3GPP TSG-RAN WG3 Meeting #107e R3-201300

**Online, 24th – 28th February 2020 was R3-200824**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **38.413** | **CR** | **0347** | **rev** | **1** | **Current version:** | **16.0.0** |  |
|  |
| *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 | **X** |

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|  |
| ***Title:***  | Introducing Radio Capability Optimisation (RACS) |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | R3 |
|  |  |
| ***Work item code:*** | RACS-RAN |  | ***Date:*** | 2020-02-14 |
|  |  |  |  |  |
| ***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 canbe 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:*** | RACS requires signalling support in NGAP to allow provision of the UE Capability ID and mapping between UE Capabiltiy IE and UE Radio Capabiltiy Information at UE Context Setup and mobility scenarios. |
|  |  |
| ***Summary of change:*** | The UE Capability ID is included in the INITIAL UE CONTEXT REQUEST message, the UE CONTEXT MODIFICATION REQUEST message, the PATH SWITCH REQUEST ACKNOWLEDGE message, the HANDOVER REQUEST message.A new RAN initated UE Radio Capability ID Mapping Request procedure is introduced.Rev1: change the name of the new procedure to UE Radio Capability Mapping Request |
|  |  |
| ***Consequences if not approved:*** | RACS would not be supported |
|  |  |
| ***Clauses affected:*** | 8.1, 8.3.1.2, 8.3.4.2, 8.4.2.2, 8.4.4.2, 8.14.a (new), 9.2.2.1, 9.2.2.7, 9.2.3.4, 9.2.3.9, 9.2.13.x (new), 9.2.13.y (new), 9.3.1.z (new), 9.4.3, 9.4.4, 9.4.5, 9.4.6, 9.4.7 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 38.423 CR0290 |
| ***affected:*** |  | **X** |  Test specifications |  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications |  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

<<<<<<<<<<<<<<<<<<<< First Change >>>>>>>>>>>>>>>>>>>>

## 8.1 List of NGAP Elementary Procedures

In the following tables, all EPs are divided into Class 1 and Class 2 EPs (see subclause 3.1 for explanation of the different classes):

Table 8.1-1: Class 1 procedures

|  |  |  |  |
| --- | --- | --- | --- |
| Elementary Procedure | Initiating Message | Successful Outcome | Unsuccessful Outcome |
| Response message | Response message |
| AMF Configuration Update | AMF CONFIGURATION UPDATE | AMF CONFIGURATION UPDATE ACKNOWLEDGE | AMF CONFIGURATION UPDATE FAILURE |
| RAN Configuration Update | RAN CONFIGURATION UPDATE | RAN CONFIGURATION UPDATE ACKNOWLEDGE | RAN CONFIGURATION UPDATE FAILURE |
| Handover Cancellation | HANDOVER CANCEL | HANDOVER CANCEL ACKNOWLEDGE |  |
| Handover Preparation | HANDOVER REQUIRED | HANDOVER COMMAND | HANDOVER PREPARATION FAILURE |
| Handover Resource Allocation | HANDOVER REQUEST | HANDOVER REQUEST ACKNOWLEDGE | HANDOVER FAILURE |
| Initial Context Setup | INITIAL CONTEXT SETUP REQUEST | INITIAL CONTEXT SETUP RESPONSE | INITIAL CONTEXT SETUP FAILURE |
| NG Reset | NG RESET | NG RESET ACKNOWLEDGE |  |
| NG Setup | NG SETUP REQUEST | NG SETUP RESPONSE | NG SETUP FAILURE |
| Path Switch Request | PATH SWITCH REQUEST | PATH SWITCH REQUEST ACKNOWLEDGE | PATH SWITCH REQUEST FAILURE |
| PDU Session Resource Modify | PDU SESSION RESOURCE MODIFY REQUEST | PDU SESSION RESOURCE MODIFY RESPONSE |  |
| PDU Session Resource Modify Indication | PDU SESSION RESOURCE MODIFY INDICATION | PDU SESSION RESOURCE MODIFY CONFIRM |  |
| PDU Session Resource Release | PDU SESSION RESOURCE RELEASE COMMAND | PDU SESSION RESOURCE RELEASE RESPONSE |  |
| PDU Session Resource Setup | PDU SESSION RESOURCE SETUP REQUEST | PDU SESSION RESOURCE SETUP RESPONSE |  |
| UE Context Modification | UE CONTEXT MODIFICATION REQUEST | UE CONTEXT MODIFICATION RESPONSE | UE CONTEXT MODIFICATION FAILURE |
| UE Context Release | UE CONTEXT RELEASE COMMAND | UE CONTEXT RELEASE COMPLETE |  |
| Write-Replace Warning  | WRITE-REPLACE WARNING REQUEST | WRITE-REPLACE WARNING RESPONSE |  |
| PWS Cancel | PWS CANCEL REQUEST | PWS CANCEL RESPONSE |  |
| UE Radio Capability Check | UE RADIO CAPABILITY CHECK REQUEST | UE RADIO CAPABILITY CHECK RESPONSE |  |
| UE Radio Capability ID Mapping Request | UE RADIO CAPABILITY ID MAPPING REQUEST | UE RADIO CAPABILITY ID MAPPING RESPONSE |  |

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

### 8.3.1 Initial Context Setup

#### 8.3.1.1 General

The purpose of the Initial Context Setup procedure is to establish the necessary overall initial UE context at the NG-RAN node, when required, including PDU session context, the Security Key, Mobility Restriction List, UE Radio Capability and UE Security Capabilities, etc. The AMF may initiate the Initial Context Setup procedure if a UE-associated logical NG-connection exists for the UE or if the AMF has received the *RAN UE NGAP ID* IE in an INITIAL UE MESSAGE message or if the NG-RAN node has already initiated a UE-associated logical NG-connection by sending an INITIAL UE MESSAGE message via another NG interface instance. The procedure uses UE-associated signalling.

For signalling only connections and if the *UE Context Request* IE is not received in the Initial UE Message, the AMF may be configured to trigger the procedure for all NAS procedures or on a per NAS procedure basis depending on operator’s configuration.

#### 8.3.1.2 Successful Operation



Figure 8.3.1.2-1: Initial context setup: successful operation

In case of the establishment of a PDU session the 5GC shall be prepared to receive user data before the INITIAL CONTEXT SETUP RESPONSE message has been received by the AMF. If no UE-associated logical NG-connection exists, the UE-associated logical NG-connection shall be established at reception of the INITIAL CONTEXT SETUP REQUEST message.

The INITIAL CONTEXT SETUP REQUEST message shall contain the *Index to RAT/Frequency Selection Priority* IE, if available in the AMF.

If the *NAS-PDU* IE is included in the INITIAL CONTEXT SETUP REQUEST message, the NG-RAN node shall pass it transparently towards the UE.

If the *Masked IMEISV* IE is contained in the INITIAL CONTEXT SETUP REQUEST message the target NG-RAN node shall, if supported, use it to determine the characteristics of the UE for subsequent handling.

Upon receipt of the INITIAL CONTEXT SETUP REQUEST message the NG-RAN node shall

- attempt to execute the requested PDU session configuration;

- store the received UE Aggregate Maximum Bit Rate in the UE context, and use the received UE Aggregate Maximum Bit Rate for Non-GBR QoS flows for the concerned UE as specified in TS 23.501 [9];

- store the received Mobility Restriction List in the UE context;

- store the received UE Radio Capability in the UE context;

- store the received Index to RAT/Frequency Selection Priority in the UE context and use it as defined in TS 23.501 [9];

- store the received UE Security Capabilities in the UE context;

- store the received Security Key in the UE context and, if the NG-RAN node is required to activate security for the UE, take this security key into use.

For the Initial Context Setup an initial value for the Next Hop Chaining Count is stored in the UE context.

If the *PDU Session Resource Setup Request List* IE is contained in the INITIAL CONTEXT SETUP REQUEST message, the NG-RAN node shall behave the same as defined in the PDU Session Resource Setup procedure. The NG-RAN node shall report to the AMF in the INITIAL CONTEXT SETUP RESPONSE message the result for each PDU session resource requested to be setup as defined in the PDU Session Resource Setup procedure.

Upon reception of the INITIAL CONTEXT SETUP RESPONSE message the AMF shall, for each PDU session indicated in the *PDU Session ID* IE, transfer transparently the *PDU Session Resource Setup Response Transfer* IE or *PDU Session Resource Setup Unsuccessful Transfer* IE to the SMF associated with the concerned PDU session. In case the splitting PDU session is not used by the NG-RAN node, the SMF should remove the Additional Transport Layer Information, if any.

The NG-RAN node shall use the information in the *Mobility Restriction List* IE if present in the INITIAL CONTEXT SETUP REQUEST message to

- determine a target for subsequent mobility action for which the NG-RAN node provides information about the target of the mobility action towards the UE;

- select a proper SCG during dual connectivity operation;

- assign proper RNA(s) for the UE when moving the UE to RRC\_INACTIVE state.

If the *Mobility Restriction List* IE is not contained in the INITIAL CONTEXT SETUP REQUEST message, the NG-RAN node shall consider that no roaming and no access restriction apply to the UE. The NG-RAN node shall also consider that no roaming and no access restriction apply to the UE when:

- one of the QoS flows includes a particular ARP value (TS 23.501 [9]).

If the *Trace Activation* IE is included in the INITIAL CONTEXT SETUP REQUEST message the NG-RAN node shall, if supported, initiate the requested trace function as described in TS 32.422 [11].

If the *UE Security Capabilities* IE included in the INITIAL CONTEXT SETUP REQUEST message only contains the EIA0 or NIA0 algorithm as defined in TS 33.501 [13] and if the EIA0 or NIA0 algorithm is defined in the configured list of allowed integrity protection algorithms in the NG-RAN node (TS 33.501 [13]), the NG-RAN node shall take it into use and ignore the keys received in the *Security Key* IE.

If the *Core Network Assistance Information* *for RRC INACTIVE* IE is included in the INITIAL CONTEXT SETUP REQUEST message, the NG-RAN node shall, if supported, store this information in the UE context and use it for e.g. the RRC\_INACTIVE state decision and RNA configuration for the UE and RAN paging if any for a UE in RRC\_INACTIVE state, as specified in TS 38.300 [8].

If the *CN Assisted RAN Parameters Tuning* IE is included in the INITIAL CONTEXT SETUP REQUEST message, the NG-RAN node may use it as described in TS 23.501 [9].

If the *RRC Inactive Transition Report Request* IE is included in the INITIAL CONTEXT SETUP REQUEST message, the NG-RAN node shall, if supported, store this information in the UE context.

If the *Emergency Fallback Indicator* IE is included in the INITIAL CONTEXT SETUP REQUEST message, it indicates that the UE context to be set up is subject to emergency service fallback as described in TS 23.501 [9] and the NG-RAN node may, if supported, take the appropriate mobility actions.

If the *Old AMF* IE is included in the INITIAL CONTEXT SETUP REQUEST message, the NG-RAN node shall consider that this UE-associated logical NG-connection was redirected to this AMF from another AMF identified by the *Old AMF* IE.

If the *Redirection for Voice EPS Fallback* IE is included in the INITIAL CONTEXT SETUP REQUEST message, the NG-RAN node shall, if supported, store it and use it in a subsequent decision of EPS fallback for voice as specified in TS 23.502 [10].

If the *Location Reporting Request Type* IE is included in the INITIAL CONTEXT SETUP REQUEST message, the NG-RAN node should perform the requested location reporting functionality for the UE as described in subclause 8.12.

If the INITIAL CONTEXT SETUP REQUEST message contains the *UE Radio Capabiltiy ID* IE the NG-RAN node shall, if supported, use it as specified in TS 23.501 [9] and TS 23.502 [10].

**Interactions with Initial UE Message procedure:**

The NG-RAN node shall use the *AMF UE NGAP ID* IE and *RAN UE NGAP ID* IE received in the INITIAL CONTEXT SETUP REQUEST message as identification of the logical connection even if the *RAN UE NGAP ID* IE had been allocated in an INITIAL UE MESSAGE message sent over a different NG interface instance.

