Item PRESENCE mandatory}

}

CompleteFailureCauseInformation-Item ::= SEQUENCE {

cell-ID ECGI,

measurementFailureCause-List MeasurementFailureCause-List,

iE-Extensions ProtocolExtensionContainer { {CompleteFailureCauseInformation-Item-ExtIEs} } OPTIONAL,

...

}

CompleteFailureCauseInformation-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- RESOURCE STATUS UPDATE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ResourceStatusUpdate ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ResourceStatusUpdate-IEs}},

...

}

ResourceStatusUpdate-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-ENB1-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-ENB2-Measurement-ID CRITICALITY reject TYPE Measurement-ID PRESENCE mandatory}|

{ ID id-CellMeasurementResult CRITICALITY ignore TYPE CellMeasurementResult-List PRESENCE mandatory},

...

}

CellMeasurementResult-List ::= SEQUENCE (SIZE (1..maxCellineNB)) OF ProtocolIE-Single-Container { {CellMeasurementResult-ItemIEs} }

CellMeasurementResult-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-CellMeasurementResult-Item CRITICALITY ignore TYPE CellMeasurementResult-Item PRESENCE mandatory}

}

CellMeasurementResult-Item ::= SEQUENCE {

cell-ID ECGI,

hWLoadIndicator HWLoadIndicator OPTIONAL,

s1TNLLoadIndicator S1TNLLoadIndicator OPTIONAL,

radioResourceStatus RadioResourceStatus OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {CellMeasurementResult-Item-ExtIEs} } OPTIONAL,

...

}

CellMeasurementResult-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-CompositeAvailableCapacityGroup CRITICALITY ignore EXTENSION CompositeAvailableCapacityGroup PRESENCE optional}|

{ ID id-ABS-Status CRITICALITY ignore EXTENSION ABS-Status PRESENCE optional}|

{ ID id-RSRPMRList CRITICALITY ignore EXTENSION RSRPMRList PRESENCE optional}|

{ ID id-CSIReportList CRITICALITY ignore EXTENSION CSIReportList PRESENCE optional}|

{ ID id-CellReportingIndicator CRITICALITY ignore EXTENSION CellReportingIndicator PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- PRIVATE MESSAGE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PrivateMessage ::= SEQUENCE {

privateIEs PrivateIE-Container {{PrivateMessage-IEs}},

...

}

PrivateMessage-IEs X2AP-PRIVATE-IES ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- MOBILITY CHANGE REQUEST

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MobilityChangeRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{MobilityChangeRequest-IEs}},

...

}

MobilityChangeRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-ENB1-Cell-ID CRITICALITY reject TYPE ECGI PRESENCE mandatory}|

{ ID id-ENB2-Cell-ID CRITICALITY reject TYPE ECGI PRESENCE mandatory}|

{ ID id-ENB1-Mobility-Parameters CRITICALITY ignore TYPE MobilityParametersInformation PRESENCE optional}|

{ ID id-ENB2-Proposed-Mobility-Parameters CRITICALITY reject TYPE MobilityParametersInformation PRESENCE mandatory}|

{ ID id-Cause CRITICALITY reject TYPE Cause PRESENCE mandatory},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- MOBILITY CHANGE ACKNOWLEDGE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MobilityChangeAcknowledge ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{MobilityChangeAcknowledge-IEs}},

...

}

MobilityChangeAcknowledge-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-ENB1-Cell-ID CRITICALITY reject TYPE ECGI PRESENCE mandatory}|

{ ID id-ENB2-Cell-ID CRITICALITY reject TYPE ECGI PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- MOBILITY CHANGE FAILURE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MobilityChangeFailure ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{MobilityChangeFailure-IEs}},

...

}

MobilityChangeFailure-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-ENB1-Cell-ID CRITICALITY ignore TYPE ECGI PRESENCE mandatory}|

{ ID id-ENB2-Cell-ID CRITICALITY ignore TYPE ECGI PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-ENB2-Mobility-Parameters-Modification-Range CRITICALITY ignore TYPE MobilityParametersModificationRange PRESENCE optional}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- RADIO LINK FAILURE INDICATION

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

RLFIndication ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{RLFIndication-IEs}},

...

}

RLFIndication-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-FailureCellPCI CRITICALITY ignore TYPE PCI PRESENCE mandatory}|

{ ID id-Re-establishmentCellECGI CRITICALITY ignore TYPE ECGI PRESENCE mandatory}|

{ ID id-FailureCellCRNTI CRITICALITY ignore TYPE CRNTI PRESENCE mandatory}|

{ ID id-ShortMAC-I CRITICALITY ignore TYPE ShortMAC-I PRESENCE optional}|

{ ID id-UE-RLF-Report-Container CRITICALITY ignore TYPE UE-RLF-Report-Container PRESENCE optional}|

{ ID id-RRCConnSetupIndicator CRITICALITY reject TYPE RRCConnSetupIndicator PRESENCE optional}|

{ ID id-RRCConnReestabIndicator CRITICALITY ignore TYPE RRCConnReestabIndicator PRESENCE optional}|

{ ID id-UE-RLF-Report-Container-for-extended-bands CRITICALITY ignore TYPE UE-RLF-Report-Container-for-extended-bands PRESENCE optional}|

{ ID id-NBIoT-RLF-Report-Container CRITICALITY ignore TYPE NBIoT-RLF-Report-Container PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- CELL ACTIVATION REQUEST

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

CellActivationRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{CellActivationRequest-IEs}},

...

}

CellActivationRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-ServedCellsToActivate CRITICALITY reject TYPE ServedCellsToActivate PRESENCE mandatory},

...

}

ServedCellsToActivate::= SEQUENCE (SIZE (1..maxCellineNB)) OF ServedCellsToActivate-Item

ServedCellsToActivate-Item::= SEQUENCE {

ecgi ECGI,

iE-Extensions ProtocolExtensionContainer { {ServedCellsToActivate-Item-ExtIEs} } OPTIONAL,

...

}

ServedCellsToActivate-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- CELL ACTIVATION RESPONSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

CellActivationResponse ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{CellActivationResponse-IEs}},

...

}

CellActivationResponse-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-ActivatedCellList CRITICALITY ignore TYPE ActivatedCellList PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

...

}

ActivatedCellList ::= SEQUENCE (SIZE (1..maxCellineNB)) OF ActivatedCellList-Item

ActivatedCellList-Item::= SEQUENCE {

ecgi ECGI,

iE-Extensions ProtocolExtensionContainer { {ActivatedCellList-Item-ExtIEs} } OPTIONAL,

...

}

ActivatedCellList-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

--\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- CELL ACTIVATION FAILURE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

CellActivationFailure ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{CellActivationFailure-IEs}},

...

}

CellActivationFailure-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory }|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- X2 RELEASE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2Release ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{X2Release-IEs}},

...

}

X2Release-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-GlobalENB-ID CRITICALITY reject TYPE GlobalENB-ID PRESENCE mandatory},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- X2AP MESSAGE TRANSFER

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2APMessageTransfer ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{X2APMessageTransfer-IEs}},

...

}

X2APMessageTransfer-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-RNL-Header CRITICALITY reject TYPE RNL-Header PRESENCE mandatory}|

{ ID id-x2APMessage CRITICALITY reject TYPE X2AP-Message PRESENCE optional},

...

}

RNL-Header ::= SEQUENCE {

source-GlobalENB-ID GlobalENB-ID,

target-GlobalENB-ID GlobalENB-ID OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {RNL-Header-Item-ExtIEs} } OPTIONAL,

...

}

RNL-Header-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

X2AP-Message ::= OCTET STRING

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SENB ADDITION REQUEST

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SeNBAdditionRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SeNBAdditionRequest-IEs}},

...

}

SeNBAdditionRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-UE-SecurityCapabilities CRITICALITY reject TYPE UESecurityCapabilities PRESENCE conditional}|

-- This IE shall be present if the *Bearer Option* IE is set to the value “SCG bearer” --

{ ID id-SeNBSecurityKey CRITICALITY reject TYPE SeNBSecurityKey PRESENCE conditional}|

-- This IE shall be present if the *Bearer Option* IE is set to the value “SCG bearer” --

{ ID id-SeNBUEAggregateMaximumBitRate CRITICALITY reject TYPE UEAggregateMaximumBitRate PRESENCE mandatory}|

{ ID id-ServingPLMN CRITICALITY ignore TYPE PLMN-Identity PRESENCE optional}|

{ ID id-E-RABs-ToBeAdded-List CRITICALITY reject TYPE E-RABs-ToBeAdded-List PRESENCE mandatory}|

{ ID id-MeNBtoSeNBContainer CRITICALITY reject TYPE MeNBtoSeNBContainer PRESENCE mandatory}|

{ ID id-CSGMembershipStatus CRITICALITY reject TYPE CSGMembershipStatus PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-ExpectedUEBehaviour CRITICALITY ignore TYPE ExpectedUEBehaviour PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

E-RABs-ToBeAdded-List ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeAdded-ItemIEs} }

E-RABs-ToBeAdded-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeAdded-Item CRITICALITY reject TYPE E-RABs-ToBeAdded-Item PRESENCE mandatory},

...

}

E-RABs-ToBeAdded-Item ::= CHOICE {

sCG-Bearer E-RABs-ToBeAdded-Item-SCG-Bearer,

split-Bearer E-RABs-ToBeAdded-Item-Split-Bearer,

...

}

E-RABs-ToBeAdded-Item-SCG-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

e-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters,

dL-Forwarding DL-Forwarding OPTIONAL,

s1-UL-GTPtunnelEndpoint GTPtunnelEndpoint,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeAdded-Item-SCG-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeAdded-Item-SCG-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-Correlation-ID CRITICALITY ignore EXTENSION Correlation-ID PRESENCE optional}|

{ ID id-SIPTO-Correlation-ID CRITICALITY ignore EXTENSION Correlation-ID PRESENCE optional}|

{ ID id-BearerType CRITICALITY ignore EXTENSION BearerType PRESENCE optional}|

{ ID id-Ethernet-Type CRITICALITY ignore EXTENSION Ethernet-Type PRESENCE optional},

...

}

E-RABs-ToBeAdded-Item-Split-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

e-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters,

meNB-GTPtunnelEndpoint GTPtunnelEndpoint,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeAdded-Item-Split-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeAdded-Item-Split-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SENB ADDITION REQUEST ACKNOWLEDGE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SeNBAdditionRequestAcknowledge ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SeNBAdditionRequestAcknowledge-IEs}},

...

}

SeNBAdditionRequestAcknowledge-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-E-RABs-Admitted-ToBeAdded-List CRITICALITY ignore TYPE E-RABs-Admitted-ToBeAdded-List PRESENCE mandatory}|

{ ID id-E-RABs-NotAdmitted-List CRITICALITY ignore TYPE E-RAB-List PRESENCE optional}|

{ ID id-SeNBtoMeNBContainer CRITICALITY reject TYPE SeNBtoMeNBContainer PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-GW-TransportLayerAddress CRITICALITY ignore TYPE TransportLayerAddress PRESENCE optional}|

{ ID id-SIPTO-L-GW-TransportLayerAddress CRITICALITY ignore TYPE TransportLayerAddress PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-Tunnel-Information-for-BBF CRITICALITY ignore TYPE TunnelInformation PRESENCE optional},

...

}

E-RABs-Admitted-ToBeAdded-List ::= SEQUENCE (SIZE (1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-Admitted-ToBeAdded-ItemIEs} }

E-RABs-Admitted-ToBeAdded-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-Admitted-ToBeAdded-Item CRITICALITY ignore TYPE E-RABs-Admitted-ToBeAdded-Item PRESENCE mandatory}

}

E-RABs-Admitted-ToBeAdded-Item ::= CHOICE {

sCG-Bearer E-RABs-Admitted-ToBeAdded-Item-SCG-Bearer,

split-Bearer E-RABs-Admitted-ToBeAdded-Item-Split-Bearer,

...

}

E-RABs-Admitted-ToBeAdded-Item-SCG-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

s1-DL-GTPtunnelEndpoint GTPtunnelEndpoint,

dL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

uL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeAdded-Item-SCG-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeAdded-Item-SCG-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-Admitted-ToBeAdded-Item-Split-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

seNB-GTPtunnelEndpoint GTPtunnelEndpoint,

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeAdded-Item-Split-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeAdded-Item-Split-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- SENB ADDITION REQUEST REJECT

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SeNBAdditionRequestReject ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SeNBAdditionRequestReject-IEs}},

...

}

SeNBAdditionRequestReject-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SENB RECONFIGURATION COMPLETE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SeNBReconfigurationComplete ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SeNBReconfigurationComplete-IEs}},

...

}

SeNBReconfigurationComplete-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-ResponseInformationSeNBReconfComp CRITICALITY ignore TYPE ResponseInformationSeNBReconfComp PRESENCE mandatory}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

ResponseInformationSeNBReconfComp ::= CHOICE {

success ResponseInformationSeNBReconfComp-SuccessItem,

reject-by-MeNB ResponseInformationSeNBReconfComp-RejectByMeNBItem,

...

}

ResponseInformationSeNBReconfComp-SuccessItem ::= SEQUENCE {

meNBtoSeNBContainer MeNBtoSeNBContainer OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {ResponseInformationSeNBReconfComp-SuccessItemExtIEs} } OPTIONAL,

...

}

ResponseInformationSeNBReconfComp-SuccessItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ResponseInformationSeNBReconfComp-RejectByMeNBItem ::= SEQUENCE {

cause Cause,

meNBtoSeNBContainer MeNBtoSeNBContainer OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {ResponseInformationSeNBReconfComp-RejectByMeNBItemExtIEs} } OPTIONAL,

...

}

ResponseInformationSeNBReconfComp-RejectByMeNBItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- SENB MODIFICATION REQUEST

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SeNBModificationRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ SeNBModificationRequest-IEs}},

...

}

SeNBModificationRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-SCGChangeIndication CRITICALITY ignore TYPE SCGChangeIndication PRESENCE optional}|

{ ID id-ServingPLMN CRITICALITY ignore TYPE PLMN-Identity PRESENCE optional}|

{ ID id-UE-ContextInformationSeNBModReq CRITICALITY reject TYPE UE-ContextInformationSeNBModReq PRESENCE optional}|

{ ID id-MeNBtoSeNBContainer CRITICALITY ignore TYPE MeNBtoSeNBContainer PRESENCE optional}|

{ ID id-CSGMembershipStatus CRITICALITY reject TYPE CSGMembershipStatus PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

UE-ContextInformationSeNBModReq ::= SEQUENCE {

uE-SecurityCapabilities UESecurityCapabilities OPTIONAL,

seNB-SecurityKey SeNBSecurityKey OPTIONAL,

seNBUEAggregateMaximumBitRate UEAggregateMaximumBitRate OPTIONAL,

e-RABs-ToBeAdded E-RABs-ToBeAdded-List-ModReq OPTIONAL,

e-RABs-ToBeModified E-RABs-ToBeModified-List-ModReq OPTIONAL,

e-RABs-ToBeReleased E-RABs-ToBeReleased-List-ModReq OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {UE-ContextInformationSeNBModReqExtIEs} } OPTIONAL,

...

}

UE-ContextInformationSeNBModReqExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeAdded-List-ModReq ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeAdded-ModReqItemIEs} }

E-RABs-ToBeAdded-ModReqItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeAdded-ModReqItem CRITICALITY ignore TYPE E-RABs-ToBeAdded-ModReqItem PRESENCE mandatory},

...

}

E-RABs-ToBeAdded-ModReqItem ::= CHOICE {

sCG-Bearer E-RABs-ToBeAdded-ModReqItem-SCG-Bearer,

split-Bearer E-RABs-ToBeAdded-ModReqItem-Split-Bearer,

...

}

E-RABs-ToBeAdded-ModReqItem-SCG-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

e-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters,

dL-Forwarding DL-Forwarding OPTIONAL,

s1-UL-GTPtunnelEndpoint GTPtunnelEndpoint,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeAdded-ModReqItem-SCG-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeAdded-ModReqItem-SCG-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-Correlation-ID CRITICALITY ignore EXTENSION Correlation-ID PRESENCE optional}|

{ ID id-SIPTO-Correlation-ID CRITICALITY ignore EXTENSION Correlation-ID PRESENCE optional}|

{ ID id-BearerType CRITICALITY ignore EXTENSION BearerType PRESENCE optional}|

{ ID id-Ethernet-Type CRITICALITY ignore EXTENSION Ethernet-Type PRESENCE optional},

...

}

E-RABs-ToBeAdded-ModReqItem-Split-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

e-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters,

meNB-GTPtunnelEndpoint GTPtunnelEndpoint,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeAdded-ModReqItem-Split-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeAdded-ModReqItem-Split-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeModified-List-ModReq ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeModified-ModReqItemIEs} }

E-RABs-ToBeModified-ModReqItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeModified-ModReqItem CRITICALITY ignore TYPE E-RABs-ToBeModified-ModReqItem PRESENCE mandatory},

...

}

E-RABs-ToBeModified-ModReqItem ::= CHOICE {

sCG-Bearer E-RABs-ToBeModified-ModReqItem-SCG-Bearer,

split-Bearer E-RABs-ToBeModified-ModReqItem-Split-Bearer,

...

}

E-RABs-ToBeModified-ModReqItem-SCG-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

e-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters OPTIONAL,

s1-UL-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeModified-ModReqItem-SCG-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeModified-ModReqItem-SCG-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeModified-ModReqItem-Split-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

e-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters OPTIONAL,

meNB-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeModified-ModReqItem-Split-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeModified-ModReqItem-Split-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeReleased-List-ModReq ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeReleased-ModReqItemIEs} }

E-RABs-ToBeReleased-ModReqItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeReleased-ModReqItem CRITICALITY ignore TYPE E-RABs-ToBeReleased-ModReqItem PRESENCE mandatory},

...

}

E-RABs-ToBeReleased-ModReqItem ::= CHOICE {

sCG-Bearer E-RABs-ToBeReleased-ModReqItem-SCG-Bearer,

split-Bearer E-RABs-ToBeReleased-ModReqItem-Split-Bearer,

...

}

E-RABs-ToBeReleased-ModReqItem-SCG-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

dL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

uL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-ModReqItem-SCG-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-ModReqItem-SCG-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeReleased-ModReqItem-Split-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

dL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-ModReqItem-Split-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-ModReqItem-Split-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SENB MODIFICATION REQUEST ACKNOWLEDGE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SeNBModificationRequestAcknowledge ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SeNBModificationRequestAcknowledge-IEs}},

...

}

SeNBModificationRequestAcknowledge-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-E-RABs-Admitted-ToBeAdded-ModAckList CRITICALITY ignore TYPE E-RABs-Admitted-ToBeAdded-ModAckList PRESENCE optional}|

{ ID id-E-RABs-Admitted-ToBeModified-ModAckList CRITICALITY ignore TYPE E-RABs-Admitted-ToBeModified-ModAckList PRESENCE optional}|

{ ID id-E-RABs-Admitted-ToBeReleased-ModAckList CRITICALITY ignore TYPE E-RABs-Admitted-ToBeReleased-ModAckList PRESENCE optional}|

{ ID id-E-RABs-NotAdmitted-List CRITICALITY ignore TYPE E-RAB-List PRESENCE optional}|

{ ID id-SeNBtoMeNBContainer CRITICALITY ignore TYPE SeNBtoMeNBContainer PRESENCE optional}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

E-RABs-Admitted-ToBeAdded-ModAckList ::= SEQUENCE (SIZE (1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-Admitted-ToBeAdded-ModAckItemIEs} }

E-RABs-Admitted-ToBeAdded-ModAckItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-Admitted-ToBeAdded-ModAckItem CRITICALITY ignore TYPE E-RABs-Admitted-ToBeAdded-ModAckItem PRESENCE mandatory}

}

E-RABs-Admitted-ToBeAdded-ModAckItem ::= CHOICE {

sCG-Bearer E-RABs-Admitted-ToBeAdded-ModAckItem-SCG-Bearer,

split-Bearer E-RABs-Admitted-ToBeAdded-ModAckItem-Split-Bearer,

...

}

E-RABs-Admitted-ToBeAdded-ModAckItem-SCG-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

s1-DL-GTPtunnelEndpoint GTPtunnelEndpoint,

dL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

uL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeAdded-ModAckItem-SCG-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeAdded-ModAckItem-SCG-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-Admitted-ToBeAdded-ModAckItem-Split-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

seNB-GTPtunnelEndpoint GTPtunnelEndpoint,

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeAdded-ModAckItem-Split-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeAdded-ModAckItem-Split-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-Admitted-ToBeModified-ModAckList ::= SEQUENCE (SIZE (1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-Admitted-ToBeModified-ModAckItemIEs} }

E-RABs-Admitted-ToBeModified-ModAckItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-Admitted-ToBeModified-ModAckItem CRITICALITY ignore TYPE E-RABs-Admitted-ToBeModified-ModAckItem PRESENCE mandatory}

}

E-RABs-Admitted-ToBeModified-ModAckItem ::= CHOICE {

sCG-Bearer E-RABs-Admitted-ToBeModified-ModAckItem-SCG-Bearer,

split-Bearer E-RABs-Admitted-ToBeModified-ModAckItem-Split-Bearer,

...

}

E-RABs-Admitted-ToBeModified-ModAckItem-SCG-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

s1-DL-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeModified-ModAckItem-SCG-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeModified-ModAckItem-SCG-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-Admitted-ToBeModified-ModAckItem-Split-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

seNB-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeModified-ModAckItem-Split-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeModified-ModAckItem-Split-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-Admitted-ToBeReleased-ModAckList ::= SEQUENCE (SIZE (1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-Admitted-ToBeReleased-ModAckItemIEs} }

E-RABs-Admitted-ToBeReleased-ModAckItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-Admitted-ToBeReleased-ModAckItem CRITICALITY ignore TYPE E-RABs-Admitted-ToReleased-ModAckItem PRESENCE mandatory}

}

E-RABs-Admitted-ToReleased-ModAckItem ::= CHOICE {

sCG-Bearer E-RABs-Admitted-ToBeReleased-ModAckItem-SCG-Bearer,

split-Bearer E-RABs-Admitted-ToBeReleased-ModAckItem-Split-Bearer,

...

}

E-RABs-Admitted-ToBeReleased-ModAckItem-SCG-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeReleased-ModAckItem-SCG-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeReleased-ModAckItem-SCG-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-Admitted-ToBeReleased-ModAckItem-Split-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeReleased-ModAckItem-Split-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeReleased-ModAckItem-Split-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- SENB MODIFICATION REQUEST REJECT

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SeNBModificationRequestReject ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SeNBModificationRequestReject-IEs}},

...

}

SeNBModificationRequestReject-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- SENB MODIFICATION REQUIRED

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SeNBModificationRequired ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SeNBModificationRequired-IEs}},

...

}

SeNBModificationRequired-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-SCGChangeIndication CRITICALITY ignore TYPE SCGChangeIndication PRESENCE optional}|

{ ID id-E-RABs-ToBeReleased-ModReqd CRITICALITY ignore TYPE E-RABs-ToBeReleased-ModReqd PRESENCE optional}|

{ ID id-SeNBtoMeNBContainer CRITICALITY ignore TYPE SeNBtoMeNBContainer PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

E-RABs-ToBeReleased-ModReqd ::= SEQUENCE (SIZE (1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeReleased-ModReqdItemIEs} }

E-RABs-ToBeReleased-ModReqdItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeReleased-ModReqdItem CRITICALITY ignore TYPE E-RABs-ToBeReleased-ModReqdItem PRESENCE mandatory },

...

}

E-RABs-ToBeReleased-ModReqdItem ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

cause Cause,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-ModReqdItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-ModReqdItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SENB MODIFICATION CONFIRM

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SeNBModificationConfirm ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SeNBModificationConfirm-IEs}},

...

}

SeNBModificationConfirm-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-MeNBtoSeNBContainer CRITICALITY ignore TYPE MeNBtoSeNBContainer PRESENCE optional}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SENB MODIFICATION REFUSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SeNBModificationRefuse ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SeNBModificationRefuse-IEs}},

...

}

SeNBModificationRefuse-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-MeNBtoSeNBContainer CRITICALITY ignore TYPE MeNBtoSeNBContainer PRESENCE optional}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SENB RELEASE REQUEST

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SeNBReleaseRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SeNBReleaseRequest-IEs}},

...

}

SeNBReleaseRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE optional}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE optional}|

{ ID id-E-RABs-ToBeReleased-List-RelReq CRITICALITY ignore TYPE E-RABs-ToBeReleased-List-RelReq PRESENCE optional}|

{ ID id-UE-ContextKeptIndicator CRITICALITY ignore TYPE UE-ContextKeptIndicator PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-MakeBeforeBreakIndicator CRITICALITY ignore TYPE MakeBeforeBreakIndicator PRESENCE optional},

...

}

E-RABs-ToBeReleased-List-RelReq ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeReleased-RelReqItemIEs} }

E-RABs-ToBeReleased-RelReqItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeReleased-RelReqItem CRITICALITY ignore TYPE E-RABs-ToBeReleased-RelReqItem PRESENCE mandatory},

...

}

E-RABs-ToBeReleased-RelReqItem ::= CHOICE {

sCG-Bearer E-RABs-ToBeReleased-RelReqItem-SCG-Bearer,

split-Bearer E-RABs-ToBeReleased-RelReqItem-Split-Bearer,

...

}

E-RABs-ToBeReleased-RelReqItem-SCG-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

uL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

dL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-RelReqItem-SCG-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-RelReqItem-SCG-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeReleased-RelReqItem-Split-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

dL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-RelReqItem-Split-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-RelReqItem-Split-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- SENB RELEASE REQUIRED

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SeNBReleaseRequired ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SeNBReleaseRequired-IEs}},

...

}

SeNBReleaseRequired-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SENB RELEASE CONFIRM

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SeNBReleaseConfirm ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SeNBReleaseConfirm-IEs}},

...

}

SeNBReleaseConfirm-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-E-RABs-ToBeReleased-List-RelConf CRITICALITY ignore TYPE E-RABs-ToBeReleased-List-RelConf PRESENCE optional}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

E-RABs-ToBeReleased-List-RelConf ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeReleased-RelConfItemIEs} }

E-RABs-ToBeReleased-RelConfItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeReleased-RelConfItem CRITICALITY ignore TYPE E-RABs-ToBeReleased-RelConfItem PRESENCE mandatory},

...

}

E-RABs-ToBeReleased-RelConfItem ::= CHOICE {

sCG-Bearer E-RABs-ToBeReleased-RelConfItem-SCG-Bearer,

split-Bearer E-RABs-ToBeReleased-RelConfItem-Split-Bearer,

...

}

E-RABs-ToBeReleased-RelConfItem-SCG-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

uL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

dL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-RelConfItem-SCG-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-RelConfItem-SCG-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeReleased-RelConfItem-Split-Bearer ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

dL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-RelConfItem-Split-BearerExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-RelConfItem-Split-BearerExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- SENB COUNTER CHECK REQUEST

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SeNBCounterCheckRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SeNBCounterCheckRequest-IEs}},

...

}

SeNBCounterCheckRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-E-RABs-SubjectToCounterCheck-List CRITICALITY ignore TYPE E-RABs-SubjectToCounterCheck-List PRESENCE mandatory}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

E-RABs-SubjectToCounterCheck-List ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-SubjectToCounterCheckItemIEs} }

E-RABs-SubjectToCounterCheckItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-SubjectToCounterCheckItem CRITICALITY ignore TYPE E-RABs-SubjectToCounterCheckItem PRESENCE mandatory},

...

}

E-RABs-SubjectToCounterCheckItem ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

uL-Count INTEGER (0..4294967295),

dL-Count INTEGER (0..4294967295),

iE-Extensions ProtocolExtensionContainer { {E-RABs-SubjectToCounterCheckItemExtIEs} } OPTIONAL,

...

}

E-RABs-SubjectToCounterCheckItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- X2 REMOVAL REQUEST

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2RemovalRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{X2RemovalRequest-IEs}},

...

}

X2RemovalRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-GlobalENB-ID CRITICALITY reject TYPE GlobalENB-ID PRESENCE mandatory}|

{ ID id-X2RemovalThreshold CRITICALITY reject TYPE X2BenefitValue PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- X2 REMOVAL RESPONSE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2RemovalResponse ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{X2RemovalResponse-IEs}},

...

}

X2RemovalResponse-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-GlobalENB-ID CRITICALITY reject TYPE GlobalENB-ID PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- X2 REMOVAL FAILURE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2RemovalFailure ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{X2RemovalFailure-IEs}},

...

}

X2RemovalFailure-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- RETRIEVE UE CONTEXT REQUEST

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

RetrieveUEContextRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ RetrieveUEContextRequest-IEs}},

...

}

RetrieveUEContextRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-New-eNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

-- Allocated at the new eNB.   
-- This IE contains an Extended eNB UE X2AP ID, which, together with the *New eNB UE X2AP ID* IE   
-- represents the eNB UE X2AP ID allocated at the new eNB.

{ ID id-resumeID CRITICALITY reject TYPE ResumeID PRESENCE mandatory}|

{ ID id-ShortMAC-I CRITICALITY reject TYPE ShortMAC-I PRESENCE mandatory}|

{ ID id-NewEUTRANCellIdentifier CRITICALITY reject TYPE EUTRANCellIdentifier PRESENCE mandatory}|

{ID id-FailureCellCRNTI CRITICALITY reject TYPE CRNTI PRESENCE optional}|

{ID id-FailureCellPCI CRITICALITY reject TYPE PCI PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- RETRIEVE UE CONTEXT RESPONSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

RetrieveUEContextResponse ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ RetrieveUEContextResponse-IEs}},

...

}

RetrieveUEContextResponse-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-New-eNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-New-eNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-Old-eNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Old-eNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-GUMMEI-ID CRITICALITY reject TYPE GUMMEI PRESENCE mandatory}|

{ ID id-UE-ContextInformationRetrieve CRITICALITY reject TYPE UE-ContextInformationRetrieve PRESENCE mandatory}|

{ ID id-TraceActivation CRITICALITY ignore TYPE TraceActivation PRESENCE optional}|

{ ID id-SRVCCOperationPossible CRITICALITY ignore TYPE SRVCCOperationPossible PRESENCE optional}|

{ ID id-Masked-IMEISV CRITICALITY ignore TYPE Masked-IMEISV PRESENCE optional}|

{ ID id-ExpectedUEBehaviour CRITICALITY ignore TYPE ExpectedUEBehaviour PRESENCE optional}|

{ ID id-ProSeAuthorized CRITICALITY ignore TYPE ProSeAuthorized PRESENCE optional}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-V2XServicesAuthorized CRITICALITY ignore TYPE V2XServicesAuthorized PRESENCE optional}|

{ ID id-AerialUEsubscriptionInformation CRITICALITY ignore TYPE AerialUEsubscriptionInformation PRESENCE optional}|

{ ID id-Subscription-Based-UE-DifferentiationInfo CRITICALITY ignore TYPE Subscription-Based-UE-DifferentiationInfo PRESENCE optional}|

{ ID id-NRV2XServicesAuthorized CRITICALITY ignore TYPE NRV2XServicesAuthorized PRESENCE optional}|

{ ID id-PC5QoSParameters CRITICALITY ignore TYPE PC5QoSParameters PRESENCE optional },

...

}

UE-ContextInformationRetrieve ::= SEQUENCE {

mME-UE-S1AP-ID UE-S1AP-ID,

uESecurityCapabilities UESecurityCapabilities,

aS-SecurityInformation AS-SecurityInformation,

uEaggregateMaximumBitRate UEAggregateMaximumBitRate,

subscriberProfileIDforRFP SubscriberProfileIDforRFP OPTIONAL,

e-RABs-ToBeSetup-ListRetrieve E-RABs-ToBeSetup-ListRetrieve,

rRC-Context RRC-Context,

handoverRestrictionList HandoverRestrictionList OPTIONAL,

locationReportingInformation LocationReportingInformation OPTIONAL,

managBasedMDTallowed ManagementBasedMDTallowed OPTIONAL,

managBasedMDTPLMNList MDTPLMNList OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {UE-ContextInformationRetrieve-ExtIEs} } OPTIONAL,

...

}

UE-ContextInformationRetrieve-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-UESidelinkAggregateMaximumBitRate CRITICALITY ignore EXTENSION UESidelinkAggregateMaximumBitRate PRESENCE optional }|

{ ID id-AdditionalRRMPriorityIndex CRITICALITY ignore EXTENSION AdditionalRRMPriorityIndex PRESENCE optional }|

{ ID id-EPCHandoverRestrictionListContainer CRITICALITY ignore EXTENSION EPCHandoverRestrictionListContainer PRESENCE optional }|

{ ID id-NRUESidelinkAggregateMaximumBitRate CRITICALITY ignore EXTENSION NRUESidelinkAggregateMaximumBitRate PRESENCE optional}|

{ ID id-UERadioCapabilityID CRITICALITY reject EXTENSION UERadioCapabilityID PRESENCE optional }|

{ ID id-IMSvoiceEPSfallbackfrom5G CRITICALITY ignore EXTENSION IMSvoiceEPSfallbackfrom5G PRESENCE optional },

...

}

E-RABs-ToBeSetup-ListRetrieve ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeSetupRetrieve-ItemIEs} }

E-RABs-ToBeSetupRetrieve-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeSetupRetrieve-Item CRITICALITY ignore TYPE E-RABs-ToBeSetupRetrieve-Item PRESENCE mandatory},

...

}

E-RABs-ToBeSetupRetrieve-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

e-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters,

bearerType BearerType OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeSetupRetrieve-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeSetupRetrieve-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-uL-GTPtunnelEndpoint CRITICALITY reject EXTENSION GTPtunnelEndpoint PRESENCE mandatory}|

{ ID id-dL-Forwarding CRITICALITY ignore EXTENSION DL-Forwarding PRESENCE optional}|

{ ID id-Ethernet-Type CRITICALITY ignore EXTENSION Ethernet-Type PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- RETRIEVE UE CONTEXT FAILURE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

RetrieveUEContextFailure ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ RetrieveUEContextFailure-IEs}},

...

}

RetrieveUEContextFailure-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-New-eNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-New-eNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SGNB ADDITION REQUEST

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBAdditionRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBAdditionRequest-IEs}},

...

