3GPP TSG-RAN WG3 Meeting #129 R3-25xxxx

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

Agenda Item: 21.3

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

Title: [TP for BL CR TS 38.473] Support of DL PDU Set Information Marking Indication

Document for: Other

# 1 Introduction

The WID of Rel-19 XR has been updated with the following objective:

*- Support of PDU set based QoS handling enhancement [RAN3]:*

*- Support of DL PDU Set marking without PDU Set QoS*

*- Support of Alternative PDU Set QoS, which may contain UL and/or DL PDU Set QoS Parameters (i.e. UL PSDB, DL PSDB, UL PSER and/or DL PSER).*

This paper provides the F1AP TP to capture the support for DL PDU Set Information Marking Support Indication. Detail explanation can be found in our other contribution in agenda 21.3.

# 2 Text Proposal

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#### 8.3.1.2 Successful Operation



Figure 8.3.1.2-1: UE Context Setup Request procedure: Successful Operation

The gNB-CU initiates the procedure by sending UE CONTEXT SETUP REQUEST message to the gNB-DU. If the gNB-DU succeeds to establish the UE context, it replies to the gNB-CU with UE CONTEXT SETUP RESPONSE. If no UE-associated logical F1-connection exists, the UE-associated logical F1-connection shall be established as part of the procedure. Except for RACH based SDT and UE configured with BWP specific ServingCellMO, the gNB-CU shall perform RRC Reconfiguration or RRC connection resume to send UE to the RRC\_CONNECTED state as described in TS 38.331 [8], and in this case, the *CellGroupConfig* IE shall transparently be signaled to the UE as specified in TS 38.331 [8]. In the cases of RACH based SDT procedure and UE configured with BWP specific ServingCellMO, the *CellGroupConfig* IE shall be ignored by the gNB-CU.

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If the *PDU Set QoS Parameters* IE or the *DL PDU Set Information Marking Support Indication* IE is included in the *QoS Flow Level QoS Parameters* IE contained in the UE CONTEXT SETUP REQUEST message, the gNB-DU shall, if supported, store this information and use it as specified in TS 23.501 [21].

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#### 8.3.4.2 Successful Operation



Figure 8.3.4.2-1: UE Context Modification procedure. Successful operation

The UE CONTEXT MODIFICATION REQUEST message is initiated by the gNB-CU.

Upon reception of the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall perform the modifications, and if successful reports the update in the UE CONTEXT MODIFICATION RESPONSE message.

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If the *PDU Set QoS Parameters* IE or the *DL PDU Set Information Marking Support Indication* IE is included in the *QoS Flow Level QoS Parameters* IE contained in the UE CONTEXT MODIFICATION REQUEST message, the gNB-DU shall, if supported, store this information and use it as specified in TS 23.501 [21].

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#### 9.3.1.45 QoS Flow Level QoS Parameters

This IE defines the QoS to be applied to a QoS flow, or to a DRB, or to a BH RLC channel, or to a Uu Relay RLC channel, or to a PC5 Relay RLC channel, or to a MRB.

NOTE: For a BH RLC channel, the listed mandatory IEs and the *GBR QoS Flow Information* IE are applicable, where *GBR QoS Flow Information* IE may be present if BH RLC channel conveys the traffic belonging to a GBR 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 |  | 9.3.1.49 |  | - |  |
| *>Dynamic 5QI* |  |  |  |  | - |  |
| >>Dynamic 5QI Descriptor | M |  | 9.3.1.47 |  | - |  |
| NG-RAN Allocation and Retention Priority | M |  | 9.3.1.48 |  | - |  |
| GBR QoS Flow Information | O |  | 9.3.1.46 | This IE shall be present for GBR QoS Flows only and is ignored otherwise. | - |  |
| Reflective QoS Attribute | O |  | ENUMERATED (subject to, ...) | Details in TS 23.501 [21]. This IE applies to non-GBR flows only and is ignored otherwise. | - |  |
| PDU Session ID | O |  | INTEGER (0 ..255) | As specified in TS 23.501 [21]. | YES | ignore |
| UL PDU Session Aggregate Maximum Bit Rate | O |  | Bit Rate  9.3.1.22 | The PDU session Aggregate Maximum Bit Rate Uplink which is associated with the involved PDU session. | YES | ignore |
| QoS Monitoring Request | O |  | ENUMERATED (UL, DL, Both, …, stop) | Indicates to measure UL, or DL, or both UL/DL delays for the associated QoS flow or stop the corresponding QoS monitoring. | YES | ignore |
| PDCP Terminating Node DL Transport Layer Address | O |  | Transport Layer Address  9.3.2.3 | DL Transport Layer Address of node terminating PDCP. Included for MN-terminated SCG bearers and SN-terminated MCG bearers. | YES | ignore |
| PDU Set QoS Parameters |  | 0..1 |  |  | YES | ignore |
| >UL PDU Set QoS Information | O |  | PDU Set QoS Information  9.3.1.319 |  | - |  |
| >DL PDU Set QoS Information | O |  | PDU Set QoS Information  9.3.1.319 |  | - |  |
| DL PDU Set Information Marking Support Indication | O |  | ENUMERATED (true, …) |  | YES | 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 [21]. | YES | ignore |
| Indication of Bitrate Adaptation | O |  | ENUMERATED (uplink, …) | Indicates that the QoS Flow allows rate adaptation in the indicated direction. | YES | ignore |

