**3GPP TSG-RAN WG3 #124 R3-243898**

**Fukuoka, Japan, 20th – 24th May 2024**

**Agenda Item: 21.2**

**Source: NEC, Nokia, Nokia Shanghai Bell, Ericsson, Huawei, ZTE, Xiaomi, Samsung**

**Title****: (TP to BL CR for TS 38.423) PSI-Based SDU Discarding**

**Document for: Agreement**

# 1. Introduction

This is the TP as proposed in R3-2403240.

**Proposal 1: to add *PSI based SDU Discard UL* IE with ENUMERATED (start, stop, …) in the *PDU Session Resource Setup Response Info – SN terminated* IE, *PDU Session Resource Setup Info – MN terminated* IE, *PDU Session Resource Modification Response Info – SN terminated* IE and *PDU Session Resource Modification Info – MN terminated* IE.**

**TP to add *PSI based SDU Discard UL* IE with ENUMERATED (start, stop, …) is shown in the Annex: (TP to TS 38.423 on Support of XR in DC) PSI based discard**

# Reference

[1] RP-240791 Revised WID on XR (eXtended Reality) for NR Phase 3

[2] Baseline CR 38.423 in [R3-242241](https://www.3gpp.org/ftp/tsg_ran/WG3_Iu/TSGR3_123bis/Docs/R3-242241.zip)

[3] Baseline CR 37.340 in [R3-242192](https://www.3gpp.org/ftp/tsg_ran/WG3_Iu/TSGR3_123bis/Docs/R3-242192.zip)

**Annex: (TP to TS 38.423 on Support of XR in DC) PSI based discard**

8.3.1 S-NG-RAN node Addition Preparation

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8.3.1.2 Successful Operation

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**Figure 8.3.1.2-1: S-NG-RAN node Addition Preparation, successful operation**

The M-NG-RAN node initiates the procedure by sending the S-NODE ADDITION REQUEST message to the S-NG-RAN node.

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If the S-NODE ADDITION REQUEST message contains the *IAB Authorization status* IE, the S-NG-RAN node shall, if supported, store it and use it as defined in TS 38.401[2].

For each QoS flow, if the *PDU Set QoS Parameters* IE is included in the *QoS Flow Level QoS Parameters* IE in the *PDU Session Resource Setup Info – SN terminated* IE of the S-NODE ADDITION REQUEST message, the S-NG-RAN node shall, if supported, store this information and use it as specified in TS 23.501 [7].

For each DRB configured as MN-terminated split bearer/SCG bearer, if the *PDU Set QoS Parameters* IE is included in the *DRB QoS* IE in the *PDU Session Resource Setup Info – MN terminated* IE of the S-NODE ADDITION REQUEST message, the S-NG-RAN node shall, if supported, store this information and use it as specified in TS 23.501 [7].

For each DRB configured as MN-terminated split bearer/SCG bearer, if the *ECN Marking or Congestion Information Reporting Request* IE is included in the *PDU Session Resource Setup Info – MN terminated* IE contained in the S-NODE ADDITION REQUEST message, the S-NG-RAN node shall, if supported, use it accordingly for the specific DRB. If the *ECN Marking or Congestion Information Reporting Status* IE is included in the *PDU Session Resource Setup Response Info – MN terminated* IE, the M-NG-RAN node shall, if supported, use it to deduce if ECN marking or congestion information reporting is active or not active.

For each DRB configured as MN-terminated split bearer/SCG bearer, if the *PSI based SDU Discard UL* IE is included in the *PDU Session Resource Setup Info – MN terminated* IE contained in the S-NODE ADDITION REQUEST message, the S-NG-RAN node shall, if supported, use it accordingly for the specific DRB.

For each DRB configured as SN-terminated split bearer/MCG bearer, if the *PSI based SDU Discard UL* IE is included in the *PDU Session Resource Setup Response Info – SN terminated* IE contained in the S-NODE ADDITION REQUEST ACKNOWLEDGE message, the M-NG-RAN node shall, if supported, use it accordingly for the specific DRB.

**Interactions with the S-NG-RAN node Reconfiguration Completion procedure:**

If the S-NG-RAN node admits at least one PDU session resource, the S-NG-RAN node shall start the timer TXnDCoverall when sending the S-NODE ADDITION REQUEST ACKNOWLEDGE message to the M-NG-RAN node except for a request for conditional configuration. The reception of the S-NODE RECONFIGURATION COMPLETE message shall stop the timer TXnDCoverall if TXnDCoverall is running.

**Interaction with the Activity Notification procedure**

Upon receiving an S-NODE ADDITION REQUEST message containing the *Desired Activity Notification Level* IE, the S-NG-RAN node shall, if supported, use this information to decide whether to trigger subsequent Activation Notification procedures according to the requested notification level.

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8.3.3 M-NG-RAN node initiated S-NG-RAN node Modification Preparation

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8.3.3.2 Successful Operation

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**Figure 8.3.3.2-1: M-NG-RAN node initiated S-NG-RAN node Modification Preparation, successful operation**

The M-NG-RAN node initiates the procedure by sending the S-NODE MODIFICATION REQUEST message to the S-NG-RAN node.

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If the S-NODE MODIFICATION REQUEST message contains the *IAB Authorization status* IE, the S-NG-RAN node shall, if supported, store it and use it as defined in TS 38.401[2].

For each QoS flow, if the *PDU Set QoS Parameters* IE is included in the *QoS Flow Level QoS Parameters* IE in the *PDU Session Resource Setup Info – SN terminated* IE or the *PDU Session Resource Modification Info – SN terminated* IE of the S-NODE MODIFICATION REQUEST message, the S-NG-RAN node shall, if supported, store this information and use it as specified in TS 23.501 [7].

For each DRB configured as MN-terminated split bearer/SCG bearer, if the *PDU Set QoS Parameters* IE is included in the *DRB QoS* IE in the *PDU Session Resource Setup Info – MN terminated* IE or the *PDU Session Resource Modification Info – MN terminated* IE of the S-NODE MODIFICATION REQUEST message, the S-NG-RAN node shall, if supported, store this information and use it as specified in TS 23.501 [7].

For each DRB configured as MN-terminated split bearer/SCG bearer, if the *ECN Marking or Congestion Information Reporting Request* IE is included in the *PDU Session Resource Setup Info – MN terminated* IE or the *PDU Session Resource Modification Info – MN terminated* IE contained in the S-NODE MODIFICATION REQUEST message, the S-NG-RAN node shall, if supported, use it accordingly for the specific DRB. If the *ECN Marking or Congestion Information Reporting Status* IE is included in the *PDU Session Resource Setup Response Info – MN terminated* IE or the *PDU Session Resource Modification Response Info – MN terminated* IE, the M-NG-RAN node shall, if supported, use it to deduce if ECN marking or congestion information reporting is active or not active.

For each DRB configured as MN-terminated split bearer/SCG bearer, if the *PSI based SDU Discard UL* IE is included in the *PDU Session Resource Modification Info – MN terminated* IE contained in the S-NODE MODIFICATION REQUEST message, the S-NG-RAN node shall, if supported, use it accordingly for the specific DRB.

For each DRB configured as SN-terminated split bearer/MCG bearer, if the *PSI based SDU Discard UL* IE is included in the *PDU Session Resource Modification Response Info – SN terminated* IE contained in the S-NODE MODIFICATION REQUEST ACKNOWLEDGE message, the M-NG-RAN node shall, if supported, use it accordingly for the specific DRB.

**Interactions with the S-NG-RAN node Reconfiguration Completion procedure:**

If the S-NG-RAN node admits a modification of the UE context requiring the M-NG-RAN node to report about the success of the RRC connection reconfiguration procedure, the S-NG-RAN node shall start the timer TXnDCoverall when sending the S-NODE MODIFICATION REQUEST ACKNOWLEDGE message to the M-NG-RAN node except for a request for conditional configuration. The reception of the S-NG-RAN node RECONFIGURATION COMPLETE message shall stop the timer TXnDCoverall if TXnDCoverall is running.

**Interaction with the Activity Notification procedure**

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

**Interaction with the Xn-U Address Indication procedure**

For QoS flow mapped to DRBs configured with an SN terminated bearer option and removed from the SDAP in the S-NG-RAN node the S-NG-RAN node may provide data forwarding related information in the S-NODE MODIFICATION REQUEST ACKNOWLEDGE within the *Data Forwarding and offloading Info from source NG-RAN node* IE, in which case the M-NG-RAN node may decide to provide data forwarding addresses to the S-NG-RAN node and trigger the Xn-U Address Indication procedure as specified in TS 37.340 [8].

