**3GPP TSG-RAN WG3 #108-e R3-20xxxx**

**June 1st – 11th, 2020 E-Meeting**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **36.423** | **CR** | **1331** | **rev** | **15** | **Current version:** | **16.1.0** |  |
|  | | | | | | | | |
| *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:*** | Baseline CR for introducing Rel-16 LTE further mobility enhancements | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Intel Corporation, Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | R3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | LTE\_feMob-Core | | | | |  | ***Date:*** | | | 2020-06-10 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | To capture agreements for Rel-16 LTE further mobility enhancements:  **RAN3-104 r1&r2:**   * To capture the agreed TP in R3-192709 and some TPs merge from R3-192665, R3-192416, including: * Reuse existing HO Prep procedure for CHO prep * Reuse existing HO cancel for canceling CHO from source * The target shall be able to signal successful CHO to the source * Reuse existing HO prep for the MBB HO * WA: When to start data forwarding is up to implementation   **RAN3-105 r3:**   * To capture the agreed TP in R3-194767 about further descriptions on Make-Before-Break HO preparation * To capture the agreed TP in R3-194640 about further descriptions on CHO * To capture the agreed TP in R3-194644 about CHO cancel procedure   **RAN3-105 r4:**   * The term NR-CGI is not correct, should be ECGI   **RAN3-105bis r5**   * The definition of DAPS has not been introduced * To capture the agreements on SN status continuation for data forwarding   **RAN3-106 r6**   * Submitted to RAN3#106   **RAN3-106-r7**   * To capture all the agreed TPs during RAN3#106   **RAN3-107e r8**   * Submitted to RAN3#107e   **RAN3-107e r9**   * ASN.1 for CHO CANCEL procedure was missing   **RAN3-107e r10**   * To capture all the agreed TPs during RAN3#107e * Some small corrections to ASN.1   **RAN3-107bis-e r11**   * Submitted to RAN3#107bis-e   **RAN3-107bis-e r12**   * To capture all the agreed TPs during RAN3#107bis-e * Editorial changes remain   **RAN3-108-e r13**   * Submitted to RAN3#108e   **RAN3-108-e r14**   * Editorial updates during RAN3#108e   **RAN3-109-E r15**   * To capture all the agreed TPs during RAN3#108-e | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | **RAN3-104:**  1. Agreed TPs in R3-192709 and some TPs merge from R3-192665, R3-192416, including   * Handover Preparation procedure is updated to enable triggering CHO. * New class-2 Handover Success procedure is introduced for the target to signal the source that the UE has successfully attached to the target.   **RAN3-105:**  1. Agreed TP in R3-194767, including:   * Add “Enhanced Make-Before-Break Information” IE with necessary contexts and FFS for further discussions * Corresponding ASN.1 to this added IE   2. Agreed TP in R3-194640, including:   * The contexts about handling of parallel transactions for HO Preparation were added * some FFSes were removed   3. Agreed TP in R3-194644   * CHO Cancel procedure from the target node shall not be used in legacy HO * Both source and target nodes are allowed to initiate per-target cell CHO cancel; target node is only allowed to cancel a prepared CHO   **RAN3-105bis**  1. Agreed change in R3-194965   * To change “NR CGI” to “ECGI”   2. Agreed TP in R3-196131   * To capture the agreements on SN status continuation during DAPS handover process   3. To introduce the definition of DAPS, and replace the previous conception of enhanced MBB or eMBB, including the concerned contexts, tabular and ASN.1.  **RAN3-106**  1. All changes are kept as one author.  **RAN3-106**  1. Agreed TP in R3-196699   * Enabling identification of the tunnel for late data forwarding   2. Agreed TP in R3-197615   * Clarify that candidate cells to be Cancelled list should be related to UE signaling when previously set up   3. Agreed TP in R3-197613   * Enabling modification of CHO   4. Agreed TP in R3-197611   * Clarify that the parallel requests can be identified with the target cell ID in the case that the source UE AP IDs are the same   5. Agreed TP in R3-197791   * Data Forwarding and SN Status Transfer for DAPS HO   **RAN3-107e**  1. Update with the latest template in R3-200043  **RAN3-107e**  1. To add ASN.1 for CHO CANCEL procedure in R3-201298  **RAN3-107e**  1. Agreed TP in R3-201312   * Introduce the DAPS HO per DRB indicator and DAPS response Info into Handover Preparation procedure over X2 interface.   2. Agreed TP in R3-201078   * To define the value of maxnoofCellsinCHO as 16   3. Agreed TP in R3-201304   * Some corrections to Conditional HO Cancel   4. Agreed TP in R3-201359   * To introduce additional Information on CHO triggering to mitigate the risk of unnecessary resource reservation   5. Agreed TP in R3-201387   * To introduce necessary changes to make the early forwarding work for DAPS/CHO   6. Agreed TP in R3-201306   * Correction to CHO Per Target Cell TEID * Add ASN.1 part for “COUNTvalueExtended” and “PDCP-SNlength18” * Update the defintion of “DAPS HO” to refer to 36.300   **RAN3-107bis-e**  1. All changes are kept as one author, based on the latest spec.  **RAN3-107bis-e**  1. Agreed TP in R3-202295   * Correction and Resolving FFS on inter-gNB-DU conditional mobility scenarios   2. Agreed TP in R3-202613   * Further Clarification of Maximum Number of CHO Preparations   3. Agreed TP in R3-202671   * Implementation of the arrival probability   4. Agreed TP in R3-202715   * Do not introduce one shot DAPS HO proposal from source. DAPS HO proposal is per E-RAB/DRB.   5. Agreed TP in R3-202754   * Enabling keeping 2 configs at the target   6. Rapporteur clean-ups according to R3-202734 and some ASN.1 error corrections  **RAN3-108-e**   1. All changes are kept as one author, based on the latest spec, with a complet ASN.1. 2. Remove changes on changes   **RAN3-108-e**  1. Agreed TP in R3-204122   * Refine X2AP Abnormal Conditions etc   2. Agreed TP in R3-204150   * Further Clarification of CHO in MR-DC operation   3. Agreed TP in R3-204164   * Conditional HO Cancel procedure and HO Success procedure   4. Agreed TP in R3-204185   * CHO Modification   5. Agreed TP in R3-204231   * HO SUCCESS alignment with F1 ACCESS SUCCESS   6. Agreed TP in R3-204294   * Change of the name of the Early Forwarding Transfer procedure   7. Agreed TP in R3-204300   * DAPS HO handling during preparation   Impact analysis, same release: the CR has limited functional and protocol impact as it affects only the CHO and RUDI concernig mobility enhancements. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Rel-16 LTE further mobility enhancements is missing in TS 36.423. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 3.1, 3.3, 7, 8.1, 8.2.1, 8.2.2, 8.2.4, 8.2.X(new), 8.2.Y(new), 8.2.Z (new), 8.7.5, 9.1.1.1, 9.1.1.2, 9.1.1.3, 9.1.1.4, 9.1.1.6, 9.1.1.X(new), 9.1.1.Y(new), 9.1.1.Z (new), 9.2.x, 9.2.y, 9.2.C, 9.3.3, 9.3.4, 9.3.5, 9.3.7 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 36.300  TS 36.413 CR0016 | | |
| ***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# -: R3-192709  Rev# 1: R3-193164  Rev# 2: R3-193358  Rev# 3: R3-194798  Rev# 4: R3-194965  Rev# 5: R3-196303  Rev# 6: R3-196501  Rev# 7: R3-197805  Rev# 8: R3-200043  Rev# 9: R3-201298  Rev# 10: R3-201449  Rev# 11: R3-201585  Rev# 12: R3-202888  Rev# 13: R3-203059  Rev# 14: R3-204205  Rev# 15: R3-20XXXX | | | | | | | | |

/////////////////////////////irrelevant operations skipped///////////////////////////////////////////

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

**ACL functionality:** A functionality controlling the access to network nodes. In case of Access Control Lists (ACL) functionality is applied in a network node the network node may only accept connections from other peer network nodes once the source addresses of the sending network node is already known in the target node.

**Elementary Procedure:** X2AP protocol consists of Elementary Procedures (EPs). An X2AP Elementary Procedure is a unit of interaction between two eNBs. An EP consists of an initiating message and possibly a response message. Two kinds of EPs are used:

- Class 1: Elementary Procedures with response (success or failure),

- Class 2: Elementary Procedures without response.