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9.4.5 Information Element Definitions

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-- Information Element Definitions

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

F1AP-IEs {

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

ngran-access (22) modules (3) f1ap (3) version1 (1) f1ap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IMPORTS

*------ Unchanged part skipped ------*

id-Transmission-Bandwidth-asymmetric,

id-TagIDPointer,

id-LocalOrigin,

id-SRSPosPeriodicConfigHyperSFNIndex,

id-PSIbasedSDUdiscardDL,

id-PduSetDelayBudgetDownlink,

id-PduSetDelayBudgetUplink,

id-PduSetErrorRateDownlink,

id-PduSetErrorRateUplink,

id-MonitoringRequestonAvailableBitrate,

id-MMSID,

id-Indication-of-Bitrate-Adaptation,

id-DLPDUSetInformationMarkingSupportIndication,

maxNRARFCN,

maxnoofErrors,

maxnoofBPLMNs,

maxnoofBPLMNsNR,

maxnoofDLUPTNLInformation,

maxnoofNrCellBands,

maxnoofULUPTNLInformation,

maxnoofQoSFlows,

maxnoofSliceItems,

maxnoofSIBTypes,

maxnoofSITypes,

maxCellineNB,

maxnoofExtendedBPLMNs,

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

-- D

*------ Unchanged part skipped ------*

DRB-Information ::= SEQUENCE {

dRB-QoS QoSFlowLevelQoSParameters,

sNSSAI SNSSAI,

notificationControl NotificationControl OPTIONAL,

flows-Mapped-To-DRB-List Flows-Mapped-To-DRB-List,

iE-Extensions ProtocolExtensionContainer { { DRB-Information-ItemExtIEs } } OPTIONAL

}

DRB-Information-ItemExtIEs F1AP-PROTOCOL-EXTENSION ::= {

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

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

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

...

}

DRBs-Modified-Item ::= SEQUENCE {

dRBID DRBID,

lCID LCID OPTIONAL,

dLUPTNLInformation-ToBeSetup-List DLUPTNLInformation-ToBeSetup-List,

iE-Extensions ProtocolExtensionContainer { { DRBs-Modified-ItemExtIEs } } OPTIONAL,

...

}

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

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-- Q

*------ Unchanged part skipped ------*

QoSFlowLevelQoSParameters ::= SEQUENCE {

qoS-Characteristics QoS-Characteristics,

nGRANallocationRetentionPriority NGRANAllocationAndRetentionPriority,

gBR-QoS-Flow-Information GBR-QoSFlowInformation OPTIONAL,

reflective-QoS-Attribute ENUMERATED {subject-to, ...} OPTIONAL,

iE-Extensions ProtocolExtensionContainer { { QoSFlowLevelQoSParameters-ExtIEs } } OPTIONAL

}

QoSFlowLevelQoSParameters-ExtIEs F1AP-PROTOCOL-EXTENSION ::= {

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

{ ID id-ULPDUSessionAggregateMaximumBitRate CRITICALITY ignore EXTENSION BitRate PRESENCE optional}|

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

{ ID id-PDCPTerminatingNodeDLTNLAddrInfo CRITICALITY ignore EXTENSION TransportLayerAddress PRESENCE optional }|

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

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...

}

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### 9.4.7 Constant Definitions

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

--

-- Constant definitions

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

*------ Unchanged part skipped ------*

id-EarlySyncServingCellInformation ProtocolIE-ID ::= 843

id-RANSharingAssistanceInformation ProtocolIE-ID ::= 844

id-LTMCFRAResourceConfig-List ProtocolIE-ID ::= 845

id-F1U-PathFailure ProtocolIE-ID ::= 846

id-MeasBasedOnAggregatedResources ProtocolIE-ID ::= 847

id-SIB23-message ProtocolIE-ID ::= 848

id-BarringExemptionforEmerCallInfo ProtocolIE-ID ::= 849

id-SIB17bis-message ProtocolIE-ID ::= 850

id-ReportingIntervalIMs ProtocolIE-ID ::= 851

id-Transmission-Bandwidth-asymmetric ProtocolIE-ID ::= 852

id-TagIDPointer ProtocolIE-ID ::= 853

id-LocalOrigin ProtocolIE-ID ::= 854

id-LTMResetInformation ProtocolIE-ID ::= 855

id-SRSPosPeriodicConfigHyperSFNIndex ProtocolIE-ID ::= 856

id-PreconfiguredSRSInformation ProtocolIE-ID ::= 857

id-PSIbasedSDUdiscardDL ProtocolIE-ID ::= xxx

id-PduSetDelayBudgetDownlink ProtocolIE-ID ::= xxx1

id-PduSetDelayBudgetUplink ProtocolIE-ID ::= xxx2

id-PduSetErrorRateDownlink ProtocolIE-ID ::= xxx3

id-PduSetErrorRateUplink ProtocolIE-ID ::= xxx4

id-MonitoringRequestonAvailableBitrate ProtocolIE-ID ::= xxx5

id-MMSID ProtocolIE-ID ::= xxx6

id-Indication-of-Bitrate-Adaptation ProtocolIE-ID ::= xxx7

id-DLPDUSetInformationMarkingSupportIndication ProtocolIE-ID ::= xxx8

END

-- ASN1STOP

<<<<<<<<<<<<<<<<<<<< End of Changes >>>>>>>>>>>>>>>>>>>>