For QoS flow offloading from the S-NG-RAN node to the M-NG-RAN, the S-NG-RAN node may provide the data forwarding related information in the S-NODE MODIFICATION REQUEST ACKNOWLEDGE within the *Data Forwarding and offloading Info from source NG-RAN node* IE, in which case the M-NG-RAN node may decide to provide data forwarding addresses to the S-NG-RAN node and trigger the Xn-U Address Indication procedure as specified in TS 37.340 [8].

**Interactions with the S-NG-RAN node initiated S-NG-RAN node Modification:**

If the *SN triggered* IE set to "TRUE" is included in the S-NODE MODIFICATION REQUEST message, the S-NG-RAN node shall consider that the procedure has been initiated in response to the previously initiated S-NG-RAN node initiated S-NG-RAN node Modification procedure.

**Interaction with the Path Switch Request procedure as specified in TS 38.413 [5]:**

For a split PDU session, if the *Integrity Protection Indication* IE and/or the *Confidentiality Protection Indication* IE included in the PATH SWITCH REQUEST ACKNOWLEDGE message is set to "preferred", the M-NG-RAN node may keep the current UP integrity protection and ciphering policy.

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### 9.2.1 Container and List IE definitions

#### 9.2.1.6 PDU Session Resource Setup Response Info – SN terminated

This IE contains the result of the addition of S-NG-RAN node resources related to a PDU session for DRBs configured with an SN terminated bearer option.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| --- | --- | --- | --- | --- | --- | --- |
| DL NG-U UP TNL Information at NG-RAN | M |  | UP Transport Layer Information  9.2.3.30 | S-NG-RAN node endpoint of the NG transport bearer. For delivery of DL PDUs. | – |  |
| **DRBs To Be Setup List** |  | *0..1* |  |  | – |  |
| **>DRBs to Be Setup Item** |  | *1 .. <maxnoofDRBs>* |  |  | – |  |
| >>DRB ID | M |  | 9.2.3.33 |  | – |  |
| >>SN UL PDCP UP TNL Information | M |  | UP Transport Parameters  9.2.3.76 | S-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs. | – |  |
| >>DRB QoS | M |  | QoS Flow Level QoS Parameters  9.2.3.5 |  | – |  |
| >>PDCP SN Length | O |  | 9.2.3.63 | Indicates the PDCP SN length of the DRB. | – |  |
| >>RLC Mode | M |  | 9.2.3.28 | Indicates the RLC mode to be used in the assisting node. | – |  |
| >>secondary SN UL PDCP UP TNL Information | O |  | UP Transport Parameters  9.2.3.76 | S-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs in case of PDCP duplication. | – |  |
| >>Duplication Activation | O |  | 9.2.3.71 | Information on the initial state of UL PDCP duplication.  This IE is ignored if the *RLC Duplication Information* IE is present. | – |  |
| >>UL Configuration | O |  | 9.2.3.75 | Information about UL usage in the M-NG-RAN node. This IE is used when the concerned DRB has both MCG resource and SCG resource configured i.e. the concerned DRB is configured as split bearer. | – |  |
| **>>QoS Flows Mapped To DRB List** |  | *1* |  |  | – |  |
| **>>>QoS Flows Mapped To DRB Item** |  | *1 .. <maxnoofQoSFlows>* |  |  | – |  |
| >>>>QoS Flow Identifier | M |  | 9.2.3.10 |  | – |  |
| >>>>MCG requested GBR QoS Flow Information | O |  | GBR QoS Flow Information  9.2.3.6 | This IE contains GBR QoS Flow Information necessary for the MCG part. | – |  |
| >>>>QoS Flow Mapping Indication | O |  | 9.2.3.79 |  | – |  |
| >>>>Current QoS Parameters Set Index | O |  | Alternative QoS Parameters Set Index  9.2.3.103 |  | YES | ignore |
| >>>>Source DL Forwarding IP Address | O |  | Transport Layer Address  9.2.3.29 | Identifies the TNL address used by the source node for data forwarding. | YES | ignore |
| **>>Additional PDCP Duplication TNL List** |  | *0..1* |  |  | YES | ignore |
| **>>>Additional PDCP Duplication TNL Item** |  | *1 .. <maxnoofAdditionalPDCPDuplicationTNL>* |  |  | – |  |
| >>>>Additional PDCP Duplication UP TNL Information | M |  | UP Transport Layer Information  9.2.3.30 | S-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs in case of additional PDCP duplication. | – |  |
| >>RLC Duplication Information | O |  | 9.2.3.111 | . | – |  |
| >>PSI based SDU Discard UL | O |  | ENUMERATED (start, stop, …) | Indicates whether UL PSI based SDU discard is (re)configured or released for the DRB. The codepoint “start” means that UL PSI based discarding is (re)configured, while the codepoint “stop” means that UL PSI based discarding is released. Up to 8 DRBs can be set as “start”. | YES | ignore |
| Data Forwarding Info from target NG-RAN node | O |  | 9.2.1.16 |  | – |  |
| QoS Flows Not Admitted List | O |  | QoS Flow List with Cause  9.2.1.4 |  | – |  |
| Security Result | O |  | 9.2.3.67 |  | – |  |
| DRB IDs taken into use | O |  | DRB List  9.2.1.29 | Indicating the DRB IDs taken into use by the target NG-RAN node, as specified in TS 37.340 [8]. | YES | reject |
| Redundant DL NG-U UP TNL Information at NG-RAN | O |  | UP Transport Layer Information  9.2.3.30 | S-NG-RAN node endpoint of the NG transport bearer. For delivery of DL PDUs for the redundant transmission. | YES | ignore |
| Used RSN Information | O |  | Redundant PDU Session Information  9.2.3.112 |  | YES | ignore |
| Data Forwarding and Offloading Info from source NG-RAN node | O |  | 9.2.1.17 | Contains data forwarding proposal for S-CPAC, to be used later when the S-NG-RAN node is selected for access. | YES | ignore |

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| --- | --- |
| Range bound | Explanation |
| maxnoofDRBs | Maximum no. of DRBs allowed towards one UE. Value is 32. |
| maxnoofQoSFlows | Maximum no. of QoS flows. Value is 64 |
| maxnoofAdditionalPDCPDuplicationTNL | Maximum no. of additional PDCP Duplication TNL. Value is 2. |

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#### 9.2.1.7 PDU Session Resource Setup Info – MN terminated

This IE contains information for the addition of S-NG-RAN node resources related to a PDU session for DRBs configured with an MN terminated bearer option.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| --- | --- | --- | --- | --- | --- | --- |
| PDU Session Type | M |  | 9.2.3.19 |  | – |  |
| **DRBs To Be Setup List** |  | *1* |  |  | – |  |
| **>DRBs to Be Setup Item** |  | *1 .. <maxnoofDRBs>* |  |  | – |  |
| >>DRB ID | M |  | 9.2.3.33 |  | – |  |
| >>MN UL PDCP UP TNL Information | M |  | UP Transport Parameters  9.2.3.76 | M-NG-RAN node endpoint(s) of a DRB’s Xn-U transport bearer at its PDCP resource. For delivery of UL PDUs. | – |  |
| >>RLC Mode | M |  | 9.2.3.28 | Indicates the RLC mode to be used in the assisting node. | – |  |
| >>UL Configuration | O |  | 9.2.3.75 | Information about UL usage in the S-NG-RAN node. This IE is used when the concerned DRB has both MCG resource and SCG resource configured i.e. the concerned DRB is configured as split bearer. | – |  |
| >>DRB QoS | M |  | QoS Flow Level QoS Parameters  9.2.3.5 |  | – |  |
| >>PDCP SN Length | O |  | 9.2.3.63 | Indicates the PDCP SN length of the DRB. | – |  |
| >>secondary MN UL PDCP UP TNL Information | O |  | UP Transport Parameters 9.2.3.76 | M-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs in case of PDCP duplication. | – |  |
| >>Duplication Activation | O |  | 9.2.3.71 | Information on the initial state of UL PDCP duplication.  This IE is ignored if the *RLC Duplication Information* IE is present. | – |  |
| **>>QoS Flows Mapped To DRB List** |  | *1* |  |  | – |  |
| **>>>QoS Flows Mapped To DRB Item** |  | *1 .. <maxnoofQoSFlows>* |  |  | – |  |
| >>>>QoS Flow Identifier | M |  | 9.2.3.10 |  | – |  |
| >>>>QoS Flow Level QoS Parameters | M |  | 9.2.3.5 |  | – |  |
| >>>>QoS Flow Mapping Indication | O |  | 9.2.3.79 |  | – |  |
| >>>>TSC Traffic Characteristics | O |  | 9.2.3.114 | Traffic pattern information associated with the QFI. Details in TS 23.501 [7]. | YES | ignore |
| **>>Additional PDCP Duplication TNL List** |  | *0..1* |  |  | YES | ignore |
| **>>>Additional PDCP Duplication TNL Item** |  | *1 .. <maxnoofAdditionalPDCPDuplicationTNL>* |  |  | – |  |
| >>>>Additional PDCP Duplication UP TNL Information | M |  | UP Transport Layer Information  9.2.3.30 | M-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs in case of additional PDCP duplication. | – |  |
| >>RLC Duplication Information | O |  | 9.2.3.111 |  | YES | ignore |
| >>ECN Marking or Congestion Information Reporting Request | O |  | 9.2.3.205 |  | YES | ignore |
| >>PSI based SDU Discard UL | O |  | ENUMERATED (start, stop, …) | Indicates whether UL PSI based SDU discard is (re)configured or released for the DRB. The codepoint “start” means that UL PSI based discarding is (re)configured, while the codepoint “stop” means that UL PSI based discarding is released. Up to 8 DRBs can be set as “start”. | YES | ignore |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofDRBs | Maximum no. of DRBs allowed towards one UE. Value is 32. |
| maxnoofQoSFlows | Maximum no. of QoS flows allowed within one PDU session. Value is 64. |
| maxnoofAdditionalPDCPDuplicationTNL | Maximum no. of additional PDCP Duplication TNL. Value is 2. |