**E-RAB:** Defined in TS 36.401 [2].

**CSG Cell:** as defined in TS 36.300 [15].

**Dual Connectivity:** as defined in TS 36.300 [15].

**E-UTRA-NR Dual Connectivity**: as defined in TS 37.340 [32].

**Hybrid cell:** as defined in TS 36.300 [15].

**Master eNB:** as defined in TS 36.300 [15].

**Secondary Cell Group:** as defined in TS 36.300 [15].

**Secondary eNB:** as defined in TS 36.300 [15].

**en-gNB**: as defined in TS 37.340 [32].

**Conditional Handover:** As defined in TS 36.300 [15].

**DAPS HO:** As defined in TS 36.300 [15].

**Conditional PSCell Change:** As defined in TS 37.340 [32].

## 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

DAPS Dual Active Protocol Stacks

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7 Functions of X2AP

The X2AP protocol provides the following functions:

- Mobility Management. This function allows the eNB to move the responsibility of a certain UE to another eNB. Forwarding of user plane data, Status Transfer and UE Context Release function are parts of the mobility management.

- Dual Connectivity. This function allows the eNB to request another eNB to provide radio resources for a certain UE while keeping responsibility for that UE.

- E-UTRA-NR Dual Connectivity. This function allows the eNB to request another en-gNB to provide radio resources for a certain UE while keeping responsibility for that UE.

- Load Management. This function is used by eNBs to indicate resource status, overload and traffic load to each other.

- Reporting of General Error Situations. This function allows reporting of general error situations, for which function specific error messages have not been defined.

- Resetting the X2. This function is used to reset the X2 interface.

- Setting up the X2. This function is used to exchange necessary data for the eNB or en-gNB for setup the X2 interface and implicitly perform an X2 Reset.

- eNB Configuration Update. This function allows updating of application level data needed for two eNBs to interoperate correctly over the X2 interface.

- Mobility Parameters Management. This function allows the eNB to coordinate adaptation of mobility parameter settings with a peer eNB.

- Mobility Robustness Optimisation. This function allows reporting of information related to mobility failure events.

- Energy Saving. This function allows decreasing energy consumption by enabling indication of cell activation/deactivation over the X2 interface.

- X2 Release. This function allows an eNB to be aware that the signalling connection to a peer eNB is unavailable.

- Message Transfer. This function allows indirect transport of X2AP messages to a peer eNB.

- Registration. This function allows registration of eNB in case indirect transport of X2AP messages is supported.

- Removing the X2. This function allows removing the signalling connection between two eNBs or between eNB and en-gNB in a controlled manner.

- Inter-eNB UE Context Retrieval. This function allows retrieval of a UE context in case of resumption or re-establishment of an RRC connection.

- Secondary RAT Data Usage Report. This function allows eNB to get the uplink and downlink data volumes for the Secondary RAT on a per E-RAB basis.

- E-UTRA - NR Spectrum Sharing. This function allows uplink and downlink spectrum sharing between a number of E - UTRA and a number of NR cells with overlapping coverage.

- EN-DC Configuration Transfer. This function supports en-gNB X2 TNL address discovery.

The mapping between the above functions and X2 EPs is shown in the table below.

**Table 7-1: Mapping between X2AP functions and X2AP EPs**

| **Function** | **Elementary Procedure(s)** |
| --- | --- |
| Mobility Management | a) Handover Preparation b) SN Status Transfer c) UE Context Release  d) Handover Cancel  e) Handover Success  f) Conditional Handover Cancel |
| Dual Connectivity | a) SeNB Addition Preparation  b) SeNB Reconfiguration Completion  c) MeNB initiated SeNB Modification Preparation  d) SeNB initiated SeNB Modification  e) MeNB initiated SeNB Release  f) SeNB initiated SeNB Release  g) SeNB Counter Check |
| E-UTRA-NR Dual Connectivity | a) SgNB Addition Preparation  b) SgNB Reconfiguration Completion  c) MeNB initiated SgNB Modification Preparation  d) SgNB initiated SgNB Modification  e) SgNB change  f) MeNB initiated SgNB Release  g) SgNB initiated SgNB Release  h) SgNB Counter Check  i) RRC transfer  j) EN-DC X2 Setup  k) EN-DC Configuration Update  l) EN-DC Cell Activation  m) SgNB Activity Notification  n) EN-DC X2 Removal  o) gNB Status Indication |
| Load Management | a) Load Indication  b) Resource Status Reporting Initiation  c) Resource Status Reporting |
| Reporting of General Error Situations | Error Indication |
| Resetting the X2 | Reset |
| Setting up the X2 | X2 Setup |
| eNB Configuration Update | a) eNB Configuration Update  b) Cell Activation |
| Mobility Parameters Management | Mobility Settings Change |
| Mobility Robustness Optimisation | a) Radio Link Failure Indication  b) Handover Report |
| Energy Saving | a) eNB Configuration Update  b) Cell Activation |
| X2 Release | X2 Release |
| Message Transfer Registration | X2AP Message Transfer |
| Removing the X2 | X2 Removal |
| Inter-eNB UE Context Retrieval | a) Retrieve UE Context  b) Data Forwarding Address Indication |
| Secondary RAT Data Usage Report | Secondary RAT Data Usage Report |
| E-UTRA – NR Spectrum Sharing | E-UTRA - NR Cell Resource Coordination |
| EN-DC Configuration Transfer | EN-DC Configuration Transfer |

////////////////////irrelevant operations skipped///////////////////////////////////////////////////

# 8 X2AP procedures

## 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 |

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 |

## 8.2 Basic mobility procedures

### 8.2.1 Handover Preparation

#### 8.2.1.1 General

This procedure is used to establish necessary resources in an eNB for an incoming handover. If the procedure concerns a conditional handover, parallel transactions are allowed. Possible parallel requests are identified by the target cell ID when the source UE AP IDs are the same.

The procedure uses UE-associated signalling.

#### 8.2.1.2 Successful Operation



Figure 8.2.1.2-1: Handover Preparation, successful operation

The source eNB initiates the procedure by sending the HANDOVER REQUEST message to the target eNB. When the source eNB sends the HANDOVER REQUEST message, it shall start the timer TRELOCprep.

If the *Conditional Handover Information* IE is contained in the HANDOVER REQUEST message, the target eNB shall consider that the request concerns a conditional handover and shall include the *Conditional Handover Information* IE in the HANDOVER REQUEST ACKNOWLEDGE message.

If the *New eNB UE X2AP ID* IE is contained in the *Conditional Handover Information* IE included in the HANDOVER REQUEST message, then the target eNB shall remove the existing prepared conditional HO identified by the *New eNB UE X2AP ID* IE and the *Target Cell ID* IE. It is up to the implementation of the target eNB when to remove the HO information.

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

The source eNB may include in the *GUMMEI* IE any GUMMEI corresponding to the source MME node.

If at least one of the requested non-GBR E-RABs is admitted to the cell indicated by the *Target Cell ID* IE, the target eNB shall reserve necessary resources, and send the HANDOVER REQUEST ACKNOWLEDGE message back to the source eNB. The target eNB shall include the E-RABs for which resources have been prepared at the target cell in the *E-RABs Admitted List* IE. The target eNB shall include the E-RABs that have not been admitted in the *E-RABs Not Admitted List* IE with an appropriate cause value.

At reception of the HANDOVER REQUEST message the target eNB shall:

- prepare the configuration of the AS security relation between the UE and the target eNB by using the information in the *UE Security Capabilities* IE and the AS Security Information IE in the *UE Context Information* IE.

For each E-RAB for which the source eNB proposes to do forwarding of downlink data, the source eNB shall include the *DL Forwarding* IE within the *E-RABs To be Setup Item* IE of the HANDOVER REQUEST message. The source eNB shall include the DL Forwarding IE if it requests a DAPS handover for that E-RAB. For each E-RAB that it has decided to admit, the target eNB may include the *DL GTP Tunnel Endpoint* IE within the *E-RABs Admitted Item* IE of the HANDOVER 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 *GTP TEID* IE in the *E-RAB To Be Switched in Downlink List* IE of the PATH SWITCH REQUEST message (see TS 36.413 [4]) depending on implementation choice.

For each bearer in the *E-RABs Admitted List* IE, the target eNB may include the *UL GTP Tunnel Endpoint* IE to indicate that it requests data forwarding of uplink packets to be performed for that bearer.

Upon reception of the HANDOVER REQUEST ACKNOWLEDGE message the source eNB shall stop the timer TRELOCprep and terminate the Handover Preparation procedure. If the procedure was initiated for an immediate handover, the source eNB shall start the timer TX2RELOCoverall. The source eNB is then defined to have a Prepared Handover for that X2 UE-associated signalling.