**Interactions with RRC Inactive Transition Report procedure:**

If the *RRC Inactive Transition Report Request* IE is included in the INITIAL CONTEXT SETUP REQUEST message and set to "subsequent state transition report", the NG-RAN node shall, if supported, send the RRC INACTIVE TRANSITION REPORT message to the AMF to report the RRC state of the UE when the UE enters or leaves RRC\_INACTIVE state.

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

### 8.3.4 UE Context Modification

#### 8.3.4.1 General

The purpose of the UE Context Modification procedure is to partly modify the established UE context. The procedure uses UE-associated signalling.

#### 8.3.4.2 Successful Operation



Figure 8.3.4.2-1: UE context modification: successful operation

Upon receipt of the UE CONTEXT MODIFICATION REQUEST message the NG-RAN node shall

- store the received *Security Key* IE and, if the NG-RAN node is required to activate security for the UE, take this security key into use.

- store the *UE Security Capabilities* IE and take them into use together with the received keys according to TS 33.501 [13].

- store the *Index to RAT/Frequency Selection Priority* IE and use it as defined in TS 23.501 [9].

If the *RAN Paging Priority* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node may use it to determine a priority for paging the UE in RRC\_INACTIVE state.

If the *UE Aggregate Maximum Bit Rate* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall

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

- use the received UE Aggregate Maximum Bit Rate for all Non-GBR QoS flows for the concerned UE as specified in TS 23.501 [9].

If the *Core Network Assistance Information for RRC INACTIVE* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall, if supported, store this information in the UE context and use it for e.g. the RRC\_INACTIVE state decision and RNA configuration for the UE and RAN paging if any for a UE in RRC\_INACTIVE state, as specified in TS 38.300 [8].

If the *CN Assisted RAN Parameters Tuning* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node may use it as described in TS 23.501 [9].

If the *RRC Inactive Transition Report Request* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall, if supported, store this information in the UE context and report to the AMF the *User Location Information* IE and the *RRC State* IE in the UE CONTEXT MODIFICATION RESPONSE message.

If the *RRC Inactive Transition Report Request* IE is included in the UE CONTEXT MODIFICATION REQUEST message and set to "cancel report", the NG-RAN node shall, if supported, stop reporting to the AMF the RRC state of the UE.

The NG-RAN node shall report, in the UE CONTEXT MODIFICATION RESPONSE message to the AMF, the successful update of the UE context.

If the *Emergency Fallback Indicator* IE is included in the UE CONTEXT MODIFICATION REQUEST message, it indicates that the concerned UE context is subject to emergency service fallback as described in TS 23.501 [9] and the NG-RAN node may, if supported, take the appropriate mobility actions taking into account the *Emergency Service Target CN* IE if provided.

If the *New AMF UE NGAP ID* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall use the received value for future signalling with the AMF.

If the *New GUAMI* IE is included in the UE CONTEXT MODIFICATION REQUEST message, the NG-RAN node shall replace the previously stored GUAMI as specified in TS 23.501 [9].

If the UE CONTEXT MODIFICATION REQUEST message contains the *UE Radio Capabiltiy ID* IE the NG-RAN node shall, if supported, use it as specified in TS 23.501 [9] and TS 23.502 [10].

**Interactions with RRC Inactive Transition Report procedure:**

If the *RRC Inactive Transition Report Request* IE is included in the UE CONTEXT MODIFICATION REQUEST message and set to "single RRC connected state report", the NG-RAN node shall, if supported and if the UE is in RRC\_INACTIVE state, send one subsequent RRC INACTIVE TRANSITION REPORT message to the AMF when the RRC state transitions to RRC\_CONNECTED state.

If the *RRC Inactive Transition Report Request* IE is included in the UE CONTEXT MODIFICATION REQUEST message and set to "subsequent state transition report", the NG-RAN node shall, if supported, send the RRC INACTIVE TRANSITION REPORT message to the AMF to report the RRC state of the UE when the UE enters or leaves RRC\_INACTIVE state.

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

### 8.4.2 Handover Resource Allocation

#### 8.4.2.1 General

The purpose of the Handover Resource Allocation procedure is to reserve resources at the target NG-RAN node for the handover of a UE.

#### 8.4.2.2 Successful Operation



Figure 8.4.2.2-1: Handover resource allocation: successful operation

The AMF initiates the procedure by sending the HANDOVER REQUEST message to the target NG-RAN node.

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

<<<<<<<<<<<<<<<<<<<< Unmodified Text omitted >>>>>>>>>>>>>>>>>>>>

If the *Redirection for Voice EPS Fallback* IE is included in the HANDOVER REQUEST message, the NG-RAN node shall, if supported, store it and use it in a subsequent decision of EPS fallback for voice as specified in TS 23.502 [10].

After all necessary resources for the admitted PDU session resources have been allocated, the target NG-RAN node shall generate the HANDOVER REQUEST ACKNOWLEDGE message.

If the HANDOVER REQUEST message contains the *UE Radio Capabiltiy ID* IE the NG-RAN node shall, if supported, use it as specified in TS 23.501 [9] and TS 23.502 [10].

**Interactions with RRC Inactive Transition Report procedure:**

If the *RRC Inactive Transition Report Request* IE is included in the HANDOVER REQUEST message and set to "subsequent state transition report", the NG-RAN node shall, if supported, send the RRC INACTIVE TRANSITION REPORT message to the AMF to report the RRC state of the UE when the UE enters or leaves RRC\_INACTIVE state.

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

### 8.4.4 Path Switch Request

#### 8.4.4.1 General

The purpose of the Path Switch Request procedure is to establish a UE associated signalling connection to the 5GC and, if applicable, to request the switch of the downlink termination point of the NG-U transport bearer towards a new termination point.

#### 8.4.4.2 Successful Operation



Figure 8.4.4.2-1: Path switch request: successful operation

The NG-RAN node initiates the procedure by sending the PATH SWITCH REQUEST message to the AMF. Upon reception of the PATH SWITCH REQUEST message the AMF shall, for each PDU session indicated in the *PDU Session ID* IE, transparently transfer the *Path Switch Request Transfer* IE to the SMF associated with the concerned PDU session.

<<<<<<<<<<<<<<<<<<<< Unmodified Text omitted >>>>>>>>>>>>>>>>>>>>

If the *PDU Session Resource Released List* IE is included in the PATH SWITCH REQUEST ACKNOWLEDGE message, the NG-RAN node shall release the corresponding QoS flows and regard the PDU session(s) indicated in the *PDU Session Resource Released List* IE as being released. The appropriate cause value for each PDU session released is included in the *Path Switch Request Unsuccessful Transfer* IE contained in the PATH SWITCH REQUEST ACKNOWLEDGE message.

If the PATH SWITCH REQUEST ACKNOWLEDGE message contains the *UE Radio Capabiltiy ID* IE the NG-RAN node shall, if supported, use it as specified in TS 23.501 [9] and TS 23.502 [10].

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

### 8.14.a UE Radio Capability ID Mapping Request

#### 8.14.a.1 General

The purpose of the UE Radio Capability ID Mapping Request procedure is for the NG-RAN node to request from the AMF UE Radio Capability information mapped to the UE Radio Capabiltiy ID.

The procedure uses non UE-associated signalling.

#### 8.14.a.2 Successful Operation



Figure 8.14.a.2-1: UE Radio Capability ID Mapping Request procedure: successful operation

The NG-RAN node initiates the procedure by sending a UE RADIO CAPABILITY ID MAPPING REQUEST message.

Upon receipt of the UE RADIO CAPABILITY ID MAPPING REQUEST message, the AMF shall provide within the UE RADIO CAPABILITY ID MAPPING RESPONSE message the UE Radio Capability information mapped to the UE Capability ID indicated in the UE RADIO CAPABILITY ID MAPPING REQUEST message.

#### 8.14.a.3 Unsuccessful Operation

Not applicable.

#### 8.14.a.4 Abnormal Conditions

Void.

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

#### 9.2.2.1 INITIAL CONTEXT SETUP REQUEST

This message is sent by the AMF to request the setup of a UE context.

Direction: AMF → NG-RAN node

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.3.1.1 |  | YES | reject |
| AMF UE NGAP ID | M |  | 9.3.3.1 |  | YES | reject |
| RAN UE NGAP ID | M |  | 9.3.3.2 |  | YES | reject |
| Old AMF | O |  | AMF Name9.3.3.21 |  | YES | reject |
| UE Aggregate Maximum Bit Rate | C-ifPDUsessionResourceSetup |  | 9.3.1.58 |  | YES | reject |
| Core Network Assistance Information for RRC INACTIVE | O |  | 9.3.1.15 |  | YES | ignore |
| GUAMI | M |  | 9.3.3.3 |  | YES | reject |
| **PDU Session Resource Setup Request List** |  | *0..1* |  |  | YES | reject |
| **>PDU Session Resource Setup Request Item** |  | *1..<maxnoofPDUSessions>* |  |  | - |  |
| >>PDU Session ID | M |  | 9.3.1.50 |  | - |  |
| >>PDU Session NAS-PDU | O |  | NAS-PDU9.3.3.4 |  | - |  |
| >>S-NSSAI  | M |  | 9.3.1.24 |  | - |  |
| >>PDU Session Resource Setup Request Transfer | M |  | OCTET STRING | Containing the *PDU Session Resource Setup Request Transfer* IE specified in subclause 9.3.4.1. | - |  |
| Allowed NSSAI | M |  | 9.3.1.31 | Indicates the S-NSSAIs permitted by the network | YES | reject |
| UE Security Capabilities | M |  | 9.3.1.86 |  | YES | reject |
| Security Key | M |  | 9.3.1.87 |  | YES | reject |
| Trace Activation | O |  | 9.3.1.14 |  | YES | ignore |
| Mobility Restriction List | O |  | 9.3.1.85 |  | YES | ignore |
| UE Radio Capability | O |  | 9.3.1.74 |  | YES | ignore |
| Index to RAT/Frequency Selection Priority | O |  | 9.3.1.61 |  | YES | ignore |
| Masked IMEISV | O |  | 9.3.1.54 |  | YES | ignore |
| NAS-PDU | O |  | 9.3.3.4 |  | YES | ignore |
| Emergency Fallback Indicator | O |  | 9.3.1.26 |  | YES | reject |
| RRC Inactive Transition Report Request | O |  | 9.3.1.91 |  | YES | ignore |
| UE Radio Capability for Paging | O |  | 9.3.1.68 |  | YES | ignore |
| Redirection for Voice EPS Fallback  | O |  | 9.3.1.116 |  | YES | ignore |
| Location Reporting Request Type | O |  | 9.3.1.65 |  | YES | ignore |
| CN Assisted RAN Parameters Tuning | O |  | 9.3.1.119 |  | YES | ignore |
| UE Radio Capability ID | O |  | 9.3.1.z |  | YES | reject |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofPDUSessions | Maximum no. of PDU sessions allowed towards one UE. Value is 256. |

|  |  |
| --- | --- |
| Condition | Explanation |
| ifPDUsessionResourceSetup | This IE shall be present if the *PDU Session Resource Setup List* IE is present. |

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

#### 9.2.2.7 UE CONTEXT MODIFICATION REQUEST

This message is sent by the AMF to provide UE Context information changes to the NG-RAN node.

Direction: AMF → NG-RAN node

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.3.1.1 |  | YES | reject |
| AMF UE NGAP ID | M |  | 9.3.3.1 |  | YES | reject |
| RAN UE NGAP ID | M |  | 9.3.3.2 |  | YES | reject |
| RAN Paging Priority | O  |  | 9.3.3.15 |  | YES | ignore |
| Security Key | O |  | 9.3.1.87 |  | YES | reject |
| Index to RAT/Frequency Selection Priority | O |  | 9.3.1.61 |  | YES | ignore |
| UE Aggregate Maximum Bit Rate | O |  | 9.3.1.58 |  | YES | ignore |
| UE Security Capabilities | O |  | 9.3.1.86 |  | YES | reject |
| Core Network Assistance Information for RRC INACTIVE | O |  | 9.3.1.15 |  | YES | ignore |
| Emergency Fallback Indicator | O |  | 9.3.1.26 |  | YES | reject |
| New AMF UE NGAP ID | O |  | AMF UE NGAP ID9.3.3.1 |  | YES | reject |
| RRC Inactive Transition Report Request | O |  | 9.3.1.91 |  | YES | ignore |
| New GUAMI | O |  | GUAMI9.3.3.3 |  | YES | reject |
| CN Assisted RAN Parameters Tuning | O |  | 9.3.1.119 |  | YES | ignore |
| UE Radio Capability ID | O |  | 9.3.1.z |  | YES | reject |

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

#### 9.2.3.4 HANDOVER REQUEST

This message is sent by the AMF to the target NG-RAN node to request the preparation of resources.

