**3GPP TSG-RAN WG3 Meeting #128R3-253839**

**Malta, MT, 19th – 23rd May, 2025**

Agenda Item: 21.3

Source: CATT

Title: (TP for XR BL CR for TS38.423) Fix for the FFS

Document for: Other

# 1 Introduction

This TP adds the following changes:

1. **Define available bitrate and threshold as a 32-bit integer with unit kbps.**
2. **Use value “8” for maxnoofThresholds for available data rate reporting**
3. **Remove FFS on MMSID octet string size.**
4. **Change “Data Rate” to “Bitrate”**

# TP to BL CR for TS 38.423

8.2.1 Handover Preparation

8.2.1.1 General

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

The procedure uses UE-associated signalling.

8.2.1.2 Successful Operation

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**Figure 8.2.1.2-1: Handover Preparation, successful operation**

The source NG-RAN node initiates the procedure by sending the HANDOVER REQUEST message to the target NG-RAN node. When the source NG-RAN node sends the HANDOVER REQUEST message, it shall start the timer TXnRELOCprep.

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

For each QoS flow which has been successfully established in the target NG-RAN node, if the *QoS Monitoring Request* IE was included in the *QoS Flow Level QoS Parameters* IE contained in the HANDOVER REQUEST message, the target NG-RAN node shall store this information, and shall, if supported, perform delay measurement and QoS monitoring, as specified in TS 23.501 [7]. If the *QoS Monitoring Reporting Frequency* IE was included in the *QoS Flow Level QoS Parameters* IE contained in the HANDOVER REQUEST message, the target NG-RAN node shall store this information, and shall, if supported, use it for RAN part delay reporting. 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 Resources To Be Setup List* IE, the target NG-RAN node shall, if supported, use it as specified in TS 23.501 [7].

If the HANDOVER REQUEST message includes the *PDU Set QoS Parameters* IE or the *DL PDU Set Information Marking Support Indication* IE, the target NG-RAN node shall, if supported, report in the HANDOVER REQUEST ACKNOWLEDGE message the *PDU Set based Handling Indicator* IE.

For each QoS flow which has been successfully established in the target NG-RAN node, if the *ECN Marking or Congestion Information Reporting Request* IE is included in the *PDU Session Resources To Be Setup List* IE contained in the HANDOVER REQUEST message, the target NG-RAN node shall, if supported, use it accordingly for the specific QoS flow.

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

If the *DL LBT Failure Information Request* IE is included in the HANDOVER REQUEST message, the target NG-RAN node shall, if supported, consider that the source NG-RAN node has requested the DL LBT failure information of the UE in the target cell for MRO analysis, as specified in TS 38.300 [9].

For each GBR QoS flow which has been successfully established in the target NG-RAN node, if the *Monitoring Request on Available Bitrate* IE was included in the *GBR QoS Flow Information* IE in the *PDU Session Resource To Be Setup List* IE contained in HANDOVER REQUEST message, the target NG-RAN node shall, if supported, store this information and perform Available bitrate monitoring, as specified in TS 23.501 [7].

For each QoS flow, if the *MMSID* IE is included in the *QoS Flow Level QoS Parameters* IE contained in the HANDOVER REQUEST message, the target NG-RAN node shall, if supported, consider that the QoS flow is related to a multi-modal service, as described in TS 23.501[7] and TS 38.300[9].

///////////////////////////////////////////////////////////////////////Next change ///////////////////////////////////////////////////////////////////////

8.2.4 Retrieve UE Context

8.2.4.1 General

The purpose of the Retrieve UE Context procedure is to either retrieve the UE context from the old NG-RAN node and transfer it to the NG-RAN node where the UE RRC Connection has been requested to be established, or to enable the old NG-RAN node to forward an RRC message to the UE via the new NG-RAN node without context transfer, or to request for small data transmission. The procedure can also be used to transfer the authorization status information of the mobile IAB-node.

The procedure uses UE-associated signalling.

8.2.4.2 Successful Operation

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**Figure 8.2.4.2-1: Retrieve UE Context, successful operation**

The new NG-RAN node initiates the procedure by sending the RETRIEVE UE CONTEXT REQUEST message to the old NG-RAN node.