#### 9.2.1.8 PDU Session Resource Setup Response Info – MN terminated

This IE contains the result of the addition of S-NG-RAN node resources related to a PDU session for DRBs configured with an MN terminated bearer option.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| --- | --- | --- | --- | --- | --- | --- |
| **DRBs Admitted List** |  | *1* |  |  | – |  |
| **>DRBs Admitted Item** |  | *1 .. <maxnoofDRBs>* |  |  | – |  |
| >>DRB ID | M |  | 9.2.3.33 |  | – |  |
| >>SN DL SCG UP TNL Information | M |  | UP Transport Parameters  9.2.3.76 | S-NG-RAN node GTP-U tunnel endpoint(s) of the DRB’s Xn transport at its Lower Layer SCG resource. For delivery of DL PDUs. | – |  |
| >>secondary SN DL SCG UP TNL Information | O |  | UP Transport Parameters  9.2.3.76 | S-NG-RAN node GTP-U tunnel endpoint(s) of the DRB’s Xn transport at its Lower Layer SCG resource. For delivery of DL PDUs in case of PDCP duplication. | – |  |
| >>LCID | O |  | 9.2.3.70 | LCID for primary path or LCID for split secondary path for fallback to split bearer if PDCP duplication is applied | – |  |
| **>>Additional PDCP Duplication TNL List** |  | *0..1* |  |  | YES | ignore |
| **>>>Additional PDCP Duplication TNL Item** |  | *1 .. <maxnoofAdditionalPDCPDuplicationTNL>* |  |  | – |  |
| >>>>Additional PDCP Duplication UP TNL Information | M |  | UP Transport Layer Information  9.2.3.30 | S-NG-RAN node GTP-U tunnel endpoint(s) of the DRB’s Xn transport at its Lower Layer SCG resource. For delivery of DL PDUs in case of additional PDCP duplication. | – |  |
| **>>QoS Flows Mapped To DRB List** |  | *0..1* |  |  | YES | ignore |
| **>>>QoS Flows Mapped To DRB Item** |  | *1 .. <maxnoofQoSFlows>* |  |  | – |  |
| >>>>QoS Flow Identifier | M |  | 9.2.3.10 |  | – |  |
| >>>>Current QoS Parameters Set Index | M |  | Alternative QoS Parameters Set Index  9.2.3.103 |  | – |  |
| >>ECN Marking or Congestion Information Reporting Status | O |  | 9.2.3.x1 |  | YES | ignore |
| DRBs Not Admitted To Be Setup or Modified List | O |  | DRB List with Cause  9.2.1.28 |  | YES | ignore |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofDRBs | Maximum no. of DRBs allowed towards one UE. Value is 32. |
| maxnoofAdditionalPDCPDuplicationTNL | Maximum no. of additional PDCP Duplication TNL. Value is 2 |

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#### 9.2.1.10 PDU Session Resource Modification Response Info – SN terminated

This IE contains the PDU session resource related result of an M-NG-RAN node initiated request to modify DRBs configured with an SN terminated bearer option.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| --- | --- | --- | --- | --- | --- | --- |
| DL NG-U UP TNL Information at NG-RAN | O |  | UP Transport Layer Information  9.2.3.30 | S-NG-RAN node endpoint of the NG transport bearer. For delivery of DL PDUs. | – |  |
| **DRBs To Be Setup List** |  | *0..1* |  |  | – |  |
| **>DRBs to Be Setup Item** |  | *1 .. <maxnoofDRBs>* |  |  | – |  |
| >>DRB ID | M |  | 9.2.3.33 |  | – |  |
| >>SN UL PDCP UP TNL Information | M |  | UP Transport Parameters  9.2.3.76 | S-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs. | – |  |
| >>DRB QoS | M |  | QoS Flow Level QoS Parameters  9.2.3.5 |  | – |  |
| >>PDCP SN Length | O |  | 9.2.3.63 | Indicates the PDCP SN length of the DRB. | – |  |
| >>RLC Mode | M |  | 9.2.3.28 | Indicates the RLC mode to be used in the assisting node. | – |  |
| >>secondary SN UL PDCP UP TNL Information | O |  | UP Transport Parameters  9.2.3.76 | S-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs in case of PDCP duplication. | – |  |
| >>Duplication Activation | O |  | 9.2.3.71 | Information on the initial state of UL PDCP duplication.  This IE is ignored if the *RLC Duplication Information* IE is present. | – |  |
| >>UL Configuration | O |  | 9.2.3.75 | Information about UL usage in the M-NG-RAN node. This IE is used when the concerned DRB has both MCG resource and SCG resource configured i.e. the concerned DRB is configured as split bearer. | – |  |
| **>>QoS Flows Mapped To DRB List** |  | *1* |  |  | – |  |
| **>>>QoS Flows Mapped To DRB Item** |  | *1 .. <maxnoofQoSFlows>* |  |  | – |  |
| >>>>QoS Flow Identifier | M |  | 9.2.3.10 |  | – |  |
| >>>>MCG requested GBR QoS Flow Information | O |  | GBR QoS Flow Information  9.2.3.6 | This IE contains GBR QoS Flow Information necessary for the MCG part. | – |  |
| >>>>QoS Flow Mapping Indication | O |  | 9.2.3.79 |  | – |  |
| >>>>Current QoS Parameters Set Index | O |  | Alternative QoS Parameters Set Index  9.2.3.103 |  | YES | ignore |
| >>>>Source DL Forwarding IP Address | O |  | Transport Layer Address  9.2.3.29 | Identifies the TNL address used by the source node for data forwarding. | YES | ignore |
| **>>Additional PDCP Duplication TNL List** |  | *0..1* |  |  | YES | ignore |
| **>>>Additional PDCP Duplication TNL Item** |  | *1 .. <maxnoofAdditionalPDCPDuplicationTNL>* |  |  | – |  |
| >>>>Additional PDCP Duplication UP TNL Information | M |  | UP Transport Layer Information  9.2.3.30 | S-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs in case of additional PDCP duplication. | – |  |
| >>RLC Duplication Information | O |  | 9.2.3.111 |  | YES | ignore |
| >>PSI based SDU Discard UL | O |  | ENUMERATED (start, stop, …) | Indicates whether UL PSI based SDU discard is (re)configured or released for the DRB. The codepoint “start” means that UL PSI based discarding is (re)configured, while the codepoint “stop” means that UL PSI based discarding is released. Up to 8 DRBs can be set as “start”. | YES | ignore |
| Data Forwarding Info from target NG-RAN node | O |  | 9.2.1.16 | Applicable for the QoS flows in DRBs to be setup. | – |  |
| **DRBs To Be Modified List** |  | *0..1* |  |  | – |  |
| **>DRBs to Be Modified Item** |  | *1 .. <maxnoofDRBs>* |  |  | – |  |
| >>DRB ID | M |  | 9.2.3.33 |  | – |  |
| >>SN UL PDCP UP TNL Information | O |  | UP Transport Parameters  9.2.3.76 | S-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs. | – |  |
| >>DRB QoS | O |  | QoS Flow Level QoS Parameters  9.2.3.5 |  | – |  |
| **>>QoS Flows Mapped to DRB List** |  | *0..1* |  | Overwriting the existing QoS Flow List | – |  |
| **>>>QoS Flows Mapped to DRB Item** |  | *1 .. <maxnoofQoSFlows>* |  |  | – |  |
| >>>>QoS Flow Identifier | M |  | 9.2.3.10 |  | – |  |
| >>>>MCG requested GBR QoS Flow Information | O |  | GBR QoS Flow Information  9.2.3.6 | This IE contains GBR QoS Flow Information necessary for the MCG part. | – |  |
| >>>>QoS Flow Mapping Indication | O |  | 9.2.3.79 |  | – |  |
| >>>>Current QoS Parameters Set Index | O |  | Alternative QoS Parameters Set Index  9.2.3.103 |  | YES | ignore |
| >>>>Source DL Forwarding IP Address | O |  | Transport Layer Address  9.2.3.29 | Identifies the TNL address used by the source node for data forwarding. | YES | ignore |
| **>>Additional PDCP Duplication TNL List** |  | *0..1* |  |  | YES | ignore |
| **>>>Additional PDCP Duplication TNL Item** |  | *1 .. <maxnoofAdditionalPDCPDuplicationTNL>* |  |  | – |  |
| >>>>Additional PDCP Duplication UP TNL Information | M |  | UP Transport Layer Information  9.2.3.30 | S-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs in case of additional PDCP duplication. | – |  |
| >>RLC Duplication Information | O |  | 9.2.3.111 |  | YES | ignore |
| >>secondary SN UL PDCP UP TNL Information | O |  | UP Transport Parameters  9.2.3.76 | S-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs in case of PDCP duplication. | YES | ignore |
| >>PDCP Duplication Configuration | O |  | 9.2.3.86 |  | YES | ignore |
| >>Duplication Activation | O |  | 9.2.3.71 |  | YES | ignore |
| >>PSI based SDU Discard UL | O |  | ENUMERATED (start, stop, …) | Indicates whether UL PSI based SDU discard is (re)configured or released for the DRB. The codepoint “start” means that UL PSI based discarding is (re)configured, while the codepoint “stop” means that UL PSI based discarding is released. Up to 8 DRBs can be set as “start”. | YES | ignore |
| DRBs To Be Released List | O |  | DRB List with Cause  9.2.1.28 |  | – |  |
| Data Forwarding and Offloading Info from source NG-RAN node | O |  | 9.2.1.17 | Contains DL Data Forwarding indications for QoS Flows removed from the SDAP in the SN. | – |  |
| QoS Flows Not Admitted to be Added List | O |  | QoS Flow List with Cause  9.2.1.4 |  | – |  |
| QoS Flows Released List | O |  | QoS Flow List with Cause  9.2.1.4 |  | – |  |
| DRB IDs taken into use | O |  | DRB List  9.2.1.29 | Indicating the DRB IDs taken into use by the target NG-RAN node, as specified in TS 37.340 [8]. | YES | reject |
| Redundant DL NG-U UP TNL Information at NG-RAN | O |  | UP Transport Layer Information  9.2.3.30 | S-NG-RAN node endpoint of the NG transport bearer. For delivery of DL PDUs for the redundant transmission. | YES | ignore |
| Security Result | O |  | 9.2.3.67 |  | YES | ignore |