Direction: AMF → NG-RAN node.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.3.1.1 |  | YES | reject |
| AMF UE NGAP ID | M |  | 9.3.3.1 |  | YES | reject |
| Handover Type | M |  | 9.3.1.22 |  | YES | reject |
| Cause | M |  | 9.3.1.2 |  | YES | ignore |
| UE Aggregate Maximum Bit Rate | M |  | 9.3.1.58 |  | YES | reject |
| Core Network Assistance Information for RRC INACTIVE | O |  | 9.3.1.15 |  | YES | ignore |
| UE Security Capabilities  | M |  | 9.3.1.86 |  | YES | reject |
| Security Context | M |  | 9.3.1.88 |  | YES | reject |
| New Security Context Indicator | O |  | 9.3.1.55 |  | YES | reject |
| NASC | O |  | NAS-PDU9.3.3.4 | Refers to either the “Intra N1 mode NAS transparent container” or the “S1 mode to N1 mode NAS transparent container”, the details of the IE definition and the encoding arespecified in TS 24.501 [26]. | YES | reject |
| **PDU Session Resource Setup List** |  | *1* |  |  | YES | reject |
| **>PDU Session Resource Setup Item** |  | *1..<maxnoofPDUSessions>* |  |  | - |  |
| >>PDU Session ID  | M |  | 9.3.1.50 |  | - |  |
| >>S-NSSAI | M |  | 9.3.1.24 |  | - |  |
| >>Handover Request Transfer | M |  | OCTET STRING | Containing the *PDU Session Resource Setup Request Transfer* IE specified in subclause 9.3.4.1. | - |  |
| Allowed NSSAI | M |  | 9.3.1.31 | Indicates the S-NSSAIs permitted by the network. | YES | reject |
| Trace Activation | O |  | 9.3.1.14 |  | YES | ignore |
| Masked IMEISV | O |  | 9.3.1.54 |  | YES | ignore |
| Source to Target Transparent Container | M |  | 9.3.1.20 |  | YES | reject |
| Mobility Restriction List | O |  | 9.3.1.85 |  | YES | ignore |
| Location Reporting Request Type | O |  | 9.3.1.65 |  | YES | ignore |
| RRC Inactive Transition Report Request | O |  | 9.3.1.91 |  | YES | ignore |
| GUAMI | M |  | 9.3.3.3 |  | YES | reject |
| Redirection for Voice EPS Fallback  | O |  | 9.3.1.116 |  | YES | ignore |
| CN Assisted RAN Parameters Tuning | O |  | 9.3.1.119 |  | YES | ignore |
| UE Radio Capability ID | O |  | 9.3.1.z |  | YES | reject |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofPDUSessions | Maximum no. of PDU sessions allowed towards one UE. Value is 256. |

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

#### 9.2.3.9 PATH SWITCH REQUEST ACKNOWLEDGE

This message is sent by the AMF to inform the NG-RAN node that the path switch has been successfully completed in the 5GC.

Direction: AMF → NG-RAN node.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.3.1.1 |  | YES | reject |
| AMF UE NGAP ID | M |  | 9.3.3.1 |  | YES | ignore |
| RAN UE NGAP ID | M |  | 9.3.3.2 |  | YES | ignore |
| UE Security Capabilities | O |  | 9.3.1.86 |  | YES | reject |
| Security Context | M |  | 9.3.1.88 |  | YES | reject |
| New Security Context Indicator | O |  | 9.3.1.55 |  | YES | reject |
| **PDU Session Resource Switched List** |  | *1*  |  |  | YES | ignore |
| **>PDU Session Resource Switched Item** |  | *1..<maxnoofPDUSessions>*  |  |  | - |  |
| >>PDU Session ID  | M |  | 9.3.1.50 |  | - |  |
| >>Path Switch Request Acknowledge Transfer | M |  | OCTET STRING | Containing the *Path Switch Request Acknowledge Transfer* IE specified in subclause 9.3.4.9. | - |  |
| **PDU Session Resource Released List** |  | *0..1* |  |  | YES | ignore |
| **>PDU Session Resource Released Item** |  | *1..<maxnoofPDUSessions>* |  |  | - |  |
| >>PDU Session ID | M |  | 9.3.1.50 |  | - |  |
| >>Path Switch Request Unsuccessful Transfer | M |  | OCTET STRING | Containing the *Path Switch Request Unsuccessful Transfer* IE specified in subclause 9.3.4.20. | - |  |
| Allowed NSSAI | M |  | 9.3.1.31 | Indicates the S-NSSAIs permitted by the network. | YES | reject |
| Core Network Assistance Information for RRC INACTIVE | O |  | 9.3.1.15 |  | YES | ignore |
| RRC Inactive Transition Report Request | O |  | 9.3.1.91 |  | YES | ignore |
| Criticality Diagnostics | O |  | 9.3.1.3 |  | YES | ignore |
| Redirection for Voice EPS Fallback  | O |  | 9.3.1.116 |  | YES | ignore |
| CN Assisted RAN Parameters Tuning | O |  | 9.3.1.119 |  | YES | ignore |
| UE Radio Capability ID | O |  | 9.3.1.z |  | YES | reject |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofPDUSessions | Maximum no. of PDU sessions allowed towards one UE. Value is 256. |

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

#### 9.2.13.x UE RADIO CAPABILITY ID MAPPING REQUEST

This message is sent by the NG-RAN node to request the AMF to provide mapping information for the indicated UE Radio Capability ID.

Direction: NG-RAN node → AMF

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.3.1.1 |  | YES | reject |
| UE Radio Capability ID | M |  | 9.3.1.z |  | YES | reject |

#### 9.2.13.y UE RADIO CAPABILITY ID MAPPING RESPONSE

This message is sent by the AMF to provide UE Radio Capabiltiy information which is mapped to the UE Radio Capability ID indicated by the NG-RAN node in the UE RADIO CAPABILITY ID MAPPING REQUEST message.

Direction: AMF → NG-RAN node

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| Message Type | M |  | 9.3.1.1 |  | YES | reject |
| UE Radio Capability ID | M |  | 9.3.1.z |  | YES | ignore |
| UE Radio Capability | M |  | 9.3.1.74 |  | YES | ignore |
| Criticality Diagnostics | O |  | 9.3.1.3 |  | YES | ignore |

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

#### 9.3.1.z UE Radio Capability ID

This IE contains the UE Radio Capability ID as defined in TS 23.003 [23].

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| UE Radio Capability ID | M |  | OCTET STRING | NOTE: The IE type may need to be refined to match with defintions in 23.003 [23]. |

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

### 9.4.3 Elementary Procedure Definitions

-- ASN1START

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

--

-- Elementary Procedure definitions

--

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

NGAP-PDU-Descriptions {

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

ngran-Access (22) modules (3) ngap (1) version1 (1) ngap-PDU-Descriptions (0)}

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

--

-- IE parameter types from other modules.

--

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

IMPORTS

 Criticality,

 ProcedureCode

FROM NGAP-CommonDataTypes

 AMFConfigurationUpdate,

 AMFConfigurationUpdateAcknowledge,

 AMFConfigurationUpdateFailure,

 AMFStatusIndication,

 CellTrafficTrace,

 DeactivateTrace,

 DownlinkNASTransport,

 DownlinkNonUEAssociatedNRPPaTransport,

 DownlinkRANConfigurationTransfer,

 DownlinkRANStatusTransfer,

 DownlinkUEAssociatedNRPPaTransport,

 ErrorIndication,

 HandoverCancel,

 HandoverCancelAcknowledge,

 HandoverCommand,

 HandoverFailure,

 HandoverNotify,

 HandoverPreparationFailure,

 HandoverRequest,

 HandoverRequestAcknowledge,

 HandoverRequired,

 InitialContextSetupFailure,

 InitialContextSetupRequest,

 InitialContextSetupResponse,

 InitialUEMessage,

 LocationReport,

 LocationReportingControl,

 LocationReportingFailureIndication,

 NASNonDeliveryIndication,

 NGReset,

 NGResetAcknowledge,

 NGSetupFailure,

 NGSetupRequest,

 NGSetupResponse,

 OverloadStart,

 OverloadStop,

 Paging,

 PathSwitchRequest,

 PathSwitchRequestAcknowledge,

 PathSwitchRequestFailure,

 PDUSessionResourceModifyConfirm,

 PDUSessionResourceModifyIndication,

 PDUSessionResourceModifyRequest,

 PDUSessionResourceModifyResponse,

 PDUSessionResourceNotify,

 PDUSessionResourceReleaseCommand,

 PDUSessionResourceReleaseResponse,

 PDUSessionResourceSetupRequest,

 PDUSessionResourceSetupResponse,

 PrivateMessage,

 PWSCancelRequest,

 PWSCancelResponse,

 PWSFailureIndication,

 PWSRestartIndication,

 RANConfigurationUpdate,

 RANConfigurationUpdateAcknowledge,

 RANConfigurationUpdateFailure,

 RerouteNASRequest,

 RRCInactiveTransitionReport,

 SecondaryRATDataUsageReport,

 TraceFailureIndication,

 TraceStart,

 UEContextModificationFailure,

 UEContextModificationRequest,

 UEContextModificationResponse,

 UEContextReleaseCommand,

 UEContextReleaseComplete,

 UEContextReleaseRequest,

 UERadioCapabilityCheckRequest,

 UERadioCapabilityCheckResponse,

 UERadioCapabilityInfoIndication,

 UETNLABindingReleaseRequest,

 UplinkNASTransport,

 UplinkNonUEAssociatedNRPPaTransport,

 UplinkRANConfigurationTransfer,

 UplinkRANStatusTransfer,

 UplinkUEAssociatedNRPPaTransport,

 WriteReplaceWarningRequest,

 WriteReplaceWarningResponse,

 UplinkRIMInformationTransfer,

 DownlinkRIMInformationTransfer,

 UERadioCapabilityIDMappingRequest,

 UERadioCapabilityIDMappingResponse

FROM NGAP-PDU-Contents

 id-AMFConfigurationUpdate,

 id-AMFStatusIndication,

 id-CellTrafficTrace,

 id-DeactivateTrace,

 id-DownlinkNASTransport,

 id-DownlinkNonUEAssociatedNRPPaTransport,

 id-DownlinkRANConfigurationTransfer,

 id-DownlinkRANStatusTransfer,

 id-DownlinkUEAssociatedNRPPaTransport,

 id-ErrorIndication,

 id-HandoverCancel,

 id-HandoverNotification,

 id-HandoverPreparation,

 id-HandoverResourceAllocation,

 id-InitialContextSetup,

 id-InitialUEMessage,

 id-LocationReport,

 id-LocationReportingControl,

 id-LocationReportingFailureIndication,

 id-NASNonDeliveryIndication,

 id-NGReset,

 id-NGSetup,

 id-OverloadStart,

 id-OverloadStop,

 id-Paging,

 id-PathSwitchRequest,

 id-PDUSessionResourceModify,

 id-PDUSessionResourceModifyIndication,

 id-PDUSessionResourceNotify,

 id-PDUSessionResourceRelease,

 id-PDUSessionResourceSetup,

 id-PrivateMessage,

 id-PWSCancel,

 id-PWSFailureIndication,

 id-PWSRestartIndication,

 id-RANConfigurationUpdate,

 id-RerouteNASRequest,

 id-RRCInactiveTransitionReport,

 id-SecondaryRATDataUsageReport,

 id-TraceFailureIndication,

 id-TraceStart,

 id-UEContextModification,

 id-UEContextRelease,

 id-UEContextReleaseRequest,

 id-UERadioCapabilityCheck,

 id-UERadioCapabilityInfoIndication,

 id-UETNLABindingRelease,

 id-UplinkNASTransport,

 id-UplinkNonUEAssociatedNRPPaTransport,

 id-UplinkRANConfigurationTransfer,

 id-UplinkRANStatusTransfer,

 id-UplinkUEAssociatedNRPPaTransport,

 id-WriteReplaceWarning,

 id-UplinkRIMInformationTransfer,

 id-DownlinkRIMInformationTransfer,

 id-UERadioCapabilityIDMappingRequest

FROM NGAP-Constants;

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

--

-- Interface Elementary Procedure Class

--

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

NGAP-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

--

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

NGAP-PDU ::= CHOICE {

 initiatingMessage InitiatingMessage,

 successfulOutcome SuccessfulOutcome,

 unsuccessfulOutcome UnsuccessfulOutcome,

 ...