}

SgNBAdditionRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-NRUESecurityCapabilities CRITICALITY reject TYPE NRUESecurityCapabilities PRESENCE mandatory}|

{ ID id-SgNBSecurityKey CRITICALITY reject TYPE SgNBSecurityKey PRESENCE mandatory}|

{ ID id-SgNBUEAggregateMaximumBitRate CRITICALITY reject TYPE UEAggregateMaximumBitRate PRESENCE mandatory}|

{ ID id-SelectedPLMN CRITICALITY ignore TYPE PLMN-Identity PRESENCE optional}|

{ ID id-HandoverRestrictionList CRITICALITY ignore TYPE HandoverRestrictionList PRESENCE optional}|

{ ID id-E-RABs-ToBeAdded-SgNBAddReqList CRITICALITY reject TYPE E-RABs-ToBeAdded-SgNBAddReqList PRESENCE mandatory}|

{ ID id-MeNBtoSgNBContainer CRITICALITY reject TYPE MeNBtoSgNBContainer PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE optional}|

{ ID id-ExpectedUEBehaviour CRITICALITY ignore TYPE ExpectedUEBehaviour PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-RequestedSplitSRBs CRITICALITY reject TYPE SplitSRBs PRESENCE optional}|

{ ID id-MeNBResourceCoordinationInformation CRITICALITY ignore TYPE MeNBResourceCoordinationInformation PRESENCE optional}|

{ ID id-SGNB-Addition-Trigger-Ind CRITICALITY reject TYPE SGNB-Addition-Trigger-Ind PRESENCE optional}|

{ ID id-SubscriberProfileIDforRFP CRITICALITY ignore TYPE SubscriberProfileIDforRFP PRESENCE optional}|

{ ID id-MeNBCell-ID CRITICALITY reject TYPE ECGI PRESENCE mandatory}|

{ ID id-DesiredActNotificationLevel CRITICALITY ignore TYPE DesiredActNotificationLevel PRESENCE optional}|

{ ID id-TraceActivation CRITICALITY ignore TYPE TraceActivation PRESENCE optional}|

{ ID id-LocationInformationSgNBReporting CRITICALITY ignore TYPE LocationInformationSgNBReporting PRESENCE optional}|

{ ID id-Masked-IMEISV CRITICALITY ignore TYPE Masked-IMEISV PRESENCE optional}|

{ ID id-AdditionalRRMPriorityIndex CRITICALITY ignore TYPE AdditionalRRMPriorityIndex PRESENCE optional}|

{ ID id-RequestedFastMCGRecoveryViaSRB3 CRITICALITY ignore TYPE RequestedFastMCGRecoveryViaSRB3 PRESENCE optional}|

{ ID id-UEContextReferenceatSourceNGRAN CRITICALITY ignore TYPE RAN-UE-NGAP-ID PRESENCE optional}|

{ ID id-ManagementBasedMDTallowed CRITICALITY ignore TYPE ManagementBasedMDTallowed PRESENCE optional }|

{ ID id-ManagementBasedMDTPLMNList CRITICALITY ignore TYPE MDTPLMNList PRESENCE optional }|

{ ID id-UERadioCapabilityID CRITICALITY reject TYPE UERadioCapabilityID PRESENCE optional}|

{ ID id-IABNodeIndication CRITICALITY reject TYPE IABNodeIndication PRESENCE optional}|

{ ID id-sourceNG-RAN-node-id CRITICALITY ignore TYPE Global-RAN-NODE-ID PRESENCE optional}|

{ ID id-CPAinformation-REQ CRITICALITY reject TYPE CPAinformation-REQ PRESENCE optional},

...

}

E-RABs-ToBeAdded-SgNBAddReqList ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeAdded-SgNBAddReq-ItemIEs} }

E-RABs-ToBeAdded-SgNBAddReq-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeAdded-SgNBAddReq-Item CRITICALITY reject TYPE E-RABs-ToBeAdded-SgNBAddReq-Item PRESENCE mandatory},

...

}

E-RABs-ToBeAdded-SgNBAddReq-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

drb-ID DRB-ID,

en-DC-ResourceConfiguration EN-DC-ResourceConfiguration,

resource-configuration CHOICE {

sgNBPDCPpresent E-RABs-ToBeAdded-SgNBAddReq-Item-SgNBPDCPpresent,

sgNBPDCPnotpresent E-RABs-ToBeAdded-SgNBAddReq-Item-SgNBPDCPnotpresent,

...

},

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeAdded-SgNBAddReq-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeAdded-SgNBAddReq-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeAdded-SgNBAddReq-Item-SgNBPDCPpresent ::= SEQUENCE {

full-E-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters,

max-MCG-admit-E-RAB-Level-QoS-Parameters GBR-QosInformation OPTIONAL,

-- This IE shall be present if MCG resource and SCG resources IEs in the EN-DC Resource Configuration IE are set to “present” and GBR QoS Information IE is present in Full E-RAB Level QoS Parameters IE --

dL-Forwarding DL-Forwarding OPTIONAL,

meNB-DL-GTP-TEIDatMCG GTPtunnelEndpoint OPTIONAL,

-- This IE shall be present if MCG resource IE in the EN-DC Resource Configuration IE is set to “present” --

s1-UL-GTPtunnelEndpoint GTPtunnelEndpoint,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeAdded-SgNBAddReq-Item-SgNBPDCPpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeAdded-SgNBAddReq-Item-SgNBPDCPpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-RLCMode-transferred CRITICALITY ignore EXTENSION RLCMode PRESENCE optional}|

{ ID id-BearerType CRITICALITY ignore EXTENSION BearerType PRESENCE optional}|

{ ID id-Ethernet-Type CRITICALITY ignore EXTENSION Ethernet-Type PRESENCE optional},

...

}

E-RABs-ToBeAdded-SgNBAddReq-Item-SgNBPDCPnotpresent ::= SEQUENCE {

requested-SCG-E-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters,

meNB-UL-GTP-TEIDatPDCP GTPtunnelEndpoint,

secondary-meNB-UL-GTP-TEIDatPDCP GTPtunnelEndpoint OPTIONAL,

rlc-Mode RLCMode,

uL-Configuration ULConfiguration OPTIONAL,

-- This IE shall be present if MCG resource and SCG resources IEs in the EN-DC Resource Configuration IE are set to “present” --

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeAdded-SgNBAddReq-Item-SgNBPDCPnotpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeAdded-SgNBAddReq-Item-SgNBPDCPnotpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-uLpDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional}|

{ ID id-dLPDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional}|

{ ID id-duplicationActivation CRITICALITY ignore EXTENSION DuplicationActivation PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SGNB ADDITION REQUEST ACKNOWLEDGE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBAdditionRequestAcknowledge ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBAdditionRequestAcknowledge-IEs}},

...

}

SgNBAdditionRequestAcknowledge-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-E-RABs-Admitted-ToBeAdded-SgNBAddReqAckList CRITICALITY ignore TYPE E-RABs-Admitted-ToBeAdded-SgNBAddReqAckList PRESENCE mandatory}|

{ ID id-E-RABs-NotAdmitted-List CRITICALITY ignore TYPE E-RAB-List PRESENCE optional}|

{ ID id-SgNBtoMeNBContainer CRITICALITY reject TYPE SgNBtoMeNBContainer PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-AdmittedSplitSRBs CRITICALITY reject TYPE SplitSRBs PRESENCE optional}|

{ ID id-SgNBResourceCoordinationInformation CRITICALITY ignore TYPE SgNBResourceCoordinationInformation PRESENCE optional}|

{ ID id-RRCConfigIndication CRITICALITY reject TYPE RRC-Config-Ind PRESENCE optional}|

{ ID id-LocationInformationSgNB CRITICALITY ignore TYPE LocationInformationSgNB PRESENCE optional}|

{ ID id-AvailableFastMCGRecoveryViaSRB3 CRITICALITY ignore TYPE AvailableFastMCGRecoveryViaSRB3 PRESENCE optional }|

{ ID id-DirectForwardingPathAvailability CRITICALITY ignore TYPE DirectForwardingPathAvailability PRESENCE optional }|

{ ID id-CPAinformation-ACK CRITICALITY ignore TYPE CPAinformation-ACK PRESENCE optional},

...

}

E-RABs-Admitted-ToBeAdded-SgNBAddReqAckList ::= SEQUENCE (SIZE (1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-Admitted-ToBeAdded-SgNBAddReqAck-ItemIEs} }

E-RABs-Admitted-ToBeAdded-SgNBAddReqAck-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-Admitted-ToBeAdded-SgNBAddReqAck-Item CRITICALITY ignore TYPE E-RABs-Admitted-ToBeAdded-SgNBAddReqAck-Item PRESENCE mandatory}

}

E-RABs-Admitted-ToBeAdded-SgNBAddReqAck-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

en-DC-ResourceConfiguration EN-DC-ResourceConfiguration,

resource-configuration CHOICE {

sgNBPDCPpresent E-RABs-Admitted-ToBeAdded-SgNBAddReqAck-Item-SgNBPDCPpresent,

sgNBPDCPnotpresent E-RABs-Admitted-ToBeAdded-SgNBAddReqAck-Item-SgNBPDCPnotpresent,

...

},

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeAdded-SgNBAddReqAck-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeAdded-SgNBAddReqAck-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-Admitted-ToBeAdded-SgNBAddReqAck-Item-SgNBPDCPpresent ::= SEQUENCE {

s1-DL-GTPtunnelEndpoint GTPtunnelEndpoint,

sgNB-UL-GTP-TEIDatPDCP GTPtunnelEndpoint OPTIONAL,

-- This IE shall be present if MCG resource IE in the EN-DC Resource Configuration IE is set to “present” --

rlc-Mode RLCMode OPTIONAL,

-- This IE shall be present if *MCG* resource IE in the *EN-DC Resource Configuration* IE is set to “present” --

dL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

uL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

mCG-E-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters OPTIONAL,

-- This IE shall be present if MCG resource and SCG resource IEs in the EN-DC Resource Configuration IE are set to “present” and the *GBR QoS Information* IE is present in the *Requested MCG E-RAB Level QoS Parameters* IE --

uL-Configuration ULConfiguration OPTIONAL,

-- This IE shall be present if MCG resource and SCG resources IEs in the EN-DC Resource Configuration IE are set to “present” --

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeAdded-SgNBAddReqAck-Item-SgNBPDCPpresentExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeAdded-SgNBAddReqAck-Item-SgNBPDCPpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-uLpDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional}|

{ ID id-dLPDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional},

...

}

E-RABs-Admitted-ToBeAdded-SgNBAddReqAck-Item-SgNBPDCPnotpresent ::= SEQUENCE {

sgNB-DL-GTP-TEIDatSCG GTPtunnelEndpoint,

secondary-sgNB-DL-GTP-TEIDatSCG GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeAdded-SgNBAddReqAck-Item-SgNBPDCPnotpresentExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeAdded-SgNBAddReqAck-Item-SgNBPDCPnotpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-lCID CRITICALITY ignore EXTENSION LCID PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- SGNB ADDITION REQUEST REJECT

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBAdditionRequestReject ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBAdditionRequestReject-IEs}},

...

}

SgNBAdditionRequestReject-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE optional}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SGNB RECONFIGURATION COMPLETE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBReconfigurationComplete ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBReconfigurationComplete-IEs}},

...

}

SgNBReconfigurationComplete-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-ResponseInformationSgNBReconfComp CRITICALITY ignore TYPE ResponseInformationSgNBReconfComp PRESENCE mandatory}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

ResponseInformationSgNBReconfComp ::= CHOICE {

success-SgNBReconfComp ResponseInformationSgNBReconfComp-SuccessItem,

reject-by-MeNB-SgNBReconfComp ResponseInformationSgNBReconfComp-RejectByMeNBItem,

...

}

ResponseInformationSgNBReconfComp-SuccessItem ::= SEQUENCE {

meNBtoSgNBContainer MeNBtoSgNBContainer OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {ResponseInformationSgNBReconfComp-SuccessItemExtIEs} } OPTIONAL,

...

}

ResponseInformationSgNBReconfComp-SuccessItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ResponseInformationSgNBReconfComp-RejectByMeNBItem ::= SEQUENCE {

cause Cause,

iE-Extensions ProtocolExtensionContainer { {ResponseInformationSgNBReconfComp-RejectByMeNBItemExtIEs} } OPTIONAL,

...

}

ResponseInformationSgNBReconfComp-RejectByMeNBItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SGNB MODIFICATION REQUEST

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBModificationRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ SgNBModificationRequest-IEs}},

...

}

SgNBModificationRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-SelectedPLMN CRITICALITY ignore TYPE PLMN-Identity PRESENCE optional}|

{ ID id-HandoverRestrictionList CRITICALITY ignore TYPE HandoverRestrictionList PRESENCE optional}|

{ ID id-SCGConfigurationQuery CRITICALITY ignore TYPE SCGConfigurationQuery PRESENCE optional}|

{ ID id-UE-ContextInformation-SgNBModReq CRITICALITY reject TYPE UE-ContextInformation-SgNBModReq PRESENCE optional}|

{ ID id-MeNBtoSgNBContainer CRITICALITY reject TYPE MeNBtoSgNBContainer PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-MeNBResourceCoordinationInformation CRITICALITY ignore TYPE MeNBResourceCoordinationInformation PRESENCE optional}|

{ ID id-RequestedSplitSRBs CRITICALITY ignore TYPE SplitSRBs PRESENCE optional}|

{ ID id-RequestedSplitSRBsrelease CRITICALITY ignore TYPE SplitSRBs PRESENCE optional}|

{ ID id-DesiredActNotificationLevel CRITICALITY ignore TYPE DesiredActNotificationLevel PRESENCE optional}|

{ ID id-LocationInformationSgNBReporting CRITICALITY ignore TYPE LocationInformationSgNBReporting PRESENCE optional}|

{ ID id-MeNBCell-ID CRITICALITY ignore TYPE ECGI PRESENCE optional}|

{ ID id-RequestedFastMCGRecoveryViaSRB3 CRITICALITY ignore TYPE RequestedFastMCGRecoveryViaSRB3 PRESENCE optional}|

{ ID id-RequestedFastMCGRecoveryViaSRB3Release CRITICALITY ignore TYPE RequestedFastMCGRecoveryViaSRB3Release PRESENCE optional}|

{ ID id-SNtriggered CRITICALITY ignore TYPE SNtriggered PRESENCE optional}|

{ ID id-IABNodeIndication CRITICALITY reject TYPE IABNodeIndication PRESENCE optional}|

{ ID id-CPAinformation-MOD CRITICALITY reject TYPE CPAinformation-MOD PRESENCE optional}|

{ ID id-CPCupdate-MOD CRITICALITY ignore TYPE CPCupdate-MOD PRESENCE optional},

...

}

UE-ContextInformation-SgNBModReq ::= SEQUENCE {

nRUE-SecurityCapabilities NRUESecurityCapabilities OPTIONAL,

sgNB-SecurityKey SgNBSecurityKey OPTIONAL,

sgNBUEAggregateMaximumBitRate UEAggregateMaximumBitRate OPTIONAL,

e-RABs-ToBeAdded E-RABs-ToBeAdded-SgNBModReq-List OPTIONAL,

e-RABs-ToBeModified E-RABs-ToBeModified-SgNBModReq-List OPTIONAL,

e-RABs-ToBeReleased E-RABs-ToBeReleased-SgNBModReq-List OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {UE-ContextInformationSgNBModReqExtIEs} } OPTIONAL,

...

}

UE-ContextInformationSgNBModReqExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-SubscriberProfileIDforRFP CRITICALITY ignore EXTENSION SubscriberProfileIDforRFP PRESENCE optional}|

{ ID id-AdditionalRRMPriorityIndex CRITICALITY ignore EXTENSION AdditionalRRMPriorityIndex PRESENCE optional}|

{ID id-LowerLayerPresenceStatusChange CRITICALITY ignore EXTENSION LowerLayerPresenceStatusChange PRESENCE optional},

...

}

E-RABs-ToBeAdded-SgNBModReq-List ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeAdded-SgNBModReq-ItemIEs} }

E-RABs-ToBeAdded-SgNBModReq-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeAdded-SgNBModReq-Item CRITICALITY ignore TYPE E-RABs-ToBeAdded-SgNBModReq-Item PRESENCE mandatory},

...

}

E-RABs-ToBeAdded-SgNBModReq-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

drb-ID DRB-ID,

en-DC-ResourceConfiguration EN-DC-ResourceConfiguration,

resource-configuration CHOICE {

sgNBPDCPpresent E-RABs-ToBeAdded-SgNBModReq-Item-SgNBPDCPpresent,

sgNBPDCPnotpresent E-RABs-ToBeAdded-SgNBModReq-Item-SgNBPDCPnotpresent,

...

},

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeAdded-SgNBModReq-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeAdded-SgNBModReq-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeAdded-SgNBModReq-Item-SgNBPDCPpresent ::= SEQUENCE {

full-E-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters,

max-MN-admit-E-RAB-Level-QoS-Parameters GBR-QosInformation OPTIONAL,

-- This IE shall be present if MCG resource and SCG resources IEs in the EN-DC Resource Configuration IE are set to “present” and GBR QoS Information IE is present in Full E-RAB Level QoS Parameters IE --

dL-Forwarding DL-Forwarding OPTIONAL,

meNB-DL-GTP-TEIDatMCG GTPtunnelEndpoint OPTIONAL,

-- This IE shall be present if MCG resource IE in the EN-DC Resource Configuration IE is set to “present” --

s1-UL-GTPtunnelEndpoint GTPtunnelEndpoint,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeAdded-SgNBModReq-Item-SgNBPDCPpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeAdded-SgNBModReq-Item-SgNBPDCPpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-RLCMode-transferred CRITICALITY ignore EXTENSION RLCMode PRESENCE optional}|

{ ID id-BearerType CRITICALITY ignore EXTENSION BearerType PRESENCE optional}|

{ ID id-Ethernet-Type CRITICALITY ignore EXTENSION Ethernet-Type PRESENCE optional},

...

}

E-RABs-ToBeAdded-SgNBModReq-Item-SgNBPDCPnotpresent ::= SEQUENCE {

requested-SCG-E-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters,

meNB-UL-GTP-TEIDatPDCP GTPtunnelEndpoint,

secondary-meNB-UL-GTP-TEIDatPDCP GTPtunnelEndpoint OPTIONAL,

rlc-Mode RLCMode,

uL-Configuration ULConfiguration OPTIONAL,

-- This IE shall be present if MCG resource and SCG resources IEs in the EN-DC Resource Configuration IE are set to “present” --

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeAdded-SgNBModReq-Item-SgNBPDCPnotpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeAdded-SgNBModReq-Item-SgNBPDCPnotpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-uLpDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional}|

{ ID id-dLPDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional}|

{ ID id-duplicationActivation CRITICALITY ignore EXTENSION DuplicationActivation PRESENCE optional},

...

}

E-RABs-ToBeModified-SgNBModReq-List ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeModified-SgNBModReq-ItemIEs} }

E-RABs-ToBeModified-SgNBModReq-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeModified-SgNBModReq-Item CRITICALITY ignore TYPE E-RABs-ToBeModified-SgNBModReq-Item PRESENCE mandatory},

...

}

E-RABs-ToBeModified-SgNBModReq-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

en-DC-ResourceConfiguration EN-DC-ResourceConfiguration,

resource-configuration CHOICE {

sgNBPDCPpresent E-RABs-ToBeModified-SgNBModReq-Item-SgNBPDCPpresent,

sgNBPDCPnotpresent E-RABs-ToBeModified-SgNBModReq-Item-SgNBPDCPnotpresent,

...

},

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeModified-SgNBModReq-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeModified-SgNBModReq-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeModified-SgNBModReq-Item-SgNBPDCPpresent ::= SEQUENCE {

full-E-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters OPTIONAL,

max-MN-admit-E-RAB-Level-QoS-Parameters GBR-QosInformation OPTIONAL,

meNB-DL-GTP-TEIDatMCG GTPtunnelEndpoint OPTIONAL,

s1-UL-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeModified-SgNBModReq-Item-SgNBPDCPpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeModified-SgNBModReq-Item-SgNBPDCPpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-RLC-Status CRITICALITY ignore EXTENSION RLC-Status PRESENCE optional },

...

}

E-RABs-ToBeModified-SgNBModReq-Item-SgNBPDCPnotpresent ::= SEQUENCE {

requested-SCG-E-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters OPTIONAL,

meNB-UL-GTP-TEIDatPDCP GTPtunnelEndpoint OPTIONAL,

uL-Configuration ULConfiguration OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeModified-SgNBModReq-Item-SgNBPDCPnotpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeModified-SgNBModReq-Item-SgNBPDCPnotpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-uLpDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional}|

{ ID id-dLPDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional}|

{ ID id-secondarymeNBULGTPTEIDatPDCP CRITICALITY ignore EXTENSION GTPtunnelEndpoint PRESENCE optional},

...

}

E-RABs-ToBeReleased-SgNBModReq-List ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeReleased-SgNBModReq-ItemIEs} }

E-RABs-ToBeReleased-SgNBModReq-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeReleased-SgNBModReq-Item CRITICALITY ignore TYPE E-RABs-ToBeReleased-SgNBModReq-Item PRESENCE mandatory},

...

}

E-RABs-ToBeReleased-SgNBModReq-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

en-DC-ResourceConfiguration EN-DC-ResourceConfiguration,

resource-configuration CHOICE {

sgNBPDCPpresent E-RABs-ToBeReleased-SgNBModReq-Item-SgNBPDCPpresent,

sgNBPDCPnotpresent E-RABs-ToBeReleased-SgNBModReq-Item-SgNBPDCPnotpresent,

...

},

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-SgNBModReq-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-SgNBModReq-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeReleased-SgNBModReq-Item-SgNBPDCPpresent ::= SEQUENCE {

dL-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

uL-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-SgNBModReq-Item-SgNBPDCPpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-SgNBModReq-Item-SgNBPDCPpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeReleased-SgNBModReq-Item-SgNBPDCPnotpresent ::= SEQUENCE {

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-SgNBModReq-Item-SgNBPDCPnotpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-SgNBModReq-Item-SgNBPDCPnotpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SGNB MODIFICATION REQUEST ACKNOWLEDGE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBModificationRequestAcknowledge ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBModificationRequestAcknowledge-IEs}},

...

}

SgNBModificationRequestAcknowledge-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY ignore TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-E-RABs-Admitted-ToBeAdded-SgNBModAckList CRITICALITY ignore TYPE E-RABs-Admitted-ToBeAdded-SgNBModAckList PRESENCE optional}|

{ ID id-E-RABs-Admitted-ToBeModified-SgNBModAckList CRITICALITY ignore TYPE E-RABs-Admitted-ToBeModified-SgNBModAckList PRESENCE optional}|

{ ID id-E-RABs-Admitted-ToBeReleased-SgNBModAckList CRITICALITY ignore TYPE E-RABs-Admitted-ToBeReleased-SgNBModAckList PRESENCE optional}|

{ ID id-E-RABs-NotAdmitted-List CRITICALITY ignore TYPE E-RAB-List PRESENCE optional}|

{ ID id-SgNBtoMeNBContainer CRITICALITY ignore TYPE SgNBtoMeNBContainer PRESENCE optional}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-SgNBResourceCoordinationInformation CRITICALITY ignore TYPE SgNBResourceCoordinationInformation PRESENCE optional}|

{ ID id-AdmittedSplitSRBs CRITICALITY ignore TYPE SplitSRBs PRESENCE optional}|

{ ID id-AdmittedSplitSRBsrelease CRITICALITY ignore TYPE SplitSRBs PRESENCE optional}|

{ ID id-RRCConfigIndication CRITICALITY reject TYPE RRC-Config-Ind PRESENCE optional}|

{ ID id-LocationInformationSgNB CRITICALITY ignore TYPE LocationInformationSgNB PRESENCE optional}|

{ ID id-AvailableFastMCGRecoveryViaSRB3 CRITICALITY ignore TYPE AvailableFastMCGRecoveryViaSRB3 PRESENCE optional}|

{ ID id-ReleaseFastMCGRecoveryViaSRB3 CRITICALITY ignore TYPE ReleaseFastMCGRecoveryViaSRB3 PRESENCE optional} |

{ ID id-CPCupdate-ACK CRITICALITY reject TYPE CPCupdate-ACK PRESENCE optional},

...

}

E-RABs-Admitted-ToBeAdded-SgNBModAckList ::= SEQUENCE (SIZE (1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-Admitted-ToBeAdded-SgNBModAck-ItemIEs} }

E-RABs-Admitted-ToBeAdded-SgNBModAck-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-Admitted-ToBeAdded-SgNBModAck-Item CRITICALITY ignore TYPE E-RABs-Admitted-ToBeAdded-SgNBModAck-Item PRESENCE mandatory}

}

E-RABs-Admitted-ToBeAdded-SgNBModAck-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

en-DC-ResourceConfiguration EN-DC-ResourceConfiguration,

resource-configuration CHOICE {

sgNBPDCPpresent E-RABs-Admitted-ToBeAdded-SgNBModAck-Item-SgNBPDCPpresent,

sgNBPDCPnotpresent E-RABs-Admitted-ToBeAdded-SgNBModAck-Item-SgNBPDCPnotpresent,

...

},

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeAdded-SgNBModAck-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeAdded-SgNBModAck-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-Admitted-ToBeAdded-SgNBModAck-Item-SgNBPDCPpresent ::= SEQUENCE {

s1-DL-GTPtunnelEndpoint GTPtunnelEndpoint,

sgNB-UL-GTP-TEIDatPDCP GTPtunnelEndpoint OPTIONAL,

-- This IE shall be present if *MCG* resource IE in the *EN-DC Resource Configuration* IE are set to “present” --

rlc-Mode RLCMode OPTIONAL,

-- This IE shall be present if *MCG* resource IE in the *EN-DC Resource Configuration* IE are set to “present” --

dL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

uL-Forwarding-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

mCG-E-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters OPTIONAL,

-- This IE shall be present if *MCG resource* and *SCG resource* IEs in the *EN-DC Resource Configuration* IE are set to “present” and the *GBR QoS Information* IE is present in the *Requested MCG E-RAB Level QoS Parameters* IE --

uL-Configuration ULConfiguration OPTIONAL,

-- This IE shall be present if *MCG* resource and *SCG resources* IEs in the *EN-DC Resource Configuration* IE are set to “present” --

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeAdded-SgNBModAck-Item-SgNBPDCPpresentExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeAdded-SgNBModAck-Item-SgNBPDCPpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-uLpDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional}|

{ ID id-dLPDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional},

...

}

E-RABs-Admitted-ToBeAdded-SgNBModAck-Item-SgNBPDCPnotpresent ::= SEQUENCE {

sgNB-DL-GTP-TEIDatSCG GTPtunnelEndpoint,

secondary-sgNB-DL-GTP-TEIDatSCG GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeAdded-SgNBModAck-Item-SgNBPDCPnotpresentExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeAdded-SgNBModAck-Item-SgNBPDCPnotpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ID id-lCID CRITICALITY ignore EXTENSION LCID PRESENCE optional},

...

}

E-RABs-Admitted-ToBeModified-SgNBModAckList ::= SEQUENCE (SIZE (1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-Admitted-ToBeModified-SgNBModAck-ItemIEs} }

E-RABs-Admitted-ToBeModified-SgNBModAck-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-Admitted-ToBeModified-SgNBModAck-Item CRITICALITY ignore TYPE E-RABs-Admitted-ToBeModified-SgNBModAck-Item PRESENCE mandatory}

}

E-RABs-Admitted-ToBeModified-SgNBModAck-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

en-DC-ResourceConfiguration EN-DC-ResourceConfiguration,

resource-configuration CHOICE {

sgNBPDCPpresent E-RABs-Admitted-ToBeModified-SgNBModAck-Item-SgNBPDCPpresent,

sgNBPDCPnotpresent E-RABs-Admitted-ToBeModified-SgNBModAck-Item-SgNBPDCPnotpresent,

...

},

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeAdded-SgNBModAck-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeAdded-SgNBModAck-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-Admitted-ToBeModified-SgNBModAck-Item-SgNBPDCPpresent ::= SEQUENCE {

s1-DL-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

sgNB-UL-GTP-TEIDatPDCP GTPtunnelEndpoint OPTIONAL,

mCG-E-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters OPTIONAL,

uL-Configuration ULConfiguration OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeModified-SgNBModAck-Item-SgNBPDCPpresentExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeModified-SgNBModAck-Item-SgNBPDCPpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-uLpDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional}|

{ ID id-dLPDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional},

...

}

E-RABs-Admitted-ToBeModified-SgNBModAck-Item-SgNBPDCPnotpresent ::= SEQUENCE {

sgNB-DL-GTP-TEIDatSCG GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeModified-SgNBModAck-Item-SgNBPDCPnotpresentExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeModified-SgNBModAck-Item-SgNBPDCPnotpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-secondarysgNBDLGTPTEIDatPDCP CRITICALITY ignore EXTENSION GTPtunnelEndpoint PRESENCE optional}|

{ ID id-RLC-Status CRITICALITY ignore EXTENSION RLC-Status PRESENCE optional },

...

}

E-RABs-Admitted-ToBeReleased-SgNBModAckList ::= SEQUENCE (SIZE (1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-Admitted-ToBeReleased-SgNBModAck-ItemIEs} }

E-RABs-Admitted-ToBeReleased-SgNBModAck-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-Admitted-ToBeReleased-SgNBModAck-Item CRITICALITY ignore TYPE E-RABs-Admitted-ToReleased-SgNBModAck-Item PRESENCE mandatory}

}

E-RABs-Admitted-ToReleased-SgNBModAck-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

en-DC-ResourceConfiguration EN-DC-ResourceConfiguration,

resource-configuration CHOICE {

sgNBPDCPpresent E-RABs-Admitted-ToBeReleased-SgNBModAck-Item-SgNBPDCPpresent,

sgNBPDCPnotpresent E-RABs-Admitted-ToBeReleased-SgNBModAck-Item-SgNBPDCPnotpresent,

...

},

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-SgNBModAck-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-SgNBModAck-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-Admitted-ToBeReleased-SgNBModAck-Item-SgNBPDCPpresent ::= SEQUENCE {

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeReleased-SgNBModAck-Item-SgNBPDCPpresentExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeReleased-SgNBModAck-Item-SgNBPDCPpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-Admitted-ToBeReleased-SgNBModAck-Item-SgNBPDCPnotpresent ::= SEQUENCE {

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeReleased-SgNBModAck-Item-SgNBPDCPnotpresentExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeReleased-SgNBModAck-Item-SgNBPDCPnotpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SGNB MODIFICATION REQUEST REJECT

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBModificationRequestReject ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBModificationRequestReject-IEs}},

...

}

SgNBModificationRequestReject-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY ignore TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SGNB MODIFICATION REQUIRED

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBModificationRequired ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBModificationRequired-IEs}},

...

}

SgNBModificationRequired-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-PDCPChangeIndication CRITICALITY ignore TYPE PDCPChangeIndication PRESENCE optional}|

{ ID id-E-RABs-ToBeReleased-SgNBModReqdList CRITICALITY ignore TYPE E-RABs-ToBeReleased-SgNBModReqdList PRESENCE optional}|

{ ID id-SgNBtoMeNBContainer CRITICALITY ignore TYPE SgNBtoMeNBContainer PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-E-RABs-ToBeModified-SgNBModReqdList CRITICALITY ignore TYPE E-RABs-ToBeModified-SgNBModReqdList PRESENCE optional}|

{ ID id-SgNBResourceCoordinationInformation CRITICALITY ignore TYPE SgNBResourceCoordinationInformation PRESENCE optional}|

{ ID id-RRCConfigIndication CRITICALITY reject TYPE RRC-Config-Ind PRESENCE optional}|

{ ID id-LocationInformationSgNB CRITICALITY ignore TYPE LocationInformationSgNB PRESENCE optional}|

{ ID id-CPAinformation-REQD CRITICALITY ignore TYPE CPAinformation-REQD PRESENCE optional},

...

}

E-RABs-ToBeReleased-SgNBModReqdList ::= SEQUENCE (SIZE (1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeReleased-SgNBModReqd-ItemIEs} }

E-RABs-ToBeReleased-SgNBModReqd-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeReleased-SgNBModReqd-Item CRITICALITY ignore TYPE E-RABs-ToBeReleased-SgNBModReqd-Item PRESENCE mandatory },

...

}

E-RABs-ToBeReleased-SgNBModReqd-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

cause Cause,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-SgNBModReqd-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-SgNBModReqd-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-RLCMode-transferred CRITICALITY ignore EXTENSION RLCMode PRESENCE optional},

...

}

E-RABs-ToBeModified-SgNBModReqdList ::= SEQUENCE (SIZE (1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeModified-SgNBModReqd-ItemIEs} }

E-RABs-ToBeModified-SgNBModReqd-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeModified-SgNBModReqd-Item CRITICALITY ignore TYPE E-RABs-ToBeModified-SgNBModReqd-Item PRESENCE mandatory },

...

}

E-RABs-ToBeModified-SgNBModReqd-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

en-DC-ResourceConfiguration EN-DC-ResourceConfiguration,

resource-configuration CHOICE {

sgNBPDCPpresent E-RABs-ToBeModified-SgNBModReqd-Item-SgNBPDCPpresent,

sgNBPDCPnotpresent E-RABs-ToBeModified-SgNBModReqd-Item-SgNBPDCPnotpresent,

...

},

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeModified-SgNBModReqd-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeModified-SgNBModReqd-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeModified-SgNBModReqd-Item-SgNBPDCPpresent ::= SEQUENCE {

requested-MCG-E-RAB-Level-QoS-Parameters E-RAB-Level-QoS-Parameters OPTIONAL,

uL-Configuration ULConfiguration OPTIONAL,

sgNB-UL-GTP-TEIDatPDCP GTPtunnelEndpoint OPTIONAL,

s1-DL-GTP-TEIDatSgNB GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeModified-SgNBModReqd-Item-SgNBPDCPpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeModified-SgNBModReqd-Item-SgNBPDCPpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-uLpDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional}|

{ ID id-dLPDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional}|

{ ID id-new-drb-ID-req CRITICALITY ignore EXTENSION NewDRBIDrequest PRESENCE optional},

...

}

E-RABs-ToBeModified-SgNBModReqd-Item-SgNBPDCPnotpresent ::= SEQUENCE {

sgNB-DL-GTP-TEIDatSCG GTPtunnelEndpoint OPTIONAL,

secondary-sgNB-DL-GTP-TEIDatSCG GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeModified-SgNBModReqd-Item-SgNBPDCPnotpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeModified-SgNBModReqd-Item-SgNBPDCPnotpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-RLC-Status CRITICALITY ignore EXTENSION RLC-Status PRESENCE optional}|

{ ID id-lCID CRITICALITY ignore EXTENSION LCID PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SGNB MODIFICATION CONFIRM

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBModificationConfirm ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBModificationConfirm-IEs}},

...