If the *Trace Activation* IE is included in the HANDOVER REQUEST message then the target eNB shall, if supported, initiate the requested trace function as described in TS 32.422 [6]. In particular, the target eNB shall, if supported:

- if the *Trace Activation* IE does not include the *MDT Configuration* IE, initiate the requested trace session as described in TS 32.422 [6];

- if the *Trace Activation* IE includes the *MDT Activation* IE, within the *MDT Configuration* IE, set to "Immediate MDT and Trace" initiate the requested trace session and MDT session as described in TS 32.422 [6];

- if the *Trace Activation* IE includes the *MDT Activation* IE, within the *MDT Configuration* IE, set to "Immediate MDT Only" initiate the requested MDT session as described in TS 32.422 [6] and the target eNB shall ignore *Interfaces To Trace* IE, and *Trace Depth* IE;

- if the *Trace Activation* IE includes the *MDT Location Information* IE, within the *MDT Configuration* IE, store this information and take it into account in the requested MDT session;

- if the *Trace Activation* IE includes the *Signalling based MDT PLMN List* IE, within the *MDT Configuration* IE, the eNB may use it to propagate the MDT Configuration as described in TS 37.320 [31];

- if the *Trace Activation* IE includes the *UE Application layer measurement configuration* IE, initiate the requested trace session and QoE Measurement Collection function as described in TS 36.300 [15].

- if the *Trace Activation* IE includes the *Bluetooth Measurement Configuration* IE, within the *MDT Configuration* IE, take it into account for MDT Configuration as described in TS 37.320 [31].

- if the *Trace Activation* IE includes the *WLAN Measurement Configuration* IE, within the *MDT Configuration* IE, take it into account for MDT Configuration 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 HANDOVER REQUEST message, the target eNB 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].

If the *Masked IMEISV* IE is contained in the HANDOVER REQUEST message the target eNB shall, if supported, use it to determine the characteristics of the UE for subsequent handling.

The source eNB 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 HANDOVER REQUEST message, except if the source eNB selects a serving PLMN in the target eNB which is not included in the Management Based MDT PLMN List. If the *Management Based MDT PLMN List* IE is not present, the source eNB shall, if supported, include the *Management Based MDT Allowed* IE, if this information is available in the UE context, in the HANDOVER REQUEST message, except if the source eNB selects a serving PLMN in the target eNB different from the serving PLMN in the source eNB.

If the *Handover Restriction List* IE is

- contained in the HANDOVER REQUEST message, the target eNB shall

- store the information received in the *Handover Restriction List* IE in the UE context;

- use this information to determine a target for the UE during subsequent mobility action for which the eNB provides information about the target of the mobility action towards the UE, except when one of the E-RABs has a particular ARP value (TS 23.401 [12]) in which case the information shall not apply;

- use this information to select a proper SCG during dual connectivity operation.

- not contained in the HANDOVER REQUEST message, the target eNB shall consider that no roaming and no access restriction apply to the UE.

If the *Location Reporting Information* IE is included in the HANDOVER REQUEST message then the target eNB should initiate the requested location reporting functionality as defined in TS 36.413 [4].

If the *SRVCC Operation Possible* IE is included in the HANDOVER REQUEST message, the target eNB shall store the content of such IE in the UE context and use it as defined in TS 23.216 [20].

If the *UE Security Capabilities* IE included in the HANDOVER REQUEST message only contains the EIA0 algorithm as defined in TS 33.401 [18] and if this EIA0 algorithm is defined in the configured list of allowed integrity protection algorithms in the eNB (TS 33.401 [18]), the eNB shall take it into use and ignore the keys received in the *AS Security Information* IE.

The HANDOVER REQUEST message shall contain the *Subscriber Profile ID* *for RAT/Frequency priority* IE, if available.

If the *Subscriber Profile ID* *for RAT/Frequency priority* IE is contained in the HANDOVER REQUEST message, the target eNB shall store this information and the target eNB should use the information as defined in TS 36.300 [15].

If the *Additional RRM Policy Index* IE is contained in the HANDOVER REQUEST message, the target eNB shall, if supported, store this information and the target eNB should use the information as defined in TS 36.300 [15].

Upon reception of *UE History Information* IE in the HANDOVER REQUEST message, the target eNB shall collect the information defined as mandatory in the *UE History Information* IE and shall, if supported, collect the information defined as optional in the *UE History Information* IE, for as long as the UE stays in one of its cells, and store the collected information to be used for future handover preparations.

Upon reception of the *UE History Information from the UE* IE in the HANDOVER REQUEST message, the target eNB shall, if supported, store the collected information to be used for future handover preparations.

If the *Mobility Information* IE is provided in the HANDOVER REQUEST message, the target eNB shall, if supported, store this information and use it as defined in TS 36.300 [15]. The target eNB shall, if supported, store the C-RNTI of the source cell received in the HANDOVER REQUEST message.

If the *Expected UE Behaviour* IE is provided in the HANDOVER REQUEST message, the target eNB shall, if supported, store this information and may use it to determine the RRC connection time.

If the *ProSe Authorized* IE is contained in the HANDOVER REQUEST message and it contains one or more IEs set to "authorized", the eNB shall, if supported, consider that the UE is authorized for the relevant ProSe service(s).

If the *V2X Services Authorized* IE is contained in the HANDOVER REQUEST message and it contains one or more IEs set to "authorized", the eNB shall, if supported, consider that the UE is authorized for the relevant service(s).

If the *UE Context Reference at the SeNB* IE is contained in the HANDOVER REQUEST message the target eNB may use it as specified in TS 36.300 [15]. In this case, the source eNB may expect the target eNB to include the *UE Context Kept Indicator* IE set to "True" in the HANDOVER REQUEST ACKNOWLEDGE message, which shall use this information as specified in TS 36.300 [15]. If the *UE Context Reference at the WT* IE is contained in the HANDOVER REQUEST message, the target eNB may use it as specified in TS 36.300 [15]. In this case, the source eNB may expect the target eNB to include the *WT UE Context Kept Indicator* IE set to "True" in the HANDOVER REQUEST ACKNOWLEDGE message; the source eNB shall use this information as specified in TS 36.300 [15].

If the *UE Context Reference at the SgNB* IE is contained in the HANDOVER REQUEST message the target eNB may use it as specified in TS 37.340 [32]. In this case, the source eNB may expect the target eNB to include the *UE Context Kept Indicator* IE set to "True" in the HANDOVER REQUEST ACKNOWLEDGE message, which shall use this information as specified in TS 37.340 [32].

If the *Bearer Type* IE is included in the HANDOVER REQUEST message and is set to "non IP", then the target eNB shall not perform header compression for the concerned E-RAB.If the *UE Sidelink Aggregate Maximum Bit Rate* IE is contained in theHANDOVER REQUEST message, the target eNB shall, if supported, use it for the concerned UE's sidelink communication in network scheduled mode for V2X services.

If the *NR UE Security Capabilities* IE is included in the HANDOVER REQUEST message, the target eNB shall, if supported, store this information in the UE context and send it to the respective peer node during subsequent handover preparations and/or EN-DC operations for the UE as defined in TS 33.401 [15].

If the *Aerial UE subscription information* IE is included in the HANDOVER REQUEST message, the target eNB shall, if supported, store this information in the UE context and use it as defined in TS 36.300 [15].

If the *Subscription Based* *UE Differentiation Information* IE is included in the HANDOVER REQUEST message, the eNB shall, if supported, store this information in the UE context for further use according to TS 23.401 [12].

If the *DAPS Request Information* IE is included for an E-RAB to be setup in the HANDOVER REQUEST message, the target eNB shall consider that the request concerns a DAPS handover for that E-RAB, as described in TS 36.300 [15]. Accordingly, the target eNB shall include the *DAPS Response Information* IE in the HANDOVER REQUEST ACKNOWLEDGE message.

If the *Maximum Number of CHO Preparations* IE is included in *Conditional Handover Information* IE contained in the the HANDOVER REQUEST ACKNOWLEDGE message, then the source eNB should not initiate more Handover Preparation procedures for a CHO for the same UE towards the target eNB than the number indicated in the *Maximum Number of CHO Preparations* IE.

If the *Estimated Arrival Probability* IE is contained in the *Conditional Handover Information* IE included in the HANDOVER REQUEST message, then the target eNB may use the information to allocate necessary resources for the incoming CHO.

If the *EPC Handover Restriction List Container* IE is included in the HANDOVER REQUEST message, the target eNB shall, if supported, store this information in the UE context and shall use it as specified in TS 36.300 [15].

**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 HANDOVER REQUEST ACKNOWLEDGE message, then the source eNB shall, if supported, include the uplink/downlink PDCP SN and HFN status received from the SgNB in the SN Status Transfer procedure towards the target eNB, as specified in TS 37.340 [32].

#### 8.2.1.3 Unsuccessful Operation



Figure 8.2.1.3-1: Handover Preparation, unsuccessful operation

If the target eNB does not admit at least one non-GBR E-RAB, or a failure occurs during the Handover Preparation, the target eNB shall send the HANDOVER PREPARATION FAILURE message to the source eNB. The message shall contain the Cause IE with an appropriate value.

If the target eNB receives a HANDOVER REQUEST message containing RRC Context IE that does not include required information as specified in TS 36.331 [9], the target eNB shall send the HANDOVER PREPARATION FAILURE message to the source eNB.

If the *Conditional Handover Information* IE is contained in the HANDOVER REQUEST message and the target eNB rejects the handover or a failure occurs during the Handover Preparation, the target eNB shall include the *Requested Target Cell ID* IE in the HANDOVER PREPARATION FAILURE message.