}

InitiatingMessage ::= SEQUENCE {

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

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

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

}

SuccessfulOutcome ::= SEQUENCE {

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

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

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

}

UnsuccessfulOutcome ::= SEQUENCE {

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

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

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

}

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

--

-- Interface Elementary Procedure List

--

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

NGAP-ELEMENTARY-PROCEDURES NGAP-ELEMENTARY-PROCEDURE ::= {

 NGAP-ELEMENTARY-PROCEDURES-CLASS-1 |

 NGAP-ELEMENTARY-PROCEDURES-CLASS-2,

 ...

}

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

 aMFConfigurationUpdate |

 handoverCancel |

 handoverPreparation |

 handoverResourceAllocation |

 initialContextSetup |

 nGReset |

 nGSetup |

 pathSwitchRequest |

 pDUSessionResourceModify |

 pDUSessionResourceModifyIndication |

 pDUSessionResourceRelease |

 pDUSessionResourceSetup |

 pWSCancel |

 rANConfigurationUpdate |

 uEContextModification |

 uEContextRelease |

 uERadioCapabilityCheck |

 writeReplaceWarning |

 uERadioCapabilityIDMappingRequest

}

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

 aMFStatusIndication |

 cellTrafficTrace |

 deactivateTrace |

 downlinkNASTransport |

 downlinkNonUEAssociatedNRPPaTransport |

 downlinkRANConfigurationTransfer |

 downlinkRANStatusTransfer |

 downlinkUEAssociatedNRPPaTransport |

 errorIndication |

 handoverNotification |

 initialUEMessage |

 locationReport |

 locationReportingControl |

 locationReportingFailureIndication |

 nASNonDeliveryIndication |

 overloadStart |

 overloadStop |

 paging |

 pDUSessionResourceNotify |

 privateMessage |

 pWSFailureIndication |

 pWSRestartIndication |

 rerouteNASRequest |

 rRCInactiveTransitionReport |

 secondaryRATDataUsageReport |

 traceFailureIndication |

 traceStart |

 uEContextReleaseRequest |

 uERadioCapabilityInfoIndication |

 uETNLABindingRelease |

 uplinkNASTransport |

 uplinkNonUEAssociatedNRPPaTransport |

 uplinkRANConfigurationTransfer |

 uplinkRANStatusTransfer |

 uplinkUEAssociatedNRPPaTransport |

 uplinkRIMInformationTransfer |

 downlinkRIMInformationTransfer

}

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

--

-- Interface Elementary Procedures

--

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

aMFConfigurationUpdate NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE AMFConfigurationUpdate

 SUCCESSFUL OUTCOME AMFConfigurationUpdateAcknowledge

 UNSUCCESSFUL OUTCOME AMFConfigurationUpdateFailure

 PROCEDURE CODE id-AMFConfigurationUpdate

 CRITICALITY reject

}

aMFStatusIndication NGAP-ELEMENTARY-PROCEDURE ::={

 INITIATING MESSAGE AMFStatusIndication

 PROCEDURE CODE id-AMFStatusIndication

 CRITICALITY ignore

}

cellTrafficTrace NGAP-ELEMENTARY-PROCEDURE ::={

 INITIATING MESSAGE CellTrafficTrace

 PROCEDURE CODE id-CellTrafficTrace

 CRITICALITY ignore

}

deactivateTrace NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE DeactivateTrace

 PROCEDURE CODE id-DeactivateTrace

 CRITICALITY ignore

}

downlinkNASTransport NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE DownlinkNASTransport

 PROCEDURE CODE id-DownlinkNASTransport

 CRITICALITY ignore

}

downlinkNonUEAssociatedNRPPaTransport NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE DownlinkNonUEAssociatedNRPPaTransport

 PROCEDURE CODE id-DownlinkNonUEAssociatedNRPPaTransport

 CRITICALITY ignore

}

downlinkRANConfigurationTransfer NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE DownlinkRANConfigurationTransfer

 PROCEDURE CODE id-DownlinkRANConfigurationTransfer

 CRITICALITY ignore

}

downlinkRANStatusTransfer NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE DownlinkRANStatusTransfer

 PROCEDURE CODE id-DownlinkRANStatusTransfer

 CRITICALITY ignore

}

downlinkUEAssociatedNRPPaTransport NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE DownlinkUEAssociatedNRPPaTransport

 PROCEDURE CODE id-DownlinkUEAssociatedNRPPaTransport

 CRITICALITY ignore

}

errorIndication NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE ErrorIndication

 PROCEDURE CODE id-ErrorIndication

 CRITICALITY ignore

}

handoverCancel NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE HandoverCancel

 SUCCESSFUL OUTCOME HandoverCancelAcknowledge

 PROCEDURE CODE id-HandoverCancel

 CRITICALITY reject

}

handoverNotification NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE HandoverNotify

 PROCEDURE CODE id-HandoverNotification

 CRITICALITY ignore

}

handoverPreparation NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE HandoverRequired

 SUCCESSFUL OUTCOME HandoverCommand

 UNSUCCESSFUL OUTCOME HandoverPreparationFailure

 PROCEDURE CODE id-HandoverPreparation

 CRITICALITY reject

}

handoverResourceAllocation NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE HandoverRequest

 SUCCESSFUL OUTCOME HandoverRequestAcknowledge

 UNSUCCESSFUL OUTCOME HandoverFailure

 PROCEDURE CODE id-HandoverResourceAllocation

 CRITICALITY reject

}

initialContextSetup NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE InitialContextSetupRequest

 SUCCESSFUL OUTCOME InitialContextSetupResponse

 UNSUCCESSFUL OUTCOME InitialContextSetupFailure

 PROCEDURE CODE id-InitialContextSetup

 CRITICALITY reject

}

initialUEMessage NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE InitialUEMessage

 PROCEDURE CODE id-InitialUEMessage

 CRITICALITY ignore

}

locationReport NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE LocationReport

 PROCEDURE CODE id-LocationReport

 CRITICALITY ignore

}

locationReportingControl NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE LocationReportingControl

 PROCEDURE CODE id-LocationReportingControl

 CRITICALITY ignore

}

locationReportingFailureIndication NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE LocationReportingFailureIndication

 PROCEDURE CODE id-LocationReportingFailureIndication

 CRITICALITY ignore

}

nASNonDeliveryIndication NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE NASNonDeliveryIndication

 PROCEDURE CODE id-NASNonDeliveryIndication

 CRITICALITY ignore

}

nGReset NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE NGReset

 SUCCESSFUL OUTCOME NGResetAcknowledge

 PROCEDURE CODE id-NGReset

 CRITICALITY reject

}

nGSetup NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE NGSetupRequest

 SUCCESSFUL OUTCOME NGSetupResponse

 UNSUCCESSFUL OUTCOME NGSetupFailure

 PROCEDURE CODE id-NGSetup

 CRITICALITY reject

}

overloadStart NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE OverloadStart

 PROCEDURE CODE id-OverloadStart

 CRITICALITY ignore

}

overloadStop NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE OverloadStop

 PROCEDURE CODE id-OverloadStop

 CRITICALITY reject

}

paging NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE Paging

 PROCEDURE CODE id-Paging

 CRITICALITY ignore

}

pathSwitchRequest NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE PathSwitchRequest

 SUCCESSFUL OUTCOME PathSwitchRequestAcknowledge

 UNSUCCESSFUL OUTCOME PathSwitchRequestFailure

 PROCEDURE CODE id-PathSwitchRequest

 CRITICALITY reject

}

pDUSessionResourceModify NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE PDUSessionResourceModifyRequest

 SUCCESSFUL OUTCOME PDUSessionResourceModifyResponse

 PROCEDURE CODE id-PDUSessionResourceModify

 CRITICALITY reject

}

pDUSessionResourceModifyIndication NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE PDUSessionResourceModifyIndication

 SUCCESSFUL OUTCOME PDUSessionResourceModifyConfirm

 PROCEDURE CODE id-PDUSessionResourceModifyIndication

 CRITICALITY reject

}

pDUSessionResourceNotify NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE PDUSessionResourceNotify

 PROCEDURE CODE id-PDUSessionResourceNotify

 CRITICALITY ignore

}

pDUSessionResourceRelease NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE PDUSessionResourceReleaseCommand

 SUCCESSFUL OUTCOME PDUSessionResourceReleaseResponse

 PROCEDURE CODE id-PDUSessionResourceRelease

 CRITICALITY reject

}

pDUSessionResourceSetup NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE PDUSessionResourceSetupRequest

 SUCCESSFUL OUTCOME PDUSessionResourceSetupResponse

 PROCEDURE CODE id-PDUSessionResourceSetup

 CRITICALITY reject

}

privateMessage NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE PrivateMessage

 PROCEDURE CODE id-PrivateMessage

 CRITICALITY ignore

}

pWSCancel NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE PWSCancelRequest

 SUCCESSFUL OUTCOME PWSCancelResponse

 PROCEDURE CODE id-PWSCancel

 CRITICALITY reject

}

pWSFailureIndication NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE PWSFailureIndication

 PROCEDURE CODE id-PWSFailureIndication

 CRITICALITY ignore

}

pWSRestartIndication NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE PWSRestartIndication

 PROCEDURE CODE id-PWSRestartIndication

 CRITICALITY ignore

}

rANConfigurationUpdate NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE RANConfigurationUpdate

 SUCCESSFUL OUTCOME RANConfigurationUpdateAcknowledge

 UNSUCCESSFUL OUTCOME RANConfigurationUpdateFailure

 PROCEDURE CODE id-RANConfigurationUpdate

 CRITICALITY reject

}

rerouteNASRequest NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE RerouteNASRequest

 PROCEDURE CODE id-RerouteNASRequest

 CRITICALITY reject

}

rRCInactiveTransitionReport NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE RRCInactiveTransitionReport

 PROCEDURE CODE id-RRCInactiveTransitionReport

 CRITICALITY ignore

}

secondaryRATDataUsageReport NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE SecondaryRATDataUsageReport

 PROCEDURE CODE id-SecondaryRATDataUsageReport

 CRITICALITY ignore

}

traceFailureIndication NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE TraceFailureIndication

 PROCEDURE CODE id-TraceFailureIndication

 CRITICALITY ignore

}

traceStart NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE TraceStart

 PROCEDURE CODE id-TraceStart

 CRITICALITY ignore

}

uEContextModification NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE UEContextModificationRequest

 SUCCESSFUL OUTCOME UEContextModificationResponse

 UNSUCCESSFUL OUTCOME UEContextModificationFailure

 PROCEDURE CODE id-UEContextModification

 CRITICALITY reject

}

uEContextRelease NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE UEContextReleaseCommand

 SUCCESSFUL OUTCOME UEContextReleaseComplete

 PROCEDURE CODE id-UEContextRelease

 CRITICALITY reject

}

uEContextReleaseRequest NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE UEContextReleaseRequest

 PROCEDURE CODE id-UEContextReleaseRequest

 CRITICALITY ignore

}

uERadioCapabilityCheck NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE UERadioCapabilityCheckRequest

 SUCCESSFUL OUTCOME UERadioCapabilityCheckResponse

 PROCEDURE CODE id-UERadioCapabilityCheck

 CRITICALITY reject

}

uERadioCapabilityInfoIndication NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE UERadioCapabilityInfoIndication

 PROCEDURE CODE id-UERadioCapabilityInfoIndication

 CRITICALITY ignore

}

uETNLABindingRelease NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE UETNLABindingReleaseRequest