}

SgNBModificationConfirm-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY ignore TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-E-RABs-AdmittedToBeModified-SgNBModConfList CRITICALITY ignore TYPE E-RABs-AdmittedToBeModified-SgNBModConfList PRESENCE optional}|

{ ID id-MeNBtoSgNBContainer CRITICALITY ignore TYPE MeNBtoSgNBContainer PRESENCE optional}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-MeNBResourceCoordinationInformation CRITICALITY ignore TYPE MeNBResourceCoordinationInformation PRESENCE optional},

...

}

E-RABs-AdmittedToBeModified-SgNBModConfList ::= SEQUENCE (SIZE (1..maxnoofBearers)) OF ProtocolIE-Single-Container

{ {E-RABs-AdmittedToBeModified-SgNBModConf-ItemIEs} }

E-RABs-AdmittedToBeModified-SgNBModConf-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-AdmittedToBeModified-SgNBModConf-Item CRITICALITY ignore TYPE E-RABs-AdmittedToBeModified-SgNBModConf-Item PRESENCE mandatory },

...

}

E-RABs-AdmittedToBeModified-SgNBModConf-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

en-DC-ResourceConfiguration EN-DC-ResourceConfiguration,

resource-configuration CHOICE {

sgNBPDCPpresent E-RABs-AdmittedToBeModified-SgNBModConf-Item-SgNBPDCPpresent,

sgNBPDCPnotpresent E-RABs-AdmittedToBeModified-SgNBModConf-Item-SgNBPDCPnotpresent,

...

},

iE-Extensions ProtocolExtensionContainer { {E-RABs-AdmittedToBeModified-SgNBModConf-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-AdmittedToBeModified-SgNBModConf-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-AdmittedToBeModified-SgNBModConf-Item-SgNBPDCPpresent ::= SEQUENCE {

iE-Extensions ProtocolExtensionContainer { {E-RABs-AdmittedToBeModified-SgNBModConf-Item-SgNBPDCPpresentExtIEs} } OPTIONAL,

...

}

E-RABs-AdmittedToBeModified-SgNBModConf-Item-SgNBPDCPpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-AdmittedToBeModified-SgNBModConf-Item-SgNBPDCPnotpresent ::= SEQUENCE {

secondary-meNB-UL-GTP-TEIDatPDCP GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-AdmittedToBeModified-SgNBModConf-Item-SgNBPDCPnotpresentExtIEs} } OPTIONAL,

...

}

E-RABs-AdmittedToBeModified-SgNBModConf-Item-SgNBPDCPnotpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-uLpDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional}|

{ ID id-dLPDCPSnLength CRITICALITY ignore EXTENSION PDCPSnLength PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SGNB MODIFICATION REFUSE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBModificationRefuse ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBModificationRefuse-IEs}},

...

}

SgNBModificationRefuse-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY ignore TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-MeNBtoSgNBContainer CRITICALITY ignore TYPE MeNBtoSgNBContainer PRESENCE optional}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SGNB RELEASE REQUEST

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBReleaseRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBReleaseRequest-IEs}},

...

}

SgNBReleaseRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE optional}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-E-RABs-ToBeReleased-SgNBRelReqList CRITICALITY ignore TYPE E-RABs-ToBeReleased-SgNBRelReqList PRESENCE optional}|

{ ID id-UE-ContextKeptIndicator CRITICALITY ignore TYPE UE-ContextKeptIndicator PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-MeNBtoSgNBContainer CRITICALITY reject TYPE MeNBtoSgNBContainer PRESENCE optional}|

{ ID id-ERABs-transferred-to-MeNB CRITICALITY ignore TYPE E-RAB-List PRESENCE optional},

...

}

E-RABs-ToBeReleased-SgNBRelReqList ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeReleased-SgNBRelReq-ItemIEs} }

E-RABs-ToBeReleased-SgNBRelReq-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeReleased-SgNBRelReq-Item CRITICALITY ignore TYPE E-RABs-ToBeReleased-SgNBRelReq-Item PRESENCE mandatory},

...

}

E-RABs-ToBeReleased-SgNBRelReq-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

en-DC-ResourceConfiguration EN-DC-ResourceConfiguration,

resource-configuration CHOICE {

sgNBPDCPpresent E-RABs-ToBeReleased-SgNBRelReq-Item-SgNBPDCPpresent,

sgNBPDCPnotpresent E-RABs-ToBeReleased-SgNBRelReq-Item-SgNBPDCPnotpresent,

...

},

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-SgNBRelReq-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-SgNBRelReq-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeReleased-SgNBRelReq-Item-SgNBPDCPpresent ::= SEQUENCE {

uL-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

dL-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-SgNBRelReq-Item-SgNBPDCPpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-SgNBRelReq-Item-SgNBPDCPpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeReleased-SgNBRelReq-Item-SgNBPDCPnotpresent ::= SEQUENCE {

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-SgNBRelReq-Item-SgNBPDCPnotpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-SgNBRelReq-Item-SgNBPDCPnotpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

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--

-- SGNB RELEASE REQUEST ACKNOWLEDGE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBReleaseRequestAcknowledge ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBReleaseRequestAcknowledge-IEs}},

...

}

SgNBReleaseRequestAcknowledge-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY ignore TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional }|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional }|

{ ID id-E-RABs-Admitted-ToBeReleased-SgNBRelReqAckList CRITICALITY ignore TYPE E-RABs-Admitted-ToBeReleased-SgNBRelReqAckList PRESENCE optional },

...

}

E-RABs-Admitted-ToBeReleased-SgNBRelReqAckList ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF

ProtocolIE-Single-Container { {E-RABs-Admitted-ToBeReleased-SgNBRelReqAck-ItemIEs} }

E-RABs-Admitted-ToBeReleased-SgNBRelReqAck-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-Admitted-ToBeReleased-SgNBRelReqAck-Item CRITICALITY ignore TYPE E-RABs-Admitted-ToBeReleased-SgNBRelReqAck-Item PRESENCE mandatory},

...

}

E-RABs-Admitted-ToBeReleased-SgNBRelReqAck-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

rlc-Mode-transferred RLCMode,

iE-Extensions ProtocolExtensionContainer { {E-RABs-Admitted-ToBeReleased-SgNBRelReqAck-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-Admitted-ToBeReleased-SgNBRelReqAck-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SGNB RELEASE REQUEST REJECT

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBReleaseRequestReject ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBReleaseRequestReject-IEs}},

...

}

SgNBReleaseRequestReject-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY ignore TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- SGNB RELEASE REQUIRED

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBReleaseRequired ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBReleaseRequired-IEs}},

...

}

SgNBReleaseRequired-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional }|

{ ID id-E-RABs-ToBeReleased-SgNBRelReqdList CRITICALITY ignore TYPE E-RABs-ToBeReleased-SgNBRelReqdList PRESENCE optional }|

{ ID id-SgNBtoMeNBContainer CRITICALITY ignore TYPE SgNBtoMeNBContainer PRESENCE optional },

...

}

E-RABs-ToBeReleased-SgNBRelReqdList ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeReleased-SgNBRelReqd-ItemIEs} }

E-RABs-ToBeReleased-SgNBRelReqd-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeReleased-SgNBRelReqd-Item CRITICALITY ignore TYPE E-RABs-ToBeReleased-SgNBRelReqd-Item PRESENCE mandatory},

...

}

E-RABs-ToBeReleased-SgNBRelReqd-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

rlc-Mode-transferred RLCMode,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-SgNBRelReqd-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-SgNBRelReqd-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

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-- SGNB RELEASE CONFIRM

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBReleaseConfirm ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBReleaseConfirm-IEs}},

...

}

SgNBReleaseConfirm-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY ignore TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-E-RABs-ToBeReleased-SgNBRelConfList CRITICALITY ignore TYPE E-RABs-ToBeReleased-SgNBRelConfList PRESENCE optional}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

E-RABs-ToBeReleased-SgNBRelConfList ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeReleased-SgNBRelConf-ItemIEs} }

E-RABs-ToBeReleased-SgNBRelConf-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeReleased-SgNBRelConf-Item CRITICALITY ignore TYPE E-RABs-ToBeReleased-SgNBRelConf-Item PRESENCE mandatory},

...

}

E-RABs-ToBeReleased-SgNBRelConf-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

en-DC-ResourceConfiguration EN-DC-ResourceConfiguration,

resource-configuration CHOICE {

sgNBPDCPpresent E-RABs-ToBeReleased-SgNBRelConf-Item-SgNBPDCPpresent,

sgNBPDCPnotpresent E-RABs-ToBeReleased-SgNBRelConf-Item-SgNBPDCPnotpresent,

...

},

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-SgNBRelConf-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-SgNBRelConf-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeReleased-SgNBRelConf-Item-SgNBPDCPpresent ::= SEQUENCE {

uL-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

dL-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-SgNBRelConf-Item-SgNBPDCPpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-SgNBRelConf-Item-SgNBPDCPpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeReleased-SgNBRelConf-Item-SgNBPDCPnotpresent ::= SEQUENCE {

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-SgNBRelConf-Item-SgNBPDCPnotpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-SgNBRelConf-Item-SgNBPDCPnotpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

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-- SGNB COUNTER CHECK REQUEST

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBCounterCheckRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBCounterCheckRequest-IEs}},

...

}

SgNBCounterCheckRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-E-RABs-SubjectToSgNBCounterCheck-List CRITICALITY ignore TYPE E-RABs-SubjectToSgNBCounterCheck-List PRESENCE mandatory}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

E-RABs-SubjectToSgNBCounterCheck-List ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-SubjectToSgNBCounterCheck-ItemIEs} }

E-RABs-SubjectToSgNBCounterCheck-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-SubjectToSgNBCounterCheck-Item CRITICALITY ignore TYPE E-RABs-SubjectToSgNBCounterCheck-Item PRESENCE mandatory},

...

}

E-RABs-SubjectToSgNBCounterCheck-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

uL-Count INTEGER (0..4294967295),

dL-Count INTEGER (0..4294967295),

iE-Extensions ProtocolExtensionContainer { {E-RABs-SubjectToSgNBCounterCheck-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-SubjectToSgNBCounterCheck-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- SGNB CHANGE REQUIRED

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBChangeRequired ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBChangeRequired-IEs}},

...

}

SgNBChangeRequired-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Target-SgNB-ID CRITICALITY reject TYPE GlobalGNB-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-SgNBtoMeNBContainer CRITICALITY reject TYPE SgNBtoMeNBContainer PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-CPCinformation-REQD CRITICALITY ignore TYPE CPCinformation-REQD PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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-- SGNB CHANGE CONFIRM

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SgNBChangeConfirm ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBChangeConfirm-IEs}},

...

}

SgNBChangeConfirm-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY ignore TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-E-RABs-ToBeReleased-SgNBChaConfList CRITICALITY ignore TYPE E-RABs-ToBeReleased-SgNBChaConfList PRESENCE optional}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-CPCinformation-CONF CRITICALITY reject TYPE CPCinformation-CONF PRESENCE optional}|

{ ID id-MeNBtoSgNBContainer CRITICALITY reject TYPE MeNBtoSgNBContainer PRESENCE optional},

...

}

E-RABs-ToBeReleased-SgNBChaConfList ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-ToBeReleased-SgNBChaConf-ItemIEs} }

E-RABs-ToBeReleased-SgNBChaConf-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-ToBeReleased-SgNBChaConf-Item CRITICALITY ignore TYPE E-RABs-ToBeReleased-SgNBChaConf-Item PRESENCE mandatory},

...

}

E-RABs-ToBeReleased-SgNBChaConf-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

en-DC-ResourceConfiguration EN-DC-ResourceConfiguration,

resource-configuration CHOICE {

sgNBPDCPpresent E-RABs-ToBeReleased-SgNBChaConf-Item-SgNBPDCPpresent,

sgNBPDCPnotpresent E-RABs-ToBeReleased-SgNBChaConf-Item-SgNBPDCPnotpresent,

...

},

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-SgNBChaConf-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-SgNBChaConf-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeReleased-SgNBChaConf-Item-SgNBPDCPpresent ::= SEQUENCE {

uL-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

dL-GTPtunnelEndpoint GTPtunnelEndpoint OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-SgNBChaConf-Item-SgNBPDCPpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-SgNBChaConf-Item-SgNBPDCPpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABs-ToBeReleased-SgNBChaConf-Item-SgNBPDCPnotpresent ::= SEQUENCE {

iE-Extensions ProtocolExtensionContainer { {E-RABs-ToBeReleased-SgNBChaConf-Item-SgNBPDCPnotpresentExtIEs} } OPTIONAL,

...

}

E-RABs-ToBeReleased-SgNBChaConf-Item-SgNBPDCPnotpresentExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

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-- RRC TRANSFER

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

RRCTransfer ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{RRCTransfer-IEs}},

...

}

RRCTransfer-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SplitSRB CRITICALITY reject TYPE SplitSRB PRESENCE optional}|

{ ID id-NRUeReport CRITICALITY reject TYPE NRUeReport PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-FastMCGRecovery-SN-to-MN CRITICALITY ignore TYPE FastMCGRecovery PRESENCE optional}|

{ ID id-FastMCGRecovery-MN-to-SN CRITICALITY ignore TYPE FastMCGRecovery PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SGNB CHANGE REFUSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBChangeRefuse ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBChangeRefuse-IEs}},

...

}

SgNBChangeRefuse-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY ignore TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC X2 SETUP REQUEST

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCX2SetupRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCX2SetupRequest-IEs}},

...

}

ENDCX2SetupRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-InitiatingNodeType-EndcX2Setup CRITICALITY reject TYPE InitiatingNodeType-EndcX2Setup PRESENCE mandatory}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional}|

{ ID id-TNLConfigurationInfo CRITICALITY ignore TYPE TNLConfigurationInfo PRESENCE optional},

...

}

InitiatingNodeType-EndcX2Setup ::= CHOICE {

init-eNB ProtocolIE-Container {{ENB-ENDCX2SetupReqIEs}},

init-en-gNB  ProtocolIE-Container {{En-gNB-ENDCX2SetupReqIEs}},

...

}

ENB-ENDCX2SetupReqIEs X2AP-PROTOCOL-IES ::= {

{ ID id-GlobalENB-ID CRITICALITY reject TYPE GlobalENB-ID PRESENCE mandatory}|

{ ID id-ServedEUTRAcellsENDCX2ManagementList CRITICALITY reject TYPE ServedEUTRAcellsENDCX2ManagementList PRESENCE mandatory}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional }|

-- NOTE: In the current version of this specification the *Interface Instance Indication* IE is not included in the *Initiating NodeType* IE --

{ ID id-CellandCapacityAssistInfo CRITICALITY ignore TYPE CellandCapacityAssistInfo PRESENCE optional },

...

}

ServedEUTRAcellsENDCX2ManagementList ::= SEQUENCE (SIZE (1.. maxCellineNB)) OF SEQUENCE {

servedEUTRACellInfo ServedCell-Information,

nrNeighbourInfo NRNeighbour-Information OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {ServedEUTRAcellsENDCX2Management-ExtIEs} } OPTIONAL,

...

}

ServedEUTRAcellsENDCX2Management-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

En-gNB-ENDCX2SetupReqIEs X2AP-PROTOCOL-IES ::= {

{ ID id-Globalen-gNB-ID CRITICALITY reject TYPE GlobalGNB-ID PRESENCE mandatory}|

{ ID id-ServedNRcellsENDCX2ManagementList CRITICALITY reject TYPE ServedNRcellsENDCX2ManagementList PRESENCE mandatory}|

{ ID id-PartialListIndicator CRITICALITY ignore TYPE PartialListIndicator PRESENCE optional },

...

}

ServedNRcellsENDCX2ManagementList ::= SEQUENCE (SIZE (1.. maxCellinengNB)) OF SEQUENCE {

servedNRCellInfo ServedNRCell-Information,

nRNeighbourInfo NRNeighbour-Information OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {En-gNBServedCells-ExtIEs} } OPTIONAL,

...

}

En-gNBServedCells-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ServedNRCell-Information ::= SEQUENCE {

nrpCI NRPCI,

nrCellID NRCGI,

fiveGS-TAC FiveGS-TAC OPTIONAL,

configured-TAC TAC OPTIONAL,

broadcastPLMNs BroadcastPLMNs-Item,

nrModeInfo CHOICE {

fdd FDD-InfoServedNRCell-Information,

tdd TDD-InfoServedNRCell-Information,

...

},

measurementTimingConfiguration OCTET STRING,

iE-Extensions ProtocolExtensionContainer { {ServedNRCell-Information-ExtIEs} } OPTIONAL,

...

}

ServedNRCell-Information-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-additionalPLMNs-Item CRITICALITY ignore EXTENSION AdditionalPLMNs-Item PRESENCE optional}|

{ ID id-BPLMN-ID-Info-NR CRITICALITY ignore EXTENSION BPLMN-ID-Info-NR PRESENCE optional}|

{ ID id-SSB-PositionsInBurst CRITICALITY ignore EXTENSION SSB-PositionsInBurst PRESENCE optional}|

{ ID id-NRCellPRACHConfig CRITICALITY ignore EXTENSION NRCellPRACHConfig PRESENCE optional}|

{ ID id-CSI-RSTransmissionIndication CRITICALITY ignore EXTENSION CSI-RSTransmissionIndication PRESENCE optional}|

{ ID id-SFN-Offset CRITICALITY ignore EXTENSION SFN-Offset PRESENCE optional},

...

}

FDD-InfoServedNRCell-Information ::= SEQUENCE {

ul-NRFreqInfo NRFreqInfo,

dl-NRFreqInfo NRFreqInfo,

ul-NR-TxBW NR-TxBW,

dl-NR-TxBW NR-TxBW,

iE-Extensions ProtocolExtensionContainer { {FDD-InfoServedNRCell-Information-ExtIEs} } OPTIONAL,

...

}

FDD-InfoServedNRCell-Information-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-ULCarrierList CRITICALITY ignore EXTENSION NRCarrierList PRESENCE optional }|

{ ID id-DLCarrierList CRITICALITY ignore EXTENSION NRCarrierList PRESENCE optional },

...

}

TDD-InfoServedNRCell-Information ::= SEQUENCE {

nRFreqInfo NRFreqInfo,

nR-TxBW NR-TxBW,

iE-Extensions ProtocolExtensionContainer { {TDD-InfoServedNRCell-Information-ExtIEs} } OPTIONAL,

...

}

TDD-InfoServedNRCell-Information-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-TDDULDLConfigurationCommonNR CRITICALITY ignore EXTENSION TDDULDLConfigurationCommonNR PRESENCE optional}|

{ ID id-CarrierList CRITICALITY ignore EXTENSION NRCarrierList PRESENCE optional}|

{ ID id-IntendedTDD-DL-ULConfiguration-NR CRITICALITY ignore EXTENSION IntendedTDD-DL-ULConfiguration-NR PRESENCE optional},

...

}

CellandCapacityAssistInfo::= SEQUENCE {

maximumCellListSize MaximumCellListSize OPTIONAL,

cellAssistanceInformation CellAssistanceInformation OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {CellandCapacityAssistInfo-ExtIEs} } OPTIONAL,

...

}

CellandCapacityAssistInfo-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CellAssistanceInformation ::= CHOICE {

limited-list Limited-list,

full-list ENUMERATED {allServedNRcells, ...},

...

}

Limited-list ::= SEQUENCE (SIZE (1..maxCellinengNB)) OF SEQUENCE {

nrCellID NRCGI,

iE-Extensions ProtocolExtensionContainer { {Limited-list-ExtIEs} } OPTIONAL,

...

}

Limited-list-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC X2 SETUP RESPONSE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCX2SetupResponse ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCX2SetupResponse-IEs}},

...

}

ENDCX2SetupResponse-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-RespondingNodeType-EndcX2Setup CRITICALITY reject TYPE RespondingNodeType-EndcX2Setup PRESENCE mandatory}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional }|

{ ID id-TNLConfigurationInfo CRITICALITY ignore TYPE TNLConfigurationInfo PRESENCE optional },

...

}

RespondingNodeType-EndcX2Setup ::= CHOICE {

respond-eNB ProtocolIE-Container {{ENB-ENDCX2SetupReqAckIEs}},

respond-en-gNB ProtocolIE-Container {{En-gNB-ENDCX2SetupReqAckIEs}},

...

}

ENB-ENDCX2SetupReqAckIEs X2AP-PROTOCOL-IES ::= {

{ ID id-GlobalENB-ID CRITICALITY reject TYPE GlobalENB-ID PRESENCE mandatory}|

{ ID id-ServedEUTRAcellsENDCX2ManagementList CRITICALITY reject TYPE ServedEUTRAcellsENDCX2ManagementList PRESENCE mandatory}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional }|

-- NOTE: In the current version of this specification the *Interface Instance Indication* IE is not included in the *Responding NodeType* IE --

{ ID id-CellandCapacityAssistInfo CRITICALITY ignore TYPE CellandCapacityAssistInfo PRESENCE optional },

...

}

En-gNB-ENDCX2SetupReqAckIEs X2AP-PROTOCOL-IES ::= {

{ ID id-Globalen-gNB-ID CRITICALITY reject TYPE GlobalGNB-ID PRESENCE mandatory}|

{ ID id-ServedNRcellsENDCX2ManagementList CRITICALITY reject TYPE ServedNRcellsENDCX2ManagementList PRESENCE mandatory}|

{ ID id-PartialListIndicator CRITICALITY ignore TYPE PartialListIndicator PRESENCE optional },

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC X2 SETUP FAILURE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCX2SetupFailure ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCX2SetupFailure-IEs}},

...

}

ENDCX2SetupFailure-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory} |

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional } |

{ ID id-TimeToWait CRITICALITY ignore TYPE TimeToWait PRESENCE optional } |

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional }|

{ ID id-MessageOversizeNotification CRITICALITY ignore TYPE MessageOversizeNotification PRESENCE optional },

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC CONFIGURATION UPDATE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCConfigurationUpdate ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCConfigurationUpdate-IEs}},

...

}

ENDCConfigurationUpdate-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-InitiatingNodeType-EndcConfigUpdate CRITICALITY reject TYPE InitiatingNodeType-EndcConfigUpdate PRESENCE mandatory}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional}|

{ ID id-TNLConfigurationInfo CRITICALITY ignore TYPE TNLConfigurationInfo PRESENCE optional }|

{ ID id-TNLA-To-Add-List CRITICALITY ignore TYPE TNLA-To-Add-List PRESENCE optional }|

{ ID id-TNLA-To-Update-List CRITICALITY ignore TYPE TNLA-To-Update-List PRESENCE optional }|

{ ID id-TNLA-To-Remove-List CRITICALITY ignore TYPE TNLA-To-Remove-List PRESENCE optional },

...

}

InitiatingNodeType-EndcConfigUpdate::= CHOICE {

init-eNB ProtocolIE-Container {{ENB-ENDCConfigUpdateIEs}},

init-en-gNB  ProtocolIE-Container {{En-gNB-ENDCConfigUpdateIEs}},

...

}

ENB-ENDCConfigUpdateIEs X2AP-PROTOCOL-IES ::= {

{ ID id-CellAssistanceInformation CRITICALITY reject TYPE CellAssistanceInformation PRESENCE optional }|

{ ID id-ServedEUTRAcellsENDCX2ManagementList CRITICALITY reject TYPE ServedEUTRAcellsENDCX2ManagementList PRESENCE optional }|

{ ID id-ServedEUTRAcellsToModifyListENDCConfUpd CRITICALITY reject TYPE ServedEUTRAcellsToModifyListENDCConfUpd PRESENCE optional }|

{ ID id-ServedEUTRAcellsToDeleteListENDCConfUpd CRITICALITY reject TYPE ServedEUTRAcellsToDeleteListENDCConfUpd PRESENCE optional },

...

}

ServedEUTRAcellsToModifyListENDCConfUpd ::= SEQUENCE (SIZE (1.. maxCellineNB)) OF SEQUENCE {

old-ECGI ECGI,

servedEUTRACellInfo ServedCell-Information,

nrNeighbourInfo NRNeighbour-Information OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {ServedEUTRAcellsToModifyListENDCConfUpd-ExtIEs} } OPTIONAL,

...

}

ServedEUTRAcellsToModifyListENDCConfUpd-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ServedEUTRAcellsToDeleteListENDCConfUpd ::= SEQUENCE (SIZE (1..maxCellineNB)) OF ECGI

En-gNB-ENDCConfigUpdateIEs X2AP-PROTOCOL-IES ::= {

{ ID id-ServedNRcellsENDCX2ManagementList CRITICALITY reject TYPE ServedNRcellsENDCX2ManagementList PRESENCE optional }|

{ ID id-ServedNRcellsToModifyListENDCConfUpd CRITICALITY reject TYPE ServedNRcellsToModifyENDCConfUpdList PRESENCE optional }|

{ ID id-ServedNRcellsToDeleteListENDCConfUpd CRITICALITY reject TYPE ServedNRcellsToDeleteENDCConfUpdList PRESENCE optional },

...

}

ServedNRcellsToModifyENDCConfUpdList ::= SEQUENCE (SIZE (1..maxCellinengNB)) OF ServedNRCellsToModify-Item

ServedNRCellsToModify-Item::= SEQUENCE {

old-nrcgi NRCGI,

servedNRCellInformation ServedNRCell-Information,

nrNeighbourInformation NRNeighbour-Information OPTIONAL,

nrDeactivationIndication DeactivationIndication OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {ServedNRCellsToModify-Item-ExtIEs} } OPTIONAL,

...

}

ServedNRCellsToModify-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ServedNRcellsToDeleteENDCConfUpdList ::= SEQUENCE (SIZE (1..maxCellinengNB)) OF NRCGI

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC CONFIGURATION UPDATE ACKNOWLEDGE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCConfigurationUpdateAcknowledge ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCConfigurationUpdateAcknowledge-IEs}},

...

}

ENDCConfigurationUpdateAcknowledge-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-RespondingNodeType-EndcConfigUpdate CRITICALITY reject TYPE RespondingNodeType-EndcConfigUpdate PRESENCE mandatory}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional }|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional }|

{ ID id-TNLConfigurationInfo CRITICALITY ignore TYPE TNLConfigurationInfo PRESENCE optional }|

{ ID id-TNLA-Setup-List CRITICALITY ignore TYPE TNLA-Setup-List PRESENCE optional }|

{ ID id-TNLA-Failed-To-Setup-List CRITICALITY ignore TYPE TNLA-Failed-To-Setup-List PRESENCE optional },

...

}

RespondingNodeType-EndcConfigUpdate::= CHOICE {

respond-eNB ProtocolIE-Container {{ENB-ENDCConfigUpdateAckIEs}},

respond-en-gNB ProtocolIE-Container {{En-gNB-ENDCConfigUpdateAckIEs}},

...

}

ENB-ENDCConfigUpdateAckIEs X2AP-PROTOCOL-IES ::= {

...

}

En-gNB-ENDCConfigUpdateAckIEs X2AP-PROTOCOL-IES ::= {

{ ID id-ServedNRcellsENDCX2ManagementList CRITICALITY reject TYPE ServedNRcellsENDCX2ManagementList PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC CONFIGURATION UPDATE FAILURE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCConfigurationUpdateFailure ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCConfigurationUpdateFailure-IEs}},

...

}

ENDCConfigurationUpdateFailure-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional }|

{ ID id-TimeToWait CRITICALITY ignore TYPE TimeToWait PRESENCE optional }|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional },

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC CELL ACTIVATION REQUEST

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCCellActivationRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCCellActivationRequest-IEs}},

...

}

ENDCCellActivationRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-ServedNRCellsToActivate CRITICALITY reject TYPE ServedNRCellsToActivate PRESENCE mandatory}|

{ ID id-ActivationID CRITICALITY reject TYPE ActivationID PRESENCE mandatory}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional },

...

}

ServedNRCellsToActivate::= SEQUENCE (SIZE (1.. maxCellinengNB)) OF ServedNRCellsToActivate-Item

ServedNRCellsToActivate-Item::= SEQUENCE {

nrCellID NRCGI,

iE-Extensions ProtocolExtensionContainer { {ServedNRCellsToActivate-Item-ExtIEs} } OPTIONAL,

...

}

ServedNRCellsToActivate-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC CELL ACTIVATION RESPONSE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCCellActivationResponse ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCCellActivationResponse-IEs}},

...

}

ENDCCellActivationResponse-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-ActivatedNRCellList CRITICALITY ignore TYPE ActivatedNRCellList PRESENCE mandatory}|

{ ID id-ActivationID CRITICALITY reject TYPE ActivationID PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional }|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional },

...

}

ActivatedNRCellList ::= SEQUENCE (SIZE (1.. maxCellinengNB)) OF ActivatedNRCellList-Item

ActivatedNRCellList-Item::= SEQUENCE {

nrCellID NRCGI,

iE-Extensions ProtocolExtensionContainer { {ActivatedNRCellList-Item-ExtIEs} } OPTIONAL,

...

}

ActivatedNRCellList-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

--\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC CELL ACTIVATION FAILURE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCCellActivationFailure ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCCellActivationFailure-IEs}},

...

}

ENDCCellActivationFailure-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-ActivationID CRITICALITY reject TYPE ActivationID PRESENCE mandatory }|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory }|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional }|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional },

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC RESOURCE STATUS REQUEST

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCResourceStatusRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCResourceStatusRequest-IEs}},

...

}

ENDCResourceStatusRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-UTRAN-Node1-Measurement-ID CRITICALITY reject TYPE Measurement-ID-ENDC PRESENCE mandatory }|

{ ID id-E-UTRAN-Node2-Measurement-ID CRITICALITY ignore TYPE Measurement-ID-ENDC PRESENCE conditional}| -- The IE shall be present if the *Registration Request EN-DC* IE is set to “Stop” or to “Add”

{ ID id-Registration-Request CRITICALITY reject TYPE Registration-Request-ENDC PRESENCE mandatory }|

{ ID id-ReportingPeriodicity CRITICALITY ignore TYPE ReportingPeriodicity-ENDC PRESENCE optional }|

{ ID id-ReportCharacteristics CRITICALITY ignore TYPE ReportCharacteristics-ENDC PRESENCE conditional}| -- The IE shall be present if the *Registration Request EN-DC* IE is set to “Start”

{ ID id-CellToReport-NR-ENDC CRITICALITY ignore TYPE CellToReport-NR-ENDC-List PRESENCE optional } |

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional }|

{ ID id-CellToReport-E-UTRA-ENDC CRITICALITY ignore TYPE CellToReport-E-UTRA-ENDC-List PRESENCE optional},

...

}

ReportingPeriodicity-ENDC ::= ENUMERATED {ms500, ms1000, ms2000, ms5000, ms10000, ...}

CellToReport-NR-ENDC-List ::= SEQUENCE (SIZE (1..maxCellinengNB)) OF ProtocolIE-Single-Container { {CellToReport-NR-ENDC-ItemIEs} }

CellToReport-NR-ENDC-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-CellToReport-NR-ENDC-Item CRITICALITY ignore TYPE CellToReport-NR-ENDC-Item PRESENCE mandatory}

}

CellToReport-NR-ENDC-Item ::= SEQUENCE {

nr-cell-ID NRCGI,

ssbToReport-List SSBToReport-List OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {CellToReport-NR-ENDC-Item-ExtIEs} } OPTIONAL,

...

}

CellToReport-NR-ENDC-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CellToReport-E-UTRA-ENDC-List ::= SEQUENCE (SIZE (1..maxCellineNB)) OF ProtocolIE-Single-Container { {CellToReport-E-UTRA-ENDC-Item-IEs} }

CellToReport-E-UTRA-ENDC-Item-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-CellToReport-E-UTRA-ENDC-Item CRITICALITY ignore TYPE CellToReport-E-UTRA-ENDC-Item PRESENCE mandatory}

}

CellToReport-E-UTRA-ENDC-Item ::= SEQUENCE {

e-utra-cell-ID ECGI,

iE-Extensions ProtocolExtensionContainer { {CellToReport-E-UTRA-ENDC-Item-ExtIEs} } OPTIONAL,

...

}

CellToReport-E-UTRA-ENDC-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

SSBToReport-List ::= SEQUENCE (SIZE (1.. maxnoofSSBAreas)) OF SSBToReport-Item

SSBToReport-Item ::= SEQUENCE {

ssbIndex SSBIndex,

iE-Extensions ProtocolExtensionContainer { {SSBToReport-Item-ExtIEs} } OPTIONAL,

...

}

SSBToReport-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC RESOURCE STATUS RESPONSE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCResourceStatusResponse ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCResourceStatusResponse-IEs}},

...

}

ENDCResourceStatusResponse-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-UTRAN-Node1-Measurement-ID CRITICALITY reject TYPE Measurement-ID-ENDC PRESENCE mandatory}|

{ ID id-E-UTRAN-Node2-Measurement-ID CRITICALITY reject TYPE Measurement-ID-ENDC PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional } |

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional },

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC RESOURCE STATUS FAILURE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCResourceStatusFailure ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCResourceStatusFailure-IEs}},

...

}

ENDCResourceStatusFailure-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-UTRAN-Node1-Measurement-ID CRITICALITY reject TYPE Measurement-ID-ENDC PRESENCE mandatory}|

{ ID id-E-UTRAN-Node2-Measurement-ID CRITICALITY reject TYPE Measurement-ID-ENDC PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional }|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional },

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC RESOURCE STATUS UPDATE

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-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCResourceStatusUpdate ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCResourceStatusUpdate-IEs}},

...

}

ENDCResourceStatusUpdate-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-UTRAN-Node1-Measurement-ID CRITICALITY reject TYPE Measurement-ID-ENDC PRESENCE mandatory}|

{ ID id-E-UTRAN-Node2-Measurement-ID CRITICALITY reject TYPE Measurement-ID-ENDC PRESENCE mandatory}|

{ ID id-CellMeasurementResult-NR-ENDC CRITICALITY ignore TYPE CellMeasurementResult-NR-ENDC-List PRESENCE optional }|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional }|

{ ID id-CellMeasurementResult-E-UTRA-ENDC CRITICALITY ignore TYPE CellMeasurementResult-E-UTRA-ENDC-List PRESENCE optional},

...