**Interactions with Handover Cancel procedure:**

If there is no response from the target eNB to the HANDOVER REQUEST message before timer TRELOCprep expires in the source eNB, the source eNB should cancel the Handover Preparation procedure towards the target eNB by initiating the Handover Cancel procedure with the appropriate value for the Cause IE. The source eNB shall ignore any HANDOVER REQUEST ACKNOWLEDGE or HANDOVER PREPARATION FAILURE message received after the initiation of the Handover Cancel procedure and remove any reference and release any resources related to the concerned X2 UE-associated signalling.

#### 8.2.1.4 Abnormal Conditions

If the target eNB receives a HANDOVER REQUEST message containing multiple *E-RAB ID* IEs (in the *E-RABs To Be Setup List* IE) set to the same value, the target eNB shall not admit the corresponding E-RABs.

If the target eNB receives a HANDOVER 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 target eNB shall not admit the corresponding E-RAB.

If the supported algorithms for encryption defined in the *Encryption Algorithms* IE in the *UE Security Capabilities* IE in the *UE Context Information* IE, plus the mandated support of EEA0 in all UEs (TS 33.401 [18]), do not match any algorithms defined in the configured list of allowed encryption algorithms in the target eNB (TS 33.401 [18]), the target eNB shall reject the procedure using the HANDOVER PREPARATION FAILURE message.

If the supported algorithms for integrity defined in the *Integrity Protection Algorithms* IE in the *UE Security Capabilities* IE in the *UE Context Information* IE, plus the mandated support of the EIA0 algorithm in all UEs (TS 33.401 [18]), do not match any algorithms defined in the configured list of allowed integrity protection algorithms in the eNB (TS 33.401 [18]), the eNB shall reject the procedure using the HANDOVER PREPARATION FAILURE message.

If the target eNB receives a HANDOVER REQUEST message which does not contain the *Handover Restriction List* IE, and the PLMN to be used cannot be determined otherwise, the target eNB shall reject the procedure using the HANDOVER PREPARATION FAILURE message.

If the target eNB receives a HANDOVER REQUEST message containing the *Handover Restriction List* IE, and the serving PLMN is not supported by the target cell, the target eNB shall reject the procedure using the HANDOVER PREPARATION FAILURE message.

If the target eNB receives a HANDOVER REQUEST message which does not contain the *CSG Membership Status* IE, and the target cell is a hybrid cell, the target eNB shall reject the procedure using the HANDOVER PREPARATION FAILURE message.

If the target cell is a CSG cell and the target eNB has not received any CSG ID of the source cell, the target eNB shall reject the procedure using the HANDOVER PREPARATION FAILURE message.

If the target cell is a CSG cell with a different CSG from the source cell, the target eNB shall reject the procedure using the HANDOVER PREPARATION FAILURE message.

If the *CHO trigger* IE is set to “CHO-replace” in the HANDOVER REQUEST message, but there is no CHO prepared for the included *New eNB UE X2AP ID* IE, or the candidate cell in the *Target Cell ID* IE was not prepared using the same UE-associated signaling connection, the target eNB shall reject the procedure using the HANDOVER PREPARATION FAILURE message.

//////////////////////irrelevant operations skipped///////////////////////////////////////////////////

### 8.2.2 SN Status Transfer

#### 8.2.2.1 General

The purpose of the SN Status Transfer procedure is to transfer the uplink PDCP SN and HFN receiver status and the downlink PDCP SN and HFN transmitter status either, from the source to the target eNB during an X2 handover, between the eNBs involved in dual connectivity and/or LWA, or between MeNB and en-gNB involved in EN-DC, for each respective E-RAB for which PDCP SN and HFN status preservation applies.

In case that the X2 handover is a DAPS handover, the SN Status Transfer procedure may also be used to transfer the uplink PDCP SN and HFN receiver status, or the downlink PDCP SN and HFN transmitter status for an E-RAB associated with RLC-UM and configured with DAPS as described in TS 36.300 [15].

If the SN Status Transfer procedure is applied in the course of dual connectivity, LWA, RRC connection re-establishment or EN-DC, in the subsequent specification text

- the behaviour of the eNB from which the E-RAB context is transferred, i.e., the eNB involved in dual connectivity, LWA, RRC connection re-establishment from which data forwarding, is specified by the behaviour of the "source eNB",

- the behaviour of the eNB to which the E-RAB context is transferred, i.e., the eNB involved in dual connectivity, LWA, RRC connection re-establishment to which data is forwarded, is specified by the behaviour of the "target eNB".

- in case of EN-DC, the behaviour of the node from which the E-RAB context is transferred, i.e., either the en-gNB or the MeNB from which data is forwarded, is specified by the behaviour of the "source eNB",

- in case of EN-DC, the behaviour of the node to which the E-RAB context is transferred, i.e., either the en-gNB or the MeNB to which data is forwarded, is specified by the behaviour of the "target eNB".

The procedure uses UE-associated signalling.

#### 8.2.2.2 Successful Operation

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Figure 8.2.2.2-1: SN Status Transfer, successful operation

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Figure 8.2.2.2-2: MeNB initiated SN Status Transfer for EN-DC, successful operation

****

**Figure 8.2.2.2-3: en-gNB initiated SN Status Transfer for EN-DC, successful operation**

The source eNB initiates the procedure by stop assigning PDCP SNs to downlink SDUs and stop delivering UL SDUs towards the EPC and sending the SN STATUS TRANSFER message to the target eNB at the time point when it considers the transmitter/receiver status to be frozen. The target eNB using Full Configuration for this handover as per TS 36.300 [15] or for the EN-DC operations as per TS 37.340 [32] shall ignore the information received in this message. In case of EN-DC, if the target eNB performs PDCP version change or PDCP SN length change or RLC mode change for an E-RAB as specified in TS 37.340 [32], it shall ignore the information received for that E-RAB in this message.

In case that the X2 handover is a DAPS handover, the source eNB may continue assigning PDCP SNs to downlink SDUs and delivering uplink SDUs toward the EPC when initiating this procedure for E-RABs not configured with DAPS as in TS 36.300 [15].

The *E-RABs Subject To Status Transfer List* IE included in the SN STATUS TRANSFER message contains the E-RAB ID(s) corresponding to the E-RAB(s) for which PDCP SN and HFN status preservation shall be applied. In case that the X2 handover is a DAPS handover, this IE may contain the E-RAB ID(s) corresponding to the E-RAB(s) associated with RLC-UM.

If the source eNB includes in the SN STATUS TRANSFER message, the information on the missing and received uplink SDUs in the *Receive Status Of UL PDCP SDUs* IE or *Receive Status Of UL PDCP SDUs Extended* IE or *Receive Status Of UL PDCP SDUs for PDCP SN Length 18* IE for each E-RAB for which the source eNB has accepted the request from the target eNB for uplink forwarding, then the target eNB may use it in a Status Report message sent to the UE over the radio.

For each E-RAB for which the *DL COUNT Value* IE is received in the SN STATUS TRANSFER message, the target eNB shall use it to mark with the value contained in the *PDCP-SN* IE of this IE the first downlink packet for which there is no PDCP SN yet assigned. If the *DL COUNT Value Extended* IE or *DL COUNT Value for PDCP SN Length 18* IE is included in the *E-RABs Subject To Status Transfer Item* IE, the target eNB shall, if supported, use the value contained in the *PDCP-SN Extended* IE of the *DL COUNT Value Extended* IE or *PDCP-SN Length 18 IE of the DL COUNT Value for PDCP SN Length 18* IE instead of the value contained in the *PDCP-SN* IE of the *DL COUNT Value* IE.

For each E-RAB for which the *UL COUNT Value* IE is received in the SN STATUS TRANSFER message, the target eNB shall not deliver any uplink packet which has a PDCP SN lower than the value contained in the *PDCP-SN* IE of this IE. If the *UL COUNT Value Extended* IE or *UL COUNT Value for PDCP SN Length 18* IE is included in the *E-RABs Subject To Status Transfer Item* IE, the target eNB shall, if supported, use the value contained in the *PDCP-SN Extended* IE of the *UL COUNT Value Extended* IE or *PDCP-SN Length 18 IE of the UL COUNT Value for PDCP SN Length 18* IE instead of the value contained in the *PDCP-SN* IE of the *UL COUNT Value* IE.

**EN-DC**

If the en-gNB sends the message to the MeNB, then the *SgNB UE X2AP ID* IE shall be included in the SN 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.

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

#### 8.2.2.3 Abnormal Conditions

If the target eNB receives this message for a UE for which no prepared handover exists at the target eNB, the target eNB shall ignore the message.

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

### 8.2.4 Handover Cancel

#### 8.2.4.1 General

The Handover Cancel procedure is used to enable a source eNB to cancel an ongoing handover preparation or an already prepared handover.