 PROCEDURE CODE id-UETNLABindingRelease

 CRITICALITY ignore

}

uplinkNASTransport NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE UplinkNASTransport

 PROCEDURE CODE id-UplinkNASTransport

 CRITICALITY ignore

}

uplinkNonUEAssociatedNRPPaTransport NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE UplinkNonUEAssociatedNRPPaTransport

 PROCEDURE CODE id-UplinkNonUEAssociatedNRPPaTransport

 CRITICALITY ignore

}

uplinkRANConfigurationTransfer NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE UplinkRANConfigurationTransfer

 PROCEDURE CODE id-UplinkRANConfigurationTransfer

 CRITICALITY ignore

}

uplinkRANStatusTransfer NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE UplinkRANStatusTransfer

 PROCEDURE CODE id-UplinkRANStatusTransfer

 CRITICALITY ignore

}

uplinkUEAssociatedNRPPaTransport NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE UplinkUEAssociatedNRPPaTransport

 PROCEDURE CODE id-UplinkUEAssociatedNRPPaTransport

 CRITICALITY ignore

}

writeReplaceWarning NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE WriteReplaceWarningRequest

 SUCCESSFUL OUTCOME WriteReplaceWarningResponse

 PROCEDURE CODE id-WriteReplaceWarning

 CRITICALITY reject

}

uplinkRIMInformationTransfer NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE UplinkRIMInformationTransfer

 PROCEDURE CODE id-UplinkRIMInformationTransfer

 CRITICALITY ignore

}

downlinkRIMInformationTransfer NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE DownlinkRIMInformationTransfer

 PROCEDURE CODE id-DownlinkRIMInformationTransfer

 CRITICALITY ignore

}

uERadioCapabilityIDMappingRequest NGAP-ELEMENTARY-PROCEDURE ::= {

 INITIATING MESSAGE UERadioCapabilityIDMappingRequest

 SUCCESSFUL OUTCOME UERadioCapabilityIDMappingResponse

 PROCEDURE CODE id-UERadioCapabilityIDMappingRequest

 CRITICALITY reject

}

END

-- ASN1STOP

### 9.4.4 PDU Definitions

-- ASN1START

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

--

-- PDU definitions for NGAP.

--

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

NGAP-PDU-Contents {

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

ngran-Access (22) modules (3) ngap (1) version1 (1) ngap-PDU-Contents (1) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

--

-- IE parameter types from other modules.

--

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

IMPORTS

 AllowedNSSAI,

 AMFName,

 AMFSetID,

 AMF-TNLAssociationSetupList,

 AMF-TNLAssociationToAddList,

 AMF-TNLAssociationToRemoveList,

 AMF-TNLAssociationToUpdateList,

 AMF-UE-NGAP-ID,

 AssistanceDataForPaging,

 BroadcastCancelledAreaList,

 BroadcastCompletedAreaList,

 CancelAllWarningMessages,

 Cause,

 CellIDListForRestart,

 CNAssistedRANTuning,

 ConcurrentWarningMessageInd,

 CoreNetworkAssistanceInformationForInactive,

 CPTransportLayerInformation,

 CriticalityDiagnostics,

 DataCodingScheme,

 DirectForwardingPathAvailability,

 EmergencyAreaIDListForRestart,

 EmergencyFallbackIndicator,

 EN-DCSONConfigurationTransfer,

 EUTRA-CGI,

 FiveG-S-TMSI,

 GlobalRANNodeID,

 GUAMI,

 HandoverFlag,

 HandoverType,

 IMSVoiceSupportIndicator,

 IndexToRFSP,

 InfoOnRecommendedCellsAndRANNodesForPaging,

 LocationReportingRequestType,

 MaskedIMEISV,

 MessageIdentifier,

 MobilityRestrictionList,

 NAS-PDU,

 NASSecurityParametersFromNGRAN,

 NewSecurityContextInd,

 NGRAN-CGI,

 NGRAN-TNLAssociationToRemoveList,

 NGRANTraceID,

 NR-CGI,

 NRPPa-PDU,

 NumberOfBroadcastsRequested,

 OverloadResponse,

 OverloadStartNSSAIList,

 PagingDRX,

 PagingOrigin,

 PagingPriority,

 PDUSessionAggregateMaximumBitRate,

 PDUSessionResourceAdmittedList,

 PDUSessionResourceFailedToModifyListModCfm,

 PDUSessionResourceFailedToModifyListModRes,

 PDUSessionResourceFailedToSetupListCxtFail,

 PDUSessionResourceFailedToSetupListCxtRes,

 PDUSessionResourceFailedToSetupListHOAck,

 PDUSessionResourceFailedToSetupListPSReq,

 PDUSessionResourceFailedToSetupListSURes,

 PDUSessionResourceHandoverList,

 PDUSessionResourceListCxtRelCpl,

 PDUSessionResourceListCxtRelReq,

 PDUSessionResourceListHORqd,

 PDUSessionResourceModifyListModCfm,

 PDUSessionResourceModifyListModInd,

 PDUSessionResourceModifyListModReq,

 PDUSessionResourceModifyListModRes,

 PDUSessionResourceNotifyList,

 PDUSessionResourceReleasedListNot,

 PDUSessionResourceReleasedListPSAck,

 PDUSessionResourceReleasedListPSFail,

 PDUSessionResourceReleasedListRelRes,

 PDUSessionResourceSecondaryRATUsageList,

 PDUSessionResourceSetupListCxtReq,

 PDUSessionResourceSetupListCxtRes,

 PDUSessionResourceSetupListHOReq,

 PDUSessionResourceSetupListSUReq,

 PDUSessionResourceSetupListSURes,

 PDUSessionResourceSwitchedList,

 PDUSessionResourceToBeSwitchedDLList,

 PDUSessionResourceToReleaseListHOCmd,

 PDUSessionResourceToReleaseListRelCmd,

 PLMNSupportList,

 PWSFailedCellIDList,

 RANNodeName,

 RANPagingPriority,

 RANStatusTransfer-TransparentContainer,

 RAN-UE-NGAP-ID,

 RedirectionVoiceFallback,

 RelativeAMFCapacity,

 RepetitionPeriod,

 ResetType,

 RoutingID,

 RRCEstablishmentCause,

 RRCInactiveTransitionReportRequest,

 RRCState,

 SecurityContext,

 SecurityKey,

 SerialNumber,

 ServedGUAMIList,

 SliceSupportList,

 S-NSSAI,

 SONConfigurationTransfer,

 SourceToTarget-TransparentContainer,

 SourceToTarget-AMFInformationReroute,

 SupportedTAList,

 TAIListForPaging,

 TAIListForRestart,

 TargetID,

 TargetToSource-TransparentContainer,

 TimeToWait,

 TNLAssociationList,

 TraceActivation,

 TrafficLoadReductionIndication,

 TransportLayerAddress,

 UEAggregateMaximumBitRate,

 UE-associatedLogicalNG-connectionList,

 UEContextRequest,

 UE-NGAP-IDs,

 UEPagingIdentity,

 UEPresenceInAreaOfInterestList,

 UERadioCapability,

 UERadioCapabilityID,

 UERadioCapabilityForPaging,

 UERetentionInformation,

 UESecurityCapabilities,

 UnavailableGUAMIList,

 UserLocationInformation,

 WarningAreaCoordinates,

 WarningAreaList,

 WarningMessageContents,

 WarningSecurityInfo,

 WarningType,

 RIMInformationTransfer

FROM NGAP-IEs

 PrivateIE-Container{},

 ProtocolExtensionContainer{},

 ProtocolIE-Container{},

 ProtocolIE-ContainerList{},

 ProtocolIE-ContainerPair{},

 ProtocolIE-SingleContainer{},

 NGAP-PRIVATE-IES,

 NGAP-PROTOCOL-EXTENSION,

 NGAP-PROTOCOL-IES,

 NGAP-PROTOCOL-IES-PAIR

FROM NGAP-Containers

 id-AllowedNSSAI,

 id-AMFName,

 id-AMFOverloadResponse,

 id-AMFSetID,

 id-AMF-TNLAssociationFailedToSetupList,

 id-AMF-TNLAssociationSetupList,

 id-AMF-TNLAssociationToAddList,

 id-AMF-TNLAssociationToRemoveList,

 id-AMF-TNLAssociationToUpdateList,

 id-AMFTrafficLoadReductionIndication,

 id-AMF-UE-NGAP-ID,

 id-AssistanceDataForPaging,

 id-BroadcastCancelledAreaList,

 id-BroadcastCompletedAreaList,

 id-CancelAllWarningMessages,

 id-Cause,

 id-CellIDListForRestart,

 id-CNAssistedRANTuning,

 id-ConcurrentWarningMessageInd,

 id-CoreNetworkAssistanceInformationForInactive,

 id-CriticalityDiagnostics,

 id-DataCodingScheme,

 id-DefaultPagingDRX,

 id-DirectForwardingPathAvailability,

 id-EmergencyAreaIDListForRestart,

 id-EmergencyFallbackIndicator,

 id-ENDC-SONConfigurationTransferDL,

 id-ENDC-SONConfigurationTransferUL,

 id-EUTRA-CGI,

 id-FiveG-S-TMSI,

 id-GlobalRANNodeID,

 id-GUAMI,

 id-HandoverFlag,

 id-HandoverType,

 id-IMSVoiceSupportIndicator,

 id-IndexToRFSP,

 id-InfoOnRecommendedCellsAndRANNodesForPaging,

 id-LocationReportingRequestType,

 id-MaskedIMEISV,

 id-MessageIdentifier,

 id-MobilityRestrictionList,

 id-NAS-PDU,

 id-NASC,

 id-NASSecurityParametersFromNGRAN,

 id-NewAMF-UE-NGAP-ID,

 id-NewGUAMI,

 id-NewSecurityContextInd,

 id-NGAP-Message,

 id-NGRAN-CGI,

 id-NGRAN-TNLAssociationToRemoveList,

 id-NGRANTraceID,

 id-NR-CGI,

 id-NRPPa-PDU,

 id-NumberOfBroadcastsRequested,

 id-OldAMF,

 id-OverloadStartNSSAIList,

 id-PagingDRX,

 id-PagingOrigin,

 id-PagingPriority,

 id-PDUSessionResourceAdmittedList,

 id-PDUSessionResourceFailedToModifyListModCfm,

 id-PDUSessionResourceFailedToModifyListModRes,

 id-PDUSessionResourceFailedToSetupListCxtFail,

 id-PDUSessionResourceFailedToSetupListCxtRes,

 id-PDUSessionResourceFailedToSetupListHOAck,

 id-PDUSessionResourceFailedToSetupListPSReq,

 id-PDUSessionResourceFailedToSetupListSURes,

 id-PDUSessionResourceHandoverList,

 id-PDUSessionResourceListCxtRelCpl,

 id-PDUSessionResourceListCxtRelReq,

 id-PDUSessionResourceListHORqd,

 id-PDUSessionResourceModifyListModCfm,

 id-PDUSessionResourceModifyListModInd,

 id-PDUSessionResourceModifyListModReq,

 id-PDUSessionResourceModifyListModRes,

 id-PDUSessionResourceNotifyList,

 id-PDUSessionResourceReleasedListNot,

 id-PDUSessionResourceReleasedListPSAck,

 id-PDUSessionResourceReleasedListPSFail,

 id-PDUSessionResourceReleasedListRelRes,

 id-PDUSessionResourceSecondaryRATUsageList,

 id-PDUSessionResourceSetupListCxtReq,

 id-PDUSessionResourceSetupListCxtRes,

 id-PDUSessionResourceSetupListHOReq,

 id-PDUSessionResourceSetupListSUReq,

 id-PDUSessionResourceSetupListSURes,

 id-PDUSessionResourceSwitchedList,

 id-PDUSessionResourceToBeSwitchedDLList,

 id-PDUSessionResourceToReleaseListHOCmd,

 id-PDUSessionResourceToReleaseListRelCmd,

 id-PLMNSupportList,

 id-PWSFailedCellIDList,

 id-RANNodeName,

 id-RANPagingPriority,

 id-RANStatusTransfer-TransparentContainer,

 id-RAN-UE-NGAP-ID,

 id-RedirectionVoiceFallback,

 id-RelativeAMFCapacity,

 id-RepetitionPeriod,

 id-ResetType,

 id-RoutingID,

 id-RRCEstablishmentCause,

 id-RRCInactiveTransitionReportRequest,

 id-RRCState,

 id-SecurityContext,

 id-SecurityKey,

 id-SerialNumber,

 id-ServedGUAMIList,

 id-SliceSupportList,

 id-SONConfigurationTransferDL,

 id-SONConfigurationTransferUL,

 id-SourceAMF-UE-NGAP-ID,

 id-SourceToTarget-TransparentContainer,

 id-SourceToTarget-AMFInformationReroute,

 id-SupportedTAList,

 id-TAIListForPaging,

 id-TAIListForRestart,

 id-TargetID,

 id-TargetToSource-TransparentContainer,

 id-TimeToWait,

 id-TraceActivation,

 id-TraceCollectionEntityIPAddress,

 id-UEAggregateMaximumBitRate,

 id-UE-associatedLogicalNG-connectionList,

 id-UEContextRequest,

 id-UE-NGAP-IDs,

 id-UEPagingIdentity,

 id-UEPresenceInAreaOfInterestList,

 id-UERadioCapability,

 id-UERadioCapabilityID,

 id-UERadioCapabilityForPaging,

 id-UERetentionInformation,

 id-UESecurityCapabilities,

 id-UnavailableGUAMIList,

 id-UserLocationInformation,

 id-WarningAreaCoordinates,

 id-WarningAreaList,

 id-WarningMessageContents,

 id-WarningSecurityInfo,

 id-WarningType,

 id-RIMInformationTransfer

FROM NGAP-Constants;