|  |  |
| --- | --- |
| Range bound | Explanation |
| maxnoofDRBs | Maximum no. of DRBs allowed towards one UE. Value is 32. |
| maxnoofQoSFlows | Maximum no. of QoS flows. Value is 64. |
| maxnoofAdditionalPDCPDuplicationTNL | Maximum no. of additional PDCP Duplication TNL. Value is 2. |

9.2.1.11 PDU Session Resource Modification Info – MN terminated

This IE contains information related to PDU session resource for an M-NG-RAN node initiated request to modify DRBs configured with an MN terminated bearer option.

| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| --- | --- | --- | --- | --- | --- | --- |
| PDU Session Type | M |  | 9.2.3.19 |  | – |  |
| **DRBs To Be Setup List** |  | *0..1* |  |  | – |  |
| **>DRBs to Be Setup Item** |  | *1 .. <maxnoof DRBs>* |  |  | – |  |
| >>DRB ID | M |  | 9.2.3.33 |  | – |  |
| >>MN UL PDCP UP TNL Information | M |  | UP Transport Parameters  9.2.3.76 | M-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs. | – |  |
| >>RLC Mode | M |  | 9.2.3.28 | Indicates the RLC mode to be used in the assisting node. | – |  |
| >>UL Configuration | O |  | 9.2.3.75 | Information about UL usage in the S-NG-RAN node. This IE is used when the concerned DRB has both MCG resource and SCG resource configured i.e. the concerned DRB is configured as split bearer. | – |  |
| >>DRB QoS | M |  | QoS Flow Level QoS Parameters  9.2.3.5 |  | – |  |
| >>PDCP SN Length | O |  | 9.2.3.63 | Indicates the PDCP SN length of the DRB. | – |  |
| >>secondary MN UL PDCP UP TNL Information | O |  | UP Transport Parameters  9.2.3.76 | M-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs in case of PDCP duplication. | – |  |
| >>Duplication Activation | O |  | 9.2.3.71 | Information on the initial state of UL PDCP duplication.  This IE is ignored if the *RLC Duplication Information* IE is present. | – |  |
| **>>QoS Flows Mapped to DRB List** |  | *1* |  |  | – |  |
| **>>>QoS Flows Mapped To DRB Item** |  | *1 .. <maxnoofQoSFlows>* |  |  | – |  |
| >>>>QoS Flow Identifier | M |  | 9.2.3.10 |  | – |  |
| >>>>QoS Flow Level QoS Parameters | M |  | 9.2.3.5 |  | – |  |
| >>>>QoS Flow Mapping Indication | O |  | 9.2.3.79 |  | – |  |
| **>>Additional PDCP Duplication TNL List** |  | *0..1* |  |  | YES | ignore |
| **>>>Additional PDCP Duplication TNL Item** |  | *1 .. <maxnoofAdditionalPDCPDuplicationTNL>* |  |  | – |  |
| >>>>Additional PDCP Duplication UP TNL Information | M |  | UP Transport Layer Information  9.2.3.30 | M-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs in case of additional PDCP duplication. | – |  |
| >>RLC Duplication Information | O |  | 9.2.3.111 |  | YES | ignore |
| >>ECN Marking or Congestion Information Reporting Request | O |  | 9.2.3.205 |  | YES | ignore |
| >>PSI based SDU Discard UL | O |  | ENUMERATED (start, stop, …) | Indicates whether UL PSI based SDU discard is (re)configured or released for the DRB. The codepoint “start” means that UL PSI based discarding is (re)configured, while the codepoint “stop” means that UL PSI based discarding is released. Up to 8 DRBs can be set as “start”. | YES | ignore |
| **DRBs To Be Modified List** |  | *0..1* |  |  | – |  |
| **>DRBs to Be Modified Item** |  | *1 .. <maxnoofDRBs>* |  |  | – |  |
| >>DRB ID | M |  | 9.2.3.33 |  | – |  |
| >>MN UL PDCP UP TNL Information | O |  | UP Transport Parameters  9.2.3.76 | M-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs. | – |  |
| >>DRB QoS | O |  | QoS Flow Level QoS Parameters  9.2.3.5 |  | – |  |
| >>secondary MN UL PDCP UP TNL Information | O |  | UP Transport Parameters  9.2.3.76 | M-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs in case of PDCP duplication. | – |  |
| >>UL Configuration | O |  | 9.2.3.75 | Information about UL usage in the S-NG-RAN node. | – |  |
| >>PDCP Duplication Configuration | O |  | 9.2.3.86 |  | – |  |
| >>Duplication Activation | O |  | 9.2.3.71 | Information on the initial state of UL PDCP duplication.  This IE is ignored if the *RLC Duplication Information* IE is present. | – |  |
| **>>QoS Flows Mapped To DRB List** |  | *0..1* |  | Overwriting the existing QoS Flow List | – |  |
| **>>>QoS Flows Mapped To DRB Item** |  | *1 .. <maxnoof QoS Flows>* |  |  | – |  |
| >>>>QoS Flow Identifier | M |  | 9.2.3.10 |  | – |  |
| >>>>QoS Flow Level QoS Parameters | M |  | 9.2.3.5 |  | – |  |
| >>>>QoS Flow Mapping Indication | O |  | 9.2.3.79 |  | – |  |
| **>>Additional PDCP Duplication TNL List** |  | *0..1* |  |  | YES | ignore |
| **>>>Additional PDCP Duplication TNL Item** |  | *1 .. <maxnoofAdditionalPDCPDuplicationTNL>* |  |  | – |  |
| >>>>Additional PDCP Duplication UP TNL Information | M |  | UP Transport Layer Information  9.2.3.30 | M-NG-RAN node endpoint(s) of a DRB’s Xn transport bearer at its PDCP resource. For delivery of UL PDUs in case of additional PDCP duplication. | – |  |
| >>RLC Duplication Information | O |  | 9.2.3.111 |  | YES | ignore |
| >>ECN Marking or Congestion Information Reporting Request | O |  | 9.2.3.205 |  | YES | ignore |
| >>PSI based SDU Discard UL | O |  | ENUMERATED (start, stop, …) | Indicates whether UL PSI based SDU discard is (re)configured or released for the DRB. The codepoint “start” means that UL PSI based discarding is (re)configured, while the codepoint “stop” means that UL PSI based discarding is released. Up to 8 DRBs can be set as “start”. | YES | ignore |
| DRBs To Be Released List | O |  | DRB List with Cause  9.2.1.28 |  | – |  |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofDRBs | Maximum no. of DRBs allowed towards one UE. Value is 32. |
| maxnoofQoSFlows | Maximum no. of QoS flows allowed within one PDU session. Value is 64. |
| maxnoofAdditionalPDCPDuplicationTNL | Maximum no. of additional PDCP Duplication TNL. Value is 2. |

