**3GPP TSG-RAN WG3 Meeting #129bisR3-257290**

**Prague, Czech Republic, 13-17 October, 2025**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.425** | **CR** | **0158** | **rev** | **1** | **Current version:** | **19.0.0** |  |
|  | | | | | | | | |
| *For* [***HELP***](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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Correction on RLC enhancement for XR | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | R3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_XR\_Ph3-Core | | | | |  | ***Date:*** | | | 2025-10-16 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-19 |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19) Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | RAN3 #129bis meeting agreed the following:  **RAN3 to use one-bit F1-U indication to indicate the condition for remaining-time-based polling is met**.  To reflect the above agreements, the current F1-U indication for remaining time based polling needs to be updated. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Use one bit to indicate to the gNB-DU that the condition for remaining-time-based polling is met. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | To support DL remaining-timer-based polling, the F1-U overhead is large. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.4.1.1, 5.5.2.1, 5.5.3.X(new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **x** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **x** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev 1: revert the first change to 5.4.1.1, update the change to 5.5.2 to keep the removed clauses to be “void”, and update the cover page accordingly. | | | | | | | | |

*CHANGES START*

5.4.1 Transfer of Downlink User Data

5.4.1.1 Successful operation

The purpose of the Transfer of Downlink User Data procedure is to provide NR-U specific sequence number information at the transfer of user data carrying a DL NR PDCP PDU from the node hosting the NR PDCP entity to the corresponding node.

An NR user plane protocol instance making use of the Transfer of Downlink User Data procedure is associated to a single radio bearer only.

The node hosting the NR PDCP entity shall assign consecutive NR-U sequence numbers to each transferred NR-U packet. A retransmitted NR PDCP PDU shall be assigned a new NR-U sequence number.

The node hosting the NR PDCP entity indicates to the corresponding node whether this NR-U packet is a retransmission of NR PDCP PDU.

The node hosting the NR PDCP entity can indicate to the corresponding node to either discard all NR PDCP PDUs up to and including a defined DL discard NR PDCP PDU SN or discard one or a number of blocks of downlink NR PDCP PDUs. The corresponding node may stop transmission or retransmission of the NR PDCP PDU as indicated in the DL discard NR PDCP PDU SN, or stop transmission or retransmission of one or a number of blocks of downlink NR PDCP PDUs, as specified in TS 38.322 [7].

If the Assistance Information Report Polling Flag is equal to 1, the corresponding node shall, if supported, send the ASSISTANCE INFORMATION DATA to the node hosting the NR PDCP entity.

The corresponding node shall detect whether an NR-U packet was lost and memorise the respective sequence number after it has declared the respective NR-U packet as being "lost".

The corresponding node shall transfer the remaining NR PDCP PDUs towards the UE and memorise the highest NR PDCP PDU sequence number of the NR PDCP PDU that was successfully delivered (as defined in TS 36.322 [6] and TS 38.322 [7]) in sequence towards the UE (in case RLC AM is used) and the highest NR PDCP PDU sequence number of the NR PDCP PDU that was transmitted to the lower layers.

The corresponding node shall send the DL DATA DELIVERY STATUS if the Report Polling Flag is set to 1 or when the NR PDCP PDU with the indicated DL report NR PDCP PDU SN has been successfully delivered, unless a situation of overload at the corresponding node is encountered. The DL DATA DELIVERY STATUS sent as a response to a specific DL report NR PDCP PDU SN shall be sent only when all PDCP PDU SNs up to this DL report NR PDCP PDU have been successfully delivered in-sequence.

If the Request OutOfSeq Report is set to 1, the corresponding node shall, if supported, include the NR PDCP PDU sequence number successfully delivered out of sequence in the DL DATA DELIVERY STATUS to the node hosting the NR PDCP entity.

NOTE: The Transfer of Downlink User Data procedure and the associated feedback of lost NR-U packets assist the node hosting the NR PDCP entity in avoiding NR PDCP HFN de-synchronisation. If a deployment decides to not use the Transfer of Downlink User Data procedure, NR PDCP HFN synchronization should be ensured by other means.

If the User data existence flag is set to 1, the corresponding node assumes that the node hosting the NR PDCP entity has some user data for the concerned data radio bearer. The corresponding node decides whether and when to use DRX for the UE (i.e. the corresponding node may indicate the UE to use DRX even if the flag is set to 1 and the received DL USER DATA frame contains no user data).

The node hosting the NR PDCP entity can indicate to the corresponding node to either retransmit all NR PDCP PDUs up to and including a defined DL retransmission NR PDCP PDU SN or retransmit one or a number of blocks of downlink NR PDCP PDUs, as specified in TS 38.322 [7].