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

--

-- PDU SESSION MANAGEMENT ELEMENTARY PROCEDURES

--

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

<<<<<<<<<<<<<<<<<<<< Unmodified Text omitted >>>>>>>>>>>>>>>>>>>>

<<<<<<<<<<<<<<<<<<<< Unmodified Text omitted >>>>>>>>>>>>>>>>>>>>

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

--

-- UE CONTEXT MANAGEMENT ELEMENTARY PROCEDURES

--

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

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

--

-- Initial Context Setup Elementary Procedure

--

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

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

--

-- INITIAL CONTEXT SETUP REQUEST

--

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

InitialContextSetupRequest ::= SEQUENCE {

 protocolIEs ProtocolIE-Container { {InitialContextSetupRequestIEs} },

 ...

}

InitialContextSetupRequestIEs NGAP-PROTOCOL-IES ::= {

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

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

 { ID id-OldAMF CRITICALITY reject TYPE AMFName PRESENCE optional }|

 { ID id-UEAggregateMaximumBitRate CRITICALITY reject TYPE UEAggregateMaximumBitRate PRESENCE conditional }|

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

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

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

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

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

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

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

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

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

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

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

 { ID id-NAS-PDU CRITICALITY ignore TYPE NAS-PDU PRESENCE optional }|

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

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

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

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

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

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

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

 ...

}

<<<<<<<<<<<<<<<<<<<< Unmodified Text omitted >>>>>>>>>>>>>>>>>>>>

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

--

-- UE Context Modification Elementary Procedure

--

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

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

--

-- UE CONTEXT MODIFICATION REQUEST

--

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

UEContextModificationRequest ::= SEQUENCE {

 protocolIEs ProtocolIE-Container { {UEContextModificationRequestIEs} },

 ...

}

UEContextModificationRequestIEs NGAP-PROTOCOL-IES ::= {

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

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

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

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

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

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

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

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

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

 { ID id-NewAMF-UE-NGAP-ID CRITICALITY reject TYPE AMF-UE-NGAP-ID PRESENCE optional }|

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

 { ID id-NewGUAMI CRITICALITY reject TYPE GUAMI PRESENCE optional }|

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

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

 ...

}

<<<<<<<<<<<<<<<<<<<< Unmodified Text omitted >>>>>>>>>>>>>>>>>>>>

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

--

-- Handover Resource Allocation Elementary Procedure

--

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

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

--

-- HANDOVER REQUEST

--

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

HandoverRequest ::= SEQUENCE {

 protocolIEs ProtocolIE-Container { {HandoverRequestIEs} },

 ...

}

HandoverRequestIEs NGAP-PROTOCOL-IES ::= {

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

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

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

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

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

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

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

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

 { ID id-NASC CRITICALITY reject TYPE NAS-PDU PRESENCE optional }|

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

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

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

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

 { ID id-SourceToTarget-TransparentContainer CRITICALITY reject TYPE SourceToTarget-TransparentContainer PRESENCE mandatory }|

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

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

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

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

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

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

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

 ...

}

<<<<<<<<<<<<<<<<<<<< Unmodified Text omitted >>>>>>>>>>>>>>>>>>>>

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

--

-- Path Switch Request Elementary Procedure

--

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

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

--

-- PATH SWITCH REQUEST

--

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

PathSwitchRequest ::= SEQUENCE {

 protocolIEs ProtocolIE-Container { { PathSwitchRequestIEs} },

 ...

}

PathSwitchRequestIEs NGAP-PROTOCOL-IES ::= {

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

 { ID id-SourceAMF-UE-NGAP-ID CRITICALITY reject TYPE AMF-UE-NGAP-ID PRESENCE mandatory }|

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

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

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

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

 ...

}

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

--

-- PATH SWITCH REQUEST ACKNOWLEDGE

--

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

PathSwitchRequestAcknowledge ::= SEQUENCE {

 protocolIEs ProtocolIE-Container { { PathSwitchRequestAcknowledgeIEs} },

 ...

}

PathSwitchRequestAcknowledgeIEs NGAP-PROTOCOL-IES ::= {

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

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

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

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

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

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

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

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

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

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

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

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

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

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

 ...

}

<<<<<<<<<<<<<<<<<<<< Unmodified Text omitted >>>>>>>>>>>>>>>>>>>>

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

--

-- DOWNLINK RIM INFORMATION TRANSFER

--

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

DownlinkRIMInformationTransfer ::= SEQUENCE {

 protocolIEs ProtocolIE-Container { {DownlinkRIMInformationTransferIEs} },

 ...

}

DownlinkRIMInformationTransferIEs NGAP-PROTOCOL-IES ::= {

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

 ...

}

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

--

-- UE RADIO CAPABILITY ID MAPPING REQUEST ELEMENTARY PROCEDURES

--

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

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

--

-- UE RADIO CAPABILITY ID MAPPING REQUEST

--

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

UERadioCapabilityIDMappingRequest ::= SEQUENCE {

 protocolIEs ProtocolIE-Container { {UERadioCapabilityIDMappingRequestIEs} },

 ...

}

UERadioCapabilityIDMappingRequestIEs NGAP-PROTOCOL-IES ::= {

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

 ...

}

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

--

-- UE RADIO CAPABILITY ID MAPPING RESPONSE

--

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

UERadioCapabilityIDMappingResponse ::= SEQUENCE {

 protocolIEs ProtocolIE-Container { {UERadioCapabilityIDMappingResponseIEs} },

 ...

}

UERadioCapabilityIDMappingResponseIEs NGAP-PROTOCOL-IES ::= {

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

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

 ...

}

END

-- ASN1STOP

### 9.4.5 Information Element Definitions

-- ASN1START

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

--

-- Information Element Definitions

--

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

NGAP-IEs {

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

ngran-Access (22) modules (3) ngap (1) version1 (1) ngap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

<<<<<<<<<<<<<<<<<<<< Unmodified Text omitted >>>>>>>>>>>>>>>>>>>>

-- U

UEAggregateMaximumBitRate ::= SEQUENCE {

 uEAggregateMaximumBitRateDL BitRate,

 uEAggregateMaximumBitRateUL BitRate,

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

 ...

}

UEAggregateMaximumBitRate-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

UE-associatedLogicalNG-connectionList ::= SEQUENCE (SIZE(1..maxnoofNGConnectionsToReset)) OF UE-associatedLogicalNG-connectionItem

UE-associatedLogicalNG-connectionItem ::= SEQUENCE {

 aMF-UE-NGAP-ID AMF-UE-NGAP-ID OPTIONAL,

 rAN-UE-NGAP-ID RAN-UE-NGAP-ID OPTIONAL,

 iE-Extensions ProtocolExtensionContainer { {UE-associatedLogicalNG-connectionItem-ExtIEs} } OPTIONAL,

 ...

}

UE-associatedLogicalNG-connectionItem-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...}

UEContextRequest ::= ENUMERATED {requested, ...}

UEHistoryInformation ::= SEQUENCE (SIZE(1..maxnoofCellsinUEHistoryInfo)) OF LastVisitedCellItem

UEIdentityIndexValue ::= CHOICE {

 indexLength10 BIT STRING (SIZE(10)),

 choice-Extensions ProtocolIE-SingleContainer { {UEIdentityIndexValue-ExtIEs} }

}

UEIdentityIndexValue-ExtIEs NGAP-PROTOCOL-IES ::= {

 ...

}

UE-NGAP-IDs ::= CHOICE {

 uE-NGAP-ID-pair UE-NGAP-ID-pair,

 aMF-UE-NGAP-ID AMF-UE-NGAP-ID,

 choice-Extensions ProtocolIE-SingleContainer { {UE-NGAP-IDs-ExtIEs} }

}

UE-NGAP-IDs-ExtIEs NGAP-PROTOCOL-IES ::= {

 ...

}

UE-NGAP-ID-pair ::= SEQUENCE{

 aMF-UE-NGAP-ID AMF-UE-NGAP-ID,

 rAN-UE-NGAP-ID RAN-UE-NGAP-ID,

 iE-Extensions ProtocolExtensionContainer { {UE-NGAP-ID-pair-ExtIEs} } OPTIONAL,

 ...

}

UE-NGAP-ID-pair-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

UEPagingIdentity ::= CHOICE {

 fiveG-S-TMSI FiveG-S-TMSI,

 choice-Extensions ProtocolIE-SingleContainer { {UEPagingIdentity-ExtIEs} }

 }

UEPagingIdentity-ExtIEs NGAP-PROTOCOL-IES ::= {

 ...

}

UEPresence ::= ENUMERATED {in, out, unknown, ...}

UEPresenceInAreaOfInterestList ::= SEQUENCE (SIZE(1..maxnoofAoI)) OF UEPresenceInAreaOfInterestItem

UEPresenceInAreaOfInterestItem ::= SEQUENCE {

 locationReportingReferenceID LocationReportingReferenceID,

 uEPresence UEPresence,

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

 ...

}

UEPresenceInAreaOfInterestItem-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

UERadioCapability ::= OCTET STRING

UERadioCapabilityForPaging ::= SEQUENCE {

 uERadioCapabilityForPagingOfNR UERadioCapabilityForPagingOfNR OPTIONAL,

 uERadioCapabilityForPagingOfEUTRA UERadioCapabilityForPagingOfEUTRA OPTIONAL,

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

 ...

}

UERadioCapabilityForPaging-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

UERadioCapabilityForPagingOfNR ::= OCTET STRING

UERadioCapabilityForPagingOfEUTRA ::= OCTET STRING

UERadioCapabilityID ::= OCTET STRING -- This IE may need to be refined

UERetentionInformation ::= ENUMERATED {

 ues-retained,

 ...

}

UESecurityCapabilities ::= SEQUENCE {

 nRencryptionAlgorithms NRencryptionAlgorithms,

 nRintegrityProtectionAlgorithms NRintegrityProtectionAlgorithms,

 eUTRAencryptionAlgorithms EUTRAencryptionAlgorithms,

 eUTRAintegrityProtectionAlgorithms EUTRAintegrityProtectionAlgorithms,

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

 ...

}

UESecurityCapabilities-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

UL-NGU-UP-TNLModifyList ::= SEQUENCE (SIZE(1..maxnoofMultiConnectivity)) OF UL-NGU-UP-TNLModifyItem

UL-NGU-UP-TNLModifyItem ::= SEQUENCE {

 uL-NGU-UP-TNLInformation UPTransportLayerInformation,

 dL-NGU-UP-TNLInformation UPTransportLayerInformation,

 iE-Extensions ProtocolExtensionContainer { {UL-NGU-UP-TNLModifyItem-ExtIEs} } OPTIONAL,

 ...

