3GPP TSG-RAN WG3 Meeting #129 R3-255862

**Bengaluru , IN, 25 – 29 August, 2025**

Agenda Item: 21.3

Source: ZTE Corporation, Nokia, Nokia Shanghai Bell, Huawei

Title: (TP to BL CR for TS 37.483) Enhancement to support timely RLC retransmissions

Document for: Other

# 1 Introduction

This TP captures the RAN3 agreements on XR:

**For DL Timely RLC retransmission, adopt Option 1 “CU based solution” that CP inform UP for the thresholds and CU inform DU for retransmission/poll**

# 2 TP on Timely RLC retransmission

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

## 8.3 Bearer Context Management procedures

### 8.3.1 Bearer Context Setup

#### 8.3.1.1 General

The purpose of the Bearer Context Setup procedure is to allow the gNB-CU-CP to establish a bearer context in the gNB-CU-UP. The procedure uses UE-associated signalling.

#### 8.3.1.2 Successful Operation



Figure 8.3.1.2-1: Bearer Context Setup procedure: Successful Operation.

The gNB-CU-CP initiates the procedure by sending the BEARER CONTEXT SETUP REQUEST message to the gNB-CU-UP. If the gNB-CU-UP succeeds to establish the requested resources, it replies to the gNB-CU-CP with the BEARER CONTEXT SETUP RESPONSE message.

>>>>>>>>>>>>>>>>>>>Unchanged parts are skipped<<<<<<<<<<<<<<<<<<<

If the *SCG Activation Status* IE is contained in the BEARER CONTEXT SETUP REQUEST message, the gNB-CU-UP shall take it into account when handling DL data transfer as specified in TS 37.340 [19].

If the *PDU Set QoS Parameters* IE is contained in the BEARER CONTEXT SETUP REQUEST message, the gNB-CU-UP shall, if supported, store it and use the information as specified in TS 23.501 [20].

For each GBR QoS flow whose DRB has been successfully established and the *Monitoring Request on Available Bitrate* IE was included in the *GBR QoS Flow Information IE* contained in the BEARER CONTEXT SETUP REQUEST message, the gNB-CU-UP shall, if supported, store this information and perform available bitrate reporting as specified in TS 23.501 [20].

For each QoS flow, if the *MMSID* IE is contained in the BEARER CONTEXT SETUP REQUEST message, the gNB-CU-UP shall, if supported, consider that the QoS flow is related to a multi-modal service, as specified in TS 23.501 [20] and TS 38.300 [4].

If the *Remaining Time Based RLC Retransmission Threshold* IE or the *Remaining Time Based RLC Polling Threshold* IEis included in the *PDCP Configuration* IE contained in the BEARER CONTEXT SETUP REQUEST message, the gNB-CU-UP shall, if supported, store it and use this information for the concerned DRB as specified in TS 38.300 [4].

**Interactions with DL Data Notification procedure:**

If the *MT-SDT Information Request* IE is included in the BEARER CONTEXT SETUP REQUEST message and the value is set to 'true', the gNB-CU-UP shall, if supported, store it and report the *MT-SDT Information* IE in the DL DATA NOTIFICATION message as specified in TS 38.401 [2].

If the *SDT Data Size Threshold* IE is included in the BEARER CONTEXT SETUP REQUEST message, the gNB-CU-UP shall, if supported, store it and act as specified in TS 38.401 [2].

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

### 8.3.2 Bearer Context Modification (gNB-CU-CP initiated)

#### 8.3.2.1 General

The purpose of the Bearer Context Modification procedure is to allow the gNB-CU-CP to modify a bearer context in the gNB-CU-UP. The procedure uses UE-associated signalling.

#### 8.3.2.2 Successful Operation



Figure 8.3.2.2-1: Bearer Context Modification procedure: Successful Operation.

The gNB-CU-CP initiates the procedure by sending the BEARER CONTEXT MODIFICATION REQUEST message to the gNB-CU-UP. If the gNB-CU-UP succeeds to modify the bearer context, it replies to the gNB-CU-CP with the BEARER CONTEXT MODIFICATION RESPONSE message.

>>>>>>>>>>>>>>>>>>>Unchanged parts are skipped<<<<<<<<<<<<<<<<<<<

For a QoS flow established with PDU Set QoS parameters, if the *PDU Set based Handling Indicator* IE is included in the *PDU Session Data Forwarding Information* IE within the BEARER CONTEXT MODIFICATION REQUEST message and the value of the *PDU Set based Handling Indicator* IE is set to "supported", the gNB-CU-UP shall, if supported, include the PDU Set Information Container in the data to be forwarded.