9.2.1.12 PDU Session Resource Modification Response Info – MN terminated

This IE contains the PDU session resource related result of an M-NG-RAN node initiated modification of DRBs configured with an MN terminated bearer option.

| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| --- | --- | --- | --- | --- | --- | --- |
| **DRBs Admitted to be Setup or Modified List** |  | *1* |  |  | – |  |
| **>DRBs Admitted to be Setup or Modified Item** |  | *1 .. <maxnoofDRBs>* |  |  | – |  |
| >>DRB ID | M |  | 9.2.3.33 |  | – |  |
| >>SN DL SCG UP TNL Information | O |  | UP Transport Parameters  9.2.3.76 | S-NG-RAN node GTP-U tunnel endpoint(s) of the DRB’s Xn transport at its Lower Layer SCG resource. For delivery of DL PDUs. | – |  |
| >>secondary SN DL SCG UP TNL Information | O |  | UP Transport Parameters  9.2.3.76 | S-NG-RAN node GTP-U tunnel endpoint(s) of the DRB’s Xn transport at its Lower Layer SCG resource. For delivery of DL PDUs in case of PDCP duplication. | – |  |
| >>LCID | O |  | 9.2.3.70 | LCID for primary path or LCID for split secondary path for fallback to split bearer if PDCP duplication is applied | – |  |
| **>>Additional PDCP Duplication TNL List** |  | *0..1* |  |  | YES | ignore |
| **>>>Additional PDCP Duplication TNL Item** |  | *1 .. <maxnoofAdditionalPDCPDuplicationTNL>* |  |  | – |  |
| >>>>Additional PDCP Duplication UP TNL Information | M |  | UP Transport Layer Information  9.2.3.30 | S-NG-RAN node GTP-U tunnel endpoint(s) of the DRB’s Xn transport at its Lower Layer SCG resource. For delivery of DL PDUs in case of additional PDCP duplication. | – |  |
| **>>QoS Flows Mapped To DRB List** |  | *0..1* |  |  | YES | ignore |
| **>>>QoS Flows Mapped To DRB Item** |  | *1 .. <maxnoofQoSFlows>* |  |  | – |  |
| >>>>QoS Flow Identifier | M |  | 9.2.3.10 |  | – |  |
| >>>>Current QoS Parameters Set Index | O |  | Alternative QoS Parameters Set Index  9.2.3.103 |  | – |  |
| >>ECN Marking or Congestion Information Reporting Status | O |  | 9.2.3.x1 |  | YES | ignore |
| DRBs Released List | O |  | DRB List  9.2.1.29 |  | – |  |
| DRBs Not Admitted To Be Setup or Modified List | O |  | DRB List with Cause  9.2.1.28 |  | – |  |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofDRBs | Maximum no. of DRBs allowed towards one UE. Value is 32. |
| maxnoofAdditionalPDCPDuplicationTNL | Maximum no. of additional PDCP Duplication TNL. Value is 2. |

///////////////////////////////////////////////////////////////////////skip unrelated///////////////////////////////////////////////////////////////////////

#### 9.2.3.205 ECN Marking or Congestion Information Reporting Request

This IE indicates to the NG-RAN node to perform ECN marking or to report information for ECN marking or to report congestion information for a QoS flow or a DRB.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| --- | --- | --- | --- | --- |
| CHOICE *ECN Marking or Congestion Information Request* | M |  |  |  |
| *>ECN Marking at RAN* |  |  |  |  |
| >>ECN Marking at RAN Request | M |  | ENUMERATED (ul, dl, both, stop, …) |  |
| *>ECN Marking at UPF* |  |  |  |  |
| >>ECN Marking at UPF Request | M |  | ENUMERATED (ul, dl, both, stop, …) |  |
| *>Congestion Information* |  |  |  |  |
| >>Congestion Information Request | M |  | ENUMERATED (ul, dl, both, stop, …) |  |

///////////////////////////////////////////////////////////////////////skip unrelated///////////////////////////////////////////////////////////////////////

#### 9.2.3.x1 ECN Marking or Congestion Information Reporting Status

This IE indicates whether ECN marking at NG-RAN or ECN marking at UPF or congestion information reporting is active or not active.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| ECN Marking or Congestion Information Reporting Status | O |  | ENUMERATED (active, not active, …) | Indicates whether ECN marking at NG-RAN or ECN marking at UPF or congestion information reporting is active or not active. |

///////////////////////////////////////////////////////////////////////skip unrelated///////////////////////////////////////////////////////////////////////

Skip unchanged part

9.3.5 Information Element definitions

-- ASN1START

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

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-- Information Element Definitions

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

XnAP-IEs {

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

ngran-access (22) modules (3) xnap (2) version1 (1) xnap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