The node hosting the NR PDCP entity can indicate to the corresponding node the DL Remaining Time based Polling Indicator to trigger remaining-time-based RLC polling, as specified in TS 38.322 [7].

****

**Figure 5.4.1.1-1: Successful Transfer of Downlink User Data**

*NEXT CHANGE*

5.5.2 Frame format for the NR user plane protocol

5.5.2.1 DL USER DATA (PDU Type 0)

This frame format is defined e.g. to allow the corresponding node to detect lost NR-U packets and may be associated with the transfer of a Downlink PDCP PDU.

The following shows the respective DL USER DATA frame.

NOTE 1: All information elements defined in Figure 5.5.2.1-1 are also applicable to E-UTRA PDCP. With this understanding, each instance of NR PDCP can be replaced by E-UTRA PDCP.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Bits** | | | | | | | | | | | | | | | | **Number of Octets** |
| **7** | **6** | | **5** | | | **4** | | **3** | | **2** | | **1** | | | **0** |
| PDU Type (=0) | | | | | | | | Spare | | DL Discard Blocks | | DL Flush | | | Report polling | 1 |
| New IE Flag | BSSI | | | TTNBI | | Request OutofSeq Report | | Report Delivered | | User data existence flag | | Assistance Info. Report Polling Flag | | | Retransmission flag | 1 |
| NR-U Sequence Number | | | | | | | | | | | | | | | | 3 |
| DL discard NR PDCP PDU SN | | | | | | | | | | | | | | | | 0 or 3 |
| DL discard Number of blocks | | | | | | | | | | | | | | | | 0 or 1 |
| DL discard NR PDCP PDU SN start (first block) | | | | | | | | | | | | | | | | 0 or 3 |
| Discarded Block size (first block) | | | | | | | | | | | | | | | | 0 or 1 |
| … | | | | | | | | | | | | | | | |  |
| DL discard NR PDCP PDU SN start (last block) | | | | | | | | | | | | | | | | 0 or 3 |
| Discarded Block size (last block) | | | | | | | | | | | | | | | | 0 or 1 |
| DL report NR PDCP PDU SN | | | | | | | | | | | | | | | | 0 or 3 |
| BSSize | | | | | | | | | | | | | | | | 0 or 3 |
| TTNB | | | | | | | | | | | | | | | | 0 or 2 |
| New IE Flag 7(E) | | New IE Flag 6 | | | New IE Flag 5 | | New IE Flag 4 | | New IE Flag 3 | | New IE Flag 2 | | New IE Flag 1 | New IE Flag 0 | | 0 or 1  New IE Flags Octet |
| DL retransmission NR PDCP PDU SN | | | | | | | | | | | | | | | | 0 or 3 |
| DL retransmission Number of blocks | | | | | | | | | | | | | | | | 0 or 1 |
| DL retransmission NR PDCP PDU SN start (first block) | | | | | | | | | | | | | | | | 0 or 3 |
| Retransmission Block size (first block) | | | | | | | | | | | | | | | | 0 or 1 |
| … | | | | | | | | | | | | | | | |  |
| DL retransmission NR PDCP PDU SN start (last block) | | | | | | | | | | | | | | | | 0 or 3 |
| Retransmission Block size (last block) | | | | | | | | | | | | | | | | 0 or 1 |
| Spare | | | | | | | | | | | | | | DL Remaining Time based Polling Indicator | | 0 or 1 |
| Padding | | | | | | | | | | | | | | | | 0-3 |

**Figure 5.5.2.1-1: DL USER DATA (PDU Type 0) Format**

The New IE Flag in bit 7 of 2nd octet in DL USER DATA (PDU Type 0) indicates if the first octet ofNew IE Flags Octet is present or not.

Bit 0 of New IE Flags Octet in DL USER DATA (PDU Type 0) indicates if the DL retransmission NR PDCP PDU SN is present (1) or not (0).

Bit 1 of New IE Flags Octet in DL USER DATA (PDU Type 0) indicates if the DL retransmission Number of blocks, DL retransmission NR PDCP PDU SN start and Retransmission Block size are present (1) or not (0).

Bit 2 of New IE Flags Octet in DL USER DATA (PDU Type 0) indicates if the DL Remaining Time based Polling Indicator is present (1) or not (0).

*NEXT CHANGE*

#### 5.5.3.77 Void

#### 5.5.3.78 Void

#### 5.5.3.79 Void

#### 5.5.3.80 Void

5.5.3.x DL Remaining Time based Polling Indicator

**Description:** This parameter indicates if the condition for DL remaining-time-based RLC polling is met, as specified in TS 38.322 [7].

**Value range:** {0= Condition for DL remaining-time-based RLC polling is not met, 1= Condition for DL remaining-time-based RLC polling is met}.

**Field length:** 1 bit.

*CHANGES END*