For each PDU session, if the *User Plane Failure Indication* IE is included in the *PDU Session Resource To Modify List* IE in the BEARER CONTEXT MODIFICATION REQUEST message, the gNB-CU-UP shall, if supported, allocate the new NG-U DL endpoint address for the concerned GTP-U tunnel as specified in TS 23.527 [36].

For each GBR QoS flow whose DRB has been successfully established or modified and the *Monitoring Request on Available Bitrate* IE was included in the *GBR QoS Flow Information IE* contained in the BEARER CONTEXT MODIFICATION REQUEST message, the gNB-CU-UP shall, if supported, store this information and perform available bitrate reporting as specified in TS 23.501 [20].

For each QoS flow, if the *MMSID* IE is contained in the BEARER CONTEXT MODIFICATION REQUEST message, the gNB-CU-UP shall, if supported, consider that the QoS flow is related to a multi-modal service, as specified in TS 23.501 [20] and TS 38.300 [4].

If the *Remaining Time Based RLC Retransmission Threshold* IE or the *Remaining Time Based RLC Polling Threshold* IEis included in the *PDCP Configuration* IE contained in the BEARER CONTEXT MODIFICATION REQUEST message, the gNB-CU-UP shall, if supported, store it and use this information for the concerned DRB as specified in TS 38.300 [4].

**Interactions with DL Data Notification procedure:**

If the *MT-SDT Information Request* IE is included in the BEARER CONTEXT MODIFICATION REQUEST message and the value is set to 'true', the gNB-CU-UP shall, if supported, store it and report the *MT-SDT Information* IE in the DL DATA NOTIFICATION message as specified in TS 38.401 [2].

If the *SDT Data Size Threshold* IE is included in the BEARER CONTEXT MODIFICATION REQUEST message, the gNB-CU-UP shall, if supported, store it and act as specified in TS 38.401 [2].

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

#### 9.3.1.38 PDCP Configuration

This IE carries the PDCP configuration.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| --- | --- | --- | --- | --- | --- | --- |
| PDCP SN UL Size | M |  | PDCP SN Size  9.3.1.61 | Indicates the PDCP SN UL size in bits. Corresponds to information provided in the *pdcp-SN-SizeUL* contained in the *PDCP-Config* IE as defined in TS 38.331 [10] for gNB or ng-eNB CP-UP separation, or in TS 36.331 [33] for eNB CP-UP separation.  Is ignored if received through *DRB To Modify List* IE in the BEARER CONTEXT MODIFICATION REQUEST message. | - |  |
| <<<<<<<<<<<<<<<<<<<< Unaffected part is skipped >>>>>>>>>>>>>>>>>>>> | | | | | | |
| PDCP SN Gap Report | O |  | ENUMERATED (true, …) | Indicates whether the PDCP entity is configured to send a PDCP SN gap report in the downlink, as specified in TS 38.323 [17]. | YES | ignore |
| Remaining Time Based RLC Retransmission Threshold | O |  | INTEGER(1..64, …) | This IE indicates the threshold information for remaining time based RLC retransmission, as specified in TS 38.331 [10]. The unit is millisecond. | YES | ignore |
| Remaining Time Based RLC Polling Threshold | O |  | INTEGER(1..64, …) | This IE indicates the threshold information for remaining time based RLC polling, as specified in TS 38.331 [10]. The unit is millisecond. | YES | ignore |

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

### 9.4.5 Information Element Definitions

-- ASN1START

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

--

-- Information Element Definitions

--

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

E1AP-IEs {

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

ngran-access (22) modules (3) e1ap (5) version1 (1) e1ap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