The procedure uses UE-associated signalling.

#### 8.2.4.2 Successful Operation



Figure 8.2.4.2-1: Handover Cancel, successful operation

The source eNB initiates the procedure by sending the HANDOVER CANCEL message to the target eNB. The source eNB shall indicate the reason for cancelling the handover by means of an appropriate cause value.

At the reception of the HANDOVER CANCEL message, the target eNB shall remove any reference to, and release any resources previously reserved to the concerned UE context.

The *New* *eNB UE X2AP ID* IE and, if available, the *New eNB UE X2AP ID Extension* IE shall be included if it has been obtained from the target eNB.

If the *Candidate Cells To Be Cancelled List* IE is included in the HANDOVER CANCEL message, the target eNB shall consider that the source eNB is cancelling only the handover associated to the candidate cells identified by the included ECGI and associated to the UE-associated signaling connection identified by the *Old eNB UE X2AP ID* IE (or the *Old eNB UE X2AP ID Extension* IE if included) and, if included , also by the *New eNB UE X2AP ID* IE (or the *New eNB UE X2AP ID Extension* IE if included).

#### 8.2.4.3 Unsuccessful Operation

Not applicable.

#### 8.2.4.4 Abnormal Conditions

Should the HANDOVER CANCEL message refer to a context that does not exist, the target eNB shall ignore the message.

If the *Candidate Cells To Be Cancelled List* IE is included in the HANDOVER CANCEL message and the handover is not associated to a conditional handover, the target eNB shall ignore the *Candidate Cells To Be Cancelled List* IE.

If one or more candidate cells in the *Candidate Cells To Be Cancelled List* IE included in the HANDOVER CANCEL message were not prepared using the same UE-associated signaling connection, the target eNB shall ignore those non-associated candidate cells.

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

### 8.2.X Handover Success

#### 8.2.X.1 General

The Handover Success procedure is used during a conditional handover or a DAPS handover, to enable a target eNB to inform the source eNB that the UE has successfully accessed the target eNB.

The procedure uses UE-associated signalling.

#### 8.2.X.2 Successful Operation



Figure 8.2.X.2-1: Handover Success, successful operation

The target eNB initiates the procedure by sending the HANDOVER SUCCESS message to the source eNB.

If late data forwarding was configured for this UE, the source NG-RAN node shall start data forwarding using the tunnel information related to the global target cell ID provided in the HANDOVER SUCCESS message.

When the source eNB receives the HANDOVER SUCCESS message, it shall consider all other CHO preparations accepted for this UE under the same UE-associated signalling connection in the target eNB as cancelled.

**Interactions with other procedures**

If a CONDITIONAL HANDOVER CANCEL message was received for this UE prior the reception of the HANDOVER SUCCESS message, the source eNB node shall consider that the UE successfully executed the handover.

#### 8.2.X.3 Unsuccessful Operation

Not applicable.

#### 8.2.X.4 Abnormal Conditions

If the HANDOVER SUCCESS message refers to a context that does not exist, the source eNB shall ignore the message.

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

### 8.2.Y Conditional Handover Cancel

#### 8.2.Y.1 General

The Conditional Handover Cancel procedure is used to enable a target eNB to cancel an already prepared conditional handover.

The procedure uses UE-associated signalling.

#### 8.2.Y.2 Successful Operation



Figure 8.2.X.2-1: Conditional Handover Cancel, successful operation

The target eNB initiates the procedure by sending the CONDITIONAL HANDOVER CANCEL message to the source eNB. The target eNB shall indicate the reason for cancelling the conditional handover by means of an appropriate cause value.

The *New* *eNB UE X2AP ID* IE and, if available, the *New eNB UE X2AP ID Extension* IE shall be included.

At the reception of the CONDITIONAL HANDOVER CANCEL message, the source eNB shall consider that the target eNB is about to remove any reference to, and release any resources previously reserved for candidate cells associated to the UE-associated signalling identified by the *Old eNB UE X2AP ID* IE (or the *Old eNB UE X2AP ID Extension* IE if included) and the *New eNB UE X2AP ID* IE (or the *New eNB UE X2AP ID Extension* IE if included).

If the *Candidate Cells To Be Cancelled List* IE is also included, the source eNB shall consider that only the resources reserved for the cells identified by the included ECGI are about to be released.

#### 8.2.Y.3 Unsuccessful Operation

Not applicable.

#### 8.2.Y.4 Abnormal Conditions

Should the CONDITIONAL HANDOVER CANCEL message refer to a context that does not exist, the source eNB shall ignore the message.

If one or more candidate cells in the *Candidate Cells To Be Cancelled List* IE included in the CONDITIONAL HANDOVER CANCEL message were not prepared using the same UE-associated signaling connection, the source eNB shall ignore those non-associated candidate cells.

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

### 8.2.Z Early Status Transfer

#### 8.2.Z.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.

The procedure uses UE-associated signalling.

#### 8.2.Z.2 Successful Operation

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Figure 8.2.Z.2-1: Early Status Transfer during DAPS Handover or Conditional Handover, successful operation

****

Figure 8.2.Z.2-2: Early Status Transfer during Conditional Handover in dual connectivity or EN-DC operation, successful operation

**Between source eNB and target eNB**

The *E-RABs Subject To Early Status Transfe 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.

**Between source SN (respectively, source en-gNB) and source MN (respectively, source 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) transferred during Conditional Handover.

For each E-RAB in the *E-RABs Subject To Early Status Transfer List* IE, the source eNB shall forward to the target, 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.

8.2.Z.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.

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

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 addresses from the MeNB to the SeNB as specified in TS 36.300 [15], or from the eNB 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**

* ****

**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 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).

8.3.15.3 Unsuccessful Operation

Not applicable.

8.3.15.4 Abnormal Conditions

Void.

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

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. In case of conditional PSCell change, the en-gNB shall also consider the procedure successful even if the timer TDCoverall has not been initiated when receiving this message.

8.7.5.3 Abnormal Conditions

Void.

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

## 9.1 Message Functional Definition and Content

### 9.1.1 Messages for Basic Mobility Procedures

#### 9.1.1.1 HANDOVER REQUEST

This message is sent by the source eNB to the target eNB to request the preparation of resources for a handover.

Direction: source eNB → target eNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.13 |  | YES | reject |
| Old eNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the source eNB | YES | reject |
| Cause | M |  | 9.2.6 |  | YES | ignore |
| Target Cell ID | M |  | ECGI  9.2.14 |  | YES | reject |
| GUMMEI | M |  | 9.2.16 |  | YES | reject |
| **UE Context Information** |  | *1* |  |  | YES | reject |
| >MME UE S1AP ID | M |  | INTEGER (0..232 -1) | MME UE S1AP ID allocated at the MME | – | – |
| >UE Security Capabilities | M |  | 9.2.29 |  | – | – |
| >AS Security Information | M |  | 9.2.30 |  | – | – |
| >UE Aggregate Maximum Bit Rate | M |  | 9.2.12 |  | – | – |
| >Subscriber Profile ID for RAT/Frequency priority | O |  | 9.2.25 |  | – | – |
| **>E-RABs To Be Setup List** |  | *1* |  |  | – | – |
| **>>E-RABs To Be Setup Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | ignore |
| >>>E-RAB ID | M |  | 9.2.23 |  | – | – |
| >>>E-RAB Level QoS Parameters | M |  | 9.2.9 | Includes necessary QoS parameters | – | – |
| >>>DL Forwarding | O |  | 9.2.5 |  | – | – |
| >>>UL GTP Tunnel Endpoint | M |  | GTP Tunnel Endpoint 9.2.1 | SGW endpoint of the S1 transport bearer. For delivery of UL PDUs. | – | – |
| >>>Bearer Type | O |  | 9.2.92 |  | YES | reject |
| >>>DAPS Request Information | O |  | 9.2.x |  | YES | ignore |
| >RRC Context | M |  | OCTET STRING | Includes the RRC *HandoverPreparationInformation* message as defined in subclause 10.2.2 of TS 36.331 [9], or the RRC *HandoverPreparationInformation-NB* message as defined in 10.6.2 of TS 36.331 [9]. | – | – |
| >Handover Restriction List | O |  | 9.2.3 |  | – | – |
| >Location Reporting Information | O |  | 9.2.21 | Includes the necessary parameters for location reporting | – | – |
| >Management Based MDT Allowed | O |  | 9.2.59 |  | YES | ignore |
| **>ManagementBasedMDT PLMN List** | O |  | MDT PLMN List  9.2.64 |  | YES | ignore |
| >UE Sidelink Aggregate Maximum Bit Rate | O |  | 9.2.97 | This IE applies only if the UE is authorized for V2X services. | YES | Ignore |
| >Additional RRM Policy Index | O |  | 9.2.25a |  | YES | ignore |
| >EPC Handover Restriction List Container | O |  | 9.2.153 |  | YES | ignore |
| UE History Information | M |  | 9.2.38 | Same definition as in TS 36.413 [4] | YES | ignore |
| Trace Activation | O |  | 9.2.2 |  | YES | ignore |
| SRVCC Operation Possible | O |  | 9.2.33 |  | YES | ignore |
| CSG Membership Status | O |  | 9.2.52 |  | YES | reject |
| Mobility Information | O |  | BIT STRING (SIZE (32)) | Information related to the handover; the source eNB provides it in order to enable later analysis of the conditions that led to a wrong HO. | YES | ignore |
| Masked IMEISV | O |  | 9.2.69 |  | YES | ignore |
| UE History Information from the UE | O |  | OCTET STRING | VisitedCellInfoList contained in the UEInformationResponse message (TS 36.331 [9]) | YES | ignore |
| Expected UE Behaviour | O |  | 9.2.70 |  | YES | ignore |
| ProSe Authorized | O |  | 9.2.78 |  | YES | ignore |
| UE Context Reference at the SeNB | O |  |  |  | YES | ignore |
| >Global SeNB ID | M |  | Global eNB ID  9.2.22 |  |  |  |
| >SeNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the SeNB |  |  |
| >SeNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the SeNB |  |  |
| Old eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the source eNB | YES | reject |
| V2X Services Authorized | O |  | 9.2.93 |  | YES | ignore |
| UE Context Reference at the WT | O |  |  |  | YES | ignore |
| >WT ID | M |  | 9.2.95 |  |  |  |
| >WT UE XwAP ID | M |  | 9.2.96 |  |  |  |
| UE Context Reference at the SgNB | O |  |  |  | YES | ignore |
| >Global en-gNB ID | M |  | 9.2.112 |  |  |  |
| >SgNB UE X2AP ID | M |  | en-gNB UE X2AP ID  9.2.100 | Allocated at the SgNB. | – | – |
| NR UE Security Capabilities | O |  | 9.2.107 |  | YES | ignore |
| Aerial UE subscription information | O |  | 9.2.129 |  | YES | ignore |
| Subscription Based UE Differentiation Information | O |  | 9.2.136 |  | YES | ignore |
| **Conditional Handover Information** | O |  |  |  | YES | reject |
| >CHO Trigger | M |  | ENUMERATED (CHO-initiation, CHO-replace, …) |  |  |  |
| >New eNB UE X2AP ID | C-ifCHOmod |  | eNB UE X2AP ID  9.2.24 | Allocated at the target eNB |  |  |
| >New eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the target eNB |  |  |
| >Estimated Arrival Probability | O |  | INTEGER (1..100) |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| ifCHOmod | This IE shall be present if the *CHO Trigger* IE is present and set to "CHO-replace". |