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

If the UE is a mobile IAB-node, the old NG-RAN node shall include the *Mobile* *IAB Authorization Status* IE in the RETRIEVE UE CONTEXT RESPONSE message. If the *Mobile* *IAB Authorization Status* IE is included in the RETRIEVE UE CONTEXT RESPONSE message, the new NG-RAN node shall, if supported, consider that the UE is a mobile IAB-node, then store it and use it accordingly as defined in TS 38.401 [2].

For each GBR QoS flow in the new NG-RAN node, if the *Monitoring Request on Available Bitrate* IE was included in the *GBR QoS Flow Information* IE in the *PDU Session Resource To Be Setup List* IE contained in RETRIEVE UE CONTEXT RESPONSE message, the new NG-RAN node shall if supported, store this information and perform Available bitrate monitoring, as specified in TS 23.501 [7].

For each QoS flow in the RETRIEVE UE CONTEXT RESPONSE message, if the *MMSID* IE is included in the *QoS Flow Level QoS Parameters* IE in the *PDU Session Resources To Be Setup List* IE, the new NG-RAN node shall, if supported, consider that the QoS flow is related to a multi-modal service, as described in TS 23.501[7] and TS 38.300[9].

///////////////////////////////////////////////////////////////////////Next change ///////////////////////////////////////////////////////////////////////

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 QoS flow for which the *ECN Marking or Congestion Information Reporting Request* IE is included in the *PDU Session Resource Setup Info – SN terminated* IE contained in the S-NODE ADDITION REQUEST message, the S-NG-RAN node shall, if supported, use it accordingly for the specific QoS flow.

If the *ECN Marking or Congestion Information Reporting Status* 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 to deduce if ECN marking at NG-RAN or ECN marking at UPF 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.

If the S-NODE ADDITION REQUEST message includes the *PDU Set QoS Parameters* IE, the S-NG-RAN node shall, if supported, report in the S-NODE ADDITION REQUEST ACKNOWLEDGE message the *PDU Set based Handling Indicator* IE.

For a QoS flow established with PDU Set QoS parameters, if the *PDU Set based Handling Indicator* IE set to "supported" is included in S-NODE ADDITION REQUEST ACKNOWLEDGE message, the M-NG-RAN node shall, if supported, include the PDU Set Information Container in the data to be forwarded to the S-NG-RAN node.

For each DRB configured as MN-terminated split bearer/SCG bearer, if the *PSI based SDU Discard DL* 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 DL* 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.

If the *Monitoring Request on Available Bitrate* IE is included in the *GBR QoS Flow Information* IE for a QoS flow contained in the *DRBs To Be Setup List* IE of the *PDU Session Resource Setup Info – MN terminated* IE, the S-NG-RAN node shall, if supported, store this information and perform Available bitrate monitoring, as specified in TS 23.501 [7].

For each GBR QoS flow which has been successfully established in the S-NG-RAN node, if the *Monitoring Request on Available Bitrate* IE was included in the *GBR QoS Flow Information* IE contained in the *PDU Session Resource Setup Info – SN terminated* IE, the S-NG-RAN node shall store this information, and shall, if supported, store this information and perform Available bitrate monitoring, as specified in TS 23.501 [7].

For each QoS flow to be added, if the *MMSID* IE was included in the *QoS Flow Level QoS Parameters* IE contained in the *PDU Session Resource Setup Info – SN terminated* IE, the S-NG-RAN node shall, if supported, consider that the QoS flow is related to a multi-modal service, as described in TS 23.501[7] and TS 38.300[9].

**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.

///////////////////////////////////////////////////////////////////////Next change ///////////////////////////////////////////////////////////////////////

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.

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

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 QoS flow for which the *ECN Marking or Congestion Information Reporting Request* IE is included in the *PDU Session Resource Setup Info – SN terminated* IE and/or in the *PDU Session Resource Modification Info – SN terminated* IE contained in the S-NODE MODIFICATION REQUEST message, the S-NG-RAN node shall, if supported, use it accordingly for the specific QoS flow.

If the *ECN Marking or Congestion Information Reporting Status* IE is included in the *PDU Session Resource Setup Response Info – SN terminated* IE and/or in the 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 to deduce if ECN marking at NG-RAN or ECN marking at UPF 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.

If the S-NODE MODIFICATION REQUEST message includes the *PDU Set QoS Parameters* IE, the S-NG-RAN node shall, if supported, report in the S-NODE MODIFICATION REQUEST ACKNOWLEDGE message the *PDU Set based Handling Indicator* IE.