}

CellMeasurementResult-NR-ENDC-List ::= SEQUENCE (SIZE (1..maxCellinengNB)) OF ProtocolIE-Single-Container { {CellMeasurementResult-NR-ENDC-ItemIEs} }

CellMeasurementResult-NR-ENDC-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-CellMeasurementResult-NR-ENDC-Item CRITICALITY ignore TYPE CellMeasurementResult-NR-ENDC-Item PRESENCE mandatory}

}

CellMeasurementResult-NR-ENDC-Item ::= SEQUENCE {

nr-cell-ID NRCGI,

nr-radioResourceStatus NRRadioResourceStatus OPTIONAL,

tnlCapacityIndicator TNLCapacityIndicator OPTIONAL,

nr-compositeAvailableCapacityGroup NRCompositeAvailableCapacityGroup OPTIONAL,

numberofActiveUEs INTEGER (0..16777215, ...) OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {CellMeasurementResult-NR-ENDC-Item-ExtIEs} } OPTIONAL,

...

}

CellMeasurementResult-NR-ENDC-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CellMeasurementResult-E-UTRA-ENDC-List ::= SEQUENCE (SIZE (1..maxCellineNB))   
 OF ProtocolIE-Single-Container { {CellMeasurementResult-E-UTRA-ENDC-ItemIEs} }

CellMeasurementResult-E-UTRA-ENDC-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-CellMeasurementResult-E-UTRA-ENDC-Item CRITICALITY ignore TYPE CellMeasurementResult-E-UTRA-ENDC-Item PRESENCE mandatory}

}

CellMeasurementResult-E-UTRA-ENDC-Item ::= SEQUENCE {

e-utra-cell-ID ECGI,

hWLoadIndicator HWLoadIndicator OPTIONAL,

s1TNLLoadIndicator S1TNLLoadIndicator OPTIONAL,

radioResourceStatus RadioResourceStatus OPTIONAL,

compositeAvailableCapacityGroup CompositeAvailableCapacityGroup OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {CellMeasurementResult-E-UTRA-ENDC-Item-ExtIEs} } OPTIONAL,

...

}

CellMeasurementResult-E-UTRA-ENDC-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SECONDARY RAT DATA USAGE REPORT

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SecondaryRATDataUsageReport ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SecondaryRATDataUsageReport-IEs}},

...

}

SecondaryRATDataUsageReport-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SecondaryRATUsageReportList CRITICALITY reject TYPE SecondaryRATUsageReportList PRESENCE mandatory}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- SGNB ACTIVITY NOTIFICATION

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

SgNBActivityNotification ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{SgNBActivityNotification-IEs}},

...

}

SgNBActivityNotification-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-UEContextLevelUserPlaneActivity CRITICALITY ignore TYPE UserPlaneTrafficActivityReport PRESENCE optional}|

{ ID id-ERABActivityNotifyItemList CRITICALITY ignore TYPE ERABActivityNotifyItemList PRESENCE optional}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC PARTIAL RESET REQUIRED

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCPartialResetRequired ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCPartialResetRequired-IEs}},

...

}

ENDCPartialResetRequired-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-UEs-ToBeReset CRITICALITY reject TYPE UEsToBeResetList PRESENCE mandatory}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC PARTIAL RESET CONFIRM

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCPartialResetConfirm ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCPartialResetConfirm-IEs}},

...

}

ENDCPartialResetConfirm-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-UEs-Admitted-ToBeReset CRITICALITY reject TYPE UEsToBeResetList PRESENCE mandatory}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- E-UTRA - NR CELL RESOURCE COORDINATION REQUEST

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

EUTRANRCellResourceCoordinationRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{EUTRANRCellResourceCoordinationRequest-IEs}},

...

}

EUTRANRCellResourceCoordinationRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-InitiatingNodeType-EutranrCellResourceCoordination CRITICALITY reject TYPE InitiatingNodeType-EutranrCellResourceCoordination PRESENCE mandatory}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional },

...

}

InitiatingNodeType-EutranrCellResourceCoordination ::= CHOICE {

initiate-eNB ProtocolIE-Container {{ENB-EUTRA-NRCellResourceCoordinationReqIEs}},

initiate-en-gNB ProtocolIE-Container {{En-gNB-EUTRA-NRCellResourceCoordinationReqIEs}},

...

}

ENB-EUTRA-NRCellResourceCoordinationReqIEs X2AP-PROTOCOL-IES ::= {

{ ID id-DataTrafficResourceIndication CRITICALITY reject TYPE DataTrafficResourceIndication PRESENCE mandatory}|

{ ID id-SpectrumSharingGroupID CRITICALITY reject TYPE SpectrumSharingGroupID PRESENCE mandatory}|

{ ID id-ListofEUTRACellsinEUTRACoordinationReq CRITICALITY reject TYPE ListofEUTRACellsinEUTRACoordinationReq PRESENCE mandatory},

...

}

En-gNB-EUTRA-NRCellResourceCoordinationReqIEs X2AP-PROTOCOL-IES ::= {

{ ID id-DataTrafficResourceIndication CRITICALITY reject TYPE DataTrafficResourceIndication PRESENCE mandatory}|

{ ID id-ListofEUTRACellsinNRCoordinationReq CRITICALITY reject TYPE ListofEUTRACellsinNRCoordinationReq PRESENCE mandatory }|

{ ID id-SpectrumSharingGroupID CRITICALITY reject TYPE SpectrumSharingGroupID PRESENCE mandatory}|

{ ID id-ListofNRCellsinNRCoordinationReq CRITICALITY reject TYPE ListofNRCellsinNRCoordinationReq PRESENCE mandatory},

...

}

ListofEUTRACellsinEUTRACoordinationReq ::= SEQUENCE (SIZE (0..maxCellineNB)) OF ECGI

ListofEUTRACellsinNRCoordinationReq ::= SEQUENCE (SIZE (1..maxCellineNB)) OF ECGI

ListofNRCellsinNRCoordinationReq ::= SEQUENCE (SIZE (0..maxnoNRcellsSpectrumSharingWithE-UTRA)) OF NRCGI

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- E-UTRA - NR CELL RESOURCE COORDINATION RESPONSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

EUTRANRCellResourceCoordinationResponse ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{EUTRANRCellResourceCoordinationResponse-IEs}},

...

}

EUTRANRCellResourceCoordinationResponse-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-RespondingNodeType-EutranrCellResourceCoordination CRITICALITY reject TYPE RespondingNodeType-EutranrCellResourceCoordination PRESENCE mandatory}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional },

...

}

RespondingNodeType-EutranrCellResourceCoordination ::= CHOICE {

respond-eNB ProtocolIE-Container {{ENB-EUTRA-NRCellResourceCoordinationReqAckIEs}},

respond-en-gNB ProtocolIE-Container {{En-gNB-EUTRA-NRCellResourceCoordinationReqAckIEs}},

...

}

ENB-EUTRA-NRCellResourceCoordinationReqAckIEs X2AP-PROTOCOL-IES ::= {

{ ID id-DataTrafficResourceIndication CRITICALITY reject TYPE DataTrafficResourceIndication PRESENCE mandatory}|

{ ID id-SpectrumSharingGroupID CRITICALITY reject TYPE SpectrumSharingGroupID PRESENCE mandatory}|

{ ID id-ListofEUTRACellsinEUTRACoordinationResp CRITICALITY reject TYPE ListofEUTRACellsinEUTRACoordinationResp PRESENCE mandatory},

...

}

En-gNB-EUTRA-NRCellResourceCoordinationReqAckIEs X2AP-PROTOCOL-IES ::= {

{ ID id-DataTrafficResourceIndication CRITICALITY reject TYPE DataTrafficResourceIndication PRESENCE mandatory}|

{ ID id-SpectrumSharingGroupID CRITICALITY reject TYPE SpectrumSharingGroupID PRESENCE mandatory}|

{ ID id-ListofNRCellsinNRCoordinationResp CRITICALITY reject TYPE ListofNRCellsinNRCoordinationResp PRESENCE mandatory},

...

}

ListofEUTRACellsinEUTRACoordinationResp ::= SEQUENCE (SIZE (0..maxCellineNB)) OF ECGI

ListofNRCellsinNRCoordinationResp ::= SEQUENCE (SIZE (0..maxnoNRcellsSpectrumSharingWithE-UTRA)) OF NRCGI

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC X2 REMOVAL REQUEST

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCX2RemovalRequest ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCX2RemovalRequest-IEs}},

...

}

ENDCX2RemovalRequest-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-InitiatingNodeType-EndcX2Removal CRITICALITY reject TYPE InitiatingNodeType-EndcX2Removal PRESENCE mandatory}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional },

...

}

InitiatingNodeType-EndcX2Removal ::= CHOICE {

init-eNB ProtocolIE-Container {{ENB-ENDCX2RemovalReqIEs}},

init-en-gNB ProtocolIE-Container {{En-gNB-ENDCX2RemovalReqIEs}},

...

}

ENB-ENDCX2RemovalReqIEs X2AP-PROTOCOL-IES ::= {

{ ID id-GlobalENB-ID CRITICALITY reject TYPE GlobalENB-ID PRESENCE mandatory},

...

}

En-gNB-ENDCX2RemovalReqIEs X2AP-PROTOCOL-IES ::= {

{ ID id-Globalen-gNB-ID CRITICALITY reject TYPE GlobalGNB-ID PRESENCE mandatory},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC X2 REMOVAL RESPONSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCX2RemovalResponse ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCX2RemovalResponse-IEs}},

...

}

ENDCX2RemovalResponse-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-RespondingNodeType-EndcX2Removal CRITICALITY reject TYPE RespondingNodeType-EndcX2Removal PRESENCE mandatory}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional },

...

}

RespondingNodeType-EndcX2Removal ::= CHOICE {

respond-eNB ProtocolIE-Container {{ENB-ENDCX2RemovalReqAckIEs}},

respond-en-gNB ProtocolIE-Container {{En-gNB-ENDCX2RemovalReqAckIEs}},

...

}

ENB-ENDCX2RemovalReqAckIEs X2AP-PROTOCOL-IES ::= {

{ ID id-GlobalENB-ID CRITICALITY reject TYPE GlobalENB-ID PRESENCE mandatory},

...

}

En-gNB-ENDCX2RemovalReqAckIEs X2AP-PROTOCOL-IES ::= {

{ ID id-Globalen-gNB-ID CRITICALITY reject TYPE GlobalGNB-ID PRESENCE mandatory},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC X2 REMOVAL FAILURE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCX2RemovalFailure ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCX2RemovalFailure-IEs}},

...

}

ENDCX2RemovalFailure-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE mandatory} |

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional }|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional },

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- DATA FORWARDING ADDRESS INDICATION

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

DataForwardingAddressIndication ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{DataForwardingAddressIndication-IEs}},

...

}

DataForwardingAddressIndication-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-New-eNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-New-eNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional }|

{ ID id-Old-eNB-UE-X2AP-ID CRITICALITY ignore TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-Old-eNB-UE-X2AP-ID-Extension CRITICALITY ignore TYPE UE-X2AP-ID-Extension PRESENCE optional }|

{ ID id-E-RABs-DataForwardingAddress-List CRITICALITY ignore TYPE E-RABs-DataForwardingAddress-List PRESENCE mandatory}|

{ ID id-CHO-DC-Indicator CRITICALITY reject TYPE CHO-DC-Indicator PRESENCE optional}|

{ ID id-CHO-DC-EarlyDataForwarding CRITICALITY ignore TYPE CHO-DC-EarlyDataForwarding PRESENCE optional}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY ignore TYPE SgNB-UE-X2AP-ID PRESENCE optional}|

{ ID id-CPCinformation-NOTIFY CRITICALITY reject TYPE CPCinformation-NOTIFY PRESENCE optional},

...

}

E-RABs-DataForwardingAddress-List ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RABs-DataForwardingAddress-ItemIEs} }

E-RABs-DataForwardingAddress-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABs-DataForwardingAddress-Item CRITICALITY ignore TYPE E-RABs-DataForwardingAddress-Item PRESENCE mandatory},

...

}

E-RABs-DataForwardingAddress-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

dl-GTPtunnelEndpoint GTPtunnelEndpoint,

iE-Extensions ProtocolExtensionContainer { {E-RABs-DataForwardingAddress-ItemExtIEs} } OPTIONAL,

...

}

E-RABs-DataForwardingAddress-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- GNB STATUS INDICATION

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

GNBStatusIndication ::= SEQUENCE {

protocolIEs ProtocolIE-Container { { GNBStatusIndicationIEs} },

...

}

GNBStatusIndicationIEs X2AP-PROTOCOL-IES ::= {

{ ID id-GNBOverloadInformation CRITICALITY ignore TYPE GNBOverloadInformation PRESENCE mandatory}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional },

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- EN-DC CONFIGURATION TRANSFER

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ENDCConfigurationTransfer ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ENDCConfigurationTransfer-IEs}},

...

}

ENDCConfigurationTransfer-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-endcSONConfigurationTransfer CRITICALITY ignore TYPE EndcSONConfigurationTransfer PRESENCE optional}|

{ ID id-InterfaceInstanceIndication CRITICALITY reject TYPE InterfaceInstanceIndication PRESENCE optional },

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- TRACE START

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

TraceStart ::= SEQUENCE {

protocolIEs ProtocolIE-Container { {TraceStartIEs} },

...

}

TraceStartIEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory }|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory }|

{ ID id-TraceActivation CRITICALITY ignore TYPE TraceActivation PRESENCE mandatory }|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- DEACTIVATE TRACE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

DeactivateTrace ::= SEQUENCE {

protocolIEs ProtocolIE-Container { {DeactivateTraceIEs} },

...

}

DeactivateTraceIEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory }|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory }|

{ ID id-EUTRANTraceID CRITICALITY ignore TYPE EUTRANTraceID PRESENCE mandatory }|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- CELL TRAFFIC TRACE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

CellTrafficTrace ::= SEQUENCE {

protocolIEs ProtocolIE-Container { {CellTrafficTraceIEs} },

...

}

CellTrafficTraceIEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory }|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory }|

{ ID id-EUTRANTraceID CRITICALITY ignore TYPE EUTRANTraceID PRESENCE mandatory }|

{ ID id-TraceCollectionEntityIPAddress CRITICALITY ignore TYPE TransportLayerAddress PRESENCE mandatory }|

{ ID id-PrivacyIndicator CRITICALITY ignore TYPE PrivacyIndicator PRESENCE optional }|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- F1-C TRAFFIC TRANSFER

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

F1CTrafficTransfer ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{ F1CTrafficTransfer-IEs}},

...

}

F1CTrafficTransfer-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-F1CTrafficContainer CRITICALITY reject TYPE F1CTrafficContainer PRESENCE mandatory}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional},

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- UE RADIO CAPABILITY ID MAPPING REQUEST

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

UERadioCapabilityIDMappingRequest::= SEQUENCE {

protocolIEs ProtocolIE-Container { { UERadioCapabilityIDMappingRequestIEs} },

...

}

UERadioCapabilityIDMappingRequestIEs X2AP-PROTOCOL-IES ::= {

{ ID id-UERadioCapabilityID CRITICALITY reject TYPE UERadioCapabilityID PRESENCE mandatory },

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- UE RADIO CAPABILITY ID MAPPING RESPONSE

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

UERadioCapabilityIDMappingResponse ::= SEQUENCE {

protocolIEs ProtocolIE-Container { { UERadioCapabilityIDMappingResponseIEs} },

...

}

UERadioCapabilityIDMappingResponseIEs X2AP-PROTOCOL-IES ::= {

{ ID id-UERadioCapabilityID CRITICALITY reject TYPE UERadioCapabilityID PRESENCE mandatory }|

{ ID id-UERadioCapability CRITICALITY ignore TYPE UERadioCapability PRESENCE mandatory }|

{ ID id-CriticalityDiagnostics CRITICALITY ignore TYPE CriticalityDiagnostics PRESENCE optional },

...

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- CONDITIONAL PSCELL CHANGE CANCEL

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

CPC-cancel ::= SEQUENCE {

protocolIEs ProtocolIE-Container {{CPC-cancel-IEs}},

...

}

CPC-cancel-IEs X2AP-PROTOCOL-IES ::= {

{ ID id-MeNB-UE-X2AP-ID CRITICALITY reject TYPE UE-X2AP-ID PRESENCE mandatory}|

{ ID id-SgNB-UE-X2AP-ID CRITICALITY reject TYPE SgNB-UE-X2AP-ID PRESENCE mandatory}|

{ ID id-MeNB-UE-X2AP-ID-Extension CRITICALITY reject TYPE UE-X2AP-ID-Extension PRESENCE optional}|

{ ID id-Cause CRITICALITY ignore TYPE Cause PRESENCE optional}|

{ ID id-Target-SgNB-ID CRITICALITY reject TYPE GlobalGNB-ID PRESENCE mandatory},

...

}

END

-- ASN1STOP

### 9.3.5 Information Element definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Information Element Definitions

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2AP-IEs {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

eps-Access (21) modules (3) x2ap (2) version1 (1) x2ap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

id-E-RAB-Item,

id-Number-of-Antennaports,

id-MBSFN-Subframe-Info,

id-PRACH-Configuration,

id-CSG-Id,

id-MDTConfiguration,

id-SignallingBasedMDTPLMNList,

id-MultibandInfoList,

id-FreqBandIndicatorPriority,

id-NeighbourTAC,

id-Time-UE-StayedInCell-EnhancedGranularity,

id-MBMS-Service-Area-List,

id-HO-cause,

id-eARFCNExtension,

id-DL-EARFCNExtension,

id-UL-EARFCNExtension,

id-M3Configuration,

id-M4Configuration,

id-M5Configuration,

id-MDT-Location-Info,

id-NRrestrictioninEPSasSecondaryRAT,

id-NRrestrictionin5GS,

id-AdditionalSpecialSubframe-Info,

id-UEID,

id-enhancedRNTP,

id-ProSeUEtoNetworkRelaying,

id-M6Configuration,

id-M7Configuration,

id-OffsetOfNbiotChannelNumberToDL-EARFCN,

id-OffsetOfNbiotChannelNumberToUL-EARFCN,

id-AdditionalSpecialSubframeExtension-Info,

id-BandwidthReducedSI,

id-extended-e-RAB-MaximumBitrateDL,

id-extended-e-RAB-MaximumBitrateUL,

id-extended-e-RAB-GuaranteedBitrateDL,

id-extended-e-RAB-GuaranteedBitrateUL,

id-extended-uEaggregateMaximumBitRateDownlink,

id-extended-uEaggregateMaximumBitRateUplink,

id-E-RABUsageReport-Item,

id-SecondaryRATUsageReport-Item,

id-UEAppLayerMeasConfig,

id-DL-scheduling-PDCCH-CCE-usage,

id-UL-scheduling-PDCCH-CCE-usage,

id-DownlinkPacketLossRate,

id-UplinkPacketLossRate,

id-serviceType,

id-ProtectedEUTRAResourceIndication,

id-NRS-NSSS-PowerOffset,

id-NSSS-NumOccasionDifferentPrecoder,

id-CNTypeRestrictions,

id-BluetoothMeasurementConfiguration,

id-WLANMeasurementConfiguration,

id-ECGI,

id-NRCGI,

id-MeNBCoordinationAssistanceInformation,

id-SgNBCoordinationAssistanceInformation,

id-NRNeighbourInfoToAdd,

id-LastNG-RANPLMNIdentity,

id-BPLMN-ID-Info-EUTRA,

id-NBIoT-UL-DL-AlignmentOffset,

id-UnlicensedSpectrumRestriction,

id-CarrierList,

id-FrequencyShift7p5khz,

id-NPRACHConfiguration,

id-MDTConfigurationNR,

id-CSI-RSTransmissionIndication,

id-QoS-Mapping-Information,

id-IntendedTDD-DL-ULConfiguration-NR,

id-TraceCollectionEntityURI,

id-SFN-Offset,

id-AdditionLocationInformation,

maxnoofBearers,

maxCellineNB,

maxEARFCN,

maxEARFCNPlusOne,

newmaxEARFCN,

maxInterfaces,

maxnoofBands,

maxnoofBPLMNs,

maxnoofAdditionalPLMNs,

maxnoofCells,

maxnoofEPLMNs,

maxnoofEPLMNsPlusOne,

maxnoofForbLACs,

maxnoofForbTACs,

maxnoofNeighbours,

maxnoofPRBs,

maxNrOfErrors,

maxPools,

maxnoofMBSFN,

maxnoofTAforMDT,

maxnoofCellIDforMDT,

maxnoofMBMSServiceAreaIdentities,

maxnoofMDTPLMNs,

maxnoofCoMPHypothesisSet,

maxnoofCoMPCells,

maxUEReport,

maxCellReport,

maxnoofPA,

maxCSIProcess,

maxCSIReport,

maxSubband,

maxnooftimeperiods,

maxnoofCellIDforQMC,

maxnoofTAforQMC,

maxnoofPLMNforQMC,

maxUEsinengNBDU,

maxnoofProtectedResourcePatterns,

maxnoNRcellsSpectrumSharingWithE-UTRA,

maxnoofNrCellBands,

maxnoofBluetoothName,

maxnoofWLANName,

maxofNRNeighbours,

maxnoofextBPLMNs,

maxnoofTLAs,

maxnoofGTPTLAs,

maxnoofTNLAssociations,

maxnoofCellsinCHO, maxnoofPC5QoSFlows,

maxnoofSSBAreas,

maxnoofNRSCSs,

maxnoofNRPhysicalResourceBlocks,

maxnoofNonAnchorCarrierFreqConfig,

maxnoofPSCellCandidates

FROM X2AP-Constants

Criticality,

ProcedureCode,

ProtocolIE-ID,

TriggeringMessage

FROM X2AP-CommonDataTypes

ProtocolExtensionContainer{},

ProtocolIE-Single-Container{},

X2AP-PROTOCOL-EXTENSION,

X2AP-PROTOCOL-IES

FROM X2AP-Containers;

-- A

ABSInformation ::= CHOICE {

fdd ABSInformationFDD,

tdd ABSInformationTDD,

abs-inactive NULL,

...

}

ABSInformationFDD ::= SEQUENCE {

abs-pattern-info BIT STRING (SIZE(40)),

numberOfCellSpecificAntennaPorts ENUMERATED {one, two, four, ...},

measurement-subset BIT STRING (SIZE(40)),

iE-Extensions ProtocolExtensionContainer { {ABSInformationFDD-ExtIEs} } OPTIONAL,

...

}

ABSInformationFDD-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ABSInformationTDD ::= SEQUENCE {

abs-pattern-info BIT STRING (SIZE(1..70, ...)),

numberOfCellSpecificAntennaPorts ENUMERATED {one, two, four, ...},

measurement-subset BIT STRING (SIZE(1..70, ...)),

iE-Extensions ProtocolExtensionContainer { {ABSInformationTDD-ExtIEs} } OPTIONAL,

...

}

ABSInformationTDD-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ABS-Status ::= SEQUENCE {

dL-ABS-status DL-ABS-status,

usableABSInformation UsableABSInformation,

iE-Extensions ProtocolExtensionContainer { {ABS-Status-ExtIEs} } OPTIONAL,

...

}

ABS-Status-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ActivationID ::= INTEGER (0..255)

AdditionLocationInformation ::= ENUMERATED {

includePSCell,

...

}

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

AdditionalSpecialSubframe-Info ::= SEQUENCE {

additionalspecialSubframePatterns AdditionalSpecialSubframePatterns,

cyclicPrefixDL CyclicPrefixDL,

cyclicPrefixUL CyclicPrefixUL,

iE-Extensions ProtocolExtensionContainer { {AdditionalSpecialSubframe-Info-ExtIEs} } OPTIONAL,

...

}

AdditionalSpecialSubframe-Info-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

AdditionalSpecialSubframePatterns ::= ENUMERATED {

ssp0,

ssp1,

ssp2,

ssp3,

ssp4,

ssp5,

ssp6,

ssp7,

ssp8,

ssp9,

...

}

AdditionalSpecialSubframeExtension-Info ::= SEQUENCE {

additionalspecialSubframePatternsExtension AdditionalSpecialSubframePatternsExtension,

cyclicPrefixDL CyclicPrefixDL,

cyclicPrefixUL CyclicPrefixUL,

iE-Extensions ProtocolExtensionContainer { {AdditionalSpecialSubframeExtension-Info-ExtIEs} } OPTIONAL,

...

}

AdditionalSpecialSubframeExtension-Info-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

AdditionalSpecialSubframePatternsExtension ::= ENUMERATED {

ssp10,

...

}

AvailableFastMCGRecoveryViaSRB3 ::= ENUMERATED {true,...}

AerialUEsubscriptionInformation ::= ENUMERATED {

allowed,

not-allowed,

...

}

AllocationAndRetentionPriority ::= SEQUENCE {

priorityLevel PriorityLevel,

pre-emptionCapability Pre-emptionCapability,

pre-emptionVulnerability Pre-emptionVulnerability,

iE-Extensions ProtocolExtensionContainer { {AllocationAndRetentionPriority-ExtIEs} } OPTIONAL,

...

}

AllocationAndRetentionPriority-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

AreaScopeOfMDT ::= CHOICE {

cellBased CellBasedMDT,

tABased TABasedMDT,

pLMNWide NULL,

...,

tAIBased TAIBasedMDT

}

AreaScopeOfQMC ::= CHOICE {

cellBased CellBasedQMC,

tABased TABasedQMC,

tAIBased TAIBasedQMC,

pLMNAreaBased PLMNAreaBasedQMC,

...

}

AS-SecurityInformation ::= SEQUENCE {

key-eNodeB-star Key-eNodeB-Star,

nextHopChainingCount NextHopChainingCount,

iE-Extensions ProtocolExtensionContainer { {AS-SecurityInformation-ExtIEs} } OPTIONAL,

...

}

AS-SecurityInformation-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

AdditionalPLMNs-Item ::= SEQUENCE (SIZE(1..maxnoofAdditionalPLMNs)) OF PLMN-Identity

-- B

BandwidthReducedSI::= ENUMERATED {

scheduled,

...

}

BearerType ::= ENUMERATED {

non-IP,

...

}

BenefitMetric ::= INTEGER (-101..100, ...)

BitRate ::= INTEGER (0..10000000000)

BroadcastPLMNs-Item ::= SEQUENCE (SIZE(1..maxnoofBPLMNs)) OF PLMN-Identity

BluetoothMeasurementConfiguration ::= SEQUENCE {

bluetoothMeasConfig BluetoothMeasConfig,

bluetoothMeasConfigNameList BluetoothMeasConfigNameList OPTIONAL,

bt-rssi ENUMERATED {true, ...} OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {BluetoothMeasurementConfiguration-ExtIEs} } OPTIONAL,

...

}

BluetoothMeasurementConfiguration-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

BluetoothMeasConfigNameList ::= SEQUENCE (SIZE(1..maxnoofBluetoothName)) OF BluetoothName

BluetoothMeasConfig::= ENUMERATED {setup,...}

BluetoothName ::= OCTET STRING (SIZE (1..248))

BPLMN-ID-Info-EUTRA ::= SEQUENCE (SIZE(1..maxnoofBPLMNs)) OF BPLMN-ID-Info-EUTRA-Item

BPLMN-ID-Info-EUTRA-Item ::= SEQUENCE {

broadcastPLMNs BroadcastPLMNs-Item,

tac TAC,

e-utraCI EUTRANCellIdentifier,

iE-Extension ProtocolExtensionContainer { {BPLMN-ID-Info-EUTRA-Item-ExtIEs} } OPTIONAL,

...

}

BPLMN-ID-Info-EUTRA-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

BPLMN-ID-Info-NR ::= SEQUENCE (SIZE(1..maxnoofextBPLMNs)) OF BPLMN-ID-Info-NR-Item

BPLMN-ID-Info-NR-Item ::= SEQUENCE {

broadcastPLMNs BroadcastextPLMNs,

fiveGS-TAC FiveGS-TAC OPTIONAL,

nr-CI NRCellIdentifier,

iE-Extension ProtocolExtensionContainer { {BPLMN-ID-Info-NR-Item-ExtIEs} } OPTIONAL,

...

}

BPLMN-ID-Info-NR-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

BroadcastextPLMNs ::= SEQUENCE (SIZE(1..maxnoofextBPLMNs)) OF PLMN-Identity

-- C

CapacityValue ::= INTEGER (0..100)

Cause ::= CHOICE {

radioNetwork CauseRadioNetwork,

transport CauseTransport,

protocol CauseProtocol,

misc CauseMisc,

...

}

CauseMisc ::= ENUMERATED {

control-processing-overload,

hardware-failure,

om-intervention,

not-enough-user-plane-processing-resources,

unspecified,

...

}

CauseProtocol ::= ENUMERATED {

transfer-syntax-error,

abstract-syntax-error-reject,

abstract-syntax-error-ignore-and-notify,

message-not-compatible-with-receiver-state,

semantic-error,

unspecified,

abstract-syntax-error-falsely-constructed-message,

...

}

CauseRadioNetwork ::= ENUMERATED {

handover-desirable-for-radio-reasons,

time-critical-handover,

resource-optimisation-handover,

reduce-load-in-serving-cell,

partial-handover,

unknown-new-eNB-UE-X2AP-ID,

unknown-old-eNB-UE-X2AP-ID,

unknown-pair-of-UE-X2AP-ID,

ho-target-not-allowed,

tx2relocoverall-expiry,

trelocprep-expiry,

cell-not-available,

no-radio-resources-available-in-target-cell,

invalid-MME-GroupID,

unknown-MME-Code,

encryption-and-or-integrity-protection-algorithms-not-supported,

reportCharacteristicsEmpty,

noReportPeriodicity,

existingMeasurementID,

unknown-eNB-Measurement-ID,

measurement-temporarily-not-available,

unspecified,

...,

load-balancing,

handover-optimisation,

value-out-of-allowed-range,

multiple-E-RAB-ID-instances,

switch-off-ongoing,

not-supported-QCI-value,

measurement-not-supported-for-the-object,

tDCoverall-expiry,

tDCprep-expiry,

action-desirable-for-radio-reasons,

reduce-load,

resource-optimisation,

time-critical-action,

target-not-allowed,

no-radio-resources-available,

invalid-QoS-combination,

encryption-algorithms-not-supported,

procedure-cancelled,

rRM-purpose,

improve-user-bit-rate,

user-inactivity,

radio-connection-with-UE-lost,

failure-in-the-radio-interface-procedure,

bearer-option-not-supported,

mCG-Mobility,

sCG-Mobility,

count-reaches-max-value,

unknown-old-en-gNB-UE-X2AP-ID,

pDCP-Overload,

cho-cpc-resources-tobechanged,

ue-power-saving,

insufficient-ue-capabilities,

normal-release,

unknown-E-UTRAN-Node-Measurement-ID

}

CauseTransport ::= ENUMERATED {

transport-resource-unavailable,

unspecified,

...

}

CellBasedMDT::= SEQUENCE {

cellIdListforMDT CellIdListforMDT,

iE-Extensions ProtocolExtensionContainer { {CellBasedMDT-ExtIEs} } OPTIONAL,

...

}

CellBasedMDT-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CellBasedQMC::= SEQUENCE {

cellIdListforQMC CellIdListforQMC,

iE-Extensions ProtocolExtensionContainer { {CellBasedQMC-ExtIEs} } OPTIONAL,

...

}

CellBasedQMC-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CellCapacityClassValue ::= INTEGER (1..100, ...)

CellDeploymentStatusIndicator ::= ENUMERATED {pre-change-notification, ...}

CellIdListforMDT ::= SEQUENCE (SIZE(1..maxnoofCellIDforMDT)) OF ECGI

CellIdListforQMC ::= SEQUENCE (SIZE(1..maxnoofCellIDforQMC)) OF ECGI

CellReplacingInfo ::= SEQUENCE {

replacingCellsList ReplacingCellsList,

iE-Extensions ProtocolExtensionContainer { {CellReplacingInfo-ExtIEs}} OPTIONAL,

...

}

CellReplacingInfo-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CellReportingIndicator ::= ENUMERATED {stop-request, ... }

Cell-Size ::= ENUMERATED {verysmall, small, medium, large, ... }

CellType ::= SEQUENCE {

cell-Size Cell-Size,

iE-Extensions ProtocolExtensionContainer { {CellType-ExtIEs}} OPTIONAL,

...

}

CellType-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CPACcandidatePSCells-list ::= SEQUENCE (SIZE(1..maxnoofPSCellCandidates)) OF CPACcandidatePSCells-item

CPACcandidatePSCells-item ::= SEQUENCE {

pscell-id NRCGI,

iE-Extensions ProtocolExtensionContainer { {CPACcandidatePSCells-item-ExtIEs}} OPTIONAL,

...

}

CPACcandidatePSCells-item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CPACindicator ::= ENUMERATED {cpac-initiation, cpac-modification, cpac-cancel, ...}

CPCdataforwarding ::= ENUMERATED {cpc-triggered, early-data-transmission-stop, ...}

CPAinformation-REQ ::= SEQUENCE {

max-no-of-pscells INTEGER (1..maxnoofPSCellCandidates),

estimatedArrivalProbability CHO-Probability OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {CPAinformation-REQ-ExtIEs} } OPTIONAL,

...

}

CPAinformation-REQ-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CPAinformation-ACK ::= SEQUENCE {

candidate-pscells CPACcandidatePSCells-list,

iE-Extensions ProtocolExtensionContainer { {CPAinformation-ACK-ExtIEs} } OPTIONAL,

...

}

CPAinformation-ACK-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CPCinformation-REQD ::= SEQUENCE {

cpc-target-sn-list CPC-target-SN-reqd-list,

iE-Extensions ProtocolExtensionContainer { {CPCinformation-REQD-ExtIEs} } OPTIONAL,

...

}

CPCinformation-REQD-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CPC-target-SN-reqd-list ::= SEQUENCE (SIZE(1..maxnoofPSCellCandidates)) OF CPC-target-SN-reqd-item

CPC-target-SN-reqd-item ::= SEQUENCE {

target-SgNB-ID GlobalGNB-ID,

cpac-indicator CPACindicator,

max-no-of-pscells INTEGER (1..maxnoofPSCellCandidates) OPTIONAL,

rrc-container RRCContainer,

estimatedArrivalProbability CHO-Probability OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {CPC-target-SN-reqd-item-ExtIEs} } OPTIONAL,

...

}

CPC-target-SN-reqd-item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CPCinformation-CONF ::= SEQUENCE {

cpc-target-sn-list CPC-target-SN-conf-list,

iE-Extensions ProtocolExtensionContainer { {CPCinformation-CONF-ExtIEs} } OPTIONAL,

...