id-CNTypeRestrictionsForEquivalent,

id-CNTypeRestrictionsForServing,

id-Additional-UL-NG-U-TNLatUPF-List,

id-ConfiguredTACIndication,

id-AlternativeQoSParaSetList,

id-CurrentQoSParaSetIndex,

id-DefaultDRB-Allowed,

id-DLCarrierList,

id-EndpointIPAddressAndPort,

id-ExtendedReportIntervalMDT,

id-ExtendedTAISliceSupportList,

id-FiveGCMobilityRestrictionListContainer,

id-SecondarydataForwardingInfoFromTarget-List,

id-LastE-UTRANPLMNIdentity,

id-LTEA2XUEPC5AggregateMaximumBitRate,

id-IntendedTDD-DL-ULConfiguration-NR,

id-MaxIPrate-DL,

id-SecurityResult,

id-OldQoSFlowMap-ULendmarkerexpected,

id-PDUSessionCommonNetworkInstance,

id-PDUSession-PairID,

id-BPLMN-ID-Info-EUTRA,

id-BPLMN-ID-Info-NR,

id-DRBsNotAdmittedSetupModifyList,

id-Secondary-MN-Xn-U-TNLInfoatM,

id-ULForwardingProposal,

id-DRB-IDs-takenintouse,

id-SplitSessionIndicator,

id-NonGBRResources-Offered,

id-MDT-Configuration,

id-TraceCollectionEntityURI,

id-NPN-Broadcast-Information,

id-NPNPagingAssistanceInformation,

id-NPNMobilityInformation,

id-NPN-Support,

id-LTEUESidelinkAggregateMaximumBitRate,

id-NRA2XUEPC5AggregateMaximumBitRate,

id-NRUESidelinkAggregateMaximumBitRate,

id-ExtendedRATRestrictionInformation,

id-QoSMonitoringRequest,

id-QoSMonitoringDisabled,

id-QosMonitoringReportingFrequency,

id-DAPSRequestInfo,

id-OffsetOfNbiotChannelNumberToDL-EARFCN,

id-OffsetOfNbiotChannelNumberToUL-EARFCN,

id-NBIoT-UL-DL-AlignmentOffset,

id-TDDULDLConfigurationCommonNR,

id-CarrierList,

id-ULCarrierList,

id-FrequencyShift7p5khz,

id-SSB-PositionsInBurst,

id-NRCellPRACHConfig,

id-Redundant-UL-NG-U-TNLatUPF,

id-Redundant-DL-NG-U-TNLatNG-RAN,

id-CNPacketDelayBudgetDownlink,

id-CNPacketDelayBudgetUplink,

id-ExtendedPacketDelayBudget,

id-Additional-Redundant-UL-NG-U-TNLatUPF-List,

id-RedundantCommonNetworkInstance,

id-TSCTrafficCharacteristics,

id-RedundantQoSFlowIndicator,

id-Additional-PDCP-Duplication-TNL-List,

id-RedundantPDUSessionInformation,

id-UsedRSNInformation,

id-RLCDuplicationInformation,

id-CSI-RSTransmissionIndication,

id-UERadioCapabilityID,

id-secondary-SN-UL-PDCP-UP-TNLInfo,

id-pdcpDuplicationConfiguration,

id-duplicationActivation,

id-NPRACHConfiguration,

id-QoSFlowsMappedtoDRB-SetupResponse-MNterminated,

id-DL-scheduling-PDCCH-CCE-usage,

id-UL-scheduling-PDCCH-CCE-usage,

id-SFN-Offset,

id-QoS-Mapping-Information,

id-AdditionLocationInformation,

id-dataForwardingInfoFromTargetE-UTRANnode,

id-Cause,

id-SecurityIndication,

id-RRCConnReestab-Indicator,

id-SourceDLForwardingIPAddress,

id-SourceNodeDLForwardingIPAddress,

id-M4ReportAmount,

id-M5ReportAmount,

id-M6ReportAmount,

id-M7ReportAmount,

id-BeamMeasurementIndicationM1,

id-Supported-MBS-FSA-ID-List,

id-MBS-AssistanceInformation,

id-MBS-SessionAssociatedInformation,

id-MBS-SessionInformation-List,

id-SliceRadioResourceStatus-List,

id-CompositeAvailableCapacitySupplementaryUplink,

id-SSBOffsets-List,

id-NG-RANnode2SSBOffsetsModificationRange,

id-NR-U-Channel-List,

id-NR-U-ChannelInfo-List,

id-MIMOPRBusageInformation,

id-UEAssistantIdentifier,

id-IAB-MT-Cell-List,

id-NoPDUSessionIndication,

id-permutation,

id-UL-GNB-DU-Cell-Resource-Configuration,

id-DL-GNB-DU-Cell-Resource-Configuration,

id-tdd-GNB-DU-Cell-Resource-Configuration,

id-Additional-Measurement-Timing-Configuration-List,

id-SurvivalTime,

id-Local-NG-RAN-Node-Identifier,

id-Neighbour-NG-RAN-Node-List,

id-FiveGProSeUEPC5AggregateMaximumBitRate,

id-Redcap-Bcast-Information,

id-UESliceMaximumBitRateList,

id-PositioningInformation,

id-ServedCellSpecificInfoReq-NR,

id-TAINSAGSupportList,

id-earlyMeasurement,

id-BeamMeasurementsReportConfiguration,

id-CoverageModificationCause,

id-UERLFReportContainerLTEExtension,

id-ExcessPacketDelayThresholdConfiguration,

id-Full-and-Short-I-RNTI-Profile-List,

id-QosFlowMappingIndication,

id-EquivalentSNPNs,

id-CHOTimeBasedInformation,

id-ChannelOccupancyTimePercentageUL,

id-EnergyDetectionThresholdUL,

id-PSCellListContainer,

id-RadioResourceStatusNR-U,

id-FiveGProSeLayer2Multipath,

id-FiveGProSeLayer2UEtoUERelay,

id-FiveGProSeLayer2UEtoUERemote,

id-ClockQualityReportingControlInfo,

id-CapabilityForBATAdaptation,

id-PNI-NPNBasedMDT,

id-PNI-NPN-AreaScopeofMDT,

id-SNPN-CellBasedMDT,

id-SNPN-TAIBasedMDT,

id-SNPN-BasedMDT,

id-S-CPAC-Request,

id-S-CPAC-Request-Info,

id-S-CPAC-ReferenceConfigRequest,

id-S-CPAC-InterSN-ExecutionNotify,

id-S-CPAC-dataforwardinginfofromSource,

id-S-CPAC-CompleteConfig-Indicator,

id-CPACcandidatePSCells-wotherInfo-list,

id-eRedcap-Bcast-Information,

id-NRPagingLongeDRXInformationforRRCINACTIVE,

id-MBSCommServiceType,

id-AssistanceInformationQoE-Meas,

id-QoERVQoEReportingPaths,

id-DirectForwardingPathAvailability,

id-CHO-CPAC-Info,

id-CHO-Maxnoof-CondReconfig,

id-PDUSetQoSParameters,

id-N6JitterInformation,

id-ECNMarkingorCongestionInformationReportingRequest,

id-TAISliceUnavailableCellList,

id-MobileIABCell,

id-ECNMarkingorCongestionInformationReportingStatus,

id-PSIbasedSDUdiscardUL,

maxEARFCN,

maxnoofAllowedAreas,

maxnoofAMFRegions,

maxnoofAoIs,

maxnoofBPLMNs,

maxnoofCAGs,

maxnoofCAGsperPLMN,

maxnoofCellsinAoI,

maxnoofCellsinNG-RANnode,

maxnoofCellsinRNA,

maxnoofCellsinUEHistoryInfo,

maxnoofCellsUEMovingTrajectory,

maxnoofDRBs,

maxnoofEPLMNs,

maxnoofEPLMNsplus1,

maxnoofEUTRABands,

maxnoofEUTRABPLMNs,

maxnoofForbiddenTACs,

maxnoofMBSFNEUTRA,

maxnoofMultiConnectivityMinusOne,

maxnoofNeighbours,

maxnoofNIDs,

maxnoofNRCellBands,

maxnoofPDUSessions,

maxnoofPLMNs,

maxnoofProtectedResourcePatterns,

maxnoofQoSFlows,

maxnoofQoSParaSets,

maxnoofRANAreaCodes,

maxnoofRANAreasinRNA,

maxnoofSCellGroups,

maxnoofSCellGroupsplus1,

maxnoofSliceItems,

maxnoofExtSliceItems,

maxnoofSNPNIDs,

maxnoofsupportedTACs,

maxnoofsupportedPLMNs,

maxnoofTAI,

maxnoofTAIsinAoI,

maxnoofTNLAssociations,

maxnoofUEContexts,

maxNRARFCN,

maxNrOfErrors,

maxnoofRANNodesinAoI,

maxnooftimeperiods,

maxnoofslots,

maxnoofExtTLAs,

maxnoofGTPTLAs,

maxnoofCHOcells,

maxnoofPC5QoSFlows,

maxnoofSSBAreas,

maxnoofNRSCSs,

maxnoofPhysicalResourceBlocks,

maxnoofRAReports,

maxnoofAdditionalPDCPDuplicationTNL,

maxnoofRLCDuplicationstate,

maxnoofBluetoothName,

maxnoofCellIDforMDT,

maxnoofMDTPLMNs,

maxnoofTAforMDT,

maxnoofWLANName,

maxnoofSensorName,

maxnoofNeighPCIforMDT,

maxnoofFreqforMDT,

maxnoofNonAnchorCarrierFreqConfig,

maxnoofDataForwardingTunneltoE-UTRAN,

maxnoofUEIDIndicesforMBSPaging,

maxnoofMBSFSAs,

maxnoofMBSQoSFlows,

maxnoofMRBs,

maxnoofCellsforMBS,

maxnoofMBSServiceAreaInformation,

maxnoofTAIforMBS,

maxnoofAssociatedMBSSessions,

maxnoofMBSSessions,

maxnoofSuccessfulHOReports,

maxnoofPSCellsPerSN,

maxnoofNR-UChannelIDs,

maxnoofCellsinCHO,

maxnoofCHOexecutioncond,

maxnoofServingCells,

maxnoofBHInfo,

maxnoofTLAsIAB,

maxnoofTrafficIndexEntries,

maxnoofBAPControlPDURLCCHs,

maxnoofServedCellsIAB,

maxnoofDUFSlots,

maxnoofSymbols,

maxnoofHSNASlots,

maxnoofRBsetsPerCell,

maxnoofChildIABNodes,

maxnoofIABSTCInfo,

maxnoofPSCellCandidates,

maxnoofTargetSNs,

maxnoofUEAppLayerMeas,

maxnoofSNSSAIforQMC,

maxnoofCellIDforQMC,

maxnoofPLMNforQMC,

maxnoofTAforQMC,

maxnoofMTCItems,

maxnoofCSIRSconfigurations,

maxnoofCSIRSneighbourCells,

maxnoofCSIRSneighbourCellsInMTC,

maxnoofNeighbour-NG-RAN-Nodes,

maxnoofSRBs,

maxnoofSMBR,

maxnoofNSAGs,

maxnoofRBsetsPerCell1,

maxnoofTargetSNsMinusOne,

maxnoofThresholdsForExcessPacketDelay,

maxnoofESNPNs,

maxnoofSuccessfulPSCellChangeReports,

maxnoofUEsforRAReportIndications,

maxnoofPSCellsinCPAC,

maxnoofCPACexecutioncond,

maxnoofLBTFailureInformation,

maxnoofCellsTrajectoryPredict,

maxnoofCellsTrajectory,

maxFailedCellMeasObjects,

maxFailedMeasPerNode,

maxnoofUEReports,

maxnoofCandidateRelayUEs,

maxnoofCAGforMDT,

maxnoofMDTSNPNs,

maxnoofSecurityConfigurations,

maxnoofRSPPQoSFlows

FROM XnAP-Constants

Criticality,

ProcedureCode,

ProtocolIE-ID,

TriggeringMessage

FROM XnAP-CommonDataTypes

ProtocolExtensionContainer{},

ProtocolIE-Single-Container{},

XNAP-PROTOCOL-EXTENSION,

XNAP-PROTOCOL-IES

FROM XnAP-Containers;

//////////////////////////////////////////////////////////////////skip unrelated//////////////////////////////////////////////////////////////////

-- E

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

ECNMarkingorCongestionInformationReportingRequest ::= CHOICE {

eCNMarkingAtRANRequest ECNMarkingAtRANRequest,

eCNMarkingAtUPFRequest ECNMarkingAtUPFRequest,

congestionInformationRequest CongestionInformationRequest,

choice-Extensions ProtocolIE-Single-Container { {ECNMarkingorCongestionInformationReportingRequest-ExtIEs} }

}

ECNMarkingorCongestionInformationReportingRequest-ExtIEs XNAP-PROTOCOL-IES ::= {

...