}

UL-NGU-UP-TNLModifyItem-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

UnavailableGUAMIList ::= SEQUENCE (SIZE(1..maxnoofServedGUAMIs)) OF UnavailableGUAMIItem

UnavailableGUAMIItem ::= SEQUENCE {

 gUAMI GUAMI,

 timerApproachForGUAMIRemoval TimerApproachForGUAMIRemoval OPTIONAL,

 backupAMFName AMFName OPTIONAL,

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

 ...

}

UnavailableGUAMIItem-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

ULForwarding ::= ENUMERATED {

 ul-forwarding-proposed,

 ...

}

UPTransportLayerInformation ::= CHOICE {

 gTPTunnel GTPTunnel,

 choice-Extensions ProtocolIE-SingleContainer { {UPTransportLayerInformation-ExtIEs} }

}

UPTransportLayerInformation-ExtIEs NGAP-PROTOCOL-IES ::= {

 ...

}

UPTransportLayerInformationList ::= SEQUENCE (SIZE(1..maxnoofMultiConnectivityMinusOne)) OF UPTransportLayerInformationItem

UPTransportLayerInformationItem ::= SEQUENCE {

 nGU-UP-TNLInformation UPTransportLayerInformation,

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

 ...

}

UPTransportLayerInformationItem-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

UPTransportLayerInformationPairList ::= SEQUENCE (SIZE(1..maxnoofMultiConnectivityMinusOne)) OF UPTransportLayerInformationPairItem

UPTransportLayerInformationPairItem ::= SEQUENCE {

 uL-NGU-UP-TNLInformation UPTransportLayerInformation,

 dL-NGU-UP-TNLInformation UPTransportLayerInformation,

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

 ...

}

UPTransportLayerInformationPairItem-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

UserLocationInformation ::= CHOICE {

 userLocationInformationEUTRA UserLocationInformationEUTRA,

 userLocationInformationNR UserLocationInformationNR,

 userLocationInformationN3IWF UserLocationInformationN3IWF,

 choice-Extensions ProtocolIE-SingleContainer { {UserLocationInformation-ExtIEs} }

}

UserLocationInformation-ExtIEs NGAP-PROTOCOL-IES ::= {

 ...

}

UserLocationInformationEUTRA ::= SEQUENCE {

 eUTRA-CGI EUTRA-CGI,

 tAI TAI,

 timeStamp TimeStamp OPTIONAL,

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

 ...

}

UserLocationInformationEUTRA-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 { ID id-PSCellInformation CRITICALITY ignore EXTENSION NGRAN-CGI PRESENCE optional},

 ...

}

UserLocationInformationN3IWF ::= SEQUENCE {

 iPAddress TransportLayerAddress,

 portNumber PortNumber,

 iE-Extensions ProtocolExtensionContainer { {UserLocationInformationN3IWF-ExtIEs} } OPTIONAL,

 ...

}

UserLocationInformationN3IWF-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

UserLocationInformationNR ::= SEQUENCE {

 nR-CGI NR-CGI,

 tAI TAI,

 timeStamp TimeStamp OPTIONAL,

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

 ...

}

UserLocationInformationNR-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 { ID id-PSCellInformation CRITICALITY ignore EXTENSION NGRAN-CGI PRESENCE optional},

 ...

}

UserPlaneSecurityInformation ::= SEQUENCE {

 securityResult SecurityResult,

 securityIndication SecurityIndication,

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

 ...

}

UserPlaneSecurityInformation-ExtIEs NGAP-PROTOCOL-EXTENSION ::= {

 ...

}

-- V

<<<<<<<<<<<<<<<<<<<< Next Change >>>>>>>>>>>>>>>>>>>>

### 9.4.7 Constant Definitions

-- ASN1START

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

--

-- Constant definitions

--

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

NGAP-Constants {

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

ngran-Access (22) modules (3) ngap (1) version1 (1) ngap-Constants (4) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

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

--

-- IE parameter types from other modules.

--

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

IMPORTS

 ProcedureCode,

 ProtocolIE-ID

FROM NGAP-CommonDataTypes;