}

CPCinformation-CONF-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CPC-target-SN-conf-list ::= SEQUENCE (SIZE(1..maxnoofPSCellCandidates)) OF CPC-target-SN-conf-item

CPC-target-SN-conf-item ::= SEQUENCE {

target-SgNB-ID GlobalGNB-ID,

candidate-pscells CPACcandidatePSCells-list,

iE-Extensions ProtocolExtensionContainer { {CPC-target-SN-conf-item-ExtIEs} } OPTIONAL,

...

}

CPC-target-SN-conf-item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CPCinformation-NOTIFY ::= SEQUENCE {

cpc-indicator CPCdataforwarding,

iE-Extensions ProtocolExtensionContainer { {CPCinformation-NOTIFY-ExtIEs} } OPTIONAL,

...

}

CPCinformation-NOTIFY-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CPAinformation-MOD ::= SEQUENCE {

max-no-of-pscells INTEGER (1..maxnoofPSCellCandidates),

estimatedArrivalProbability CHO-Probability OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {CPAinformation-MOD-ExtIEs} } OPTIONAL,

...

}

CPAinformation-MOD-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CPCupdate-MOD ::= SEQUENCE {

candidate-pscells CPACcandidatePSCells-list,

iE-Extensions ProtocolExtensionContainer { {CPCupdate-MOD-ExtIEs} } OPTIONAL,

...

}

CPCupdate-MOD-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CPCupdate-ACK ::= SEQUENCE {

candidate-pscells CPACcandidatePSCells-list,

iE-Extensions ProtocolExtensionContainer { {CPCupdate-ACK-ExtIEs} } OPTIONAL,

...

}

CPCupdate-ACK-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CPAinformation-REQD ::= SEQUENCE {

candidate-pscells CPACcandidatePSCells-list,

iE-Extensions ProtocolExtensionContainer { { CPAinformation-REQD-ExtIEs} } OPTIONAL,

...

}

CPAinformation-REQD-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CHO-DC-EarlyDataForwarding ::= ENUMERATED {stop, ...}

CHO-DC-Indicator ::= ENUMERATED {true, ...}

CNTypeRestrictions ::= SEQUENCE (SIZE(1.. maxnoofEPLMNsPlusOne)) OF CNTypeRestrictionsItem

CNTypeRestrictionsItem ::= SEQUENCE {

plmn-Id PLMN-Identity,

cn-type ENUMERATED {fiveGC-forbidden, ... , epc-forbidden},

iE-Extensions ProtocolExtensionContainer { {CNTypeRestrictionsItem-ExtIEs} } OPTIONAL,

...

}

CNTypeRestrictionsItem-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CoMPHypothesisSet ::= SEQUENCE (SIZE(1..maxnoofCoMPCells)) OF CoMPHypothesisSetItem

CoMPHypothesisSetItem ::= SEQUENCE {

coMPCellID ECGI,

coMPHypothesis BIT STRING (SIZE(6..4400, ...)),

iE-Extensions ProtocolExtensionContainer { {CoMPHypothesisSetItem-ExtIEs} } OPTIONAL,

...

}

CoMPHypothesisSetItem-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CoMPInformation ::= SEQUENCE {

coMPInformationItem CoMPInformationItem,

coMPInformationStartTime CoMPInformationStartTime,

iE-Extensions ProtocolExtensionContainer { {CoMPInformation-ExtIEs} } OPTIONAL,

...

}

CoMPInformation-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CoMPInformationItem ::= SEQUENCE (SIZE(1..maxnoofCoMPHypothesisSet)) OF

SEQUENCE {

coMPHypothesisSet CoMPHypothesisSet,

benefitMetric BenefitMetric,

iE-Extensions ProtocolExtensionContainer { {CoMPInformationItem-ExtIEs} } OPTIONAL,

...

}

CoMPInformationItem-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CoMPInformationStartTime ::= SEQUENCE (SIZE(0..1)) OF

SEQUENCE {

startSFN INTEGER (0..1023, ...),

startSubframeNumber INTEGER (0..9, ...),

iE-Extensions ProtocolExtensionContainer { {CoMPInformationStartTime-ExtIEs} } OPTIONAL,

...

}

CoMPInformationStartTime-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CompositeAvailableCapacity ::= SEQUENCE {

cellCapacityClassValue CellCapacityClassValue OPTIONAL,

capacityValue CapacityValue,

iE-Extensions ProtocolExtensionContainer { {CompositeAvailableCapacity-ExtIEs} } OPTIONAL,

...

}

CompositeAvailableCapacity-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CompositeAvailableCapacityGroup ::= SEQUENCE {

dL-CompositeAvailableCapacity CompositeAvailableCapacity,

uL-CompositeAvailableCapacity CompositeAvailableCapacity,

iE-Extensions ProtocolExtensionContainer { {CompositeAvailableCapacityGroup-ExtIEs} } OPTIONAL,

...

}

CompositeAvailableCapacityGroup-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

Correlation-ID ::= OCTET STRING (SIZE (4))

COUNTvalue ::= SEQUENCE {

pDCP-SN PDCP-SN,

hFN HFN,

iE-Extensions ProtocolExtensionContainer { {COUNTvalue-ExtIEs} } OPTIONAL,

...

}

COUNTvalue-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

COUNTValueExtended ::= SEQUENCE {

pDCP-SNExtended PDCP-SNExtended,

hFNModified HFNModified,

iE-Extensions ProtocolExtensionContainer { {COUNTValueExtended-ExtIEs} } OPTIONAL,

...

}

COUNTValueExtended-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

COUNTvaluePDCP-SNlength18 ::= SEQUENCE {

pDCP-SNlength18 PDCP-SNlength18,

hFNforPDCP-SNlength18 HFNforPDCP-SNlength18,

iE-Extensions ProtocolExtensionContainer { {COUNTvaluePDCP-SNlength18-ExtIEs} } OPTIONAL,

...

}

COUNTvaluePDCP-SNlength18-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CoverageModificationList ::= SEQUENCE (SIZE (1..maxCellineNB)) OF CoverageModification-Item

CoverageModification-Item ::= SEQUENCE {

eCGI ECGI,

coverageState INTEGER (0..15, ...),

cellDeploymentStatusIndicator CellDeploymentStatusIndicator OPTIONAL,

cellReplacingInfo CellReplacingInfo OPTIONAL,

-- Included in case the Cell Deployment Status Indicator IE is present

...

}

CPTransportLayerInformation ::= CHOICE {

endpointIPAddress TransportLayerAddress,

endpointIPAddressAndPort TransportLayerAddressAndPort,

...

}

CriticalityDiagnostics ::= SEQUENCE {

procedureCode ProcedureCode OPTIONAL,

triggeringMessage TriggeringMessage OPTIONAL,

procedureCriticality Criticality OPTIONAL,

iEsCriticalityDiagnostics CriticalityDiagnostics-IE-List OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {CriticalityDiagnostics-ExtIEs} } OPTIONAL,

...

}

CriticalityDiagnostics-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CriticalityDiagnostics-IE-List ::= SEQUENCE (SIZE (1..maxNrOfErrors)) OF

SEQUENCE {

iECriticality Criticality,

iE-ID ProtocolIE-ID,

typeOfError TypeOfError,

iE-Extensions ProtocolExtensionContainer { {CriticalityDiagnostics-IE-List-ExtIEs} } OPTIONAL,

...

}

CriticalityDiagnostics-IE-List-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

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

CSGMembershipStatus ::= ENUMERATED {

member,

not-member

}

CSG-Id ::= BIT STRING (SIZE (27))

CSIReportList ::= SEQUENCE (SIZE(1..maxUEReport)) OF

SEQUENCE {

uEID UEID,

cSIReportPerCSIProcess CSIReportPerCSIProcess,

iE-Extensions ProtocolExtensionContainer { {CSIReportList-ExtIEs} } OPTIONAL,

...

}

CSIReportList-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CSIReportPerCSIProcess ::= SEQUENCE (SIZE(1.. maxCSIProcess)) OF

SEQUENCE {

cSIProcessConfigurationIndex INTEGER (1..7, ...),

cSIReportPerCSIProcessItem CSIReportPerCSIProcessItem,

iE-Extensions ProtocolExtensionContainer { {CSIReportPerCSIProcess-ExtIEs} } OPTIONAL,

...

}

CSIReportPerCSIProcess-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CSIReportPerCSIProcessItem ::= SEQUENCE (SIZE(1.. maxCSIReport)) OF

SEQUENCE {

rI INTEGER (1..8, ...),

widebandCQI WidebandCQI,

subbandSize SubbandSize,

subbandCQIList SubbandCQIList OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {CSIReportPerCSIProcessItem-ExtIEs} } OPTIONAL,

...

}

CSIReportPerCSIProcessItem-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

CyclicPrefixDL ::= ENUMERATED {

normal,

extended,

...

}

CyclicPrefixUL ::= ENUMERATED {

normal,

extended,

...

}

CHOtrigger ::= ENUMERATED {

cho-initiation,

cho-replace,

...

}

CHOinformation-REQ ::= SEQUENCE {

cho-trigger CHOtrigger,

new-eNB-UE-X2AP-ID UE-X2AP-ID OPTIONAL

-- This IE shall be present if the cho-trigger IE is present and set to "CHO-replace" --,

new-eNB-UE-X2AP-ID-Extension UE-X2AP-ID-Extension OPTIONAL,

cHO-EstimatedArrivalProbability CHO-Probability OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { CHOinformation-REQ-ExtIEs} } OPTIONAL,

...

}

CHOinformation-REQ-ExtIEs X2AP-PROTOCOL-EXTENSION ::={

...

}

CHOinformation-ACK ::= SEQUENCE {

requestedTargetCellID ECGI,

maxCHOpreparations MaxCHOpreparations OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { CHOinformation-ACK-ExtIEs} } OPTIONAL,

...

}

CHOinformation-ACK-ExtIEs X2AP-PROTOCOL-EXTENSION ::={

...

}

CandidateCellsToBeCancelledList ::= SEQUENCE (SIZE (1..maxnoofCellsinCHO)) OF ECGI

CHO-Probability ::= INTEGER (1..100)

CSI-RSTransmissionIndication ::= ENUMERATED {

activated,

deactivated,

...

}

-- D

DataTrafficResources ::= BIT STRING (SIZE(6..17600))

DataTrafficResourceIndication ::= SEQUENCE {

activationSFN INTEGER (0..1023),

sharedResourceType SharedResourceType,

reservedSubframePattern ReservedSubframePattern OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {DataTrafficResourceIndication-ExtIEs} } OPTIONAL,

...

}

DataTrafficResourceIndication-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

DAPSRequestInfo ::= SEQUENCE {

dAPSIndicator ENUMERATED {daps-HO-required, ...},

iE-Extensions ProtocolExtensionContainer { {DAPSRequestInfo-ExtIEs} } OPTIONAL,

...

}

DAPSRequestInfo-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

DAPSResponseInfo ::= SEQUENCE {

dAPSResponseIndicator ENUMERATED { daps-HO-accepted, daps-HO-not-accepted,...},

iE-Extensions ProtocolExtensionContainer { { DAPSResponseInfo-ExtIEs} } OPTIONAL,

...

}

DAPSResponseInfo-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

DeactivationIndication::= ENUMERATED {

deactivated,

...

}

DeliveryStatus ::= SEQUENCE {

highestSuccessDeliveredPDCPSN INTEGER (0..4095),

iE-Extensions ProtocolExtensionContainer { {DeliveryStatus-ExtIEs} } OPTIONAL,

...

}

DeliveryStatus-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

DesiredActNotificationLevel ::= ENUMERATED {none, e-rab, ue-level, ...}

DirectForwardingPathAvailability ::= ENUMERATED {direct-path-available, ...}

DL-ABS-status::= INTEGER (0..100)

DL-Forwarding ::= ENUMERATED {

dL-forwardingProposed,

...

}

DL-GBR-PRB-usage::= INTEGER (0..100)

DL-non-GBR-PRB-usage::= INTEGER (0..100)

DLResourceBitmapULandDLSharing ::= DataTrafficResources

DLResourcesULandDLSharing ::= CHOICE {

unchanged NULL,

changed DLResourceBitmapULandDLSharing,

...

}

DL-scheduling-PDCCH-CCE-usage::= INTEGER (0..100)

DL-Total-PRB-usage::= INTEGER (0..100)

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

DuplicationActivation::= ENUMERATED {active, inactive, ...}

DynamicDLTransmissionInformation ::= CHOICE {

naics-active DynamicNAICSInformation,

naics-inactive NULL,

...

}

DynamicNAICSInformation ::= SEQUENCE {

transmissionModes BIT STRING (SIZE(8)) OPTIONAL,

pB-information INTEGER(0..3) OPTIONAL,

pA-list SEQUENCE (SIZE(0..maxnoofPA)) OF PA-Values,

iE-Extensions ProtocolExtensionContainer { {DynamicNAICSInformation-ExtIEs} } OPTIONAL,

...

}

DynamicNAICSInformation-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- E

EARFCN ::= INTEGER (0..maxEARFCN)

EARFCNExtension ::= INTEGER(maxEARFCNPlusOne..newmaxEARFCN, ...)

ECGI ::= SEQUENCE {

pLMN-Identity PLMN-Identity,

eUTRANcellIdentifier EUTRANCellIdentifier,

iE-Extensions ProtocolExtensionContainer { {ECGI-ExtIEs} } OPTIONAL,

...

}

ECGI-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

EndcSONConfigurationTransfer ::= OCTET STRING

EnhancedRNTP ::= SEQUENCE {

enhancedRNTPBitmap BIT STRING (SIZE(12..8800, ...)),

rNTP-High-Power-Threshold RNTP-Threshold,

enhancedRNTPStartTime EnhancedRNTPStartTime OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {EnhancedRNTP-ExtIEs} } OPTIONAL,

...

}

EnhancedRNTP-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

EnhancedRNTPStartTime ::= SEQUENCE {

startSFN INTEGER (0..1023, ...),

startSubframeNumber INTEGER (0..9, ...),

iE-Extensions ProtocolExtensionContainer { {EnhancedRNTPStartTime-ExtIEs} } OPTIONAL,

...

}

EnhancedRNTPStartTime-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ENB-ID ::= CHOICE {

macro-eNB-ID BIT STRING (SIZE (20)),

home-eNB-ID BIT STRING (SIZE (28)),

... ,

short-Macro-eNB-ID BIT STRING (SIZE(18)),

long-Macro-eNB-ID BIT STRING (SIZE(21))

}

EncryptionAlgorithms ::= BIT STRING (SIZE (16, ...))

EN-DC-ResourceConfiguration ::= SEQUENCE {

pDCPatSgNB ENUMERATED {present, not-present, ...},

mCGresources ENUMERATED {present, not-present, ...},

sCGresources ENUMERATED {present, not-present, ...},

iE-Extensions ProtocolExtensionContainer { {EN-DC-ResourceConfigurationExtIEs} } OPTIONAL,

...

}

EN-DC-ResourceConfigurationExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

EPCHandoverRestrictionListContainer ::= OCTET STRING

-- This octets of the OCTET STRING contain the Handover Restriction List IE as specified in TS 36.413 [4]. --

EPLMNs ::= SEQUENCE (SIZE(1..maxnoofEPLMNs)) OF PLMN-Identity

ERABActivityNotifyItemList ::= SEQUENCE (SIZE (0..maxnoofBearers)) OF ERABActivityNotifyItem

ERABActivityNotifyItem ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

activityReport UserPlaneTrafficActivityReport,

iE-Extensions ProtocolExtensionContainer { {ERABActivityNotifyItem-ExtIEs} } OPTIONAL,

...

}

ERABActivityNotifyItem-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RAB-ID ::= INTEGER (0..15, ...)

E-RAB-Level-QoS-Parameters ::= SEQUENCE {

qCI QCI,

allocationAndRetentionPriority AllocationAndRetentionPriority,

gbrQosInformation GBR-QosInformation OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {E-RAB-Level-QoS-Parameters-ExtIEs} } OPTIONAL,

...

}

E-RAB-Level-QoS-Parameters-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

-- Extended for introduction of downlink and uplink packet loss rate for enhanced Voice performance –

{ ID id-DownlinkPacketLossRate CRITICALITY ignore EXTENSION Packet-LossRate PRESENCE optional}|

{ ID id-UplinkPacketLossRate CRITICALITY ignore EXTENSION Packet-LossRate PRESENCE optional},

...

}

E-RAB-List ::= SEQUENCE (SIZE(1.. maxnoofBearers)) OF ProtocolIE-Single-Container { {E-RAB-ItemIEs} }

E-RAB-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RAB-Item CRITICALITY ignore TYPE E-RAB-Item PRESENCE mandatory },

...

}

E-RAB-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

cause Cause,

iE-Extensions ProtocolExtensionContainer { {E-RAB-Item-ExtIEs} } OPTIONAL,

...

}

E-RAB-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABsSubjectToEarlyStatusTransfer-List ::= SEQUENCE (SIZE (1.. maxnoofBearers)) OF E-RABsSubjectToEarlyStatusTransfer-Item

E-RABsSubjectToEarlyStatusTransfer-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

fIRST-DL-COUNTValue COUNTvalue,

fIRST-DL-COUNTValueExtended COUNTValueExtended OPTIONAL,

fIRST-DL-COUNTValueforPDCPSNLength18 COUNTvaluePDCP-SNlength18 OPTIONAL,

iE-Extension ProtocolExtensionContainer { { E-RABsSubjectToEarlyStatusTransfer-Item-ExtIEs} } OPTIONAL,

...

}

E-RABsSubjectToEarlyStatusTransfer-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABsSubjectToDLDiscarding-List ::= SEQUENCE (SIZE (1.. maxnoofBearers)) OF E-RABsSubjectToDLDiscarding-Item

E-RABsSubjectToDLDiscarding-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

dISCARD-DL-COUNTValue COUNTvalue,

dISCARD-DL-COUNTValueExtended COUNTValueExtended OPTIONAL,

dISCARD-DL-COUNTValueforPDCPSNLength18 COUNTvaluePDCP-SNlength18 OPTIONAL,

iE-Extension ProtocolExtensionContainer { { E-RABsSubjectToDLDiscarding-Item-ExtIEs} } OPTIONAL,

...

}

E-RABsSubjectToDLDiscarding-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

E-RABUsageReportList ::= SEQUENCE (SIZE(1..maxnooftimeperiods)) OF ProtocolIE-Single-Container { {E-RABUsageReport-ItemIEs} }

E-RABUsageReport-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-E-RABUsageReport-Item CRITICALITY ignore TYPE E-RABUsageReport-Item PRESENCE mandatory },

...

}

E-RABUsageReport-Item ::= SEQUENCE {

startTimeStamp OCTET STRING (SIZE(4)),

endTimeStamp OCTET STRING (SIZE(4)),

usageCountUL INTEGER (0..18446744073709551615),

usageCountDL INTEGER (0..18446744073709551615),

iE-Extensions ProtocolExtensionContainer { {E-RABUsageReport-Item-ExtIEs} } OPTIONAL,

...

}

E-RABUsageReport-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

Ethernet-Type ::= ENUMERATED {

true,

...

}

EUTRA-Mode-Info ::= CHOICE {

fDD FDD-Info,

tDD TDD-Info,

...

}

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

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

EventType ::= ENUMERATED{

change-of-serving-cell,

...

}

ExpectedUEBehaviour ::= SEQUENCE {

expectedActivity ExpectedUEActivityBehaviour OPTIONAL,

expectedHOInterval ExpectedHOInterval OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {ExpectedUEBehaviour-ExtIEs} } OPTIONAL,

...

}

ExpectedUEBehaviour-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ExpectedUEActivityBehaviour ::= SEQUENCE {

expectedActivityPeriod ExpectedActivityPeriod OPTIONAL,

expectedIdlePeriod ExpectedIdlePeriod OPTIONAL,

sourceofUEActivityBehaviourInformation SourceOfUEActivityBehaviourInformation OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {ExpectedUEActivityBehaviour-ExtIEs} } OPTIONAL,

...

}

ExpectedUEActivityBehaviour-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ExpectedActivityPeriod ::= INTEGER (1..30|40|50|60|80|100|120|150|180|181,...)

ExpectedIdlePeriod ::= INTEGER (1..30|40|50|60|80|100|120|150|180|181,...)

ExpectedHOInterval ::= ENUMERATED {

sec15, sec30, sec60, sec90, sec120, sec180, long-time,

...

}

ExtendedULInterferenceOverloadInfo ::= SEQUENCE {

associatedSubframes BIT STRING (SIZE (5)),

extended-ul-InterferenceOverloadIndication UL-InterferenceOverloadIndication,

iE-Extensions ProtocolExtensionContainer { {ExtendedULInterferenceOverloadInfo-ExtIEs} } OPTIONAL,

...

}

ExtendedULInterferenceOverloadInfo-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ExtendedBitRate ::= INTEGER (10000000001..4000000000000,...)

-- F

F1CTrafficContainer ::= OCTET STRING

FastMCGRecovery ::= SEQUENCE {

rrcContainer RRCContainer OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {FastMCGRecovery-ExtIEs} } OPTIONAL,

...

}

FastMCGRecovery-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

FDD-Info ::= SEQUENCE {

uL-EARFCN EARFCN,

dL-EARFCN EARFCN,

uL-Transmission-Bandwidth Transmission-Bandwidth,

dL-Transmission-Bandwidth Transmission-Bandwidth,

iE-Extensions ProtocolExtensionContainer { {FDD-Info-ExtIEs} } OPTIONAL,

...

}

FDD-Info-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-UL-EARFCNExtension CRITICALITY reject EXTENSION EARFCNExtension PRESENCE optional}|

{ ID id-DL-EARFCNExtension CRITICALITY reject EXTENSION EARFCNExtension PRESENCE optional}|

{ ID id-OffsetOfNbiotChannelNumberToDL-EARFCN CRITICALITY reject EXTENSION OffsetOfNbiotChannelNumberToEARFCN PRESENCE optional}|

{ ID id-OffsetOfNbiotChannelNumberToUL-EARFCN CRITICALITY reject EXTENSION OffsetOfNbiotChannelNumberToEARFCN PRESENCE optional}|

{ ID id-NRS-NSSS-PowerOffset CRITICALITY ignore EXTENSION NRS-NSSS-PowerOffset PRESENCE optional}|

{ ID id-NSSS-NumOccasionDifferentPrecoder CRITICALITY ignore EXTENSION NSSS-NumOccasionDifferentPrecoder PRESENCE optional},

...

}

FDD-InfoNeighbourServedNRCell-Information ::= SEQUENCE {

ul-NRFreqInfo NRFreqInfo,

dl-NRFreqInfo NRFreqInfo,

iE-Extensions ProtocolExtensionContainer { {FDD-InfoNeighbourServedNRCell-Information-ExtIEs} } OPTIONAL,

...

}

FDD-InfoNeighbourServedNRCell-Information-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

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

ForbiddenInterRATs ::= ENUMERATED {

all,

geran,

utran,

cdma2000,

...,

geranandutran,

cdma2000andutran

}

ForbiddenTAs ::= SEQUENCE (SIZE(1.. maxnoofEPLMNsPlusOne)) OF ForbiddenTAs-Item

ForbiddenTAs-Item ::= SEQUENCE {

pLMN-Identity PLMN-Identity,

forbiddenTACs ForbiddenTACs,

iE-Extensions ProtocolExtensionContainer { {ForbiddenTAs-Item-ExtIEs} } OPTIONAL,

...

}

ForbiddenTAs-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ForbiddenTACs ::= SEQUENCE (SIZE(1..maxnoofForbTACs)) OF TAC

ForbiddenLAs ::= SEQUENCE (SIZE(1..maxnoofEPLMNsPlusOne)) OF ForbiddenLAs-Item

ForbiddenLAs-Item ::= SEQUENCE {

pLMN-Identity PLMN-Identity,

forbiddenLACs ForbiddenLACs,

iE-Extensions ProtocolExtensionContainer { {ForbiddenLAs-Item-ExtIEs} } OPTIONAL,

...

}

ForbiddenLAs-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ForbiddenLACs ::= SEQUENCE (SIZE(1..maxnoofForbLACs)) OF LAC

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

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

FreqBandIndicatorPriority ::= ENUMERATED {

not-broadcasted,

broadcasted,

...

}

FreqBandNrItem ::= SEQUENCE {

freqBandIndicatorNr INTEGER (1..1024,...),

supportedSULBandList SEQUENCE (SIZE(0..maxnoofNrCellBands)) OF SupportedSULFreqBandItem,

iE-Extensions ProtocolExtensionContainer { {FreqBandNrItem-ExtIEs} } OPTIONAL,

...

}

FreqBandNrItem-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

FrequencyShift7p5khz ::= ENUMERATED {false, true, ...}

-- G

GBR-QosInformation ::= SEQUENCE {

e-RAB-MaximumBitrateDL BitRate,

e-RAB-MaximumBitrateUL BitRate,

e-RAB-GuaranteedBitrateDL BitRate,

e-RAB-GuaranteedBitrateUL BitRate,

iE-Extensions ProtocolExtensionContainer { {GBR-QosInformation-ExtIEs} } OPTIONAL,

...

}

GBR-QosInformation-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

-- Extension for maximum bitrate > 10Gbps --

{ ID id-extended-e-RAB-MaximumBitrateDL CRITICALITY ignore EXTENSION ExtendedBitRate PRESENCE optional}|

{ ID id-extended-e-RAB-MaximumBitrateUL CRITICALITY ignore EXTENSION ExtendedBitRate PRESENCE optional}|

{ ID id-extended-e-RAB-GuaranteedBitrateDL CRITICALITY ignore EXTENSION ExtendedBitRate PRESENCE optional}|

{ ID id-extended-e-RAB-GuaranteedBitrateUL CRITICALITY ignore EXTENSION ExtendedBitRate PRESENCE optional},

...

}

GlobalENB-ID ::= SEQUENCE {

pLMN-Identity PLMN-Identity,

eNB-ID ENB-ID,

iE-Extensions ProtocolExtensionContainer { {GlobalENB-ID-ExtIEs} } OPTIONAL,

...

}

GlobalENB-ID-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

GlobalGNB-ID ::= SEQUENCE {

pLMN-Identity PLMN-Identity,

gNB-ID GNB-ID,

iE-Extensions ProtocolExtensionContainer { {GlobalGNB-ID-ExtIEs} } OPTIONAL,

...

}

GlobalGNB-ID-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

Global-RAN-NODE-ID ::= CHOICE {

gNB GlobalGNB-ID,

choice-extension ProtocolIE-Single-Container { { Global-RAN-NODE-ID-ExtIEs} }

}

Global-RAN-NODE-ID-ExtIEs X2AP-PROTOCOL-IES ::= {

...

}

GNBOverloadInformation ::= ENUMERATED {overloaded, not-overloaded, ...}

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

GTPTLA-Item ::= SEQUENCE {

gTPTransportLayerAddresses TransportLayerAddress,

iE-Extensions ProtocolExtensionContainer { { GTPTLA-Item-ExtIEs } } OPTIONAL,

...

}

GTPTLA-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

GTPtunnelEndpoint ::= SEQUENCE {

transportLayerAddress TransportLayerAddress,

gTP-TEID GTP-TEI,

iE-Extensions ProtocolExtensionContainer { {GTPtunnelEndpoint-ExtIEs} } OPTIONAL,

...

}

GTPtunnelEndpoint-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ID id-QoS-Mapping-Information CRITICALITY reject EXTENSION QoS-Mapping-Information PRESENCE optional},

...

}

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

GUGroupIDList ::= SEQUENCE (SIZE (1..maxPools)) OF GU-Group-ID

GU-Group-ID ::= SEQUENCE {

pLMN-Identity PLMN-Identity,

mME-Group-ID MME-Group-ID,

iE-Extensions ProtocolExtensionContainer { {GU-Group-ID-ExtIEs} } OPTIONAL,

...

}

GU-Group-ID-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

GUMMEI ::= SEQUENCE {

gU-Group-ID GU-Group-ID,

mME-Code MME-Code,

iE-Extensions ProtocolExtensionContainer { {GUMMEI-ExtIEs} } OPTIONAL,

...

}

GUMMEI-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

GNB-ID ::= CHOICE {

gNB-ID BIT STRING (SIZE (22..32)),

...

}

-- H

HandoverReportType ::= ENUMERATED {

hoTooEarly,

hoToWrongCell,

...,

interRATpingpong,

interSystemPingpong

}

HandoverRestrictionList ::= SEQUENCE {

servingPLMN PLMN-Identity,

equivalentPLMNs EPLMNs OPTIONAL,

forbiddenTAs ForbiddenTAs OPTIONAL,

forbiddenLAs ForbiddenLAs OPTIONAL,

forbiddenInterRATs ForbiddenInterRATs OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {HandoverRestrictionList-ExtIEs} } OPTIONAL,

...

}

HandoverRestrictionList-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-NRrestrictioninEPSasSecondaryRAT CRITICALITY ignore EXTENSION NRrestrictioninEPSasSecondaryRAT PRESENCE optional}|

{ ID id-CNTypeRestrictions CRITICALITY ignore EXTENSION CNTypeRestrictions PRESENCE optional}|

{ ID id-NRrestrictionin5GS CRITICALITY ignore EXTENSION NRrestrictionin5GS PRESENCE optional}|

{ ID id-LastNG-RANPLMNIdentity CRITICALITY ignore EXTENSION PLMN-Identity PRESENCE optional}|

{ ID id-UnlicensedSpectrumRestriction CRITICALITY ignore EXTENSION UnlicensedSpectrumRestriction PRESENCE optional},

...

}

HFN ::= INTEGER (0..1048575)

HFNModified ::= INTEGER (0..131071)

HFNforPDCP-SNlength18 ::= INTEGER (0..16383)

HWLoadIndicator ::= SEQUENCE {

dLHWLoadIndicator LoadIndicator,

uLHWLoadIndicator LoadIndicator,

iE-Extensions ProtocolExtensionContainer { {HWLoadIndicator-ExtIEs} } OPTIONAL,

...

}

HWLoadIndicator-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- I

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

IMSvoiceEPSfallbackfrom5G ::= ENUMERATED {

true,

...

}

IntegrityProtectionAlgorithms ::= BIT STRING (SIZE (16, ...))

IntendedTDD-DL-ULConfiguration-NR ::= OCTET STRING

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

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

InvokeIndication ::= ENUMERATED{

abs-information,

...,

naics-information-start,

naics-information-stop

}

-- J

-- K

Key-eNodeB-Star ::= BIT STRING (SIZE(256))

-- L

LAC ::= OCTET STRING (SIZE (2)) --(EXCEPT ('0000'H|'FFFE'H))

LastVisitedCell-Item ::= CHOICE {

e-UTRAN-Cell LastVisitedEUTRANCellInformation,

uTRAN-Cell LastVisitedUTRANCellInformation,

gERAN-Cell LastVisitedGERANCellInformation,

...,

nG-RAN-Cell LastVisitedNGRANCellInformation

}

LastVisitedEUTRANCellInformation ::= SEQUENCE {

global-Cell-ID ECGI,

cellType CellType,

time-UE-StayedInCell Time-UE-StayedInCell,

iE-Extensions ProtocolExtensionContainer { {LastVisitedEUTRANCellInformation-ExtIEs} } OPTIONAL,

...

}

LastVisitedEUTRANCellInformation-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

-- Extension for Rel-11 to support enhanced granularity for time UE stayed in cell --

{ ID id-Time-UE-StayedInCell-EnhancedGranularity CRITICALITY ignore EXTENSION Time-UE-StayedInCell-EnhancedGranularity PRESENCE optional}|

{ ID id-HO-cause CRITICALITY ignore EXTENSION Cause PRESENCE optional},

...

}

LastVisitedGERANCellInformation ::= CHOICE {

undefined NULL,

...

}

LastVisitedNGRANCellInformation ::= OCTET STRING

LastVisitedUTRANCellInformation ::= OCTET STRING

LCID ::= INTEGER(1..32, ...)

LHN-ID ::= OCTET STRING(SIZE (32..256))

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

LoadIndicator ::= ENUMERATED {

lowLoad,

mediumLoad,

highLoad,

overLoad,

...

}

LocationInformationSgNB ::= SEQUENCE {

pSCell-id NRCGI,

iE-Extensions ProtocolExtensionContainer { {LocationInformationSgNB-ExtIEs} } OPTIONAL,

...

}

LocationInformationSgNB-ExtIEs X2AP-PROTOCOL-EXTENSION ::={

...

}

LocationInformationSgNBReporting ::= ENUMERATED {

pSCell,

...

}

LocationReportingInformation ::= SEQUENCE {

eventType EventType,

reportArea ReportArea,

iE-Extensions ProtocolExtensionContainer { {LocationReportingInformation-ExtIEs} } OPTIONAL,

...

}

LocationReportingInformation-ExtIEs X2AP-PROTOCOL-EXTENSION ::={

{ ID id-AdditionLocationInformation CRITICALITY ignore EXTENSION AdditionLocationInformation PRESENCE optional},

...

}

LowerLayerPresenceStatusChange ::= ENUMERATED {

release-lower-layers,

re-establish-lower-layers,

suspend-lower-layers,

resume-lower-layers,

...

}

-- M

M1PeriodicReporting ::= SEQUENCE {

reportInterval ReportIntervalMDT,

reportAmount ReportAmountMDT,

iE-Extensions ProtocolExtensionContainer { {M1PeriodicReporting-ExtIEs} } OPTIONAL,

...

}

M1PeriodicReporting-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

M1ReportingTrigger::= ENUMERATED{

periodic,

a2eventtriggered,

...,

a2eventtriggered-periodic

}

M1ThresholdEventA2 ::= SEQUENCE {

measurementThreshold MeasurementThresholdA2,

iE-Extensions ProtocolExtensionContainer { {M1ThresholdEventA2-ExtIEs} } OPTIONAL,

...

}

M1ThresholdEventA2-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

M3Configuration ::= SEQUENCE {

m3period M3period,

iE-Extensions ProtocolExtensionContainer { {M3Configuration-ExtIEs} } OPTIONAL,

...

}

M3Configuration-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

M3period ::= ENUMERATED {ms100, ms1000, ms10000, ... }

M4Configuration ::= SEQUENCE {

m4period M4period,

m4-links-to-log Links-to-log,

iE-Extensions ProtocolExtensionContainer { {M4Configuration-ExtIEs} } OPTIONAL,

...

}

M4Configuration-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

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

M5Configuration ::= SEQUENCE {

m5period M5period,

m5-links-to-log Links-to-log,

iE-Extensions ProtocolExtensionContainer { {M5Configuration-ExtIEs} } OPTIONAL,

...