#### 9.1.1.2 HANDOVER REQUEST ACKNOWLEDGE

This message is sent by the target eNB to inform the source eNB about the prepared resources at the target.

Direction: target eNB → source eNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.13 |  | YES | reject |
| Old eNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the source eNB | YES | ignore |
| New eNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the target eNB | YES | ignore |
| **E-RABs Admitted List** |  | *1* |  |  | YES | ignore |
| **>E-RABs Admitted Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | ignore |
| >>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>UL GTP Tunnel Endpoint | O |  | GTP Tunnel Endpoint 9.2.1 | Identifies the X2 transport bearer used for forwarding of UL PDUs | – |  |
| >>DL GTP Tunnel Endpoint | O |  | GTP Tunnel Endpoint 9.2.1 | Identifies the X2 transport bearer. used for forwarding of DL PDUs | – |  |
| >>DAPS Response Information | O |  | 9.2.y |  | YES | reject |
| 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 |
| Target eNB To Source eNB Transparent Container | M |  | OCTET STRING | Includes the RRC E-UTRA Handover Command message as defined in subclause 10.2.2 in TS 36.331 [9] | YES | ignore |
| Criticality Diagnostics | O |  | 9.2.7 |  | YES | ignore |
| UE Context Kept Indicator | O |  | 9.2.85 |  | YES | ignore |
| Old eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the source eNB | YES | ignore |
| New eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the target eNB | YES | reject |
| WT UE Context Kept Indicator | O |  | UE Context Kept Indicator  9.2.85 | Indicates that the WT has acknowledged to keep the UE context | YES | ignore |
|  |  |  |  |  |  |  |
| **Conditional Handover Information** | O |  |  |  | YES | reject |
| >Requested Target Cell ID | M |  | ECGI  9.2.14 | Target cell indicated in the corresponding HANDOVER REQUEST message | YES | reject |
| >Maximum Number of CHO Preparations | O |  | 9.2.C |  | YES | reject |

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

#### 9.1.1.3 HANDOVER PREPARATION FAILURE

This message is sent by the target eNB to inform the source eNB that the Handover Preparation has failed.

Direction: target eNB → source eNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.2.13 |  | YES | reject |
| Old eNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the source eNB | YES | ignore |
| Cause | M |  | 9.2.6 |  | YES | ignore |
| Criticality Diagnostics | O |  | 9.2.7 |  | YES | ignore |
| Old eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the source eNB | YES | ignore |
| Requested Target Cell ID | O |  | ECGI  9.2.14 | Target cell indicated in the corresponding HANDOVER REQUEST message | YES | reject |

#### 9.1.1.4 SN STATUS TRANSFER

This message is sent by the source eNB to the target eNB to transfer the uplink/downlink PDCP SN and HFN status during a handover or for EN-DC.

Direction: source eNB → target eNB (handover), eNB from which the E-RAB context is transferred → eNB to which the E-RAB context is transferred (RRC connection re-establishment or dual connectivity), MeNB/en-gNB from which the E-RAB context is transferred → en-gNB/MeNB to which the E-RAB context is transferred (EN-DC).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 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 handover at the source eNB and for dual connectivity/EN-DC at the eNB from which the E-RAB context is transferred | YES | reject |
| New eNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated for handover at the target eNB and for dual connectivity/EN-DC at the eNB to which the E-RAB context is transferred | YES | reject |
| **E-RABs Subject To Status Transfer List** |  | *1* |  |  | YES | ignore |
| **>E-RABs Subject To Status Transfer Item** |  | *1 .. <maxnoofBearers>* |  |  | EACH | ignore |
| >>E-RAB ID | M |  | 9.2.23 |  | – |  |
| >>Receive Status Of UL PDCP SDUs | O |  | BIT STRING (4096) | PDCP Sequence Number = (First Missing SDU Number + bit position) modulo 4096  0: PDCP SDU has not been received.  1: PDCP SDU has been received correctly. | – |  |
| >>UL COUNT Value | M |  | COUNT Value  9.2.15 | PDCP-SN and Hyper Frame Number of the first missing UL SDU in case of 12 bit long PDCP-SN | – |  |
| >>DL COUNT Value | M |  | COUNT Value  9.2.15 | PDCP-SN and Hyper frame number that the target eNB/en-gNB should assign for the next DL SDU not having an SN yet in case of 12 bit long PDCP-SN. | – |  |
| >>Receive Status Of UL PDCP SDUs Extended | O |  | BIT STRING (1..16384) | The IE is used in case of 15 bit long PDCP-SN in this release.  The first bit indicates the status of the SDU after the First Missing UL PDCP SDU.  The *N*th bit indicates the status of the UL PDCP SDU in position (*N* + First Missing SDU Number) modulo (1 + the maximum value of the PDCP-SN).  0: PDCP SDU has not been received.  1: PDCP SDU has been received correctly. | YES | ignore |
| >>UL COUNT Value Extended | O |  | COUNT Value Extended 9.2.66 | PDCP-SN and Hyper Frame Number of the first missing UL SDU in case of 15 bit long PDCP-SN | YES | ignore |
| >>DL COUNT Value Extended | O |  | COUNT Value Extended 9.2.66 | PDCP-SN and Hyper Frame Number that the target eNB/en-gNB should assign for the next DL SDU not having an SN yet in case of 15 bit long PDCP-SN. | YES | ignore |
| >>Receive Status Of UL PDCP SDUs for PDCP SN Length 18 | O |  | BIT STRING (1..131072) | The IE is used in case of 18 bit long PDCP-SN.  The first bit indicates the status of the SDU after the First Missing UL PDCP SDU.  The Nth bit indicates the status of the UL PDCP SDU in position (N + First Missing SDU Number) modulo (1 + the maximum value of the PDCP-SN).  0: PDCP SDU has not been received.  1: PDCP SDU has been received correctly. | YES | ignore |
| >>UL 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 missing UL SDU in case of 18 bit long PDCP-SN | YES | ignore |
| >>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 that the target eNB/en-gNB should assign for the next DL SDU not having an SN yet in case of 18 bit long PDCP-SN. | YES | ignore |
| Old eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated for handover at the source eNB and for dual connectivity/EN-DC at the eNB from which the E-RAB context is transferred. | YES | reject |
| New eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated for handover at the target eNB and for dual connectivity/EN-DC at the eNB to which the E-RAB context is transferred. | YES | reject |
| SgNB UE X2AP ID | O |  | en-gNB UE X2AP ID  9.2.100 | Allocated for EN-DC at the SgNB. | YES | ignore |

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

////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

#### 9.1.1.6 HANDOVER CANCEL

This message is sent by the source eNB to the target eNB to cancel an ongoing handover.