}

ECNMarkingAtRANRequest ::= ENUMERATED {ul, dl, both, stop,...}

ECNMarkingAtUPFRequest ::= ENUMERATED {ul, dl, both, stop,...}

CongestionInformationRequest ::= ENUMERATED {ul, dl, both, stop, ...}

ECNMarkingorCongestionInformationReportingStatus ::= ENUMERATED {active, not-active, ...}

//////////////////////////////////////////////////////////////////skip unrelated//////////////////////////////////////////////////////////////////

-- P

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

--

-- PDU Session Resource Setup Info - SN terminated

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PDUSessionResourceSetupInfo-SNterminated ::= SEQUENCE {

uL-NG-U-TNLatUPF UPTransportLayerInformation,

pduSessionType PDUSessionType,

pduSessionNetworkInstance PDUSessionNetworkInstance OPTIONAL,

qosFlowsToBeSetup-List QoSFlowsToBeSetup-List-Setup-SNterminated,

dataforwardinginfofromSource DataforwardingandOffloadingInfofromSource OPTIONAL,

securityIndication SecurityIndication OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {PDUSessionResourceSetupInfo-SNterminated-ExtIEs} } OPTIONAL,

...

}

PDUSessionResourceSetupInfo-SNterminated-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

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

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

{ ID id-DefaultDRB-Allowed CRITICALITY ignore EXTENSION DefaultDRB-Allowed PRESENCE optional}|

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

{ ID id-NonGBRResources-Offered CRITICALITY ignore EXTENSION NonGBRResources-Offered PRESENCE optional}|

{ ID id-Redundant-UL-NG-U-TNLatUPF CRITICALITY ignore EXTENSION UPTransportLayerInformation PRESENCE optional}|

{ ID id-RedundantCommonNetworkInstance CRITICALITY ignore EXTENSION PDUSessionCommonNetworkInstance PRESENCE optional}|

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

...

}

QoSFlowsToBeSetup-List-Setup-SNterminated ::= SEQUENCE (SIZE(1..maxnoofQoSFlows)) OF QoSFlowsToBeSetup-List-Setup-SNterminated-Item

QoSFlowsToBeSetup-List-Setup-SNterminated-Item ::= SEQUENCE {

qfi QoSFlowIdentifier,

qosFlowLevelQoSParameters QoSFlowLevelQoSParameters,

offeredGBRQoSFlowInfo GBRQoSFlowInfo OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {QoSFlowsToBeSetup-List-Setup-SNterminated-Item-ExtIEs} } OPTIONAL,

...

}

QoSFlowsToBeSetup-List-Setup-SNterminated-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

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

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

...

}

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

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-- PDU Session Resource Setup Response Info - SN terminated

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PDUSessionResourceSetupResponseInfo-SNterminated ::= SEQUENCE {

dL-NG-U-TNLatNG-RAN UPTransportLayerInformation,

dRBsToBeSetup DRBsToBeSetupList-SetupResponse-SNterminated OPTIONAL,

dataforwardinginfoTarget DataForwardingInfoFromTargetNGRANnode OPTIONAL,

qosFlowsNotAdmittedList QoSFlows-List-withCause OPTIONAL,

securityResult SecurityResult OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {PDUSessionResourceSetupResponseInfo-SNterminated-ExtIEs} } OPTIONAL,

...

}

PDUSessionResourceSetupResponseInfo-SNterminated-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

{ ID id-DRB-IDs-takenintouse CRITICALITY reject EXTENSION DRB-List PRESENCE optional}|

{ ID id-Redundant-DL-NG-U-TNLatNG-RAN CRITICALITY ignore EXTENSION UPTransportLayerInformation PRESENCE optional}|

{ ID id-UsedRSNInformation CRITICALITY ignore EXTENSION RedundantPDUSessionInformation PRESENCE optional}|

{ ID id-S-CPAC-dataforwardinginfofromSource CRITICALITY ignore EXTENSION DataforwardingandOffloadingInfofromSource PRESENCE optional},

...

}

DRBsToBeSetupList-SetupResponse-SNterminated ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF DRBsToBeSetupList-SetupResponse-SNterminated-Item

DRBsToBeSetupList-SetupResponse-SNterminated-Item ::= SEQUENCE {

drb-ID DRB-ID,

sN-UL-PDCP-UP-TNLInfo UPTransportParameters,

dRB-QoS QoSFlowLevelQoSParameters,

pDCP-SNLength PDCPSNLength OPTIONAL,

rLC-Mode RLCMode,

uL-Configuration ULConfiguration OPTIONAL,

secondary-SN-UL-PDCP-UP-TNLInfo UPTransportParameters OPTIONAL,

duplicationActivation DuplicationActivation OPTIONAL,

qoSFlowsMappedtoDRB-SetupResponse-SNterminated QoSFlowsMappedtoDRB-SetupResponse-SNterminated,

iE-Extensions ProtocolExtensionContainer { {DRBsToBeSetupList-SetupResponse-SNterminated-Item-ExtIEs} } OPTIONAL,

...

}

DRBsToBeSetupList-SetupResponse-SNterminated-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

{ ID id-Additional-PDCP-Duplication-TNL-List CRITICALITY ignore EXTENSION Additional-PDCP-Duplication-TNL-List PRESENCE optional}|

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

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

...

}

QoSFlowsMappedtoDRB-SetupResponse-SNterminated ::= SEQUENCE (SIZE(1..maxnoofQoSFlows)) OF

QoSFlowsMappedtoDRB-SetupResponse-SNterminated-Item

QoSFlowsMappedtoDRB-SetupResponse-SNterminated-Item ::= SEQUENCE {

qoSFlowIdentifier QoSFlowIdentifier,

mCGRequestedGBRQoSFlowInfo GBRQoSFlowInfo OPTIONAL,

qosFlowMappingIndication QoSFlowMappingIndication OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {QoSFlowsMappedtoDRB-SetupResponse-SNterminated-Item-ExtIEs} } OPTIONAL,

...

}

QoSFlowsMappedtoDRB-SetupResponse-SNterminated-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

{ ID id-CurrentQoSParaSetIndex CRITICALITY ignore EXTENSION QoSParaSetIndex PRESENCE optional }|

{ ID id-SourceDLForwardingIPAddress CRITICALITY ignore EXTENSION TransportLayerAddress PRESENCE optional},

...

}

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-- PDU Session Resource Setup Info - MN terminated

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//////////////////////////////////////////////////////////////////skip unrelated//////////////////////////////////////////////////////////////////

DRBsToBeSetupList-Setup-MNterminated ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF DRBsToBeSetupList-Setup-MNterminated-Item

DRBsToBeSetupList-Setup-MNterminated-Item ::= SEQUENCE {

drb-ID DRB-ID,

mN-UL-PDCP-UP-TNLInfo UPTransportParameters,

rLC-Mode RLCMode,

uL-Configuration ULConfiguration OPTIONAL,

dRB-QoS QoSFlowLevelQoSParameters,

pDCP-SNLength PDCPSNLength OPTIONAL,

secondary-MN-UL-PDCP-UP-TNLInfo UPTransportParameters OPTIONAL,

duplicationActivation DuplicationActivation OPTIONAL,

qoSFlowsMappedtoDRB-Setup-MNterminated QoSFlowsMappedtoDRB-Setup-MNterminated,

iE-Extensions ProtocolExtensionContainer { {DRBsToBeSetupList-Setup-MNterminated-Item-ExtIEs} } OPTIONAL,

...

}

DRBsToBeSetupList-Setup-MNterminated-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

{ ID id-Additional-PDCP-Duplication-TNL-List CRITICALITY ignore EXTENSION Additional-PDCP-Duplication-TNL-List PRESENCE optional}|

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

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

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

...