}

M5Configuration-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

M5period ::= ENUMERATED {ms1024, ms2048, ms5120, ms10240, min1, ... }

M6Configuration ::= SEQUENCE {

m6report-interval M6report-interval,

m6delay-threshold M6delay-threshold OPTIONAL,

-- This IE shall be present if the M6 Links to log IE is set to “uplink” or to “both-uplink-and-downlink” --

m6-links-to-log Links-to-log,

iE-Extensions ProtocolExtensionContainer { {M6Configuration-ExtIEs} } OPTIONAL,

...

}

M6Configuration-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

M6report-interval ::= ENUMERATED { ms1024, ms2048, ms5120, ms10240, ... }

M6delay-threshold ::= ENUMERATED { ms30, ms40, ms50, ms60, ms70, ms80, ms90, ms100, ms150, ms300, ms500, ms750, ... }

M7Configuration ::= SEQUENCE {

m7period M7period,

m7-links-to-log Links-to-log,

iE-Extensions ProtocolExtensionContainer { {M7Configuration-ExtIEs} } OPTIONAL,

...

}

M7Configuration-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

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

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

ManagementBasedMDTallowed ::= ENUMERATED {allowed, ...}

Masked-IMEISV ::= BIT STRING (SIZE (64))

MaxCHOpreparations ::= INTEGER(1..8, ...)

MDT-Activation ::= ENUMERATED {

immediate-MDT-only,

immediate-MDT-and-Trace,

...

}

MDT-Configuration ::= SEQUENCE {

mdt-Activation MDT-Activation,

areaScopeOfMDT AreaScopeOfMDT,

measurementsToActivate MeasurementsToActivate,

m1reportingTrigger M1ReportingTrigger,

m1thresholdeventA2 M1ThresholdEventA2 OPTIONAL,

-- Included in case of event-triggered, or event-triggered periodic reporting for measurement M1

m1periodicReporting M1PeriodicReporting OPTIONAL,

-- Included in case of periodic, or event-triggered periodic reporting for measurement M1

iE-Extensions ProtocolExtensionContainer { {MDT-Configuration-ExtIEs} } OPTIONAL,

...

}

MDT-Configuration-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ID id-M3Configuration CRITICALITY ignore EXTENSION M3Configuration PRESENCE conditional}|

{ID id-M4Configuration CRITICALITY ignore EXTENSION M4Configuration PRESENCE conditional}|

{ID id-M5Configuration CRITICALITY ignore EXTENSION M5Configuration PRESENCE conditional}|

{ID id-MDT-Location-Info CRITICALITY ignore EXTENSION MDT-Location-Info PRESENCE optional}|

{ID id-SignallingBasedMDTPLMNList CRITICALITY ignore EXTENSION MDTPLMNList PRESENCE optional}|

{ID id-M6Configuration CRITICALITY ignore EXTENSION M6Configuration PRESENCE conditional}|

{ID id-M7Configuration CRITICALITY ignore EXTENSION M7Configuration PRESENCE conditional}|

{ ID id-BluetoothMeasurementConfiguration CRITICALITY ignore EXTENSION BluetoothMeasurementConfiguration PRESENCE optional}|

{ ID id-WLANMeasurementConfiguration CRITICALITY ignore EXTENSION WLANMeasurementConfiguration PRESENCE optional},

...

}

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

MDT-Location-Info ::= BIT STRING (SIZE (8))

Measurement-ID ::= INTEGER (1..4095, ...)

Measurement-ID-ENDC ::= INTEGER (1..4095, ...)

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

MeasurementThresholdA2 ::= CHOICE {

threshold-RSRP Threshold-RSRP,

threshold-RSRQ Threshold-RSRQ,

...

}

MeNBCoordinationAssistanceInformation ::= ENUMERATED{

coordination-not-required,

...

}

MeNBResourceCoordinationInformation ::= SEQUENCE {

eUTRA-Cell-ID ECGI,

uLCoordinationInformation BIT STRING (SIZE(6..4400, ...)),

dLCoordinationInformation BIT STRING (SIZE(6..4400, ...)) OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {MeNBResourceCoordinationInformationExtIEs} } OPTIONAL,

...

}

MeNBResourceCoordinationInformationExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-NRCGI CRITICALITY ignore EXTENSION NRCGI PRESENCE optional}|

{ ID id-MeNBCoordinationAssistanceInformation CRITICALITY reject EXTENSION MeNBCoordinationAssistanceInformation PRESENCE optional},

...

}

MeNBtoSeNBContainer ::= OCTET STRING

MME-Group-ID ::= OCTET STRING (SIZE (2))

MME-Code ::= OCTET STRING (SIZE (1))

MBMS-Service-Area-Identity-List ::= SEQUENCE (SIZE(1.. maxnoofMBMSServiceAreaIdentities)) OF MBMS-Service-Area-Identity

MBMS-Service-Area-Identity ::= OCTET STRING (SIZE (2))

MBSFN-Subframe-Infolist::= SEQUENCE (SIZE(1.. maxnoofMBSFN)) OF MBSFN-Subframe-Info

MBSFN-Subframe-Info ::= SEQUENCE {

radioframeAllocationPeriod RadioframeAllocationPeriod,

radioframeAllocationOffset RadioframeAllocationOffset,

subframeAllocation SubframeAllocation,

iE-Extensions ProtocolExtensionContainer { {MBSFN-Subframe-Info-ExtIEs} } OPTIONAL,

...

}

MBSFN-Subframe-Info-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

MDT-ConfigurationNR ::= OCTET STRING

MobilityParametersModificationRange ::= SEQUENCE {

handoverTriggerChangeLowerLimit INTEGER (-20..20),

handoverTriggerChangeUpperLimit INTEGER (-20..20),

...

}

MobilityParametersInformation ::= SEQUENCE {

handoverTriggerChange INTEGER (-20..20),

...

}

MultibandInfoList ::= SEQUENCE (SIZE(1..maxnoofBands)) OF BandInfo

MessageOversizeNotification ::= SEQUENCE {

maximumCellListSize MaximumCellListSize,

iE-Extensions ProtocolExtensionContainer { {MessageOversizeNotification-ExtIEs} } OPTIONAL,

...

}

MessageOversizeNotification-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

MaximumCellListSize ::= INTEGER(1..16384, ...)

BandInfo ::= SEQUENCE {

freqBandIndicator FreqBandIndicator,

iE-Extensions ProtocolExtensionContainer { {BandInfo-ExtIEs} } OPTIONAL,

...

}

BandInfo-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

MeNBtoSgNBContainer ::= OCTET STRING

SplitSRBs ::= ENUMERATED {srb1, srb2, srb1and2, ...}

SplitSRB ::= SEQUENCE {

rrcContainer RRCContainer OPTIONAL,

srbType SRBType,

deliveryStatus DeliveryStatus OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {SplitSRB-ExtIEs} } OPTIONAL,

...

}

SplitSRB-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- N

NBIoT-UL-DL-AlignmentOffset ::= ENUMERATED {

khz-7dot5,

khz0,

khz7dot5,

...

}

NBIoT-RLF-Report-Container ::= OCTET STRING

Neighbour-Information ::= SEQUENCE (SIZE (0..maxnoofNeighbours)) OF SEQUENCE {

eCGI ECGI,

pCI PCI,

eARFCN EARFCN,

iE-Extensions ProtocolExtensionContainer { {Neighbour-Information-ExtIEs} } OPTIONAL,

...

}

Neighbour-Information-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-NeighbourTAC CRITICALITY ignore EXTENSION TAC PRESENCE optional}|

{ ID id-eARFCNExtension CRITICALITY reject EXTENSION EARFCNExtension PRESENCE optional},

...

}

NextHopChainingCount ::= INTEGER (0..7)

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

Number-of-Antennaports ::= ENUMERATED {

an1,

an2,

an4,

...

}

NRCapacityValue ::= SEQUENCE {

capacityValue INTEGER (0..100),

ssbAreaCapacityValue-List SSBAreaCapacityValue-List OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { NRCapacityValue-ExtIEs} } OPTIONAL,

...

}

NRCapacityValue-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

NRCarrierList ::= SEQUENCE (SIZE(1..maxnoofNRSCSs)) OF NRCarrierItem

NRCarrierItem ::= SEQUENCE {

carrierSCS NRSCS,

offsetToCarrier INTEGER (0..2199, ...),

carrierBandwidth INTEGER (0..maxnoofNRPhysicalResourceBlocks, ...),

iE-Extension ProtocolExtensionContainer { {NRCarrierItem-ExtIEs} } OPTIONAL,

...

}

NRCarrierItem-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

NRCellCapacityClassValue ::= INTEGER (1..100, ...)

NRCellPRACHConfig ::= OCTET STRING

NRCompositeAvailableCapacityGroup ::= SEQUENCE {

compositeAvailableCapacityDL NRCompositeAvailableCapacity,

compositeAvailableCapacityUL NRCompositeAvailableCapacity,

iE-Extensions ProtocolExtensionContainer { {NRCompositeAvailableCapacityGroup-ExtIEs} } OPTIONAL,

...

}

NRCompositeAvailableCapacityGroup-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

NRCompositeAvailableCapacity ::= SEQUENCE {

cellCapacityClassValue NRCellCapacityClassValue OPTIONAL,

capacityValue NRCapacityValue,

iE-Extensions ProtocolExtensionContainer { {NRCompositeAvailableCapacity-ExtIEs} } OPTIONAL,

...

}

NRCompositeAvailableCapacity-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

NRFreqInfo ::= SEQUENCE{

nRARFCN INTEGER (0.. 3279165),

freqBandListNr SEQUENCE (SIZE(1..maxnoofNrCellBands)) OF FreqBandNrItem,

sULInformation SULInformation OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {NRFreqInfo-ExtIEs} } OPTIONAL,

...

}

NRFreqInfo-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-FrequencyShift7p5khz CRITICALITY ignore EXTENSION FrequencyShift7p5khz PRESENCE optional},

...

}

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

NRCGI ::= SEQUENCE {

pLMN-Identity PLMN-Identity,

nRcellIdentifier NRCellIdentifier,

iE-Extensions ProtocolExtensionContainer { {NRCGI-ExtIEs} } OPTIONAL,

...

}

NRCGI-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

NRNeighbour-Information ::= SEQUENCE (SIZE (1.. maxofNRNeighbours))OF SEQUENCE {

nrpCI NRPCI,

nrCellID NRCGI,

fiveGS-TAC FiveGS-TAC OPTIONAL,

configured-TAC TAC OPTIONAL,

measurementTimingConfiguration OCTET STRING,

nRNeighbourModeInfo CHOICE {

fdd FDD-InfoNeighbourServedNRCell-Information,

tdd TDD-InfoNeighbourServedNRCell-Information,

...

},

iE-Extensions ProtocolExtensionContainer { {NRNeighbour-Information-ExtIEs} } OPTIONAL,

...

}

NRNeighbour-Information-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ID id-CSI-RSTransmissionIndication CRITICALITY ignore EXTENSION EARFCNExtension PRESENCE optional},

...

}

NPRACHConfiguration::= SEQUENCE {

fdd-or-tdd CHOICE {

fdd NPRACHConfiguration-FDD,

tdd NPRACHConfiguration-TDD,

...

}, iE-Extensions ProtocolExtensionContainer { { NPRACHConfiguration-ExtIEs} } OPTIONAL,

...

}

NPRACHConfiguration-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

NPRACHConfiguration-FDD::= SEQUENCE {

nprach-CP-length NPRACH-CP-Length,

anchorCarrier-NPRACHConfig OCTET STRING,

anchorCarrier-EDT-NPRACHConfig OCTET STRING OPTIONAL,

anchorCarrier-Format2-NPRACHConfig OCTET STRING OPTIONAL,

anchorCarrier-Format2-EDT-NPRACHConfig OCTET STRING OPTIONAL,

non-anchorCarrier-NPRACHConfig OCTET STRING OPTIONAL,

non-anchorCarrier-Format2-NPRACHConfig OCTET STRING OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { NPRACHConfiguration-FDD-ExtIEs} } OPTIONAL,

...

}

NPRACHConfiguration-FDD-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

NPRACHConfiguration-TDD::= SEQUENCE {

nprach-preambleFormat NPRACH-preambleFormat,

anchorCarrier-NPRACHConfigTDD OCTET STRING,

non-anchorCarrierFequencyConfiglist Non-AnchorCarrierFrequencylist OPTIONAL,

non-anchorCarrier-NPRACHConfigTDD OCTET STRING OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { NPRACHConfiguration-TDD-ExtIEs} } OPTIONAL,

...

}

NPRACHConfiguration-TDD-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

NPRACH-CP-Length::= ENUMERATED {

us66dot7,

us266dot7,

...

}

NPRACH-preambleFormat::= ENUMERATED {fmt0,fmt1,fmt2,fmt0a,fmt1a,...}

Non-AnchorCarrierFrequencylist ::= SEQUENCE (SIZE(1..maxnoofNonAnchorCarrierFreqConfig)) OF

SEQUENCE {

non-anchorCarrioerFrquency OCTET STRING,

iE-Extensions ProtocolExtensionContainer { { Non-AnchorCarrierFrequencylist-ExtIEs} } OPTIONAL,

...

}

Non-AnchorCarrierFrequencylist-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

NRPCI ::= INTEGER (0..1007)

NRrestrictioninEPSasSecondaryRAT ::= ENUMERATED {

nRrestrictedinEPSasSecondaryRAT,

...

}

NRRadioResourceStatus ::= SEQUENCE {

ssbAreaRadioResourceStatus-List SSBAreaRadioResourceStatus-List,

iE-Extensions ProtocolExtensionContainer { {NRRadioResourceStatus-ExtIEs} } OPTIONAL,

...

}

NRRadioResourceStatus-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

NRrestrictionin5GS ::= ENUMERATED {

nRrestrictedin5GS,

...

}

NRencryptionAlgorithms ::= BIT STRING (SIZE (16,...))

NRintegrityProtectionAlgorithms ::= BIT STRING (SIZE (16,...))

NR-TxBW ::= SEQUENCE {

nRSCS NRSCS,

nRNRB NRNRB,

iE-Extensions ProtocolExtensionContainer { {NR-TxBW-ExtIEs} } OPTIONAL,

...

}

NR-TxBW-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

NRNRB ::= ENUMERATED { nrb11, nrb18, nrb24, nrb25, nrb31, nrb32, nrb38, nrb51, nrb52, nrb65, nrb66, nrb78, nrb79, nrb93, nrb106, nrb107, nrb121, nrb132, nrb133, nrb135, nrb160, nrb162, nrb189, nrb216, nrb217, nrb245, nrb264, nrb270, nrb273, ...}

NRSCS ::= ENUMERATED { scs15, scs30, scs60, scs120, ...}

NRS-NSSS-PowerOffset ::= ENUMERATED { minusThree, zero, three, ...}

FiveGS-TAC ::= OCTET STRING (SIZE (3))

NRUeReport ::= SEQUENCE {

uENRMeasurements RRCContainer,

iE-Extensions ProtocolExtensionContainer { { NRUeReport-ExtIEs} } OPTIONAL,

...

}

NRUeReport-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

NRUESidelinkAggregateMaximumBitRate ::= SEQUENCE {

uESidelinkAggregateMaximumBitRate BitRate,

iE-Extensions ProtocolExtensionContainer { { NRUESidelinkAggregateMaximumBitRate-ExtIEs} } OPTIONAL,

...

}

NRUESidelinkAggregateMaximumBitRate-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

NRUESecurityCapabilities ::= SEQUENCE {

nRencryptionAlgorithms NRencryptionAlgorithms,

nRintegrityProtectionAlgorithms NRintegrityProtectionAlgorithms,

iE-Extensions ProtocolExtensionContainer { {NRUESecurityCapabilities-ExtIEs} } OPTIONAL,

...

}

NRUESecurityCapabilities-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

NSSS-NumOccasionDifferentPrecoder ::= ENUMERATED { two, four, eight, ...}

NRV2XServicesAuthorized ::= SEQUENCE {

vehicleUE VehicleUE OPTIONAL,

pedestrianUE PedestrianUE OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {NRV2XServicesAuthorized-ExtIEs} } OPTIONAL,

...

}

NRV2XServicesAuthorized-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- O

OffsetOfNbiotChannelNumberToEARFCN ::= ENUMERATED {

minusTen,

minusNine,

minusEight,

minusSeven,

minusSix,

minusFive,

minusFour,

minusThree,

minusTwo,

minusOne,

minusZeroDotFive,

zero,

one,

two,

three,

four,

five,

six,

seven,

eight,

nine,

...,

minusEightDotFive,

minusFourDotFive,

threeDotFive,

sevenDotFive

}

Oneframe ::= BIT STRING (SIZE (6))

-- P

Packet-LossRate ::= INTEGER(0..1000)

PA-Values ::= ENUMERATED {

dB-6,

dB-4dot77,

dB-3,

dB-1dot77,

dB0,

dB1,

dB2,

dB3,

...

}

PC5QoSParameters ::= SEQUENCE {

pc5QoSFlowList PC5QoSFlowList,

pc5LinkAggregatedBitRates BitRate OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { PC5QoSParameters-ExtIEs} } OPTIONAL,

...

}

PC5QoSParameters-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

    ...

}

PC5QoSFlowList ::= SEQUENCE (SIZE(1..maxnoofPC5QoSFlows)) OF PC5QoSFlowItem

PC5QoSFlowItem::= SEQUENCE {

pQI FiveQI,

pc5FlowBitRates PC5FlowBitRates OPTIONAL,

range Range OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { PC5QoSFlowItem-ExtIEs} } OPTIONAL,

...

}

PC5QoSFlowItem-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

             ...

}

PC5FlowBitRates ::= SEQUENCE {

guaranteedFlowBitRate BitRate,

maximumFlowBitRate BitRate,

iE-Extensions ProtocolExtensionContainer { { PC5FlowBitRates-ExtIEs} } OPTIONAL,

...

}

PC5FlowBitRates-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

             ...

}

PDCPChangeIndication ::= ENUMERATED {s-KgNB-update-required, pDCP-data-recovery-required,...}

PDCP-SN ::= INTEGER (0..4095)

PDCP-SNExtended ::= INTEGER (0..32767)

PDCP-SNlength18 ::= INTEGER (0..262143)

PDCPSnLength ::= ENUMERATED {twelve-bits,eighteen-bits,...}

PCI ::= INTEGER (0..503, ...)

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

Port-Number ::= OCTET STRING (SIZE (2))

PRACH-Configuration ::= SEQUENCE {

rootSequenceIndex INTEGER (0..837),

zeroCorrelationIndex INTEGER (0..15),

highSpeedFlag BOOLEAN,

prach-FreqOffset INTEGER (0..94),

prach-ConfigIndex INTEGER (0..63) OPTIONAL, -- present for TDD --

iE-Extensions ProtocolExtensionContainer { {PRACH-Configuration-ExtIEs} } OPTIONAL,

...

}

PLMNAreaBasedQMC ::= SEQUENCE {

plmnListforQMC PLMNListforQMC,

iE-Extensions ProtocolExtensionContainer { {PLMNAreaBasedQMC-ExtIEs} } OPTIONAL,

...

}

PLMNAreaBasedQMC-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

PLMNListforQMC ::= SEQUENCE (SIZE(1..maxnoofPLMNforQMC)) OF PLMN-Identity

PRACH-Configuration-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

Pre-emptionCapability ::= ENUMERATED {

shall-not-trigger-pre-emption,

may-trigger-pre-emption

}

Pre-emptionVulnerability ::= ENUMERATED {

not-pre-emptable,

pre-emptable

}

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

ProSeAuthorized ::= SEQUENCE {

proSeDirectDiscovery ProSeDirectDiscovery OPTIONAL,

proSeDirectCommunication ProSeDirectCommunication OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {ProSeAuthorized-ExtIEs} } OPTIONAL,

...

}

ProSeAuthorized-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-ProSeUEtoNetworkRelaying CRITICALITY ignore EXTENSION ProSeUEtoNetworkRelaying PRESENCE optional},

...

}

ProSeDirectDiscovery ::= ENUMERATED {

authorized,

not-authorized,

...

}

ProSeDirectCommunication ::= ENUMERATED {

authorized,

not-authorized,

...

}

ProSeUEtoNetworkRelaying ::= ENUMERATED {

authorized,

not-authorized,

...

}

ProtectedEUTRAResourceIndication::= SEQUENCE {

activationSFN INTEGER (0..1023),

protectedResourceList ProtectedResourceList,

mBSFNControlRegionLength INTEGER (0..3) OPTIONAL,

pDCCHRegionLength INTEGER (1..3) OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {ProtectedEUTRAResourceIndication-ExtIEs} } OPTIONAL,

...

}

ProtectedEUTRAResourceIndication-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

} -- Rapporteur: missing extension --

ProtectedFootprintTimePattern ::= SEQUENCE {

protectedFootprintTimePeriodicity INTEGER (1..320, ...),

protectedFootprintStartTime INTEGER (1..20, ...),

iE-Extensions ProtocolExtensionContainer { {ProtectedFootprintTimePattern-ExtIEs} } OPTIONAL,

...

}

ProtectedFootprintTimePattern-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ProtectedResourceList ::= SEQUENCE (SIZE(1.. maxnoofProtectedResourcePatterns)) OF ProtectedResourceList-Item

ProtectedResourceList-Item ::= SEQUENCE {

resourceType ResourceType,

intraPRBProtectedResourceFootprint BIT STRING (SIZE(84, ...)),

protectedFootprintFrequencyPattern BIT STRING (SIZE(6..110, ...)),

protectedFootprintTimePattern ProtectedFootprintTimePattern,

iE-Extensions ProtocolExtensionContainer { {ProtectedResourceList-Item-ExtIEs} } OPTIONAL,

...

}

ProtectedResourceList-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

PartialListIndicator ::= ENUMERATED {partial, ...}

PrivacyIndicator ::= ENUMERATED {

immediate-MDT,

logged-MDT,

...

}

-- Q

QCI ::= INTEGER (0..255)

QoS-Mapping-Information ::= SEQUENCE {

dscp BIT STRING (SIZE(6)) OPTIONAL,

flow-label BIT STRING (SIZE(20)) OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {QoS-Mapping-Information-ExtIEs} } OPTIONAL,

...

}

QoS-Mapping-Information-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- R

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

RadioframeAllocationPeriod ::= ENUMERATED{

n1,

n2,

n4,

n8,

n16,

n32,

...

}

RadioResourceStatus ::= SEQUENCE {

dL-GBR-PRB-usage DL-GBR-PRB-usage,

uL-GBR-PRB-usage UL-GBR-PRB-usage,

dL-non-GBR-PRB-usage DL-non-GBR-PRB-usage,

uL-non-GBR-PRB-usage UL-non-GBR-PRB-usage,

dL-Total-PRB-usage DL-Total-PRB-usage,

uL-Total-PRB-usage UL-Total-PRB-usage,

iE-Extensions ProtocolExtensionContainer { {RadioResourceStatus-ExtIEs} } OPTIONAL,

...

}

RadioResourceStatus-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ID id-DL-scheduling-PDCCH-CCE-usage CRITICALITY ignore EXTENSION DL-scheduling-PDCCH-CCE-usage PRESENCE optional}|

{ID id-UL-scheduling-PDCCH-CCE-usage CRITICALITY ignore EXTENSION UL-scheduling-PDCCH-CCE-usage PRESENCE optional},

...

}

Range ::= ENUMERATED {m50, m80, m180, m200, m350, m400, m500, m700, m1000, ...}

RAN-UE-NGAP-ID ::= INTEGER (0..4294967295)

ReceiveStatusofULPDCPSDUs ::= BIT STRING (SIZE(4096))

ReceiveStatusOfULPDCPSDUsExtended ::= BIT STRING (SIZE(1..16384))

ReceiveStatusOfULPDCPSDUsPDCP-SNlength18 ::= BIT STRING (SIZE(1..131072))

ReleaseFastMCGRecoveryViaSRB3 ::= ENUMERATED {true,...}

Reestablishment-Indication ::= ENUMERATED {

reestablished,

...

}

Registration-Request ::= ENUMERATED {

start,

stop,

...,

partial-stop,

add

}

Registration-Request-ENDC ::= ENUMERATED {

start,

stop,

add,

...

}

RelativeNarrowbandTxPower ::= SEQUENCE {

rNTP-PerPRB BIT STRING (SIZE(6..110, ...)),

rNTP-Threshold RNTP-Threshold,

numberOfCellSpecificAntennaPorts ENUMERATED {one, two, four, ...},

p-B INTEGER (0..3,...),

pDCCH-InterferenceImpact INTEGER (0..4,...),

iE-Extensions ProtocolExtensionContainer { {RelativeNarrowbandTxPower-ExtIEs} } OPTIONAL,

...

}

RelativeNarrowbandTxPower-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-enhancedRNTP CRITICALITY ignore EXTENSION EnhancedRNTP PRESENCE optional },

...

}

ReplacingCellsList ::= SEQUENCE (SIZE(0.. maxCellineNB)) OF ReplacingCellsList-Item

ReplacingCellsList-Item ::= SEQUENCE {

eCGI ECGI,

...

}

ReportAmountMDT ::= ENUMERATED{r1, r2, r4, r8, r16, r32, r64, rinfinity}

ReportArea ::= ENUMERATED{

ecgi,

...

}

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

ReportingPeriodicityCSIR ::= ENUMERATED {

ms5,

ms10,

ms20,

ms40,

ms80,

...

}

ReportCharacteristics-ENDC ::= BIT STRING (SIZE (32))

ReportingPeriodicityRSRPMR ::= ENUMERATED {

one-hundred-20-ms,

two-hundred-40-ms,

four-hundred-80-ms,

six-hundred-40-ms,

...

}

ReportIntervalMDT ::= ENUMERATED {ms120, ms240, ms480, ms640, ms1024, ms2048, ms5120, ms10240, min1, min6, min12, min30, min60}

RequestedFastMCGRecoveryViaSRB3 ::= ENUMERATED {true,...}

RequestedFastMCGRecoveryViaSRB3Release ::= ENUMERATED {true,...}

ReservedSubframePattern ::= SEQUENCE{

subframeType SubframeType,

reservedSubframePattern BIT STRING (SIZE(10..160)),

mBSFNControlRegionLength INTEGER (0..3),

iE-Extensions ProtocolExtensionContainer { {ReservedSubframePattern-ExtIEs} } OPTIONAL,

...

}

ReservedSubframePattern-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ResourceType ::= ENUMERATED {

downlinknonCRS,

cRS,

uplink,

...

}

ResumeID ::= CHOICE {

non-truncated BIT STRING(SIZE(40)),

truncated BIT STRING(SIZE(24)),

...

}

RLCMode ::= ENUMERATED {

rlc-am,

rlc-um-bidirectional,

rlc-um-unidirectional-ul,

rlc-um-unidirectional-dl,

...

}

RLC-Status ::= SEQUENCE {

reestablishment-Indication Reestablishment-Indication,

iE-Extensions ProtocolExtensionContainer { {RLC-Status-ExtIEs} } OPTIONAL,

...

}

RLC-Status-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

RNTP-Threshold ::= ENUMERATED {

minusInfinity,

minusEleven,

minusTen,

minusNine,

minusEight,

minusSeven,

minusSix,

minusFive,

minusFour,

minusThree,

minusTwo,

minusOne,

zero,

one,

two,

three,

...

}

RRC-Config-Ind ::= ENUMERATED {

full-config,

delta-config,

...

}

RRC-Context ::= OCTET STRING

RRCConnReestabIndicator ::= ENUMERATED {

reconfigurationFailure, handoverFailure, otherFailure, ...

}

-- The values correspond to the values of ReestablishmentCause reported from the UE in the RRCConnectionReestablishmentRequest, as defined in TS 36.331 [9]

RRCConnSetupIndicator::= ENUMERATED {

rrcConnSetup,

...

}

RSRPMeasurementResult ::= SEQUENCE (SIZE(1..maxCellReport)) OF

SEQUENCE {

rSRPCellID ECGI,

rSRPMeasured INTEGER (0..97, ...),

iE-Extensions ProtocolExtensionContainer { {RSRPMeasurementResult-ExtIEs} } OPTIONAL,

...

}

RSRPMeasurementResult-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

RSRPMRList ::= SEQUENCE (SIZE(1..maxUEReport)) OF

SEQUENCE {

rSRPMeasurementResult RSRPMeasurementResult,

iE-Extensions ProtocolExtensionContainer { {RSRPMRList-ExtIEs} } OPTIONAL,

...

}

RSRPMRList-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-UEID CRITICALITY ignore EXTENSION UEID PRESENCE optional},

...

}

RRCContainer ::= OCTET STRING

-- S

S1TNLLoadIndicator ::= SEQUENCE {

dLS1TNLLoadIndicator LoadIndicator,

uLS1TNLLoadIndicator LoadIndicator,

iE-Extensions ProtocolExtensionContainer { {S1TNLLoadIndicator-ExtIEs} } OPTIONAL,

...

}

S1TNLLoadIndicator-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

SCGChangeIndication ::= ENUMERATED {pDCPCountWrapAround, pSCellChange, other, ...}

SecondaryRATUsageReportList ::= SEQUENCE (SIZE(1..maxnoofBearers)) OF ProtocolIE-Single-Container {{SecondaryRATUsageReport-ItemIEs}}

SecondaryRATUsageReport-ItemIEs X2AP-PROTOCOL-IES ::= {

{ ID id-SecondaryRATUsageReport-Item CRITICALITY reject TYPE SecondaryRATUsageReport-Item PRESENCE mandatory},

...

}

SecondaryRATUsageReport-Item ::= SEQUENCE {

e-RAB-ID E-RAB-ID,

secondaryRATType ENUMERATED {nr, ..., nR-unlicensed },

e-RABUsageReportList E-RABUsageReportList,

iE-Extensions ProtocolExtensionContainer { {SecondaryRATUsageReport-Item-ExtIEs} } OPTIONAL,

...

}

SecondaryRATUsageReport-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

SeNBSecurityKey ::= BIT STRING (SIZE(256))

SeNBtoMeNBContainer ::= OCTET STRING

ServedCells ::= SEQUENCE (SIZE (1.. maxCellineNB)) OF SEQUENCE {

servedCellInfo ServedCell-Information,

neighbour-Info Neighbour-Information OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {ServedCell-ExtIEs} } OPTIONAL,

...

}

ServedCell-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-NRNeighbourInfoToAdd CRITICALITY ignore EXTENSION NRNeighbour-Information PRESENCE optional },

...

}

ServedCell-Information ::= SEQUENCE {

pCI PCI,

cellId ECGI,

tAC TAC,

broadcastPLMNs BroadcastPLMNs-Item,

eUTRA-Mode-Info EUTRA-Mode-Info,

iE-Extensions ProtocolExtensionContainer { {ServedCell-Information-ExtIEs} } OPTIONAL,

...

}

ServedCell-Information-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-Number-of-Antennaports CRITICALITY ignore EXTENSION Number-of-Antennaports PRESENCE optional}|

{ ID id-PRACH-Configuration CRITICALITY ignore EXTENSION PRACH-Configuration PRESENCE optional}|

{ ID id-MBSFN-Subframe-Info CRITICALITY ignore EXTENSION MBSFN-Subframe-Infolist PRESENCE optional}|

{ ID id-CSG-Id CRITICALITY ignore EXTENSION CSG-Id PRESENCE optional}|

{ ID id-MBMS-Service-Area-List CRITICALITY ignore EXTENSION MBMS-Service-Area-Identity-List PRESENCE optional}|

{ ID id-MultibandInfoList CRITICALITY ignore EXTENSION MultibandInfoList PRESENCE optional}|

{ ID id-FreqBandIndicatorPriority CRITICALITY ignore EXTENSION FreqBandIndicatorPriority PRESENCE optional}|

{ ID id-BandwidthReducedSI CRITICALITY ignore EXTENSION BandwidthReducedSI PRESENCE optional}|

{ ID id-ProtectedEUTRAResourceIndication CRITICALITY ignore EXTENSION ProtectedEUTRAResourceIndication PRESENCE optional}|

{ ID id-BPLMN-ID-Info-EUTRA CRITICALITY ignore EXTENSION BPLMN-ID-Info-EUTRA PRESENCE optional}|

{ ID id-NPRACHConfiguration CRITICALITY ignore EXTENSION NPRACHConfiguration PRESENCE optional}|

{ ID id-SFN-Offset CRITICALITY ignore EXTENSION SFN-Offset PRESENCE optional},

...

}

ServiceType ::= ENUMERATED{

qMC-for-streaming-service,

qMC-for-MTSI-service,

...

}

SgNBCoordinationAssistanceInformation ::= ENUMERATED{

coordination-not-required,

...

}

SgNBResourceCoordinationInformation ::= SEQUENCE {

nR-CGI NRCGI,

uLCoordinationInformation BIT STRING (SIZE(6..4400, ...)),

dLCoordinationInformation BIT STRING (SIZE(6..4400, ...)) OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {SgNBResourceCoordinationInformationExtIEs} } OPTIONAL,

...

}

SgNBResourceCoordinationInformationExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-ECGI CRITICALITY ignore EXTENSION ECGI PRESENCE optional}|

{ ID id-SgNBCoordinationAssistanceInformation CRITICALITY reject EXTENSION SgNBCoordinationAssistanceInformation PRESENCE optional},

...

}

SgNB-UE-X2AP-ID ::= INTEGER (0..4294967295)

SIPTOBearerDeactivationIndication ::= ENUMERATED {

true,

...

}

SharedResourceType ::= CHOICE{

uLOnlySharing ULOnlySharing,

uLandDLSharing ULandDLSharing,

...

}

ShortMAC-I ::= BIT STRING (SIZE(16))

SGNB-Addition-Trigger-Ind ::= ENUMERATED {

sn-change,

inter-eNB-HO,

intra-eNB-HO,

...

}

SNtriggered ::=ENUMERATED{

true,

...

}

SourceOfUEActivityBehaviourInformation ::= ENUMERATED {

subscription-information,

statistics,

...

}

SpecialSubframe-Info ::= SEQUENCE {

specialSubframePatterns SpecialSubframePatterns,

cyclicPrefixDL CyclicPrefixDL,

cyclicPrefixUL CyclicPrefixUL,

iE-Extensions ProtocolExtensionContainer { {SpecialSubframe-Info-ExtIEs} } OPTIONAL,

...

}

SpecialSubframe-Info-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

SpecialSubframePatterns ::= ENUMERATED {

ssp0,

ssp1,

ssp2,

ssp3,

ssp4,

ssp5,

ssp6,

ssp7,

ssp8,

...