For a QoS flow established with PDU Set QoS parameters, if the *PDU Set based Handling Indicator* IE set to "supported" is included in S-NODE MODIFICATION REQUEST ACKNOWLEDGE message, the M-NG-RAN node shall, if supported, include the PDU Set Information Container in the data to be forwarded to the S-NG-RAN node.

For each DRB configured as MN-terminated split bearer/SCG bearer, if the *PSI based SDU Discard DL* 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 DL* 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.

If the *Monitoring Request on Available Bitrate* IE is included in the *GBR QoS Flow Information* IE for a QoS flow contained in the *DRBs To Be Setup List* IE or the *DRBs To Be Modified List* IE within the *PDU Session Resource Setup Info – MN terminated* IE or the *PDU Session Resource Modification Info – MN terminated* IE, the S-NG-RAN node shall, if supported, store this information and perform Available bitrate monitoring, as specified in TS 23.501 [7]

For each GBR QoS flow which has been successfully added or modified in the S-NG-RAN node, if the *Monitoring Request on Available Bitrate* IE was included in the *GBR QoS Flow Information* IE contained in the *PDU Session Resource Setup Info – SN terminated* IE or the *PDU Session Resource Modification Info – SN terminated* IE, the S-NG-RAN node shall, if supported, store this information and perform Available bitrate monitoring, as specified in TS 23.501 [7].

For each QoS flow to be added or modified in the S-NG-RAN node, if the *MMSID* IE was included in the *QoS Flow Level QoS Parameters* IE contained in the *PDU Session Resource Setup Info – SN terminated* IE or the *PDU Session Resource Modification Info – SN terminated* IE, the S-NG-RAN node shall, if supported, consider that the QoS flow is related to a multi-modal service, as described in TS 23.501[7] and TS 38.300[9].

**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.

///////////////////////////////////////////////////////////////////////Next change ///////////////////////////////////////////////////////////////////////

9.2.3.6 GBR QoS Flow Information

This IE indicates QoS Parameters for a GBR QoS Flow for downlink and uplink.

| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** | **Criticality** | **Assigned Criticality** |
| --- | --- | --- | --- | --- | --- | --- |
| Maximum Flow Bit Rate Downlink | M |  | Bit Rate9.2.3.4 | Maximum Bit Rate in DL.Flow Bit Rates are specified in TS 23.501 [7]. | – |  |
| Maximum Flow Bit Rate Uplink | M |  | Bit Rate9.2.3.4 | Maximum Bit Rate in UL.Flow Bit Rates are specified in TS 23.501 [7]. | – |  |
| Guaranteed Flow Bit Rate Downlink | M |  | Bit Rate9.2.3.4 | Guaranteed Bit Rate (provided that there is data to deliver) in DL.Flow Bit Rates are specified in TS 23.501 [7]. | – |  |
| Guaranteed Flow Bit Rate Uplink | M |  | Bit Rate9.2.3.4 | Guaranteed Bit Rate (provided that there is data to deliver).Flow Bit Rates are specified in TS 23.501 [7]. | – |  |
| Notification Control | O |  | ENUMERATED (notification requested, ...) | Notification control is specified in TS 23.501 [7] | – |  |
| Maximum Packet Loss Rate Downlink | O |  | Packet Loss Rate9.2.3.11 | Indicates the maximum rate for lost packets that can be tolerated in the downlink direction. Maximum Packet Loss Rate is specified in TS 23.501 [7]. | – |  |
| Maximum Packet Loss Rate Uplink | O |  | Packet Loss Rate9.2.3.11 | Indicates the maximum rate for lost packets that can be tolerated in the uplink direction. Maximum Packet Loss Rate is specified in TS 23.501 [7]. | – |  |
| Alternative QoS Parameters Set List | O |  | 9.2.3.102 | Indicates alternative sets of QoS Parameters for the QoS flow.  | YES | ignore |
| **Monitoring Request on Available Bitrate** |  | *0..1* |  |  | YES | ignore |
| >Monitoring Request | M |  | ENUMERATED (ul, dl, both, stop, …) | Indicates to monitor and report UL, or DL, or both UL/DL available bitrate for the associated QoS flow as specified in TS 23.501 [7], or stop the corresponding QoS monitoring. | - | ignore |
| >DL Available Bitrate Report Thresholds | C-ifReportDL |  | Available Bitrate Report Threshold List9.2.3.x3 |  | - | ignore |
| >UL Available Bitrate Report Thresholds | C-ifReportUL |  | Available Bitrate Report Threshold List9.2.3.x3 |  | - | ignore |
| MMSID | O |  | OCTET STRING (SIZE (1)) | Multi-modal service ID from the application, used to indicate QoS flows are related to a multi-modal service, as specified in TS 23.501 [7] and TS 38.300[9]. | YES | ignore |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| ifReportDL | This IE shall be present if the *Monitoring Request* IE is set to the value “dl” or “both”. |
| ifReportUL | This IE shall be present if the Monitoring Request IE is set to the value “ul” or “both”. |