id-CommonNetworkInstance,

id-SNSSAI,

<<<<<<<<<<<<<<<<<<<< Unaffected part is skipped >>>>>>>>>>>>>>>>>>>>

id-MaximumDataBurstVolume,

id-PDCPSNGapReport,

id-UserPlaneFailureIndication,

id-PduSetDelayBudgetDownlink,

id-PduSetDelayBudgetUplink,

id-PduSetErrorRateDownlink,

id-PduSetErrorRateUplink,

id-MonitoringRequestonAvailableBitrate,

id-MMSID,

id-Remaining-time-based-rLC-retransmission-threshold,

id-Remaining-time-based-rLC-polling-threshold,

maxnoofMBSAreaSessionIDs,

maxnoofSharedNG-UTerminations,

maxnoofMRBs,

***-----------------Next Changes-------------------***

-- P

<<<<<<<<<<<<<<<<<<<< Unaffected part is skipped >>>>>>>>>>>>>>>>>>>>

PDCP-Configuration ::= SEQUENCE {

pDCP-SN-Size-UL PDCP-SN-Size,

pDCP-SN-Size-DL PDCP-SN-Size,

rLC-Mode RLC-Mode,

rOHC-Parameters ROHC-Parameters OPTIONAL,

t-ReorderingTimer T-ReorderingTimer OPTIONAL,

discardTimer DiscardTimer OPTIONAL,

uLDataSplitThreshold ULDataSplitThreshold OPTIONAL,

pDCP-Duplication PDCP-Duplication OPTIONAL,

pDCP-Reestablishment PDCP-Reestablishment OPTIONAL,

pDCP-DataRecovery PDCP-DataRecovery OPTIONAL,

duplication-Activation Duplication-Activation OPTIONAL,

outOfOrderDelivery OutOfOrderDelivery OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { PDCP-Configuration-ExtIEs } } OPTIONAL,

...

}

PDCP-Configuration-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {

{ID id-PDCP-StatusReportIndication CRITICALITY ignore EXTENSION PDCP-StatusReportIndication PRESENCE optional}|

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

{ ID id-EHC-Parameters CRITICALITY ignore EXTENSION EHC-Parameters PRESENCE optional}|

{ ID id-UDC-Parameters CRITICALITY ignore EXTENSION UDC-Parameters PRESENCE optional}|

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

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

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

{ ID id-Remaining-time-based-rLC-retransmission-threshold CRITICALITY ignore EXTENSION Remaining-time-based-rLC-threshold PRESENCE optional}|

{ ID id-Remaining-time-based-rLC-polling-threshold CRITICALITY ignore EXTENSION Remaining-time-based-rLC-threshold PRESENCE optional},

...

}

***-----------------Next Changes-------------------***

-- R

<<<<<<<<<<<<<<<<<<<< Unaffected part is skipped >>>>>>>>>>>>>>>>>>>>

Remaining-time-based-rLC-threshold ::= INTEGER(1..64, ...)

***-----------------Next Changes-------------------***

### 9.4.7 Constant Definitions

<<<<<<<<<<<<<<<<<<<< Unaffected part is skipped >>>>>>>>>>>>>>>>>>>>

id-N6JitterInformation ProtocolIE-ID ::= 202

id-ECNMarkingorCongestionInformationReportingRequest ProtocolIE-ID ::= 203

id-ECNMarkingorCongestionInformationReportingStatus ProtocolIE-ID ::= 204

id-PDUSetbasedHandlingIndicator ProtocolIE-ID ::= 205

id-IndirectPathIndication ProtocolIE-ID ::= 206

id-F1UTunnelNotEstablished ProtocolIE-ID ::= 207

id-F1U-TNL-InfoToAdd-List ProtocolIE-ID ::= 208

id-F1U-TNL-InfoAdded-List ProtocolIE-ID ::= 209

id-F1U-TNL-InfoToAddOrModify-List ProtocolIE-ID ::= 210

id-F1U-TNL-InfoAddedOrModified-List ProtocolIE-ID ::= 211

id-F1U-TNL-InfoToRelease-List ProtocolIE-ID ::= 212

id-BroadcastF1U-ContextReferenceE1 ProtocolIE-ID ::= 213

id-PSIbasedDiscardTimer ProtocolIE-ID ::= 214

id-UserPlaneErrorIndicator ProtocolIE-ID ::= 215

id-MaximumDataBurstVolume ProtocolIE-ID ::= 216

id-BCBearerContextNGU-TNLInfoatNGRAN-Request ProtocolIE-ID ::= 217

id-PDCPSNGapReport ProtocolIE-ID ::= 218

id-UserPlaneFailureIndication ProtocolIE-ID ::= 219

id-PduSetDelayBudgetDownlink ProtocolIE-ID ::= a1

id-PduSetDelayBudgetUplink ProtocolIE-ID ::= a2

id-PduSetErrorRateDownlink ProtocolIE-ID ::= a3

id-PduSetErrorRateUplink ProtocolIE-ID ::= a4

id-MonitoringRequestonAvailableBitrate ProtocolIE-ID ::= b1

id-MMSID ProtocolIE-ID ::= c1

id-Remaining-time-based-rLC-retransmission-threshold ProtocolIE-ID ::= xx

id-Remaining-time-based-rLC-polling-threshold ProtocolIE-ID ::= xx

END

-- ASN1STOP

***-----------------End of the Changes-------------------***