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

--

-- Elementary Procedures

--

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

id-AMFConfigurationUpdate ProcedureCode ::= 0

id-AMFStatusIndication ProcedureCode ::= 1

id-CellTrafficTrace ProcedureCode ::= 2

id-DeactivateTrace ProcedureCode ::= 3

id-DownlinkNASTransport ProcedureCode ::= 4

id-DownlinkNonUEAssociatedNRPPaTransport ProcedureCode ::= 5

id-DownlinkRANConfigurationTransfer ProcedureCode ::= 6

id-DownlinkRANStatusTransfer ProcedureCode ::= 7

id-DownlinkUEAssociatedNRPPaTransport ProcedureCode ::= 8

id-ErrorIndication ProcedureCode ::= 9

id-HandoverCancel ProcedureCode ::= 10

id-HandoverNotification ProcedureCode ::= 11

id-HandoverPreparation ProcedureCode ::= 12

id-HandoverResourceAllocation ProcedureCode ::= 13

id-InitialContextSetup ProcedureCode ::= 14

id-InitialUEMessage ProcedureCode ::= 15

id-LocationReportingControl ProcedureCode ::= 16

id-LocationReportingFailureIndication ProcedureCode ::= 17

id-LocationReport ProcedureCode ::= 18

id-NASNonDeliveryIndication ProcedureCode ::= 19

id-NGReset ProcedureCode ::= 20

id-NGSetup ProcedureCode ::= 21

id-OverloadStart ProcedureCode ::= 22

id-OverloadStop ProcedureCode ::= 23

id-Paging ProcedureCode ::= 24

id-PathSwitchRequest ProcedureCode ::= 25

id-PDUSessionResourceModify ProcedureCode ::= 26

id-PDUSessionResourceModifyIndication ProcedureCode ::= 27

id-PDUSessionResourceRelease ProcedureCode ::= 28

id-PDUSessionResourceSetup ProcedureCode ::= 29

id-PDUSessionResourceNotify ProcedureCode ::= 30

id-PrivateMessage ProcedureCode ::= 31

id-PWSCancel ProcedureCode ::= 32

id-PWSFailureIndication ProcedureCode ::= 33

id-PWSRestartIndication ProcedureCode ::= 34

id-RANConfigurationUpdate ProcedureCode ::= 35

id-RerouteNASRequest ProcedureCode ::= 36

id-RRCInactiveTransitionReport ProcedureCode ::= 37

id-TraceFailureIndication ProcedureCode ::= 38

id-TraceStart ProcedureCode ::= 39

id-UEContextModification ProcedureCode ::= 40

id-UEContextRelease ProcedureCode ::= 41

id-UEContextReleaseRequest ProcedureCode ::= 42

id-UERadioCapabilityCheck ProcedureCode ::= 43

id-UERadioCapabilityInfoIndication ProcedureCode ::= 44

id-UETNLABindingRelease ProcedureCode ::= 45

id-UplinkNASTransport ProcedureCode ::= 46

id-UplinkNonUEAssociatedNRPPaTransport ProcedureCode ::= 47

id-UplinkRANConfigurationTransfer ProcedureCode ::= 48

id-UplinkRANStatusTransfer ProcedureCode ::= 49

id-UplinkUEAssociatedNRPPaTransport ProcedureCode ::= 50

id-WriteReplaceWarning ProcedureCode ::= 51

id-SecondaryRATDataUsageReport ProcedureCode ::= 52

id-UplinkRIMInformationTransfer ProcedureCode ::= 53

id-DownlinkRIMInformationTransfer ProcedureCode ::= 54

id-UERadioCapabilityIDMappingRequest ProcedureCode ::= 99 -- to be allocated

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

--

-- Extension constants

--

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

maxPrivateIEs INTEGER ::= 65535

maxProtocolExtensions INTEGER ::= 65535

maxProtocolIEs INTEGER ::= 65535

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

--

-- Lists

--

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

 maxnoofAllowedAreas INTEGER ::= 16

 maxnoofAllowedS-NSSAIs INTEGER ::= 8

 maxnoofBPLMNs INTEGER ::= 12

 maxnoofCellIDforWarning INTEGER ::= 65535

 maxnoofCellinAoI INTEGER ::= 256

 maxnoofCellinEAI INTEGER ::= 65535

 maxnoofCellinTAI INTEGER ::= 65535

 maxnoofCellsingNB INTEGER ::= 16384

 maxnoofCellsinngeNB INTEGER ::= 256

 maxnoofCellsinUEHistoryInfo INTEGER ::= 16

 maxnoofCellsUEMovingTrajectory INTEGER ::= 16

 maxnoofDRBs INTEGER ::= 32

 maxnoofEmergencyAreaID INTEGER ::= 65535

 maxnoofEAIforRestart INTEGER ::= 256

 maxnoofEPLMNs INTEGER ::= 15

 maxnoofEPLMNsPlusOne INTEGER ::= 16

 maxnoofE-RABs INTEGER ::= 256

 maxnoofErrors INTEGER ::= 256

 maxnoofForbTACs INTEGER ::= 4096

 maxnoofMultiConnectivity INTEGER ::= 4

 maxnoofMultiConnectivityMinusOne INTEGER ::= 3

 maxnoofNGConnectionsToReset INTEGER ::= 65536

 maxnoofPDUSessions INTEGER ::= 256

 maxnoofPLMNs INTEGER ::= 12

 maxnoofQosFlows INTEGER ::= 64

 maxnoofRANNodeinAoI INTEGER ::= 64

 maxnoofRecommendedCells INTEGER ::= 16

 maxnoofRecommendedRANNodes INTEGER ::= 16

 maxnoofAoI INTEGER ::= 64

 maxnoofServedGUAMIs INTEGER ::= 256

 maxnoofSliceItems INTEGER ::= 1024

 maxnoofTACs INTEGER ::= 256

 maxnoofTAIforInactive INTEGER ::= 16

 maxnoofTAIforPaging INTEGER ::= 16

 maxnoofTAIforRestart INTEGER ::= 2048

 maxnoofTAIforWarning INTEGER ::= 65535

 maxnoofTAIinAoI INTEGER ::= 16

 maxnoofTimePeriods INTEGER ::= 2

 maxnoofTNLAssociations INTEGER ::= 32

 maxnoofXnExtTLAs INTEGER ::= 16

 maxnoofXnGTP-TLAs INTEGER ::= 16

 maxnoofXnTLAs INTEGER ::= 2

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

--

-- IEs

--

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

 id-AllowedNSSAI ProtocolIE-ID ::= 0

 id-AMFName ProtocolIE-ID ::= 1

 id-AMFOverloadResponse ProtocolIE-ID ::= 2

 id-AMFSetID ProtocolIE-ID ::= 3

 id-AMF-TNLAssociationFailedToSetupList ProtocolIE-ID ::= 4

 id-AMF-TNLAssociationSetupList ProtocolIE-ID ::= 5

 id-AMF-TNLAssociationToAddList ProtocolIE-ID ::= 6

 id-AMF-TNLAssociationToRemoveList ProtocolIE-ID ::= 7

 id-AMF-TNLAssociationToUpdateList ProtocolIE-ID ::= 8

 id-AMFTrafficLoadReductionIndication ProtocolIE-ID ::= 9

 id-AMF-UE-NGAP-ID ProtocolIE-ID ::= 10

 id-AssistanceDataForPaging ProtocolIE-ID ::= 11

 id-BroadcastCancelledAreaList ProtocolIE-ID ::= 12

 id-BroadcastCompletedAreaList ProtocolIE-ID ::= 13

 id-CancelAllWarningMessages ProtocolIE-ID ::= 14

 id-Cause ProtocolIE-ID ::= 15

 id-CellIDListForRestart ProtocolIE-ID ::= 16

 id-ConcurrentWarningMessageInd ProtocolIE-ID ::= 17

 id-CoreNetworkAssistanceInformationForInactive ProtocolIE-ID ::= 18

 id-CriticalityDiagnostics ProtocolIE-ID ::= 19

 id-DataCodingScheme ProtocolIE-ID ::= 20

 id-DefaultPagingDRX ProtocolIE-ID ::= 21

 id-DirectForwardingPathAvailability ProtocolIE-ID ::= 22

 id-EmergencyAreaIDListForRestart ProtocolIE-ID ::= 23

 id-EmergencyFallbackIndicator ProtocolIE-ID ::= 24

 id-EUTRA-CGI ProtocolIE-ID ::= 25

 id-FiveG-S-TMSI ProtocolIE-ID ::= 26

 id-GlobalRANNodeID ProtocolIE-ID ::= 27

 id-GUAMI ProtocolIE-ID ::= 28

 id-HandoverType ProtocolIE-ID ::= 29

 id-IMSVoiceSupportIndicator ProtocolIE-ID ::= 30

 id-IndexToRFSP ProtocolIE-ID ::= 31

 id-InfoOnRecommendedCellsAndRANNodesForPaging ProtocolIE-ID ::= 32

 id-LocationReportingRequestType ProtocolIE-ID ::= 33

 id-MaskedIMEISV ProtocolIE-ID ::= 34

 id-MessageIdentifier ProtocolIE-ID ::= 35

 id-MobilityRestrictionList ProtocolIE-ID ::= 36

 id-NASC ProtocolIE-ID ::= 37

 id-NAS-PDU ProtocolIE-ID ::= 38

 id-NASSecurityParametersFromNGRAN ProtocolIE-ID ::= 39

 id-NewAMF-UE-NGAP-ID ProtocolIE-ID ::= 40

 id-NewSecurityContextInd ProtocolIE-ID ::= 41

 id-NGAP-Message ProtocolIE-ID ::= 42

 id-NGRAN-CGI ProtocolIE-ID ::= 43

 id-NGRANTraceID ProtocolIE-ID ::= 44

 id-NR-CGI ProtocolIE-ID ::= 45

 id-NRPPa-PDU ProtocolIE-ID ::= 46

 id-NumberOfBroadcastsRequested ProtocolIE-ID ::= 47

 id-OldAMF ProtocolIE-ID ::= 48

 id-OverloadStartNSSAIList ProtocolIE-ID ::= 49

 id-PagingDRX ProtocolIE-ID ::= 50

 id-PagingOrigin ProtocolIE-ID ::= 51

 id-PagingPriority ProtocolIE-ID ::= 52

 id-PDUSessionResourceAdmittedList ProtocolIE-ID ::= 53

 id-PDUSessionResourceFailedToModifyListModRes ProtocolIE-ID ::= 54

 id-PDUSessionResourceFailedToSetupListCxtRes ProtocolIE-ID ::= 55

 id-PDUSessionResourceFailedToSetupListHOAck ProtocolIE-ID ::= 56

 id-PDUSessionResourceFailedToSetupListPSReq ProtocolIE-ID ::= 57

 id-PDUSessionResourceFailedToSetupListSURes ProtocolIE-ID ::= 58

 id-PDUSessionResourceHandoverList ProtocolIE-ID ::= 59

 id-PDUSessionResourceListCxtRelCpl ProtocolIE-ID ::= 60

 id-PDUSessionResourceListHORqd ProtocolIE-ID ::= 61

 id-PDUSessionResourceModifyListModCfm ProtocolIE-ID ::= 62

 id-PDUSessionResourceModifyListModInd ProtocolIE-ID ::= 63

 id-PDUSessionResourceModifyListModReq ProtocolIE-ID ::= 64

 id-PDUSessionResourceModifyListModRes ProtocolIE-ID ::= 65

 id-PDUSessionResourceNotifyList ProtocolIE-ID ::= 66

 id-PDUSessionResourceReleasedListNot ProtocolIE-ID ::= 67

 id-PDUSessionResourceReleasedListPSAck ProtocolIE-ID ::= 68

 id-PDUSessionResourceReleasedListPSFail ProtocolIE-ID ::= 69

 id-PDUSessionResourceReleasedListRelRes ProtocolIE-ID ::= 70

 id-PDUSessionResourceSetupListCxtReq ProtocolIE-ID ::= 71

 id-PDUSessionResourceSetupListCxtRes ProtocolIE-ID ::= 72

 id-PDUSessionResourceSetupListHOReq ProtocolIE-ID ::= 73

 id-PDUSessionResourceSetupListSUReq ProtocolIE-ID ::= 74

 id-PDUSessionResourceSetupListSURes ProtocolIE-ID ::= 75

 id-PDUSessionResourceToBeSwitchedDLList ProtocolIE-ID ::= 76

 id-PDUSessionResourceSwitchedList ProtocolIE-ID ::= 77

 id-PDUSessionResourceToReleaseListHOCmd ProtocolIE-ID ::= 78

 id-PDUSessionResourceToReleaseListRelCmd ProtocolIE-ID ::= 79

 id-PLMNSupportList ProtocolIE-ID ::= 80

 id-PWSFailedCellIDList ProtocolIE-ID ::= 81

 id-RANNodeName ProtocolIE-ID ::= 82

 id-RANPagingPriority ProtocolIE-ID ::= 83

 id-RANStatusTransfer-TransparentContainer ProtocolIE-ID ::= 84

 id-RAN-UE-NGAP-ID ProtocolIE-ID ::= 85

 id-RelativeAMFCapacity ProtocolIE-ID ::= 86

 id-RepetitionPeriod ProtocolIE-ID ::= 87

 id-ResetType ProtocolIE-ID ::= 88

 id-RoutingID ProtocolIE-ID ::= 89

 id-RRCEstablishmentCause ProtocolIE-ID ::= 90

 id-RRCInactiveTransitionReportRequest ProtocolIE-ID ::= 91

 id-RRCState ProtocolIE-ID ::= 92

 id-SecurityContext ProtocolIE-ID ::= 93

 id-SecurityKey ProtocolIE-ID ::= 94

 id-SerialNumber ProtocolIE-ID ::= 95

 id-ServedGUAMIList ProtocolIE-ID ::= 96

 id-SliceSupportList ProtocolIE-ID ::= 97

 id-SONConfigurationTransferDL ProtocolIE-ID ::= 98

 id-SONConfigurationTransferUL ProtocolIE-ID ::= 99

 id-SourceAMF-UE-NGAP-ID ProtocolIE-ID ::= 100

 id-SourceToTarget-TransparentContainer ProtocolIE-ID ::= 101

 id-SupportedTAList ProtocolIE-ID ::= 102

 id-TAIListForPaging ProtocolIE-ID ::= 103

 id-TAIListForRestart ProtocolIE-ID ::= 104

 id-TargetID ProtocolIE-ID ::= 105

 id-TargetToSource-TransparentContainer ProtocolIE-ID ::= 106

 id-TimeToWait ProtocolIE-ID ::= 107

 id-TraceActivation ProtocolIE-ID ::= 108

 id-TraceCollectionEntityIPAddress ProtocolIE-ID ::= 109

 id-UEAggregateMaximumBitRate ProtocolIE-ID ::= 110

 id-UE-associatedLogicalNG-connectionList ProtocolIE-ID ::= 111

 id-UEContextRequest ProtocolIE-ID ::= 112

 id-UE-NGAP-IDs ProtocolIE-ID ::= 114

 id-UEPagingIdentity ProtocolIE-ID ::= 115

 id-UEPresenceInAreaOfInterestList ProtocolIE-ID ::= 116

 id-UERadioCapability ProtocolIE-ID ::= 117

 id-UERadioCapabilityForPaging ProtocolIE-ID ::= 118

 id-UESecurityCapabilities ProtocolIE-ID ::= 119

 id-UnavailableGUAMIList ProtocolIE-ID ::= 120

 id-UserLocationInformation ProtocolIE-ID ::= 121

 id-WarningAreaList ProtocolIE-ID ::= 122

 id-WarningMessageContents ProtocolIE-ID ::= 123

 id-WarningSecurityInfo ProtocolIE-ID ::= 124

 id-WarningType ProtocolIE-ID ::= 125

 id-AdditionalUL-NGU-UP-TNLInformation ProtocolIE-ID ::= 126

 id-DataForwardingNotPossible ProtocolIE-ID ::= 127

 id-DL-NGU-UP-TNLInformation ProtocolIE-ID ::= 128

 id-NetworkInstance ProtocolIE-ID ::= 129

 id-PDUSessionAggregateMaximumBitRate ProtocolIE-ID ::= 130

 id-PDUSessionResourceFailedToModifyListModCfm ProtocolIE-ID ::= 131

 id-PDUSessionResourceFailedToSetupListCxtFail ProtocolIE-ID ::= 132

 id-PDUSessionResourceListCxtRelReq ProtocolIE-ID ::= 133

 id-PDUSessionType ProtocolIE-ID ::= 134

 id-QosFlowAddOrModifyRequestList ProtocolIE-ID ::= 135

 id-QosFlowSetupRequestList ProtocolIE-ID ::= 136

 id-QosFlowToReleaseList ProtocolIE-ID ::= 137

 id-SecurityIndication ProtocolIE-ID ::= 138

 id-UL-NGU-UP-TNLInformation ProtocolIE-ID ::= 139

 id-UL-NGU-UP-TNLModifyList ProtocolIE-ID ::= 140

 id-WarningAreaCoordinates ProtocolIE-ID ::= 141

 id-PDUSessionResourceSecondaryRATUsageList ProtocolIE-ID ::= 142

 id-HandoverFlag ProtocolIE-ID ::= 143

 id-SecondaryRATUsageInformation ProtocolIE-ID ::= 144

 id-PDUSessionResourceReleaseResponseTransfer ProtocolIE-ID ::= 145

 id-RedirectionVoiceFallback ProtocolIE-ID ::= 146

 id-UERetentionInformation ProtocolIE-ID ::= 147

 id-S-NSSAI ProtocolIE-ID ::= 148

 id-PSCellInformation ProtocolIE-ID ::= 149

 id-LastEUTRAN-PLMNIdentity ProtocolIE-ID ::= 150

 id-MaximumIntegrityProtectedDataRate-DL ProtocolIE-ID ::= 151

 id-AdditionalDLForwardingUPTNLInformation ProtocolIE-ID ::= 152

 id-AdditionalDLUPTNLInformationForHOList ProtocolIE-ID ::= 153

 id-AdditionalNGU-UP-TNLInformation ProtocolIE-ID ::= 154

 id-AdditionalDLQosFlowPerTNLInformation ProtocolIE-ID ::= 155

 id-SecurityResult ProtocolIE-ID ::= 156

 id-ENDC-SONConfigurationTransferDL ProtocolIE-ID ::= 157

 id-ENDC-SONConfigurationTransferUL ProtocolIE-ID ::= 158

 id-OldAssociatedQosFlowList-ULendmarkerexpected ProtocolIE-ID ::= 159

 id-CNTypeRestrictionsForEquivalent ProtocolIE-ID ::= 160

 id-CNTypeRestrictionsForServing ProtocolIE-ID ::= 161

 id-NewGUAMI ProtocolIE-ID ::= 162

 id-ULForwarding ProtocolIE-ID ::= 163

 id-ULForwardingUP-TNLInformation ProtocolIE-ID ::= 164

 id-CNAssistedRANTuning ProtocolIE-ID ::= 165

 id-CommonNetworkInstance ProtocolIE-ID ::= 166

 id-NGRAN-TNLAssociationToRemoveList ProtocolIE-ID ::= 167

 id-TNLAssociationTransportLayerAddressNGRAN ProtocolIE-ID ::= 168

 id-EndpointIPAddressAndPort ProtocolIE-ID ::= 169

 id-LocationReportingAdditionalInfo ProtocolIE-ID ::= 170

 id-SourceToTarget-AMFInformationReroute ProtocolIE-ID ::= 171

 id-AdditionalULForwardingUPTNLInformation ProtocolIE-ID ::= 172

 id-SCTP-TLAs ProtocolIE-ID ::= 173

 id-DataForwardingResponseERABList ProtocolIE-ID ::= 174

 id-RIMInformationTransfer ProtocolIE-ID ::= 175

 id-GUAMIType ProtocolIE-ID ::= 176

 id-UERadioCapabilityID ProtocolIE-ID ::= 999 -- to be assigned

END

-- ASN1STOP

<<<<<<<<<<<<<<<<<<<< End of Changes >>>>>>>>>>>>>>>>>>>>