**3GPP TSG-RAN WG2 Meeting #126 *R2-2405934***

**Fukuoka, Japan, 20 – 24 May 2024**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network | **x** | Core Network |  |

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| ***Title:*** | Miscellaneous XR Corrections | | | | | | | | | |
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| ***Source to WG:*** | Nokia (Rapporteur) | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_XR\_enh-Core | | | | |  | ***Date:*** | | | 2024-05 |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | | Rel-18 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | 1. The DSR desciption is not aligned with 38.321 2. RAN2 agreed that all SDAP SDUs belonging to a PDU Set are mapped to the same DRB. 3. PDCP SN gap Report agreed as a new mechanism. | | | | | | | | |
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| ***Summary of change:*** | | 1. The DSR description is corrected to limit the shortest remaining time of any PDCP SDU buffered, to the SDUs that has not been transmitted in any MAC PDU; and to refer to LCH instead of LCG for the trigger. 2. A NOTE is added to specify that all SDAP SDUs belonging to a PDU Set should be mapped to the same DRB 3. PDCP SN gap Report described. | | | | | | | | |
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| ***Consequences if not approved:*** | | No recommendation is given for QoS flow remapping and the description of DSR is not aligned with other specifications. | | | | | | | | |
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| ***Clauses affected:*** | | 6.5, 16.15.4.2.1, 16.15.4.2.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **x** |  | Other core specifications | | | | 38.323 CR#0139 38.331 CR#4700 | | |
| ***affected:*** | |  | **x** | Test specifications | | | |  | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | |  | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

*First Modified Subclause*

## 6.5 SDAP Sublayer

The main services and functions of SDAP include:

- Mapping between a QoS flow and a data radio bearer;

NOTE: When remapping an XR QoS flow carrying PDU sets (see section 16.15) from one DRB to another (as examplified in Annex A), all SDAP SDUs belonging to a PDU Set should be mapped to the same DRB.

- Marking QoS flow ID (QFI) in both DL and UL packets.

A single protocol entity of SDAP is configured for each individual PDU session.

*Next Modified Subclause*

##### 16.15.4.2.1 Assistance Information

In order to enhance the scheduling of uplink resources for XR, the following improvements are introduced:

- One additional buffer size table to reduce the quantisation errors in BSR reporting (e.g. for high bit rates):

- Whether, for an LCG, the new table can be used in addition to the regular one is configured by the gNB;

- When the new table is configured for an LCG, it is used whenever the amount of the buffered data of that LCG is within the range of the new table, otherwise the regular table is used.

- Delay Status Report (DSR) of buffered data via a dedicated MAC CE:

- Triggered for an LCH when the remaining time before discard of any buffered PDCP SDU goes below a configured threshold (threshold configured per LCG by the gNB);

- When triggered for an LCH, reports the amount of data buffered with a remaining time before discard below the configured threshold, together with the shortest remaining time of any PDCP SDU buffered that has not been transmitted in any MAC PDU.

- Reporting of uplink assistance information (jitter range, burst arrival time, UL data burst periodicity) per QoS flow by the UE via UE Assistance Information.

*Next Modified Subclause*

##### 16.15.4.2.2 Discard

When the PSIHI indicates that all PDUs of the PDU Set are needed for a QoS flow, as soon as one PDU of a PDU set is known to be lost, the remaining PDUs of that PDU Set can be considered as no longer needed by the application and may be subject to discard operation at the transmitter to free up radio resources.

NOTE 1: It cannot always be assumed that the remaining PDUs are not useful and can safely be discarded. Also, in case of Forward Error Correction (FEC), active discarding of PDUs when assuming that a large enough number of packets have already been transmitted for FEC to recover without the remaining PDUs is not recommended as it might trigger an increase of FEC packets.

In uplink, the UE may be configured with PDU Set based discard operation for a specific DRB. When configured, the UE discards all packets in a PDU set when one PDU belonging to this PDU set is discarded due to discard timer expiry.

The gNB may perform downlink PDU Set discarding based on implementation by taking at least PSDB, PSI, PSIHI parameters into account.

In case of congestion, the gNB may use the PSI for PDU set discarding. For uplink, dedicated downlink signalling is used to request the UE to apply a shorter discard timer to *low importance* PDU Sets in PDCP.

NOTE 2: How PDU Sets are identified as *low importance* is left up to UE implementation. When a PSI is available, it can be used according to the guidelines specified in TS 26.522 [58].

Resulting gaps in the sequence of transmitted PDCP SN can be informed to the receiver via a PDCP control PDU.

*End of Changes*