3GPP TSG-RAN WG3 #127bis R3-252372

Wuhan, China, 7th – 11th April, 2025

**Agenda Item: 21.3**

**Source: CATT, Nokia, Nokia Shanghai Bell, CMCC, Huawei**

Title: (TP to BL CR for TS 38.423) Support of available data rate report

**Document for: Other**

# Introduction

This TP reflect the change for supporting available data rate report.

The TP includes following changes:

* Add *Monitoring Request on Available Data Rate* IE in the *GBR QoS Flow Information* IE.

# Annex: TP for 38.423 XR BL CR to support available data rate report

<<<<<<<<<<<<<<<<<< Begin of the changes >>>>>>>>>>>>>>>>>>>>>>>

### 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.

<<<Unchanged part is omitted>>>

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 Data Rate* 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].

<<<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.

<<<Unchanged part is omitted>>>

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 Data Rate* 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].

<<<Next change >>>

8.3.1 S-NG-RAN node Addition Preparation

8.3.1.1 General

The purpose of the S-NG-RAN node Addition Preparation procedure is to request the S-NG-RAN node to allocate resources for dual connectivity operation for a specific UE. Possible parallel requests are identified by the PCell ID when the initiating NG-RAN node UE AP IDs are the same.

The procedure uses UE-associated signalling.

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.

<<<Unchanged part is omitted>>>

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].

If the *Monitoring Request on Available Data Rate* 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 Data Rate* 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].

<<<Next change >>>

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

8.3.3.1 General

This procedure is used to enable an M-NG-RAN node to request an S-NG-RAN node to either modify the UE context at the S-NG-RAN node or to query the current SCG configuration for supporting delta signalling in M-NG-RAN node initiated S-NG-RAN node change, or to provide the S-RLF-related information to the S-NG-RAN node.

The procedure uses UE-associated signalling.

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.

<<<Unchanged part is omitted>>>

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].

If the *Monitoring Request on Available Data Rate* 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 Data Rate* 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].

<<<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 Rate  9.2.3.4 | Maximum Bit Rate in DL.  Flow Bit Rates are specified in TS 23.501 [7]. | – |  |
| Maximum Flow Bit Rate Uplink | M |  | Bit Rate  9.2.3.4 | Maximum Bit Rate in UL.  Flow Bit Rates are specified in TS 23.501 [7]. | – |  |
| Guaranteed Flow Bit Rate Downlink | M |  | Bit Rate  9.2.3.4 | 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 Rate  9.2.3.4 | 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 Rate  9.2.3.11 | 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 Rate  9.2.3.11 | 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 Data Rate |  | *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 data rate for the associated QoS flow as specified in TS 23.501 [7], or stop the corresponding QoS monitoring. | - | ignore |
| >DL Available Data Rate Report Thresholds | C-ifReportDL |  | Available Data Rate Report Threshold List  9.2.3.x |  | - | ignore |
| >UL Available Data Rate Report Thresholds | C-ifReportUL |  | Available Data Rate Report Threshold List  9.2.3.x |  | - | 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.x Available Data Rate Report Threshold List

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **IE/Group Name** | **Presence** | **Range** | **IE type and reference** | **Semantics description** |
| **Available Data Rate Report Threshold Item** |  | *1..<maxnoofThresholds>* |  |  |
| >Reporting Threshold | M |  | INTEGER (0..FFS) | FFS |

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

<<<Next change>>>

### 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

<<<Unchanged part is omitted>>>

id-Transmission-Bandwidth-asymmetric,

id-NRPPaPositioningInformation,

id-MonitoringRequestonAvailableDataRate,

maxEARFCN,

<<<Unchanged part is omitted>>>

maxnoofSecurityConfigurations,

maxnoofRSPPQoSFlows,

maxnoofThresholds

<<<Unchanged part is omitted>>>

-- A

A2XPC5FlowBitRates ::= SEQUENCE {

a2XguaranteedFlowBitRate BitRate,

a2XmaximumFlowBitRate BitRate,

iE-Extensions ProtocolExtensionContainer { { A2XPC5FlowBitRates-ExtIEs} } OPTIONAL,

...

}

A2XPC5FlowBitRates-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

AvailableDataRateReportThresholdList ::= SEQUENCE (SIZE(1..maxnoofThresholds)) OF AvailableDataRateReportThresholdItem

AvailableDataRateReportThresholdItem ::= SEQUENCE {

reportingThreshold ReportingThreshold,

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

...

}

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

...

}

AdditionalListofPDUSessionResourceChangeConfirmInfo-SNterminated ::= SEQUENCE (SIZE(1..maxnoofTargetSNsMinusOne)) OF AdditionalListofPDUSessionResourceChangeConfirmInfo-SNterminated-Item

AdditionalListofPDUSessionResourceChangeConfirmInfo-SNterminated-Item ::= SEQUENCE {

pDUSessionResourceChangeConfirmInfo-SNterminated PDUSessionResourceChangeConfirmInfo-SNterminated,

iE-Extensions ProtocolExtensionContainer { { AdditionalListofPDUSessionResourceChangeConfirmInfo-SNterminated-Item-ExtIEs} } OPTIONAL,

...

}

<<<Unchanged part is omitted>>>

-- 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-MonitoringRequestonAvailableDataRate CRITICALITY ignore EXTENSION MonitoringRequestonAvailableDataRate PRESENCE optional },

...

}

<<<Unchanged part is omitted>>>

-- M

M1ReportingTrigger ::= ENUMERATED{

periodic,

a2eventtriggered,

a2eventtriggered-periodic,

...

}

MonitoringRequestonAvailableDataRate ::= SEQUENCE {

monitoringRequest MonitoringRequest,

dlAvailableDataRateReportThresholds AvailableDataRateReportThresholdList OPTIONAL,

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

ulAvailableDataRateReportThresholds AvailableDataRateReportThresholdList OPTIONAL,

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

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

...

}

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

...

}

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

M1ThresholdEventA2 ::= SEQUENCE {

measurementThreshold MeasurementThresholdA2,

iE-Extensions ProtocolExtensionContainer { { M1ThresholdEventA2-ExtIEs} } OPTIONAL,

...

}

M1ThresholdEventA2-ExtIEs XNAP-PROTOCOL-EXTENSION ::= {

...

}

<<<Unchanged part is omitted>>>

-- 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..FFS)

<<<Unchanged part is omitted>>>

### 9.3.7 Constant definitions

-- ASN1START

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

--

-- Constant definitions

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

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;

<<<Unchanged part is omitted>>>

maxnoofSecurityConfigurations INTEGER ::= 8

maxnoofRSPPQoSFlows INTEGER ::= 2048

maxnoofThresholds INTEGER ::= FFS

<<<Unchanged part is omitted>>>

id-SRSPositioningConfigOrActivationRequest ProtocolIE-ID ::= 473

id-NRPPaPositioningInformation ProtocolIE-ID ::= 474

id-MonitoringRequestonAvailableDataRate ProtocolIE-ID ::= yy1

END

-- ASN1STOP