}

//////////////////////////////////////////////////////////////////skip unrelated//////////////////////////////////////////////////////////////////

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

--

-- PDU Session Resource Setup Response Info - MN terminated

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//////////////////////////////////////////////////////////////////skip unrelated//////////////////////////////////////////////////////////////////

DRBsAdmittedList-SetupResponse-MNterminated ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF DRBsAdmittedList-SetupResponse-MNterminated-Item

DRBsAdmittedList-SetupResponse-MNterminated-Item ::= SEQUENCE {

drb-ID DRB-ID,

sN-DL-SCG-UP-TNLInfo UPTransportParameters,

secondary-SN-DL-SCG-UP-TNLInfo UPTransportParameters OPTIONAL,

lCID LCID OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {DRBsAdmittedList-SetupResponse-MNterminated-Item-ExtIEs} } OPTIONAL,

...

}

DRBsAdmittedList-SetupResponse-MNterminated-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

{ ID id-Additional-PDCP-Duplication-TNL-List CRITICALITY ignore EXTENSION Additional-PDCP-Duplication-TNL-List PRESENCE optional}|

{ ID id-QoSFlowsMappedtoDRB-SetupResponse-MNterminated CRITICALITY ignore EXTENSION QoSFlowsMappedtoDRB-SetupResponse-MNterminated PRESENCE optional}|

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

...

}

//////////////////////////////////////////////////////////////////skip unrelated//////////////////////////////////////////////////////////////////

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

--

-- PDU Session Resource Modification Info - MN terminated

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//////////////////////////////////////////////////////////////////skip unrelated//////////////////////////////////////////////////////////////////

DRBsToBeModifiedList-Modification-MNterminated ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF

DRBsToBeModifiedList-Modification-MNterminated-Item

DRBsToBeModifiedList-Modification-MNterminated-Item ::= SEQUENCE {

drb-ID DRB-ID,

mN-UL-PDCP-UP-TNLInfo UPTransportParameters OPTIONAL,

dRB-QoS QoSFlowLevelQoSParameters OPTIONAL,

secondary-MN-UL-PDCP-UP-TNLInfo UPTransportParameters OPTIONAL,

uL-Configuration ULConfiguration OPTIONAL,

pdcpDuplicationConfiguration PDCPDuplicationConfiguration OPTIONAL,

duplicationActivation DuplicationActivation OPTIONAL,

qoSFlowsMappedtoDRB-Setup-MNterminated QoSFlowsMappedtoDRB-Setup-MNterminated OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {DRBsToBeModifiedList-Modification-MNterminated-Item-ExtIEs} } OPTIONAL,

...

}

DRBsToBeModifiedList-Modification-MNterminated-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

{ ID id-Additional-PDCP-Duplication-TNL-List CRITICALITY ignore EXTENSION Additional-PDCP-Duplication-TNL-List PRESENCE optional}|

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

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

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

...

}

//////////////////////////////////////////////////////////////////skip unrelated//////////////////////////////////////////////////////////////////

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

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-- PDU Session Resource Modification Response Info - SN terminated

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PDUSessionResourceModificationResponseInfo-SNterminated ::= SEQUENCE {

dL-NG-U-TNLatNG-RAN UPTransportLayerInformation OPTIONAL,

dRBsToBeSetup DRBsToBeSetupList-SetupResponse-SNterminated OPTIONAL,

dataforwardinginfoTarget DataForwardingInfoFromTargetNGRANnode OPTIONAL,

dRBsToBeModified DRBsToBeModifiedList-ModificationResponse-SNterminated OPTIONAL,

dRBsToBeReleased DRB-List-withCause OPTIONAL,

dataforwardinginfofromSource DataforwardingandOffloadingInfofromSource OPTIONAL,

qosFlowsNotAdmittedTBAdded QoSFlows-List-withCause OPTIONAL,

qosFlowsReleased QoSFlows-List-withCause OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {PDUSessionResourceModificationResponseInfo-SNterminated-ExtIEs} } OPTIONAL,

...

}

PDUSessionResourceModificationResponseInfo-SNterminated-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

{ ID id-DRB-IDs-takenintouse CRITICALITY reject EXTENSION DRB-List PRESENCE optional}|

{ ID id-Redundant-DL-NG-U-TNLatNG-RAN CRITICALITY ignore EXTENSION UPTransportLayerInformation PRESENCE optional}|

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

...

}

DRBsToBeModifiedList-ModificationResponse-SNterminated ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF

DRBsToBeModifiedList-ModificationResponse-SNterminated-Item

DRBsToBeModifiedList-ModificationResponse-SNterminated-Item ::= SEQUENCE {

drb-ID DRB-ID,

sN-UL-PDCP-UP-TNLInfo UPTransportParameters OPTIONAL,

dRB-QoS QoSFlowLevelQoSParameters OPTIONAL,

qoSFlowsMappedtoDRB-SetupResponse-SNterminated QoSFlowsMappedtoDRB-SetupResponse-SNterminated OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {DRBsToBeModifiedList-ModificationResponse-SNterminated-Item-ExtIEs} } OPTIONAL,

...

}

DRBsToBeModifiedList-ModificationResponse-SNterminated-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

{ ID id-Additional-PDCP-Duplication-TNL-List CRITICALITY ignore EXTENSION Additional-PDCP-Duplication-TNL-List PRESENCE optional}|

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

{ ID id-secondary-SN-UL-PDCP-UP-TNLInfo CRITICALITY ignore EXTENSION UPTransportParameters PRESENCE optional}|

{ ID id-pdcpDuplicationConfiguration CRITICALITY ignore EXTENSION PDCPDuplicationConfiguration PRESENCE optional}|

{ ID id-duplicationActivation CRITICALITY ignore EXTENSION DuplicationActivation PRESENCE optional}|

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

...

}

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

--

-- PDU Session Resource Modification Response Info - MN terminated

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//////////////////////////////////////////////////////////////////skip unrelated//////////////////////////////////////////////////////////////////

DRBsAdmittedList-ModificationResponse-MNterminated ::= SEQUENCE (SIZE(1..maxnoofDRBs)) OF DRBsAdmittedList-ModificationResponse-MNterminated-Item

DRBsAdmittedList-ModificationResponse-MNterminated-Item ::= SEQUENCE {

drb-ID DRB-ID,

sN-DL-SCG-UP-TNLInfo UPTransportParameters OPTIONAL,

secondary-SN-DL-SCG-UP-TNLInfo UPTransportParameters OPTIONAL,

lCID LCID OPTIONAL,

iE-Extensions ProtocolExtensionContainer { {DRBsAdmittedList-ModificationResponse-MNterminated-Item-ExtIEs} } OPTIONAL,

...

}

DRBsAdmittedList-ModificationResponse-MNterminated-Item-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

{ ID id-Additional-PDCP-Duplication-TNL-List CRITICALITY ignore EXTENSION Additional-PDCP-Duplication-TNL-List PRESENCE optional}|

{ ID id-QoSFlowsMappedtoDRB-SetupResponse-MNterminated CRITICALITY ignore EXTENSION QoSFlowsMappedtoDRB-SetupResponse-MNterminated PRESENCE optional}|

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

...

}

//////////////////////////////////////////////////////////////////skip unrelated//////////////////////////////////////////////////////////////////

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

--

-- PDU Session related message level IEs END

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//////////////////////////////////////////////////////////////////skip unrelated//////////////////////////////////////////////////////////////////

PSCellChangeHistory ::= ENUMERATED {reporting-full-history, ...}

PSCellHistoryInformationRetrieve ::= ENUMERATED {query, ...}

PSCellListContainer ::= OCTET STRING

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

PNI-NPN-AreaScopeofMDT ::= SEQUENCE {

cAGListforMDT CAGListforMDT,

iE-Extensions ProtocolExtensionContainer { {PNI-NPN-AreaScopeofMDT-ExtIEs} } OPTIONAL,

...

}

PNI-NPN-AreaScopeofMDT-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

PNI-NPNBasedMDT::= SEQUENCE {

cAGListforMDT CAGListforMDT,

iE-Extensions ProtocolExtensionContainer { {PNI-NPNBasedMDT-ExtIEs} } OPTIONAL,

...

}

PNI-NPNBasedMDT-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

//////////////////////////////////////////////////////////////////skip unrelated//////////////////////////////////////////////////////////////////

### 9.3.7 Constant definitions

//////////////////////////////////////////////////////////////////skip unrelated//////////////////////////////////////////////////////////////////

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

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-- IEs

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//////////////////////////////////////////////////////////////////skip unrelated//////////////////////////////////////////////////////////////////

id-SLPositioning-Ranging-Services-Info ProtocolIE-ID ::= 464

id-ECNMarkingorCongestionInformationReportingStatus ProtocolIE-ID ::= xxx

id-PSIbasedSDUdiscardUL ProtocolIE-ID ::= xx2

END

-- ASN1STOP

//////////////////////////////////////////////////////////////////end//////////////////////////////////////////////////////////////////