}

SpectrumSharingGroupID ::= INTEGER (1..maxCellineNB)

SubbandCQI ::= SEQUENCE {

subbandCQICodeword0 SubbandCQICodeword0,

subbandCQICodeword1 SubbandCQICodeword1 OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {SubbandCQI-ExtIEs} } OPTIONAL,

...

}

Subscription-Based-UE-DifferentiationInfo ::= SEQUENCE {

periodicCommunicationIndicator ENUMERATED {periodically, ondemand, ...} OPTIONAL,

periodicTime INTEGER (1..3600, ...) OPTIONAL,

scheduledCommunicationTime ScheduledCommunicationTime OPTIONAL,

stationaryIndication ENUMERATED {stationary, mobile, ...} OPTIONAL,

trafficProfile ENUMERATED {single-packet, dual-packets, multiple-packets, ...} OPTIONAL,

batteryIndication ENUMERATED {battery-powered, battery-powered-not-rechargeable-or-replaceable, not-battery-powered, ...} OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { Subscription-Based-UE-DifferentiationInfo-ExtIEs} } OPTIONAL,

...

}

Subscription-Based-UE-DifferentiationInfo-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ScheduledCommunicationTime ::= SEQUENCE {

dayofWeek BIT STRING (SIZE(7)) OPTIONAL,

timeofDayStart INTEGER (0..86399, ...) OPTIONAL,

timeofDayEnd INTEGER (0..86399, ...) OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { ScheduledCommunicationTime-ExtIEs}} OPTIONAL,

...

}

ScheduledCommunicationTime-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

SRVCCOperationPossible ::= ENUMERATED {

possible,

...

}

SSBAreaCapacityValue-List ::= SEQUENCE (SIZE (1.. maxnoofSSBAreas)) OF SSBAreaCapacityValue-Item

SSBAreaCapacityValue-Item ::= SEQUENCE {

ssbIndex SSBIndex,

ssbAreaCapacityValue INTEGER (0..100),

iE-Extensions ProtocolExtensionContainer { {SSBAreaCapacityValue-ExtIEs} } OPTIONAL,

...

}

SSBAreaCapacityValue-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

SSBAreaRadioResourceStatus-List ::= SEQUENCE (SIZE (1.. maxnoofSSBAreas)) OF SSBAreaRadioResourceStatus-Item

SSBAreaRadioResourceStatus-Item ::= SEQUENCE {

ssbIndex SSBIndex,

ssbAreaDLGBRPRBUsage INTEGER (0..100),

ssbAreaULGBRPRBUsage INTEGER (0..100),

ssbAreaDLNonGBRPRBUsage INTEGER (0..100),

ssbAreaULNonGBRPRBUsage INTEGER (0..100),

ssbAreaDLTotalPRBUsage INTEGER (0..100),

ssbAreaULTotalPRBUsage INTEGER (0..100),

ssbAreaDLSchedulingPDCCHCCEUsage INTEGER (0..100) OPTIONAL,

ssbAreaULSchedulingPDCCHCCEUsage INTEGER (0..100) OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {SSBAreaRadioResourceStatus-ExtIEs} } OPTIONAL,

...

}

SSBAreaRadioResourceStatus-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

SSBIndex ::= INTEGER (0..63)

SSB-PositionsInBurst ::= CHOICE {

shortBitmap BIT STRING (SIZE (4)),

mediumBitmap BIT STRING (SIZE (8)),

longBitmap BIT STRING (SIZE (64)),

choice-extension ProtocolIE-Single-Container { {SSB-PositionsInBurst-ExtIEs} }

}

SSB-PositionsInBurst-ExtIEs X2AP-PROTOCOL-IES ::= {

...

}

SubbandCQI-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

SubbandCQICodeword0 ::= CHOICE {

four-bitCQI INTEGER (0..15, ...),

two-bitSubbandDifferentialCQI INTEGER (0..3, ...),

two-bitDifferentialCQI INTEGER (0..3, ...),

...

}

SubbandCQICodeword1 ::= CHOICE {

four-bitCQI INTEGER (0..15, ...),

three-bitSpatialDifferentialCQI INTEGER (0..7, ...),

two-bitSubbandDifferentialCQI INTEGER (0..3, ...),

two-bitDifferentialCQI INTEGER (0..3, ...),

...

}

SubbandCQIList ::= SEQUENCE (SIZE(1.. maxSubband)) OF SubbandCQIItem

SubbandCQIItem ::= SEQUENCE {

subbandCQI SubbandCQI,

subbandIndex INTEGER (0..27,...),

iE-Extensions ProtocolExtensionContainer { {SubbandCQIItem-ExtIEs} } OPTIONAL,

...

}

SubbandCQIItem-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

SubbandSize ::= ENUMERATED {

size2,

size3,

size4,

size6,

size8,

...

}

SubscriberProfileIDforRFP ::= INTEGER (1..256)

SubframeAllocation ::= CHOICE {

oneframe Oneframe,

fourframes Fourframes,

...

}

SubframeAssignment ::= ENUMERATED {

sa0,

sa1,

sa2,

sa3,

sa4,

sa5,

sa6,

...

}

SubframeType ::= ENUMERATED{mbsfn,nonmbsfn,...}

SgNBSecurityKey ::= BIT STRING (SIZE(256))

SgNBtoMeNBContainer ::= OCTET STRING

SRBType ::= ENUMERATED {srb1, srb2, ...}

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

SULInformation ::= SEQUENCE {

sUL-ARFCN INTEGER (0.. 3279165),

sUL-TxBW NR-TxBW,

iE-Extensions ProtocolExtensionContainer { {SULInformation-ExtIEs} } OPTIONAL,

...

}

SupportedSULFreqBandItem ::= SEQUENCE {

freqBandIndicatorNr INTEGER (1..1024,...),

iE-Extensions ProtocolExtensionContainer { {SupportedSULFreqBandItem-ExtIEs} } OPTIONAL,

...

}

SupportedSULFreqBandItem-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

SULInformation-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-CarrierList CRITICALITY ignore EXTENSION NRCarrierList PRESENCE optional }|

{ ID id-FrequencyShift7p5khz CRITICALITY ignore EXTENSION FrequencyShift7p5khz PRESENCE optional },

...

}

SFN-Offset ::= SEQUENCE {

sFN-Time-Offset BIT STRING (SIZE(24)),

iE-Extensions ProtocolExtensionContainer { {SFN-Offset-ExtIEs} } OPTIONAL,

...

}

SFN-Offset-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

-- T

TABasedMDT::= SEQUENCE {

tAListforMDT TAListforMDT,

iE-Extensions ProtocolExtensionContainer { {TABasedMDT-ExtIEs} } OPTIONAL,

...

}

TABasedMDT-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

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

TAIBasedMDT ::= SEQUENCE {

tAIListforMDT TAIListforMDT,

iE-Extensions ProtocolExtensionContainer { {TAIBasedMDT-ExtIEs} } OPTIONAL,

...

}

TAIBasedMDT-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

TAIListforMDT ::= SEQUENCE (SIZE(1..maxnoofTAforMDT)) OF TAI-Item

TAI-Item ::= SEQUENCE {

tAC TAC,

pLMN-Identity PLMN-Identity,

iE-Extensions ProtocolExtensionContainer { {TAI-Item-ExtIEs} } OPTIONAL,

...

}

TAI-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

TAListforMDT ::= SEQUENCE (SIZE(1..maxnoofTAforMDT)) OF TAC

TABasedQMC ::= SEQUENCE {

tAListforQMC TAListforQMC,

iE-Extensions ProtocolExtensionContainer { {TABasedQMC-ExtIEs} } OPTIONAL,

...

}

TABasedQMC-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

TAListforQMC ::= SEQUENCE (SIZE(1..maxnoofTAforQMC)) OF TAC

TAIBasedQMC ::= SEQUENCE {

tAIListforQMC TAIListforQMC,

iE-Extensions ProtocolExtensionContainer { {TAIBasedQMC-ExtIEs} } OPTIONAL,

...

}

TAIBasedQMC-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

TAIListforQMC ::= SEQUENCE (SIZE(1..maxnoofTAforQMC)) OF TAI-Item

TargetCellInNGRAN ::= OCTET STRING

TargetCellInUTRAN ::= OCTET STRING -- This IE is to be encoded according to the UTRAN Cell ID in the Last Visited UTRAN Cell Information IE in TS 25.413 [24]

TargeteNBtoSource-eNBTransparentContainer ::= OCTET STRING

TDD-Info ::= SEQUENCE {

eARFCN EARFCN,

transmission-Bandwidth Transmission-Bandwidth,

subframeAssignment SubframeAssignment,

specialSubframe-Info SpecialSubframe-Info,

iE-Extensions ProtocolExtensionContainer { {TDD-Info-ExtIEs} } OPTIONAL,

...

}

TDD-Info-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-AdditionalSpecialSubframe-Info CRITICALITY ignore EXTENSION AdditionalSpecialSubframe-Info PRESENCE optional}|

{ ID id-eARFCNExtension CRITICALITY reject EXTENSION EARFCNExtension PRESENCE optional}|

{ ID id-AdditionalSpecialSubframeExtension-Info CRITICALITY ignore EXTENSION AdditionalSpecialSubframeExtension-Info PRESENCE optional}|

{ ID id-OffsetOfNbiotChannelNumberToDL-EARFCN CRITICALITY reject EXTENSION OffsetOfNbiotChannelNumberToEARFCN PRESENCE optional}|

{ ID id-NBIoT-UL-DL-AlignmentOffset CRITICALITY reject EXTENSION NBIoT-UL-DL-AlignmentOffset PRESENCE optional},

...

}

TDD-InfoNeighbourServedNRCell-Information ::= SEQUENCE {

nRFreqInfo NRFreqInfo,

iE-Extensions ProtocolExtensionContainer { {TDD-InfoNeighbourServedNRCell-Information-ExtIEs} } OPTIONAL,

...

}

TDD-InfoNeighbourServedNRCell-Information-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ID id-IntendedTDD-DL-ULConfiguration-NR CRITICALITY ignore EXTENSION IntendedTDD-DL-ULConfiguration-NR PRESENCE optional},

...

}

TDDULDLConfigurationCommonNR ::= OCTET STRING

Threshold-RSRP ::= INTEGER(0..97)

Threshold-RSRQ ::= INTEGER(0..34)

TimeToWait ::= ENUMERATED {

v1s,

v2s,

v5s,

v10s,

v20s,

v60s,

...

}

Time-UE-StayedInCell ::= INTEGER (0..4095)

Time-UE-StayedInCell-EnhancedGranularity ::= INTEGER (0..40950)

TNLA-To-Add-List ::= SEQUENCE (SIZE(1..maxnoofTNLAssociations)) OF TNLA-To-Add-Item

TNLA-To-Add-Item ::= SEQUENCE {

tNLAssociationTransportLayerAddress CPTransportLayerInformation,

tNLAssociationUsage TNLAssociationUsage,

iE-Extensions ProtocolExtensionContainer { { TNLA-To-Add-Item-ExtIEs} } OPTIONAL

}

TNLA-To-Add-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

TNLA-To-Update-List ::= SEQUENCE (SIZE(1..maxnoofTNLAssociations)) OF TNLA-To-Update-Item

TNLA-To-Update-Item::= SEQUENCE {

tNLAssociationTransportLayerAddress CPTransportLayerInformation,

tNLAssociationUsage TNLAssociationUsage OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { TNLA-To-Update-Item-ExtIEs} } OPTIONAL

}

TNLA-To-Update-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

TNLA-To-Remove-List ::= SEQUENCE (SIZE(1..maxnoofTNLAssociations)) OF TNLA-To-Remove-Item

TNLA-To-Remove-Item::= SEQUENCE {

tNLAssociationTransportLayerAddress CPTransportLayerInformation,

iE-Extensions ProtocolExtensionContainer { { TNLA-To-Remove-Item-ExtIEs} } OPTIONAL

}

TNLA-To-Remove-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

TNLA-Setup-List ::= SEQUENCE (SIZE(1..maxnoofTNLAssociations)) OF TNLA-Setup-Item

TNLA-Setup-Item ::= SEQUENCE {

tNLAssociationTransportLayerAddress CPTransportLayerInformation,

iE-Extensions ProtocolExtensionContainer { { TNLA-Setup-Item-ExtIEs} } OPTIONAL,

...

}

TNLA-Setup-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

TNLA-Failed-To-Setup-List ::= SEQUENCE (SIZE(1..maxnoofTNLAssociations)) OF TNLA-Failed-To-Setup-Item

TNLA-Failed-To-Setup-Item ::= SEQUENCE {

tNLAssociationTransportLayerAddress CPTransportLayerInformation,

cause Cause,

iE-Extensions ProtocolExtensionContainer { { TNLA-Failed-To-Setup-Item-ExtIEs} } OPTIONAL

}

TNLA-Failed-To-Setup-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

TNLAssociationUsage ::= ENUMERATED {

ue,

non-ue,

both,

...

}

TNLCapacityIndicator ::= SEQUENCE {

dlTNLMaximumOfferedCapacity INTEGER (1..16777216, ...),

dlTNLAvailableCapacity INTEGER (0..100, ...),

ulTNLMaximumOfferedCapacity INTEGER (1..16777216, ...),

ulTNLAvailableCapacity INTEGER (0..100, ...),

iE-Extensions ProtocolExtensionContainer { {TNLCapacityIndicator-ExtIEs} } OPTIONAL,

...

}

TNLCapacityIndicator-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

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

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

iP-SecTransportLayerAddress TransportLayerAddress,

gTPTransportLayerAddressesToAdd GTPTLAs OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { Transport-UP-Layer-Addresses-Info-To-Add-ItemExtIEs } } OPTIONAL,

...

}

Transport-UP-Layer-Addresses-Info-To-Add-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

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

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

iP-SecTransportLayerAddress TransportLayerAddress,

gTPTransportLayerAddressesToRemove GTPTLAs OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { Transport-UP-Layer-Addresses-Info-To-Remove-ItemExtIEs } } OPTIONAL,

...

}

Transport-UP-Layer-Addresses-Info-To-Remove-ItemExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

TNLConfigurationInfo ::= SEQUENCE {

transport-UP-Layer-Addresses-Info-To-Add-List Transport-UP-Layer-Addresses-Info-To-Add-List OPTIONAL,

transport-UP-Layer-Addresses-Info-To-Remove-List Transport-UP-Layer-Addresses-Info-To-Remove-List OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { TNLConfigurationInfo-ExtIEs } } OPTIONAL,

...

}

TNLConfigurationInfo-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

TraceActivation ::= SEQUENCE {

eUTRANTraceID EUTRANTraceID,

interfacesToTrace InterfacesToTrace,

traceDepth TraceDepth,

traceCollectionEntityIPAddress TraceCollectionEntityIPAddress,

iE-Extensions ProtocolExtensionContainer { {TraceActivation-ExtIEs} } OPTIONAL,

...

}

TraceActivation-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-MDTConfiguration CRITICALITY ignore EXTENSION MDT-Configuration PRESENCE optional}|

{ ID id-UEAppLayerMeasConfig CRITICALITY ignore EXTENSION UEAppLayerMeasConfig PRESENCE optional}|

{ ID id-MDTConfigurationNR CRITICALITY ignore EXTENSION MDT-ConfigurationNR PRESENCE optional}|

{ ID id-TraceCollectionEntityURI CRITICALITY ignore EXTENSION URI-Address PRESENCE optional},

...

}

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

TraceDepth ::= ENUMERATED {

minimum,

medium,

maximum,

minimumWithoutVendorSpecificExtension,

mediumWithoutVendorSpecificExtension,

maximumWithoutVendorSpecificExtension,

...

}

Transmission-Bandwidth ::= ENUMERATED {

bw6,

bw15,

bw25,

bw50,

bw75,

bw100,

...,

bw1

}

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

TransportLayerAddressAndPort ::= SEQUENCE {

endpointIPAddress TransportLayerAddress,

portnumber Port-Number

}

TunnelInformation ::= SEQUENCE {

transportLayerAddress TransportLayerAddress,

uDP-Port-Number Port-Number OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {Tunnel-Information-ExtIEs} } OPTIONAL,

...

}

Tunnel-Information-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

TypeOfError ::= ENUMERATED {

not-understood,

missing,

...

}

-- U

UEAggregateMaximumBitRate ::= SEQUENCE {

uEaggregateMaximumBitRateDownlink BitRate,

uEaggregateMaximumBitRateUplink BitRate,

iE-Extensions ProtocolExtensionContainer { {UEAggregate-MaximumBitrate-ExtIEs} } OPTIONAL,

...

}

UEAggregate-MaximumBitrate-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ ID id-extended-uEaggregateMaximumBitRateDownlink CRITICALITY ignore EXTENSION ExtendedBitRate PRESENCE optional}|

{ ID id-extended-uEaggregateMaximumBitRateUplink CRITICALITY ignore EXTENSION ExtendedBitRate PRESENCE optional},

...

}

UEAppLayerMeasConfig ::= SEQUENCE {

containerForAppLayerMeasConfig OCTET STRING (SIZE(1..1000)),

areaScopeOfQMC AreaScopeOfQMC,

iE-Extensions ProtocolExtensionContainer { {UEAppLayerMeasConfig-ExtIEs} } OPTIONAL,

...

}

UEAppLayerMeasConfig-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

{ID id-serviceType CRITICALITY ignore EXTENSION ServiceType PRESENCE optional},

...

}

UE-ContextKeptIndicator ::= ENUMERATED {

true,

...

}

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

UE-HistoryInformation ::= SEQUENCE (SIZE(1..maxnoofCells)) OF LastVisitedCell-Item

UE-HistoryInformationFromTheUE ::= OCTET STRING

-- This IE is a transparent container and shall be encoded as the VisitedCellInfoList field contained in the UEInformationResponse message as defined in TS 36.331 [9]

UE-S1AP-ID ::= INTEGER (0.. 4294967295)

UE-X2AP-ID ::= INTEGER (0..4095)

UE-X2AP-ID-Extension ::= INTEGER (0..4095, ...)

UERadioCapability ::= OCTET STRING

UERadioCapabilityID ::= OCTET STRING

UE-RLF-Report-Container::= OCTET STRING

-- This IE is a transparent container and shall be encoded as the *RLF-Report-r9* field contained in the *UEInformationResponse* message as defined in TS 36.331 [9]

UE-RLF-Report-Container-for-extended-bands ::= OCTET STRING

-- This IE is a transparent container and shall be encoded as the RLF-Report-v9e0 field contained in the UEInformationResponse message as defined in TS 36.331 [9]

UESecurityCapabilities ::= SEQUENCE {

encryptionAlgorithms EncryptionAlgorithms,

integrityProtectionAlgorithms IntegrityProtectionAlgorithms,

iE-Extensions ProtocolExtensionContainer { {UESecurityCapabilities-ExtIEs} } OPTIONAL,

...

}

UESecurityCapabilities-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

UESidelinkAggregateMaximumBitRate ::= SEQUENCE {

uESidelinkAggregateMaximumBitRate BitRate,

iE-Extensions ProtocolExtensionContainer { {UE-Sidelink-Aggregate-MaximumBitRate-ExtIEs} } OPTIONAL,

...

}

UE-Sidelink-Aggregate-MaximumBitRate-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

UEsToBeResetList ::= SEQUENCE (SIZE (1.. maxUEsinengNBDU)) OF UEsToBeResetList-Item

UEsToBeResetList-Item::= SEQUENCE {

meNB-ID UE-X2AP-ID,

meNB-ID-ext UE-X2AP-ID-Extension OPTIONAL,

sgNB-ID SgNB-UE-X2AP-ID OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {UEsToBeResetList-Item-ExtIEs} } OPTIONAL,

...

}

UEsToBeResetList-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ULandDLSharing ::= SEQUENCE{

uLResourcesULandDLSharing ULResourcesULandDLSharing,

dLResourcesULandDLSharing DLResourcesULandDLSharing,

iE-Extensions ProtocolExtensionContainer { {ULandDLSharing-ExtIEs} } OPTIONAL,

...

}

ULandDLSharing-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ULConfiguration::= SEQUENCE {

uL-PDCP UL-UE-Configuration,

iE-Extensions ProtocolExtensionContainer { {ULConfiguration-ExtIEs} } OPTIONAL,

...

}

ULConfiguration-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

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

UL-GBR-PRB-usage::= INTEGER (0..100)

UL-HighInterferenceIndicationInfo ::= SEQUENCE (SIZE(1..maxCellineNB)) OF UL-HighInterferenceIndicationInfo-Item

UL-HighInterferenceIndicationInfo-Item ::= SEQUENCE {

target-Cell-ID ECGI,

ul-interferenceindication UL-HighInterferenceIndication,

iE-Extensions ProtocolExtensionContainer { {UL-HighInterferenceIndicationInfo-Item-ExtIEs} } OPTIONAL,

...

}

UL-HighInterferenceIndicationInfo-Item-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

UL-HighInterferenceIndication ::= BIT STRING (SIZE(1..110, ...))

UL-InterferenceOverloadIndication ::= SEQUENCE (SIZE(1..maxnoofPRBs)) OF UL-InterferenceOverloadIndication-Item

UL-InterferenceOverloadIndication-Item ::= ENUMERATED {

high-interference,

medium-interference,

low-interference,

...

}

UL-non-GBR-PRB-usage::= INTEGER (0..100)

ULOnlySharing ::= SEQUENCE{

uLResourceBitmapULOnlySharing DataTrafficResources,

iE-Extensions ProtocolExtensionContainer { {ULOnlySharing-ExtIEs} } OPTIONAL,

...

}

ULOnlySharing-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

ULResourceBitmapULandDLSharing ::= DataTrafficResources

ULResourcesULandDLSharing ::= CHOICE {

unchanged NULL,

changed ULResourceBitmapULandDLSharing,

...

}

UL-scheduling-PDCCH-CCE-usage::= INTEGER (0..100)

UL-Total-PRB-usage::= INTEGER (0..100)

UnlicensedSpectrumRestriction ::= ENUMERATED {

unlicensed-restricted,

...

}

URI-Address ::= VisibleString

UsableABSInformation ::= CHOICE {

fdd UsableABSInformationFDD,

tdd UsableABSInformationTDD,

...

}

UsableABSInformationFDD ::= SEQUENCE {

usable-abs-pattern-info BIT STRING (SIZE(40)),

iE-Extensions ProtocolExtensionContainer { {UsableABSInformationFDD-ExtIEs} } OPTIONAL,

...

}

UsableABSInformationFDD-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

UsableABSInformationTDD ::= SEQUENCE {

usaable-abs-pattern-info BIT STRING (SIZE(1..70, ...)),

iE-Extensions ProtocolExtensionContainer { {UsableABSInformationTDD-ExtIEs} } OPTIONAL,

...

}

UsableABSInformationTDD-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

UserPlaneTrafficActivityReport ::= ENUMERATED {inactive, re-activated, ...}

-- V

V2XServicesAuthorized ::= SEQUENCE {

vehicleUE VehicleUE OPTIONAL,

pedestrianUE PedestrianUE OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {V2XServicesAuthorized-ExtIEs} } OPTIONAL,

...

}

V2XServicesAuthorized-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

VehicleUE ::= ENUMERATED {

authorized,

not-authorized,

...

}

PedestrianUE ::= ENUMERATED {

authorized,

not-authorized,

...

}

-- W

WidebandCQI ::= SEQUENCE {

widebandCQICodeword0 INTEGER (0..15, ...),

widebandCQICodeword1 WidebandCQICodeword1 OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {WidebandCQI-ExtIEs} } OPTIONAL,

...

}

WidebandCQI-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

WidebandCQICodeword1::= CHOICE {

four-bitCQI INTEGER (0..15, ...),

three-bitSpatialDifferentialCQI INTEGER (0..7, ...),

...

}

WLANMeasurementConfiguration ::= SEQUENCE {

wlanMeasConfig WLANMeasConfig,

wlanMeasConfigNameList WLANMeasConfigNameList OPTIONAL,

wlan-rssi ENUMERATED {true, ...} OPTIONAL,

wlan-rtt ENUMERATED {true, ...} OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {WLANMeasurementConfiguration-ExtIEs} } OPTIONAL,

...

}

WLANMeasurementConfiguration-ExtIEs X2AP-PROTOCOL-EXTENSION ::= {

...

}

WLANMeasConfigNameList ::= SEQUENCE (SIZE(1..maxnoofWLANName)) OF WLANName

WLANMeasConfig::= ENUMERATED {setup,...}

WLANName ::= OCTET STRING (SIZE (1..32))

WTID ::= CHOICE {

wTID-Type1 WTID-Type1,

wTID-Type2 WTID-Long-Type2,

...

}

WTID-Type1 ::= SEQUENCE {

pLMN-Identity PLMN-Identity,

shortWTID BIT STRING (SIZE(24)),

...

}

WTID-Long-Type2 ::= BIT STRING (SIZE(48))

WT-UE-XwAP-ID ::= OCTET STRING (SIZE (3))

-- X

X2BenefitValue ::= INTEGER (1..8, ...)

-- Y

-- Z

END

-- ASN1STOP

### 9.3.6 Common definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Common definitions

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2AP-CommonDataTypes {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

eps-Access (21) modules (3) x2ap (2) version1 (1) x2ap-CommonDataTypes (3) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Extension constants

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

maxPrivateIEs INTEGER ::= 65535

maxProtocolExtensions INTEGER ::= 65535

maxProtocolIEs INTEGER ::= 65535

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Common Data Types

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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

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

PrivateIE-ID ::= CHOICE {

local INTEGER (0.. maxPrivateIEs),

global OBJECT IDENTIFIER

}

ProcedureCode ::= INTEGER (0..255)

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

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

END

-- ASN1STOP

### 9.3.7 Constant definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Constant definitions

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2AP-Constants {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

eps-Access (21) modules (3) x2ap (2) version1 (1) x2ap-Constants (4) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

ProcedureCode,

ProtocolIE-ID

FROM X2AP-CommonDataTypes;