Direction: source eNB → target eNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 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 at the source eNB | YES | reject |
| New eNB UE X2AP ID | O |  | eNB UE X2AP ID  9.2.24 | Allocated at the target eNB | YES | ignore |
| Cause | M |  | 9.2.6 |  | YES | ignore |
| Old eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the source eNB | YES | reject |
| New eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the target eNB | YES | ignore |
| **Candidate Cells To Be Cancelled List** |  | 0 .. <maxnoofCellsinCHO> |  |  | YES | reject |
| >Target Cell ID | M |  | ECGI  9.2.14 |  | - | - |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofCellsinCHO | Maximum no. cells that can be prepared for a conditional handover. Value is 16. |

////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

#### 9.1.1.Y HANDOVER SUCCESS

This message is sent by the target eNB to the source eNB to indicate the successful access of the UE toward the target eNB.

Direction: target eNB → source eNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 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 at the source eNB | YES | reject |
| New eNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the target eNB | YES | reject |
| Old eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the source eNB | YES | ignore |
| New eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the target eNB | YES | ignore |
| Target Cell ID | M |  | ECGI  9.2.14 | Target cell indicated in the corresponding Handover Preparation procedure | YES | reject |

////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

#### 9.1.1.X CONDITIONAL HANDOVER CANCEL

This message is sent by the target eNB to the source eNB to cancel an ongoing conditional handover.

Direction: target eNB → source eNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 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 at the source eNB | YES | ignore |
| New eNB UE X2AP ID | M |  | eNB UE X2AP ID  9.2.24 | Allocated at the target eNB | YES | reject |
| Cause | M |  | 9.2.6 |  | YES | ignore |
| Old eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the source eNB | YES | ignore |
| New eNB UE X2AP ID Extension | O |  | Extended eNB UE X2AP ID  9.2.86 | Allocated at the target eNB | YES | reject |
| **Candidate Cells To Be Cancelled List** |  | 0 .. <maxnoofCellsinCHO> |  |  | YES | reject |
| >Target Cell ID | M |  | ECGI  9.2.14 |  | - | - |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofCellsinCHO | Maximum no. cells that can be prepared for a conditional handover. Value is 16. |

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

#### 9.1.1.Z 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.

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 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>* |  |  | EACH | ignore |
| >>>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 | YES | ignore |
| >>>>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 | YES | ignore |
| *>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 | YES | ignore |
| >>>>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 | YES | ignore |

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

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

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.

Direction: new eNB → old eNB.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **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 |

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

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

### 9.2.6 Cause

The purpose of the cause information element is to indicate the reason for a particular event for the whole protocol.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE Type and Reference | Semantics Description |
| CHOICE Cause Group | M |  |  |  |
| *>Radio Network Layer* |  |  |  |  |
| >>Radio Network Layer Cause | M |  | 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 Group ID,  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 to be changed) |  |
| *>Transport Layer* |  |  |  |  |
| >>Transport Layer Cause | M |  | ENUMERATED (Transport Resource Unavailable,  Unspecified,...) |  |
| *>Protocol* |  |  |  |  |
| >>Protocol Cause | M |  | 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),...) |  |
| *>Misc* |  |  |  |  |
| >>Miscellaneous Cause | M |  | ENUMERATED (Control Processing Overload, Hardware Failure,O&M Intervention,Not enough User Plane Processing Resources,Unspecified,...) |  |

The meaning of the different cause values is described in the following table. In general, "not supported" cause values indicate that the concerned capability is missing. On the other hand, "not available" cause values indicate that the concerned capability is present, but insufficient resources were available to perform the requested action.

|  |  |
| --- | --- |
| Radio Network Layer cause | Meaning |
| Cell not Available | The concerned cell is not available. |
| Handover Desirable for Radio Reasons | The reason for requesting handover is radio related. |
| Handover Target not Allowed | Handover to the indicated target cell is not allowed for the UE in question |
| Invalid MME Group ID | The target eNB doesn’t belong to the same pool area of the source eNB i.e. S1 handovers should be attempted instead. |
| No Radio Resources Available in Target Cell | The target cell doesn’t have sufficient radio resources available. |
| Partial Handover | Provides a reason for the handover cancellation. The target eNB did not admit all E-RABs included in the HANDOVER REQUEST and the source eNB estimated service continuity for the UE would be better by not proceeding with handover towards this particular target eNB. |
| Reduce Load in Serving Cell | Load in serving cell needs to be reduced. When applied to handover preparation, it indicates the handover is triggered due to load balancing. |
| Resource Optimisation Handover | The reason for requesting handover is to improve the load distribution with the neighbour cells. |
| Time Critical Handover | Handover is requested for time critical reason i.e. this cause value is reserved to represent all critical cases where the connection is likely to be dropped if handover is not performed. |
| TX2RELOCoverall Expiry | The reason for the action is expiry of timer TX2RELOCoverall. |
| TRELOCprep Expiry | Handover Preparation procedure is cancelled when timer TRELOCprep expires. |
| Unknown MME Code | The target eNB belongs to the same pool area of the source eNB and recognizes the MME Group ID. However, the MME Code is unknown to the target eNB. |
| Unknown New eNB UE X2AP ID | The action failed because the New eNB UE X2AP ID or the MeNB UE X2AP ID is unknown. |
| Unknown Old eNB UE X2AP ID | The action failed because the Old eNB UE X2AP ID or the SeNB UE X2AP ID is unknown. |
| Unknown Pair of UE X2AP ID | The action failed because the pair of UE X2 AP IDs is unknown. |
| Encryption And/Or Integrity Protection Algorithms Not Supported | The target eNB is unable to support any of the encryption and/or integrity protection algorithms supported by the UE, or the en-gNB is unable to support any of the NR encryption and/or integrity protection algorithms supported by the UE for EN-DC operation. |
| ReportCharacteristicsEmpty | The action failed because there is no characteristic reported. |
| NoReportPeriodicity | The action failed because the periodicity is not defined. |
| ExistingMeasurementID | The action failed because measurement-ID is already used. |
| Unknown eNB Measurement ID | The action failed because some eNB Measurement-ID is unknown. |
| Measurement Temporarily not Available | The eNB can temporarily not provide the requested measurement object. |
| Load Balancing | The reason for mobility settings change is load balancing. |
| Handover Optimisation | The reason for mobility settings change is handover optimisation. |
| Value out of allowed range | The action failed because the proposed Handover Trigger parameter change in the eNB2 Proposed Mobility Parameters IE is too low or too high. |
| Multiple E-RAB ID Instances | The action failed because multiple instances of the same E-RAB had been provided to the eNB. |
| Switch Off Ongoing | The reason for the action is an ongoing switch off i.e. the concerned cell will be switched off after offloading and not be available. It aides the receiving eNB in taking subsequent actions, e.g. selecting the target cell for subsequent handovers. |
| Not supported QCI value | The action failed because the requested QCI is not supported. |
| Unspecified | Sent when none of the above cause values applies but still the cause is Radio Network Layer related. |
| Measurement not Supported For The Object | At least one of the concerned cell(s) does not support the requested measurement. |
| TDCoverall Expiry | The reason for the action is expiry of timer TDCoverall. |
| TDCprep Expiry | The reason for the action is expiry of timer TDCprep. |
| Action Desirable for Radio Reasons | The reason for requesting the action is radio related. In the current version of this specification applicable for Dual Connectivity and EN-DC only. |
| Reduce Load | Load in the cell(group) served by the requesting node needs to be reduced. In the current version of this specification applicable for Dual Connectivity and EN-DC only. |
| Resource Optimisation | The reason for requesting this action is to improve the load distribution with the neighbour cells. In the current version of this specification applicable for Dual Connectivity and EN-DC only. |
| Time Critical action | The action is requested for time critical reason i.e. this cause value is reserved to represent all critical cases where radio resources are likely to be dropped if the requested action is not performed. In the current version of this specification applicable for Dual Connectivity and EN-DC only. |
| Target not Allowed | Requested action towards the indicated target cell is not allowed for the UE in question.  In the current version of this specification applicable for Dual Connectivity and EN-DC only. |
| No Radio Resources Available | The cell(s) in the requested node don’t have sufficient radio resources available.  In the current version of this specification applicable for Dual Connectivity and EN-DC only. |
| Invalid QoS combination | The action was failed because of invalid QoS combination.  In the current version of this specification applicable for Dual Connectivity and EN-DC only. |
| Encryption Algorithms Not Supported | The requested eNB is unable to support any of the encryption algorithms supported by the UE. In the current version of this specification applicable for Dual Connectivity and EN-DC only. |
| Procedure cancelled | The sending node cancelled the procedure due to other urgent actions to be performed.  In the current version of this specification applicable for Dual Connectivity and EN-DC only. |
| RRM purpose | The procedure is initiated due to node internal RRM purposes.  In the current version of this specification applicable for Dual Connectivity and EN-DC only. |
| Improve User Bit Rate | The reason for requesting this action is to improve the user bit rate.  In the current version of this specification applicable for Dual Connectivity and EN-DC only. |
| User Inactivity | The action is requested due to user inactivity on all E-RABs, e.g., S1 is requested to be released in order to optimise the radio resources; or SeNB/en-gNB didn’t see activity on the DRB recently.  In the current version of this specification applicable for Dual Connectivity and EN-DC only. |
| Radio Connection With UE Lost | The action is requested due to losing the radio connection to the UE.  In the current version of this specification applicable for Dual Connectivity and EN-DC only. |
| Failure in the Radio Interface Procedure | Radio interface procedure has failed.  In the current version of this specification applicable for Dual Connectivity and EN-DC only. |
| Bearer Option not Supported | The requested bearer option is not supported by the sending node.  In the current version of this specification applicable for Dual Connectivity and EN-DC only. |
| MCG Mobility | The procedure is initiated due to mobility related at MCG radio resource. |
| SCG Mobility | The procedure is initiated due to mobility related at SCG radio resource. |
| Count reaches max value | Indicates the PDCP COUNT for UL or DL reached the max value and the bearer may be released. |
| Unknown Old en-gNB UE X2AP ID | The action failed because the Old en-gNB UE X2AP ID or the SeNB UE X2AP ID is unknown. |
| PDCP Overload | The procedure is initiated due to PDCP resource limitation. |
| CHO-CPC resources to be changed | The prepared resources for CHO or CPC for a UE are to be changed. |