///////////////////////////////////////////////////////////////////////Next change///////////////////////////////////////////////////////////////////////

9.2.3.x3 Available Bitrate Report Threshold List

This IE contains a list of available bitrate report thresholds. It is used for available bitrate report for UL and DL as specified in TS 23.501 [7].

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** |
| **Available Bitrate Report Threshold Item** |  | *1..<maxnoofThresholds>* |  |  |
| >Reporting Threshold | M |  | INTEGER (0..4000000000) | This IE indicates the Reporting threshold as specified in TS 23.501 [9]. The unit is Kbps. |

|  |  |
| --- | --- |
| **Range bound** | **Explanation** |
| maxnoofThresholds | Maximum no. of thresholds allowed to be provided by the SMF. Value is 8. |

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,

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

 id-MonitoringRequestonAvailableBitrate,

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

-- A

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

AvailableBitrateReportThresholdList ::= SEQUENCE (SIZE(1..maxnoofThresholds)) OF AvailableBitrateReportThresholdItem

AvailableBitrateReportThresholdItem ::= SEQUENCE {

 reportingThreshold ReportingThreshold,

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

 ...

}

AvailableBitrateReportThresholdItem-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

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

-- G

GBRQoSFlowInfo ::= SEQUENCE {

 maxFlowBitRateDL BitRate,

 maxFlowBitRateUL BitRate,

 guaranteedFlowBitRateDL BitRate,

 guaranteedFlowBitRateUL BitRate,

 notificationControl ENUMERATED {notification-requested, ...} OPTIONAL,

 maxPacketLossRateDL PacketLossRate OPTIONAL,

 maxPacketLossRateUL PacketLossRate OPTIONAL,

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

 ...

}

GBRQoSFlowInfo-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

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

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

 ...

}

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

-- M

MobilityRestrictionList-ExtIEs XNAP-PROTOCOL-EXTENSION ::={

{ ID id-LastE-UTRANPLMNIdentity CRITICALITY ignore EXTENSION PLMN-Identity PRESENCE optional }|

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

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

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

 ...

}

MonitoringRequestonAvailableBitrate ::= SEQUENCE {

 monitoringRequest MonitoringRequest,

 dlAvailableBitrateReportThresholds AvailableBitrateReportThresholdList OPTIONAL,

-- The above IE shall be present if the Monitoring Request IE is set to the value “dl” or “both”

 ulAvailableBitrateReportThresholds AvailableBitrateReportThresholdList OPTIONAL,

-- The above IE shall be present if the Monitoring Request IE is set to the value “ul” or “both”

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

 ...

}

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

 ...

}

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

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

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

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

-- R

RadioResourceStatusNR-U ::= SEQUENCE {

 dL-Total-PRB-usage INTEGER (0..100),

 uL-Total-PRB-usage INTEGER (0..100),

 iE-Extensions ProtocolExtensionContainer {{ RadioResourceStatusNR-U-ExtIEs}} OPTIONAL,

 ...

}

RadioResourceStatusNR-U-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

 ...

}

ReportingThreshold ::= INTEGER (0..4000000000)

### 9.3.7 Constant definitions

-- ASN1START

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

--

-- Constant definitions

--

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

XnAP-Constants {

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

ngran-Access (22) modules (3) xnap (2) version1 (1) xnap-Constants (4) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

 ProcedureCode,

 ProtocolIE-ID

FROM XnAP-CommonDataTypes;

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

maxnoofSecurityConfigurations INTEGER ::= 8

maxnoofRSPPQoSFlows INTEGER ::= 2048

maxnoofThresholds INTEGER ::= 8

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

id-MonitoringRequestonAvailableBitrate ProtocolIE-ID ::= xz1

END

-- ASN1STOP

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