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Elementary Procedures

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

id-handoverPreparation ProcedureCode ::= 0

id-handoverCancel ProcedureCode ::= 1

id-loadIndication ProcedureCode ::= 2

id-errorIndication ProcedureCode ::= 3

id-snStatusTransfer ProcedureCode ::= 4

id-uEContextRelease ProcedureCode ::= 5

id-x2Setup ProcedureCode ::= 6

id-reset ProcedureCode ::= 7

id-eNBConfigurationUpdate ProcedureCode ::= 8

id-resourceStatusReportingInitiation ProcedureCode ::= 9

id-resourceStatusReporting ProcedureCode ::= 10

id-privateMessage ProcedureCode ::= 11

id-mobilitySettingsChange ProcedureCode ::= 12

id-rLFIndication ProcedureCode ::= 13

id-handoverReport ProcedureCode ::= 14

id-cellActivation ProcedureCode ::= 15

id-x2Release ProcedureCode ::= 16

id-x2APMessageTransfer ProcedureCode ::= 17

id-x2Removal ProcedureCode ::= 18

id-seNBAdditionPreparation ProcedureCode ::= 19

id-seNBReconfigurationCompletion ProcedureCode ::= 20

id-meNBinitiatedSeNBModificationPreparation ProcedureCode ::= 21

id-seNBinitiatedSeNBModification ProcedureCode ::= 22

id-meNBinitiatedSeNBRelease ProcedureCode ::= 23

id-seNBinitiatedSeNBRelease ProcedureCode ::= 24

id-seNBCounterCheck ProcedureCode ::= 25

id-retrieveUEContext ProcedureCode ::= 26

id-sgNBAdditionPreparation ProcedureCode ::= 27

id-sgNBReconfigurationCompletion ProcedureCode ::= 28

id-meNBinitiatedSgNBModificationPreparation ProcedureCode ::= 29

id-sgNBinitiatedSgNBModification ProcedureCode ::= 30

id-meNBinitiatedSgNBRelease ProcedureCode ::= 31

id-sgNBinitiatedSgNBRelease ProcedureCode ::= 32

id-sgNBCounterCheck ProcedureCode ::= 33

id-sgNBChange ProcedureCode ::= 34

id-rRCTransfer ProcedureCode ::= 35

id-endcX2Setup ProcedureCode ::= 36

id-endcConfigurationUpdate ProcedureCode ::= 37

id-secondaryRATDataUsageReport ProcedureCode ::= 38

id-endcCellActivation ProcedureCode ::= 39

id-endcPartialReset ProcedureCode ::= 40

id-eUTRANRCellResourceCoordination ProcedureCode ::= 41

id-SgNBActivityNotification ProcedureCode ::= 42

id-endcX2Removal ProcedureCode ::= 43

id-dataForwardingAddressIndication ProcedureCode ::= 44

id-gNBStatusIndication ProcedureCode ::= 45

id-deactivateTrace ProcedureCode ::= 46

id-traceStart ProcedureCode ::= 47

id-endcConfigurationTransfer ProcedureCode ::= 48

id-handoverSuccess ProcedureCode ::= 49

id-conditionalHandoverCancel ProcedureCode ::= 50

id-earlyStatusTransfer ProcedureCode ::= 51

id-cellTrafficTrace ProcedureCode ::= 52

id-endcresourceStatusReporting ProcedureCode ::= 53

id-endcresourceStatusReportingInitiation ProcedureCode ::= 54

id-f1CTrafficTransfer ProcedureCode ::= 55

id-UERadioCapabilityIDMapping ProcedureCode ::= 56

id-CPC-cancel ProcedureCode ::= B01

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Lists

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

maxEARFCN INTEGER ::= 65535

maxEARFCNPlusOne INTEGER ::= 65536

newmaxEARFCN INTEGER ::= 262143

maxInterfaces INTEGER ::= 16

maxCellineNB INTEGER ::= 256

maxnoofBands INTEGER ::= 16

maxnoofBearers INTEGER ::= 256

maxNrOfErrors INTEGER ::= 256

maxnoofPDCP-SN INTEGER ::= 16

maxnoofEPLMNs INTEGER ::= 15

maxnoofEPLMNsPlusOne INTEGER ::= 16

maxnoofForbLACs INTEGER ::= 4096

maxnoofForbTACs INTEGER ::= 4096

maxnoofBPLMNs INTEGER ::= 6

maxnoofAdditionalPLMNs INTEGER ::= 6

maxnoofNeighbours INTEGER ::= 512

maxnoofPRBs INTEGER ::= 110

maxPools INTEGER ::= 16

maxnoofCells INTEGER ::= 16

maxnoofMBSFN INTEGER ::= 8

maxFailedMeasObjects INTEGER ::= 32

maxnoofCellIDforMDT INTEGER ::= 32

maxnoofTAforMDT INTEGER ::= 8

maxnoofMBMSServiceAreaIdentities INTEGER ::= 256

maxnoofMDTPLMNs INTEGER ::= 16

maxnoofCoMPHypothesisSet INTEGER ::= 256

maxnoofCoMPCells INTEGER ::= 32

maxUEReport INTEGER ::= 128

maxCellReport INTEGER ::= 9

maxnoofPA INTEGER ::= 3

maxCSIProcess INTEGER ::= 4

maxCSIReport INTEGER ::= 2

maxSubband INTEGER ::= 14

maxofNRNeighbours INTEGER ::= 1024

maxCellinengNB INTEGER ::= 16384

-- maxnoofNRCarriers INTEGER ::= 32

maxnooftimeperiods INTEGER ::= 2

maxnoofCellIDforQMC INTEGER ::= 32

maxnoofTAforQMC INTEGER ::= 8

maxnoofPLMNforQMC INTEGER ::= 16

maxUEsinengNBDU INTEGER ::= 8192

maxnoofProtectedResourcePatterns INTEGER ::= 16

maxnoNRcellsSpectrumSharingWithE-UTRA INTEGER ::= 64

maxnoofNrCellBands INTEGER ::= 32

maxnoofBluetoothName INTEGER ::= 4

maxnoofWLANName INTEGER ::= 4

maxnoofextBPLMNs INTEGER ::= 12

maxnoofTLAs INTEGER ::= 16

maxnoofGTPTLAs INTEGER ::= 16

maxnoofTNLAssociations INTEGER ::= 32

maxnoofCellsinCHO INTEGER ::= 8

maxnoofPC5QoSFlows INTEGER ::= 2048

maxnoofSSBAreas INTEGER ::= 64

maxnoofNRSCSs INTEGER ::= 5

maxnoofNRPhysicalResourceBlocks INTEGER ::= 275

maxnoofNonAnchorCarrierFreqConfig INTEGER ::= 15

maxnoofPSCellCandidates INTEGER ::= 8

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- IEs

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

id-E-RABs-Admitted-Item ProtocolIE-ID ::= 0

id-E-RABs-Admitted-List ProtocolIE-ID ::= 1

id-E-RAB-Item ProtocolIE-ID ::= 2

id-E-RABs-NotAdmitted-List ProtocolIE-ID ::= 3

id-E-RABs-ToBeSetup-Item ProtocolIE-ID ::= 4

id-Cause ProtocolIE-ID ::= 5

id-CellInformation ProtocolIE-ID ::= 6

id-CellInformation-Item ProtocolIE-ID ::= 7

id-New-eNB-UE-X2AP-ID ProtocolIE-ID ::= 9

id-Old-eNB-UE-X2AP-ID ProtocolIE-ID ::= 10

id-TargetCell-ID ProtocolIE-ID ::= 11

id-TargeteNBtoSource-eNBTransparentContainer ProtocolIE-ID ::= 12

id-TraceActivation ProtocolIE-ID ::= 13

id-UE-ContextInformation ProtocolIE-ID ::= 14

id-UE-HistoryInformation ProtocolIE-ID ::= 15

id-UE-X2AP-ID ProtocolIE-ID ::= 16

id-CriticalityDiagnostics ProtocolIE-ID ::= 17

id-E-RABs-SubjectToStatusTransfer-List ProtocolIE-ID ::= 18

id-E-RABs-SubjectToStatusTransfer-Item ProtocolIE-ID ::= 19

id-ServedCells ProtocolIE-ID ::= 20

id-GlobalENB-ID ProtocolIE-ID ::= 21

id-TimeToWait ProtocolIE-ID ::= 22

id-GUMMEI-ID ProtocolIE-ID ::= 23

id-GUGroupIDList ProtocolIE-ID ::= 24

id-ServedCellsToAdd ProtocolIE-ID ::= 25

id-ServedCellsToModify ProtocolIE-ID ::= 26

id-ServedCellsToDelete ProtocolIE-ID ::= 27

id-Registration-Request ProtocolIE-ID ::= 28

id-CellToReport ProtocolIE-ID ::= 29

id-ReportingPeriodicity ProtocolIE-ID ::= 30

id-CellToReport-Item ProtocolIE-ID ::= 31

id-CellMeasurementResult ProtocolIE-ID ::= 32

id-CellMeasurementResult-Item ProtocolIE-ID ::= 33

id-GUGroupIDToAddList ProtocolIE-ID ::= 34

id-GUGroupIDToDeleteList ProtocolIE-ID ::= 35

id-SRVCCOperationPossible ProtocolIE-ID ::= 36

id-Measurement-ID ProtocolIE-ID ::= 37

id-ReportCharacteristics ProtocolIE-ID ::= 38

id-ENB1-Measurement-ID ProtocolIE-ID ::= 39

id-ENB2-Measurement-ID ProtocolIE-ID ::= 40

id-Number-of-Antennaports ProtocolIE-ID ::= 41

id-CompositeAvailableCapacityGroup ProtocolIE-ID ::= 42

id-ENB1-Cell-ID ProtocolIE-ID ::= 43

id-ENB2-Cell-ID ProtocolIE-ID ::= 44

id-ENB2-Proposed-Mobility-Parameters ProtocolIE-ID ::= 45

id-ENB1-Mobility-Parameters ProtocolIE-ID ::= 46

id-ENB2-Mobility-Parameters-Modification-Range ProtocolIE-ID ::= 47

id-FailureCellPCI ProtocolIE-ID ::= 48

id-Re-establishmentCellECGI ProtocolIE-ID ::= 49

id-FailureCellCRNTI ProtocolIE-ID ::= 50

id-ShortMAC-I ProtocolIE-ID ::= 51

id-SourceCellECGI ProtocolIE-ID ::= 52

id-FailureCellECGI ProtocolIE-ID ::= 53

id-HandoverReportType ProtocolIE-ID ::= 54

id-PRACH-Configuration ProtocolIE-ID ::= 55

id-MBSFN-Subframe-Info ProtocolIE-ID ::= 56

id-ServedCellsToActivate ProtocolIE-ID ::= 57

id-ActivatedCellList ProtocolIE-ID ::= 58

id-DeactivationIndication ProtocolIE-ID ::= 59

id-UE-RLF-Report-Container ProtocolIE-ID ::= 60

id-ABSInformation ProtocolIE-ID ::= 61

id-InvokeIndication ProtocolIE-ID ::= 62

id-ABS-Status ProtocolIE-ID ::= 63

id-PartialSuccessIndicator ProtocolIE-ID ::= 64

id-MeasurementInitiationResult-List ProtocolIE-ID ::= 65

id-MeasurementInitiationResult-Item ProtocolIE-ID ::= 66

id-MeasurementFailureCause-Item ProtocolIE-ID ::= 67

id-CompleteFailureCauseInformation-List ProtocolIE-ID ::= 68

id-CompleteFailureCauseInformation-Item ProtocolIE-ID ::= 69

id-CSG-Id ProtocolIE-ID ::= 70

id-CSGMembershipStatus ProtocolIE-ID ::= 71

id-MDTConfiguration ProtocolIE-ID ::= 72

id-ManagementBasedMDTallowed ProtocolIE-ID ::= 74

id-RRCConnSetupIndicator ProtocolIE-ID ::= 75

id-NeighbourTAC ProtocolIE-ID ::= 76

id-Time-UE-StayedInCell-EnhancedGranularity ProtocolIE-ID ::= 77

id-RRCConnReestabIndicator ProtocolIE-ID ::= 78

id-MBMS-Service-Area-List ProtocolIE-ID ::= 79

id-HO-cause ProtocolIE-ID ::= 80

id-TargetCellInUTRAN ProtocolIE-ID ::= 81

id-MobilityInformation ProtocolIE-ID ::= 82

id-SourceCellCRNTI ProtocolIE-ID ::= 83

id-MultibandInfoList ProtocolIE-ID ::= 84

id-M3Configuration ProtocolIE-ID ::= 85

id-M4Configuration ProtocolIE-ID ::= 86

id-M5Configuration ProtocolIE-ID ::= 87

id-MDT-Location-Info ProtocolIE-ID ::= 88

id-ManagementBasedMDTPLMNList ProtocolIE-ID ::= 89

id-SignallingBasedMDTPLMNList ProtocolIE-ID ::= 90

id-ReceiveStatusOfULPDCPSDUsExtended ProtocolIE-ID ::= 91

id-ULCOUNTValueExtended ProtocolIE-ID ::= 92

id-DLCOUNTValueExtended ProtocolIE-ID ::= 93

id-eARFCNExtension ProtocolIE-ID ::= 94

id-UL-EARFCNExtension ProtocolIE-ID ::= 95

id-DL-EARFCNExtension ProtocolIE-ID ::= 96

id-AdditionalSpecialSubframe-Info ProtocolIE-ID ::= 97

id-Masked-IMEISV ProtocolIE-ID ::= 98

id-IntendedULDLConfiguration ProtocolIE-ID ::= 99

id-ExtendedULInterferenceOverloadInfo ProtocolIE-ID ::= 100

id-RNL-Header ProtocolIE-ID ::= 101

id-x2APMessage ProtocolIE-ID ::= 102

id-ProSeAuthorized ProtocolIE-ID ::= 103

id-ExpectedUEBehaviour ProtocolIE-ID ::= 104

id-UE-HistoryInformationFromTheUE ProtocolIE-ID ::= 105

id-DynamicDLTransmissionInformation ProtocolIE-ID ::= 106

id-UE-RLF-Report-Container-for-extended-bands ProtocolIE-ID ::= 107

id-CoMPInformation ProtocolIE-ID ::= 108

id-ReportingPeriodicityRSRPMR ProtocolIE-ID ::= 109

id-RSRPMRList ProtocolIE-ID ::= 110

id-MeNB-UE-X2AP-ID ProtocolIE-ID ::= 111

id-SeNB-UE-X2AP-ID ProtocolIE-ID ::= 112

id-UE-SecurityCapabilities ProtocolIE-ID ::= 113

id-SeNBSecurityKey ProtocolIE-ID ::= 114

id-SeNBUEAggregateMaximumBitRate ProtocolIE-ID ::= 115

id-ServingPLMN ProtocolIE-ID ::= 116

id-E-RABs-ToBeAdded-List ProtocolIE-ID ::= 117

id-E-RABs-ToBeAdded-Item ProtocolIE-ID ::= 118

id-MeNBtoSeNBContainer ProtocolIE-ID ::= 119

id-E-RABs-Admitted-ToBeAdded-List ProtocolIE-ID ::= 120

id-E-RABs-Admitted-ToBeAdded-Item ProtocolIE-ID ::= 121

id-SeNBtoMeNBContainer ProtocolIE-ID ::= 122

id-ResponseInformationSeNBReconfComp ProtocolIE-ID ::= 123

id-UE-ContextInformationSeNBModReq ProtocolIE-ID ::= 124

id-E-RABs-ToBeAdded-ModReqItem ProtocolIE-ID ::= 125

id-E-RABs-ToBeModified-ModReqItem ProtocolIE-ID ::= 126

id-E-RABs-ToBeReleased-ModReqItem ProtocolIE-ID ::= 127

id-E-RABs-Admitted-ToBeAdded-ModAckList ProtocolIE-ID ::= 128

id-E-RABs-Admitted-ToBeModified-ModAckList ProtocolIE-ID ::= 129

id-E-RABs-Admitted-ToBeReleased-ModAckList ProtocolIE-ID ::= 130

id-E-RABs-Admitted-ToBeAdded-ModAckItem ProtocolIE-ID ::= 131

id-E-RABs-Admitted-ToBeModified-ModAckItem ProtocolIE-ID ::= 132

id-E-RABs-Admitted-ToBeReleased-ModAckItem ProtocolIE-ID ::= 133

id-E-RABs-ToBeReleased-ModReqd ProtocolIE-ID ::= 134

id-E-RABs-ToBeReleased-ModReqdItem ProtocolIE-ID ::= 135

id-SCGChangeIndication ProtocolIE-ID ::= 136

id-E-RABs-ToBeReleased-List-RelReq ProtocolIE-ID ::= 137

id-E-RABs-ToBeReleased-RelReqItem ProtocolIE-ID ::= 138

id-E-RABs-ToBeReleased-List-RelConf ProtocolIE-ID ::= 139

id-E-RABs-ToBeReleased-RelConfItem ProtocolIE-ID ::= 140

id-E-RABs-SubjectToCounterCheck-List ProtocolIE-ID ::= 141

id-E-RABs-SubjectToCounterCheckItem ProtocolIE-ID ::= 142

id-CoverageModificationList ProtocolIE-ID ::= 143

id-ReportingPeriodicityCSIR ProtocolIE-ID ::= 145

id-CSIReportList ProtocolIE-ID ::= 146

id-UEID ProtocolIE-ID ::= 147

id-enhancedRNTP ProtocolIE-ID ::= 148

id-ProSeUEtoNetworkRelaying ProtocolIE-ID ::= 149

id-ReceiveStatusOfULPDCPSDUsPDCP-SNlength18 ProtocolIE-ID ::= 150

id-ULCOUNTValuePDCP-SNlength18 ProtocolIE-ID ::= 151

id-DLCOUNTValuePDCP-SNlength18 ProtocolIE-ID ::= 152

id-UE-ContextReferenceAtSeNB ProtocolIE-ID ::= 153

id-UE-ContextKeptIndicator ProtocolIE-ID ::= 154

id-New-eNB-UE-X2AP-ID-Extension ProtocolIE-ID ::= 155

id-Old-eNB-UE-X2AP-ID-Extension ProtocolIE-ID ::= 156

id-MeNB-UE-X2AP-ID-Extension ProtocolIE-ID ::= 157

id-SeNB-UE-X2AP-ID-Extension ProtocolIE-ID ::= 158

id-LHN-ID ProtocolIE-ID ::= 159

id-FreqBandIndicatorPriority ProtocolIE-ID ::= 160

id-M6Configuration ProtocolIE-ID ::= 161

id-M7Configuration ProtocolIE-ID ::= 162

id-Tunnel-Information-for-BBF ProtocolIE-ID ::= 163

id-SIPTO-BearerDeactivationIndication ProtocolIE-ID ::= 164

id-GW-TransportLayerAddress ProtocolIE-ID ::= 165

id-Correlation-ID ProtocolIE-ID ::= 166

id-SIPTO-Correlation-ID ProtocolIE-ID ::= 167

id-SIPTO-L-GW-TransportLayerAddress ProtocolIE-ID ::= 168

id-X2RemovalThreshold ProtocolIE-ID ::= 169

id-CellReportingIndicator ProtocolIE-ID ::= 170

id-BearerType ProtocolIE-ID ::= 171

id-resumeID ProtocolIE-ID ::= 172

id-UE-ContextInformationRetrieve ProtocolIE-ID ::= 173

id-E-RABs-ToBeSetupRetrieve-Item ProtocolIE-ID ::= 174

id-NewEUTRANCellIdentifier ProtocolIE-ID ::= 175

id-V2XServicesAuthorized ProtocolIE-ID ::= 176

id-OffsetOfNbiotChannelNumberToDL-EARFCN ProtocolIE-ID ::= 177

id-OffsetOfNbiotChannelNumberToUL-EARFCN ProtocolIE-ID ::= 178

id-AdditionalSpecialSubframeExtension-Info ProtocolIE-ID ::= 179

id-BandwidthReducedSI ProtocolIE-ID ::= 180

id-MakeBeforeBreakIndicator ProtocolIE-ID ::= 181

id-UE-ContextReferenceAtWT ProtocolIE-ID ::= 182

id-WT-UE-ContextKeptIndicator ProtocolIE-ID ::= 183

id-UESidelinkAggregateMaximumBitRate ProtocolIE-ID ::= 184

id-uL-GTPtunnelEndpoint ProtocolIE-ID ::= 185

id-DL-scheduling-PDCCH-CCE-usage ProtocolIE-ID ::= 193

id-UL-scheduling-PDCCH-CCE-usage ProtocolIE-ID ::= 194

id-UEAppLayerMeasConfig ProtocolIE-ID ::= 195

id-extended-e-RAB-MaximumBitrateDL ProtocolIE-ID ::= 196

id-extended-e-RAB-MaximumBitrateUL ProtocolIE-ID ::= 197

id-extended-e-RAB-GuaranteedBitrateDL ProtocolIE-ID ::= 198

id-extended-e-RAB-GuaranteedBitrateUL ProtocolIE-ID ::= 199

id-extended-uEaggregateMaximumBitRateDownlink ProtocolIE-ID ::= 200

id-extended-uEaggregateMaximumBitRateUplink ProtocolIE-ID ::= 201

id-NRrestrictioninEPSasSecondaryRAT ProtocolIE-ID ::= 202

id-SgNBSecurityKey ProtocolIE-ID ::= 203

id-SgNBUEAggregateMaximumBitRate ProtocolIE-ID ::= 204

id-E-RABs-ToBeAdded-SgNBAddReqList ProtocolIE-ID ::= 205

id-MeNBtoSgNBContainer ProtocolIE-ID ::= 206

id-SgNB-UE-X2AP-ID ProtocolIE-ID ::= 207

id-RequestedSplitSRBs ProtocolIE-ID ::= 208

id-E-RABs-ToBeAdded-SgNBAddReq-Item ProtocolIE-ID ::= 209

id-E-RABs-Admitted-ToBeAdded-SgNBAddReqAckList ProtocolIE-ID ::= 210

id-SgNBtoMeNBContainer ProtocolIE-ID ::= 211

id-AdmittedSplitSRBs ProtocolIE-ID ::= 212

id-E-RABs-Admitted-ToBeAdded-SgNBAddReqAck-Item ProtocolIE-ID ::= 213

id-ResponseInformationSgNBReconfComp ProtocolIE-ID ::= 214

id-UE-ContextInformation-SgNBModReq ProtocolIE-ID ::= 215

id-E-RABs-ToBeAdded-SgNBModReq-Item ProtocolIE-ID ::= 216

id-E-RABs-ToBeModified-SgNBModReq-Item ProtocolIE-ID ::= 217

id-E-RABs-ToBeReleased-SgNBModReq-Item ProtocolIE-ID ::= 218

id-E-RABs-Admitted-ToBeAdded-SgNBModAckList ProtocolIE-ID ::= 219

id-E-RABs-Admitted-ToBeModified-SgNBModAckList ProtocolIE-ID ::= 220

id-E-RABs-Admitted-ToBeReleased-SgNBModAckList ProtocolIE-ID ::= 221

id-E-RABs-Admitted-ToBeAdded-SgNBModAck-Item ProtocolIE-ID ::= 222

id-E-RABs-Admitted-ToBeModified-SgNBModAck-Item ProtocolIE-ID ::= 223

id-E-RABs-Admitted-ToBeReleased-SgNBModAck-Item ProtocolIE-ID ::= 224

id-E-RABs-ToBeReleased-SgNBModReqdList ProtocolIE-ID ::= 225

id-E-RABs-ToBeModified-SgNBModReqdList ProtocolIE-ID ::= 226

id-E-RABs-ToBeReleased-SgNBModReqd-Item ProtocolIE-ID ::= 227

id-E-RABs-ToBeModified-SgNBModReqd-Item ProtocolIE-ID ::= 228

id-E-RABs-ToBeReleased-SgNBChaConfList ProtocolIE-ID ::= 229

id-E-RABs-ToBeReleased-SgNBChaConf-Item ProtocolIE-ID ::= 230

id-E-RABs-ToBeReleased-SgNBRelReqList ProtocolIE-ID ::= 231

id-E-RABs-ToBeReleased-SgNBRelReq-Item ProtocolIE-ID ::= 232

id-E-RABs-ToBeReleased-SgNBRelConfList ProtocolIE-ID ::= 233

id-E-RABs-ToBeReleased-SgNBRelConf-Item ProtocolIE-ID ::= 234

id-E-RABs-SubjectToSgNBCounterCheck-List ProtocolIE-ID ::= 235

id-E-RABs-SubjectToSgNBCounterCheck-Item ProtocolIE-ID ::= 236

id-RRCContainer ProtocolIE-ID ::= 237

id-SRBType ProtocolIE-ID ::= 238

id-Target-SgNB-ID ProtocolIE-ID ::= 239

id-HandoverRestrictionList ProtocolIE-ID ::= 240

id-SCGConfigurationQuery ProtocolIE-ID ::= 241

id-SplitSRB ProtocolIE-ID ::= 242

id-NRUeReport ProtocolIE-ID ::= 243

id-InitiatingNodeType-EndcX2Setup ProtocolIE-ID ::= 244

id-InitiatingNodeType-EndcConfigUpdate ProtocolIE-ID ::= 245

id-RespondingNodeType-EndcX2Setup ProtocolIE-ID ::= 246

id-RespondingNodeType-EndcConfigUpdate ProtocolIE-ID ::= 247

id-NRUESecurityCapabilities ProtocolIE-ID ::= 248

id-PDCPChangeIndication ProtocolIE-ID ::= 249

id-ServedEUTRAcellsENDCX2ManagementList ProtocolIE-ID ::= 250

id-CellAssistanceInformation ProtocolIE-ID ::= 251

id-Globalen-gNB-ID ProtocolIE-ID ::= 252

id-ServedNRcellsENDCX2ManagementList ProtocolIE-ID ::= 253

id-UE-ContextReferenceAtSgNB ProtocolIE-ID ::= 254

id-SecondaryRATUsageReport ProtocolIE-ID ::= 255

id-ActivationID ProtocolIE-ID ::= 256

id-MeNBResourceCoordinationInformation ProtocolIE-ID ::= 257

id-SgNBResourceCoordinationInformation ProtocolIE-ID ::= 258

id-ServedEUTRAcellsToModifyListENDCConfUpd ProtocolIE-ID ::= 259

id-ServedEUTRAcellsToDeleteListENDCConfUpd ProtocolIE-ID ::= 260

id-ServedNRcellsToModifyListENDCConfUpd ProtocolIE-ID ::= 261

id-ServedNRcellsToDeleteListENDCConfUpd ProtocolIE-ID ::= 262

id-E-RABUsageReport-Item ProtocolIE-ID ::= 263

id-Old-SgNB-UE-X2AP-ID ProtocolIE-ID ::= 264

id-SecondaryRATUsageReportList ProtocolIE-ID ::= 265

id-SecondaryRATUsageReport-Item ProtocolIE-ID ::= 266

id-ServedNRCellsToActivate ProtocolIE-ID ::= 267

id-ActivatedNRCellList ProtocolIE-ID ::= 268

id-SelectedPLMN ProtocolIE-ID ::= 269

id-UEs-ToBeReset ProtocolIE-ID ::= 270

id-UEs-Admitted-ToBeReset ProtocolIE-ID ::= 271

id-RRCConfigIndication ProtocolIE-ID ::= 272

id-DownlinkPacketLossRate ProtocolIE-ID ::= 273

id-UplinkPacketLossRate ProtocolIE-ID ::= 274

id-SubscriberProfileIDforRFP ProtocolIE-ID ::= 275

id-serviceType ProtocolIE-ID ::= 276

id-AerialUEsubscriptionInformation ProtocolIE-ID ::= 277

id-SGNB-Addition-Trigger-Ind ProtocolIE-ID ::= 278

id-MeNBCell-ID ProtocolIE-ID ::= 279

id-RequestedSplitSRBsrelease ProtocolIE-ID ::= 280

id-AdmittedSplitSRBsrelease ProtocolIE-ID ::= 281

id-NRS-NSSS-PowerOffset ProtocolIE-ID ::= 282

id-NSSS-NumOccasionDifferentPrecoder ProtocolIE-ID ::= 283

id-ProtectedEUTRAResourceIndication ProtocolIE-ID ::= 284

id-InitiatingNodeType-EutranrCellResourceCoordination ProtocolIE-ID ::= 285

id-RespondingNodeType-EutranrCellResourceCoordination ProtocolIE-ID ::= 286

id-DataTrafficResourceIndication ProtocolIE-ID ::= 287

id-SpectrumSharingGroupID ProtocolIE-ID ::= 288

id-ListofEUTRACellsinEUTRACoordinationReq ProtocolIE-ID ::= 289

id-ListofEUTRACellsinEUTRACoordinationResp ProtocolIE-ID ::= 290

id-ListofEUTRACellsinNRCoordinationReq ProtocolIE-ID ::= 291

id-ListofNRCellsinNRCoordinationReq ProtocolIE-ID ::= 292

id-ListofNRCellsinNRCoordinationResp ProtocolIE-ID ::= 293

id-E-RABs-AdmittedToBeModified-SgNBModConfList ProtocolIE-ID ::= 294

id-E-RABs-AdmittedToBeModified-SgNBModConf-Item ProtocolIE-ID ::= 295

id-UEContextLevelUserPlaneActivity ProtocolIE-ID ::= 296

id-ERABActivityNotifyItemList ProtocolIE-ID ::= 297

id-InitiatingNodeType-EndcX2Removal ProtocolIE-ID ::= 298

id-RespondingNodeType-EndcX2Removal ProtocolIE-ID ::= 299

id-RLC-Status ProtocolIE-ID ::= 300

id-CNTypeRestrictions ProtocolIE-ID ::= 301

id-uLpDCPSnLength ProtocolIE-ID ::= 302

id-BluetoothMeasurementConfiguration ProtocolIE-ID ::= 303

id-WLANMeasurementConfiguration ProtocolIE-ID ::= 304

id-NRrestrictionin5GS ProtocolIE-ID ::= 305

id-dL-Forwarding ProtocolIE-ID ::= 306

id-E-RABs-DataForwardingAddress-List ProtocolIE-ID ::= 307

id-E-RABs-DataForwardingAddress-Item ProtocolIE-ID ::= 308

id-Subscription-Based-UE-DifferentiationInfo ProtocolIE-ID ::= 309

id-GNBOverloadInformation ProtocolIE-ID ::= 310

id-dLPDCPSnLength ProtocolIE-ID ::= 311

id-secondarysgNBDLGTPTEIDatPDCP ProtocolIE-ID ::= 312

id-secondarymeNBULGTPTEIDatPDCP ProtocolIE-ID ::= 313

id-lCID ProtocolIE-ID ::= 314

id-duplicationActivation ProtocolIE-ID ::= 315

id-ECGI ProtocolIE-ID ::= 316

id-RLCMode-transferred ProtocolIE-ID ::= 317

id-E-RABs-Admitted-ToBeReleased-SgNBRelReqAckList ProtocolIE-ID ::= 318

id-E-RABs-Admitted-ToBeReleased-SgNBRelReqAck-Item ProtocolIE-ID ::= 319

id-E-RABs-ToBeReleased-SgNBRelReqdList ProtocolIE-ID ::= 320

id-E-RABs-ToBeReleased-SgNBRelReqd-Item ProtocolIE-ID ::= 321

id-NRCGI ProtocolIE-ID ::= 322

id-MeNBCoordinationAssistanceInformation ProtocolIE-ID ::= 323

id-SgNBCoordinationAssistanceInformation ProtocolIE-ID ::= 324

id-new-drb-ID-req ProtocolIE-ID ::= 325

id-endcSONConfigurationTransfer ProtocolIE-ID ::= 326

id-NRNeighbourInfoToAdd ProtocolIE-ID ::= 327

id-NRNeighbourInfoToModify ProtocolIE-ID ::= 328

id-DesiredActNotificationLevel ProtocolIE-ID ::= 329

id-LocationInformationSgNBReporting ProtocolIE-ID ::= 330

id-LocationInformationSgNB ProtocolIE-ID ::= 331

id-LastNG-RANPLMNIdentity ProtocolIE-ID ::= 332

id-EUTRANTraceID ProtocolIE-ID ::= 333

id-additionalPLMNs-Item ProtocolIE-ID ::= 334

id-InterfaceInstanceIndication ProtocolIE-ID ::= 335

id-BPLMN-ID-Info-EUTRA ProtocolIE-ID ::= 336

id-BPLMN-ID-Info-NR ProtocolIE-ID ::= 337

id-NBIoT-UL-DL-AlignmentOffset ProtocolIE-ID ::= 338

id-ERABs-transferred-to-MeNB ProtocolIE-ID ::= 339

id-AdditionalRRMPriorityIndex ProtocolIE-ID ::= 340

id-LowerLayerPresenceStatusChange ProtocolIE-ID ::= 341

id-FastMCGRecovery-SN-to-MN ProtocolIE-ID ::= 342

id-RequestedFastMCGRecoveryViaSRB3 ProtocolIE-ID ::= 343

id-AvailableFastMCGRecoveryViaSRB3 ProtocolIE-ID ::= 344

id-RequestedFastMCGRecoveryViaSRB3Release ProtocolIE-ID ::= 345

id-ReleaseFastMCGRecoveryViaSRB3 ProtocolIE-ID ::= 346

id-FastMCGRecovery-MN-to-SN ProtocolIE-ID ::= 347

id-PartialListIndicator ProtocolIE-ID ::= 348

id-MaximumCellListSize ProtocolIE-ID ::= 349

id-MessageOversizeNotification ProtocolIE-ID ::= 350

id-CellandCapacityAssistInfo ProtocolIE-ID ::= 351

id-TNLConfigurationInfo ProtocolIE-ID ::= 352

id-TNLA-To-Add-List ProtocolIE-ID ::= 353

id-TNLA-To-Update-List ProtocolIE-ID ::= 354

id-TNLA-To-Remove-List ProtocolIE-ID ::= 355

id-TNLA-Setup-List ProtocolIE-ID ::= 356

id-TNLA-Failed-To-Setup-List ProtocolIE-ID ::= 357

id-UnlicensedSpectrumRestriction ProtocolIE-ID ::= 358

id-UEContextReferenceatSourceNGRAN ProtocolIE-ID ::= 359

id-EPCHandoverRestrictionListContainer ProtocolIE-ID ::= 360

id-CHOinformation-REQ ProtocolIE-ID ::= 361

id-CHOinformation-ACK ProtocolIE-ID ::= 362

id-DAPSRequestInfo ProtocolIE-ID ::= 363

id-RequestedTargetCellID ProtocolIE-ID ::= 364

id-CandidateCellsToBeCancelledList ProtocolIE-ID ::= 365

id-DAPSResponseInfo ProtocolIE-ID ::= 366

id-ProcedureStage ProtocolIE-ID ::= 367

id-CHO-DC-Indicator ProtocolIE-ID ::= 368

id-Ethernet-Type ProtocolIE-ID ::= 369

id-NRV2XServicesAuthorized ProtocolIE-ID ::= 370

id-NRUESidelinkAggregateMaximumBitRate ProtocolIE-ID ::= 371

id-PC5QoSParameters ProtocolIE-ID ::= 372

id-NPRACHConfiguration ProtocolIE-ID ::= 373

id-NBIoT-RLF-Report-Container ProtocolIE-ID ::= 374

id-MDTConfigurationNR ProtocolIE-ID ::= 375

id-PrivacyIndicator ProtocolIE-ID ::= 376

id-TraceCollectionEntityIPAddress ProtocolIE-ID ::= 377

id-UERadioCapabilityID ProtocolIE-ID ::= 378

id-SNtriggered ProtocolIE-ID ::= 379

id-CSI-RSTransmissionIndication ProtocolIE-ID ::= 380

id-DLCarrierList ProtocolIE-ID ::= 381

id-TargetCellInNGRAN ProtocolIE-ID ::= 382

id-E-UTRAN-Node1-Measurement-ID ProtocolIE-ID ::= 383

id-E-UTRAN-Node2-Measurement-ID ProtocolIE-ID ::= 384

id-TDDULDLConfigurationCommonNR ProtocolIE-ID ::= 385

id-CarrierList ProtocolIE-ID ::= 386

id-ULCarrierList ProtocolIE-ID ::= 387

id-FrequencyShift7p5khz ProtocolIE-ID ::= 388

id-SSB-PositionsInBurst ProtocolIE-ID ::= 389

id-NRCellPRACHConfig ProtocolIE-ID ::= 390

id-CellToReport-NR-ENDC ProtocolIE-ID ::= 391

id-CellToReport-NR-ENDC-Item ProtocolIE-ID ::= 392

id-CellMeasurementResult-NR-ENDC ProtocolIE-ID ::= 393

id-CellMeasurementResult-NR-ENDC-Item ProtocolIE-ID ::= 394

id-IABNodeIndication ProtocolIE-ID ::= 395

id-QoS-Mapping-Information ProtocolIE-ID ::= 396

id-F1CTrafficContainer ProtocolIE-ID ::= 397

id-IntendedTDD-DL-ULConfiguration-NR ProtocolIE-ID ::= 399

id-UERadioCapability ProtocolIE-ID ::= 400

id-CellMeasurementResult-E-UTRA-ENDC ProtocolIE-ID ::= 401

id-CellMeasurementResult-E-UTRA-ENDC-Item ProtocolIE-ID ::= 402

id-CellToReport-E-UTRA-ENDC ProtocolIE-ID ::= 403

id-CellToReport-E-UTRA-ENDC-Item ProtocolIE-ID ::= 404

id-TraceCollectionEntityURI ProtocolIE-ID ::= 405

id-SFN-Offset ProtocolIE-ID ::= 406

id-CHO-DC-EarlyDataForwarding ProtocolIE-ID ::= 407

id-IMSvoiceEPSfallbackfrom5G ProtocolIE-ID ::= 408

id-AdditionLocationInformation ProtocolIE-ID ::= 409

id-DirectForwardingPathAvailability ProtocolIE-ID ::= 410

id-sourceNG-RAN-node-id ProtocolIE-ID ::= 411

id-CPAinformation-REQ ProtocolIE-ID ::= C01

id-CPAinformation-ACK ProtocolIE-ID ::= C02

id-CPAinformation-REQD ProtocolIE-ID ::= C10

id-CPCinformation-REQD ProtocolIE-ID ::= C03

id-CPCinformation-CONF ProtocolIE-ID ::= C04

id-CPCinformation-NOTIFY ProtocolIE-ID ::= C05

id-CPCupdate-MOD ProtocolIE-ID ::= C08

id-CPCupdate-ACK ProtocolIE-ID ::= C09

END

-- ASN1STOP

### 9.3.8 Container definitions

-- ASN1START

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Container definitions

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2AP-Containers {

itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)

eps-Access (21) modules (3) x2ap (2) version1 (1) x2ap-Containers (5) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- IE parameter types from other modules.

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

IMPORTS

maxPrivateIEs,

maxProtocolExtensions,

maxProtocolIEs,

Criticality,

Presence,

PrivateIE-ID,

ProtocolIE-ID

FROM X2AP-CommonDataTypes;

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Class Definition for Protocol IEs

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2AP-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

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2AP-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

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2AP-PROTOCOL-EXTENSION ::= CLASS {

&id ProtocolIE-ID UNIQUE,

&criticality Criticality,

&Extension,

&presence Presence

}

WITH SYNTAX {

ID &id

CRITICALITY &criticality

EXTENSION &Extension

PRESENCE &presence

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Class Definition for Private IEs

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

X2AP-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 {X2AP-PROTOCOL-IES : IEsSetParam} ::=

SEQUENCE (SIZE (0..maxProtocolIEs)) OF

ProtocolIE-Field {{IEsSetParam}}

ProtocolIE-Single-Container {X2AP-PROTOCOL-IES : IEsSetParam} ::=

ProtocolIE-Field {{IEsSetParam}}

ProtocolIE-Field {X2AP-PROTOCOL-IES : IEsSetParam} ::= SEQUENCE {

id X2AP-PROTOCOL-IES.&id ({IEsSetParam}),

criticality X2AP-PROTOCOL-IES.&criticality ({IEsSetParam}{@id}),

value X2AP-PROTOCOL-IES.&Value ({IEsSetParam}{@id})

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Container for Protocol IE Pairs

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ProtocolIE-ContainerPair {X2AP-PROTOCOL-IES-PAIR : IEsSetParam} ::=

SEQUENCE (SIZE (0..maxProtocolIEs)) OF

ProtocolIE-FieldPair {{IEsSetParam}}

ProtocolIE-FieldPair {X2AP-PROTOCOL-IES-PAIR : IEsSetParam} ::= SEQUENCE {

id X2AP-PROTOCOL-IES-PAIR.&id ({IEsSetParam}),

firstCriticality X2AP-PROTOCOL-IES-PAIR.&firstCriticality ({IEsSetParam}{@id}),

firstValue X2AP-PROTOCOL-IES-PAIR.&FirstValue ({IEsSetParam}{@id}),

secondCriticality X2AP-PROTOCOL-IES-PAIR.&secondCriticality ({IEsSetParam}{@id}),

secondValue X2AP-PROTOCOL-IES-PAIR.&SecondValue ({IEsSetParam}{@id})

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Container Lists for Protocol IE Containers

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ProtocolIE-ContainerList {INTEGER : lowerBound, INTEGER : upperBound, X2AP-PROTOCOL-IES : IEsSetParam} ::=

SEQUENCE (SIZE (lowerBound..upperBound)) OF

ProtocolIE-Container {{IEsSetParam}}

ProtocolIE-ContainerPairList {INTEGER : lowerBound, INTEGER : upperBound, X2AP-PROTOCOL-IES-PAIR : IEsSetParam} ::=

SEQUENCE (SIZE (lowerBound..upperBound)) OF

ProtocolIE-ContainerPair {{IEsSetParam}}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Container for Protocol Extensions

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

ProtocolExtensionContainer {X2AP-PROTOCOL-EXTENSION : ExtensionSetParam} ::=

SEQUENCE (SIZE (1..maxProtocolExtensions)) OF

ProtocolExtensionField {{ExtensionSetParam}}

ProtocolExtensionField {X2AP-PROTOCOL-EXTENSION : ExtensionSetParam} ::= SEQUENCE {

id X2AP-PROTOCOL-EXTENSION.&id ({ExtensionSetParam}),

criticality X2AP-PROTOCOL-EXTENSION.&criticality ({ExtensionSetParam}{@id}),

extensionValue X2AP-PROTOCOL-EXTENSION.&Extension ({ExtensionSetParam}{@id})

}

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

--

-- Container for Private IEs

--

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PrivateIE-Container {X2AP-PRIVATE-IES : IEsSetParam} ::=

SEQUENCE (SIZE (1..maxPrivateIEs)) OF

PrivateIE-Field {{IEsSetParam}}

PrivateIE-Field {X2AP-PRIVATE-IES : IEsSetParam} ::= SEQUENCE {

id X2AP-PRIVATE-IES.&id ({IEsSetParam}),

criticality X2AP-PRIVATE-IES.&criticality ({IEsSetParam}{@id}),

value X2AP-PRIVATE-IES.&Value ({IEsSetParam}{@id})

}

END

-- ASN1STOP

|  |
| --- |
| **Remaining text not changed** |