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

### 9.2.x DAPS Request Information

The *DAPS Indicator* IE indicates that the source eNB requests a DAPS HO for the concered E-RAB.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| DAPS Indicator | M |  | ENUMERATED (DAPS HO required, …) | Indicates that DAPS HO is requested |

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

### 9.2.y DAPS Response Information

The *DAPS Response Indicator* IE indicates the response to a requested DAPS Handover for the concerned E-RAB.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| DAPS Response Indicator | M |  | ENUMERATED (DAPS HO accepted, DAPS HO not accepted, …) | Indicates that DAPS Handover is accepted or not. |

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

### 9.2.C Maximum Number of CHO Preparations

This IE indicates the maximum number of CHO preparations for a UE towards a candidate target eNB.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| Maximum Number of CHO Preparations | M |  | INTEGER (1..16, ...) |  |

//////////////////////////////////////////////////////////////irrelevant operations skipped/////////////////////////////////////////////////////////////////////

9.3.3 Elementary Procedure Definitions

-- ASN1START

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

--

-- Elementary Procedure definitions

--

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

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

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

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 ,

...

}

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,

...

}

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

--

-- 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

}

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,

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,

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,

LowerLayerPresenceStatusChange,

CandidateCellsToBeCancelledList,

CHO-DC-Indicator

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-Item,

id-CellToReport,

id-CellToReport-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-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-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-Indicator,

maxCellineNB,

maxnoofBearers,

maxnoofPDCP-SN,

maxFailedMeasObjects,

maxnoofCellIDforMDT,

maxnoofTAforMDT,

maxCellinengNB,

maxnoofCellIDforQMC,

maxnoofTAforQMC,

maxnoofPLMNforQMC,

maxnoofProtectedResourcePatterns,

maxnoNRcellsSpectrumSharingWithE-UTRA,

maxnoofNrCellBands

FROM X2AP-Constants;

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

--

-- HANDOVER REQUEST

--

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

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},

...

}

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},

...

}

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},

...

}

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 ::= {

...

}

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

--

-- 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},

...

}

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

--

-- EARLY STATUS TRANSFER

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

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},

...

}

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},

...

}

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

--

-- 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},

...

}

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

--

-- CELL ACTIVATION REQUEST

--

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

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

--

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

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

--

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

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

--

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

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},

...

}

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 ::= {

...

}

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

--

-- 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},

...

}

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 ::= {

...

}

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

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-- 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

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

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},

...

}

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

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-- 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 ::= {

...

}

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

--

-- 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 ::= {

...

}

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

--

-- X2 REMOVAL REQUEST

--

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

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},

...

}

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

--

-- X2 REMOVAL RESPONSE

--

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

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}|

{ 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},

...

}

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 },

...

}

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 },

...

}

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

--

-- 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},

...

}

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

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-- 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},

...

}

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},

...

}

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},

...

}

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

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-- 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 },

...

}

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},

...

}

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},

...

}

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},

...

}

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},

...

}

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},

...

}

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--

-- 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},

...

}

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

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-- 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 ::= {

...

}

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

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-- 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},

...

}

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

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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},

...

}

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 ::= {

...

}

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

--

-- RRC TRANSFER

--

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

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},

...

}

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 ::= {

...

}

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 ::= {

...

}

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},

...

}

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 }|

{ 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

--

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

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 reject TYPE TNLA-To-Add-List PRESENCE optional }|

{ ID id-TNLA-To-Remove-List CRITICALITY reject TYPE TNLA-To-Remove-List PRESENCE optional }|

{ ID id-TNLA-To-Update-List CRITICALITY reject TYPE TNLA-To-Update-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-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 },

...

}

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

--

-- SECONDARY RAT DATA USAGE REPORT

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

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

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

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

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

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

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

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

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

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},

...

}

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 },

...

}

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

--

-- 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 },

...

}

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,

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,

maxnoofextBPLMNsminus1,

maxnoofBPLMNsminus1,

maxnoofTLAs,

maxnoofGTPTLAs,

maxnoofTNLAssociations,

maxnoofCellsinCHO

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)

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,...}

ReleaseFastMCGRecoveryViaSRB3 ::= 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..maxnoofBPLMNsminus1)) 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..maxnoofextBPLMNsminus1)) 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

}

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 ::= {

...

}

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)

-- 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, ...}

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 ::= {

...

}

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

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 ::= {

...

}

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 ::= {

...

}

-- 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 ::= {

...

}

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 ::= {

...

}

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

}

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

IntegrityProtectionAlgorithms ::= BIT STRING (SIZE (16, ...))

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 ::={

...

}

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..16, ...)

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, ...)

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 ::= {

...

}

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,

...

}

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,

...

}

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 ::= {

...

}

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 ::= {

...

}

NRPCI ::= INTEGER (0..1007)

NRrestrictioninEPSasSecondaryRAT ::= ENUMERATED {

nRrestrictedinEPSasSecondaryRAT,

...

}

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 ::= {

...

}

NRUESecurityCapabilities ::= SEQUENCE {

nRencryptionAlgorithms NRencryptionAlgorithms,

nRintegrityProtectionAlgorithms NRintegrityProtectionAlgorithms,

iE-Extensions ProtocolExtensionContainer { {NRUESecurityCapabilities-ExtIEs} } OPTIONAL,

...

}

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

...

}

NSSS-NumOccasionDifferentPrecoder ::= ENUMERATED { two, four, eight, ...}

-- 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,

...

}

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, ...}

-- Q

QCI ::= INTEGER (0..255)

-- 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},

...

}

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))

Reestablishment-Indication ::= ENUMERATED {

reestablished,

...

}

Registration-Request ::= ENUMERATED {

start,

stop,

...,

partial-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,

...

}

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},

...

}

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,

...

}

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,

...

}

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 ::= {

...

}

-- 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

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 ::= {

...

}

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,

...

}

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},

...

}

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, ...)

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,

...

}

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 ::= XX

id-conditionalHandoverCancel ProcedureCode ::= yy

id-earlyStatusTransfer ProcedureCode ::= ZZ

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

--

-- 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

maxnoofextBPLMNsminus1 INTEGER ::= 11

maxnoofBPLMNsminus1 INTEGER ::= 11

maxnoofTLAs INTEGER ::= 16

maxnoofGTPTLAs INTEGER ::= 16

maxnoofTNLAssociations INTEGER ::= 32

maxnoofCellsinCHO INTEGER ::= 16

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

--

-- 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 ::= AAA

id-CHOinformation-ACK ProtocolIE-ID ::= EEE

id-DAPSRequestInfo ProtocolIE-ID ::= BBB

id-RequestedTargetCellID ProtocolIE-ID ::= CCC

id-CandidateCellsToBeCancelledList ProtocolIE-ID ::= DDD

id-DAPSResponseInfo ProtocolIE-ID ::= XXX

id-ProcedureStage ProtocolIE-ID ::= YYY

id-CHO-DC-Indicator ProtocolIE-ID ::= ZZZ

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