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

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

Agenda Item: 21.3

Source: ZTE Corporation

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 Threshold Information* IE is contained in the BEARER CONTEXT SETUP REQUEST message, the gNB-CU-UP shall, if supported, store it and use this information 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 Threshold Information* IE is contained in the BEARER CONTEXT MODIFICATION REQUEST message, the gNB-CU-UP shall, if supported, store it and use this information 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 >>>>>>>>>>>>>>>>>>>>

#### 9.3.1.26 QoS Flow Level QoS Parameters

This IE defines the QoS parameters to be applied to a QoS Flow.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
| --- | --- | --- | --- | --- | --- | --- |
| CHOICE *QoS Characteristics* | M |  |  |  | - |  |
| *>Non-dynamic 5QI* |  |  |  |  |  |  |
| >>Non Dynamic 5QI Descriptor | M |  | 9.3.1.27 |  | - |  |
| *>Dynamic 5QI* |  |  |  |  |  |  |
| >>Dynamic 5QI Descriptor | M |  | 9.3.1.28 |  | - |  |
| <<<<<<<<<<<<<<<<<<<< Unaffected part is skipped >>>>>>>>>>>>>>>>>>>> | | | | | | |
| **PDU Set QoS Parameters** |  | *0..1* |  |  | YES | ignore |
| >UL PDU Set QoS Information | O |  | PDU Set QoS Information  9.3.1.143 |  | - |  |
| >DL PDU Set QoS Information | O |  | PDU Set QoS Information  9.3.1.143 |  | - |  |
| 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 [20] and TS 38.300 [4]. | YES | ignore |
| Remaining Time Based RLC Threshold Information | O |  | 9.3.1.y |  | YES | ignore |

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

#### 9.3.1.y Remaining Time Based RLC Threshold Information

This IE contains threshold information which may be used for timely RLC retransmission, as specified in TS 38.300 [4]

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
| 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. |
| 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. |

### 9.4.5 Information Element Definitions

-- ASN1START

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

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-- Information Element Definitions

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

NGAP-IEs {

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

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

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

id-AdditionalDLForwardingUPTNLInformation,

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

id-QoERVQoEReportingPaths,

id-UserLocationInformationN3IWF-without-PortNumber,

id-PduSetDelayBudgetDownlink,

id-PduSetDelayBudgetUplink,

id-PduSetErrorRateDownlink,

id-PduSetErrorRateUplink,

id-DLPDUSetInformationMarkingSupportIndication,

id-MonitoringRequestonAvailableBitrate,

id-MMSID,

id-Indication-of-bitrate-adaptation,

id-Remaining-time-based-rLC-threshold-information

maxnoofAllowedAreas,

maxnoofAllowedCAGsperPLMN,

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

maxnoofRSPPQoSFlows,

maxnoofThresholds

FROM NGAP-Constants

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

QosFlowLevelQosParameters ::= SEQUENCE {

qosCharacteristics QosCharacteristics,

allocationAndRetentionPriority AllocationAndRetentionPriority,

gBR-QosInformation GBR-QosInformation OPTIONAL,

reflectiveQosAttribute ReflectiveQosAttribute OPTIONAL,

additionalQosFlowInformation AdditionalQosFlowInformation OPTIONAL,

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

...

}

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

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

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

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

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

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

{ ID id-Indication-of-bitrate-adaptation CRITICALITY ignore EXTENSION Indication-of-bitrate-adaptation PRESENCE optional}

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

,

...

}

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

ReportArea ::= ENUMERATED {

cell,

...

}

ReportingThreshold ::= INTEGER (0.. 4000000000, ...)

RepetitionPeriod ::= INTEGER (0..131071)

Remaining-time-based-rLC-threshold-information ::= SEQUENCE {

retransmissionThreshold RLCThresholdInformation OPTIONAL,

pollingThreshold RLCThresholdInformation OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { Remaining-time-based-rLC-threshold-information-ExtIEs} } OPTIONAL,

...

}

Remaining-time-based-rLC-threshold-information-ExtIEs E1AP-PROTOCOL-EXTENSION ::= {

...

}

RLCThresholdInformation ::= INTEGER(1..64, ...)

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

### 9.4.7 Constant Definitions

-- ASN1START

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

--

-- Constant definitions

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

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

id-UserLocationInformationN3IWF-without-PortNumber ProtocolIE-ID ::= 439

id-AUN3DeviceAccessInfo ProtocolIE-ID ::= 440

id-PduSetDelayBudgetDownlink ProtocolIE-ID ::= a1

id-PduSetDelayBudgetUplink ProtocolIE-ID ::= a2

id-PduSetErrorRateDownlink ProtocolIE-ID ::= a3

id-PduSetErrorRateUplink ProtocolIE-ID ::= a4

id-DLPDUSetInformationMarkingSupportIndication ProtocolIE-ID ::= a5

id-MonitoringRequestonAvailableBitrate ProtocolIE-ID ::= b1

id-MMSID ProtocolIE-ID ::= c1

id-Indication-of-bitrate-adaptation ProtocolIE-ID ::= d1

id-Remaining-time-based-rLC-threshold-information ProtocolIE-ID ::= e1

END

-- ASN1STOP

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