**3GPP TSG-RAN WG3 Meeting #110-e *R3-211206***

**E-meeting, 25 Jan – 5 Feb 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.300** | **CR** |  | **rev** |  | **Current version:** | **16.4.0** |  |
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| *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 |  | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | PDCP SN issue for EPC to 5GC handover | | | | | | | | | |
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| ***Source to WG:*** | Huawei, CATT | | | | | | | | | |
| ***Source to TSG:*** | RAN3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | Direct\_data\_fw\_NR-Core | | | | |  | ***Date:*** | | | 2021-01-15 |
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| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
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| ***Reason for change:*** | | Last RAN3#110-e meeting discussed the following informative note in TS 36.300, for the inter-RAT handover from E-UTRAN.   * *NOTE: Any assigned PDCP SNs are not forwarded because of PDCP reset.*   After the email discussion, the chairman notes captures that:   * ***On the Note in TS 36.300, the following is the correct interpretation: The source eNB does not forward any assigned PDCP SNs to the target node because of PDCP reset during inter-RAT handover.***   As discussed in R3-210964 at the RAN3#111-e meeting, in case the target NG-RAN node receives the forwarded packets with PDCP SN (e.g., from the source SgNB in case of EN-DC, or split scenario), the target NG-RAN node does not use these PDCP SNs if received in the forwarded GTP-U packets, and deliver the forwarded PDCP SDUs to the UE. | | | | | | | | |
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| ***Summary of change:*** | | Specify that the target NG-RAN node should remove the PDCP SNs if received in the forwarded GTP-U packets from the source eNB, and deliver the forwarded PDCP SDUs to the UE.    Impact Analysis:  Impact assessment towards the previous version of the specification (same release):  This CR has isolated impact with the previous version of the specification (same release).  The impact can be considered isolated because the change only affects the handover from EPC to 5GC. | | | | | | | | |
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| ***Consequences if not approved:*** | | It remains unclear how to handle the forwarded PDCP SNs for EPC to 5GC handover. | | | | | | | | |
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| ***Clauses affected:*** | | 9.3.3.2 | | | | | | | | |
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|  | | **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 ... | | |
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| ***Other comments:*** | |  | | | | | | | | |
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| ***This CR's revision history:*** | | Rev0: R3-206628  Rev1: R3-210451  Update the cover page. And rebase on the lastest version  Rev2: R3-211206  Update based on the online comments to update the note. | | | | | | | | |

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| **Change Begins** |

### 9.3.3 NR-E-UTRA mobility: From EPC to 5GC

**<Unchanged Text Omitted>**

#### 9.3.3.2 Data Forwarding for the User Plane

In case of indirect data forwarding, user plane handling for inter-System data forwarding from EPS to 5GS follows the following key principles:

- For each E-RAB accepted for data forwarding, the source eNB forwards data to the SGW in the corresponding E-RAB tunnel and the SGW forwards the received data to the UPF in the E-RAB tunnel.

- The UPF maps the forwarded data received from an E-RAB tunnel to the corresponding mapped PDU session tunnel, adding a QFI value (by means of the PDU Session User Plane protocol TS 38.415 [30]).

- The target NG-RAN node maps a forwarded packet to the corresponding DRB based on the received QFI value. It prioritizes the forwarded packets over the fresh packets for those QoS flows.

- Handling of end marker packets:

- The UPF/PGW-U sends one or several end marker packets to the SGW per EPS bearer. The SGW forwards the received end markers per EPS bearer to the source eNB. When there are no more data packets to be forwarded for an E-RAB, the source eNB forwards the received end markers in the EPS bearer tunnel to the SGW and the SGW forwards them to the UPF. The UPF adds one QFI (by means of the PDU Session User Plane protocol TS 38.415 [30]) among the QoS flows mapped to that E-RAB to the end markers and sends those end markers to the target NG-RAN node in the per PDU session tunnel. When the target NG-RAN node receives an end marker with a QFI added, the target NG-RAN node starts to transmit the data packets of all QoS flows mapped to the corresponding E-RAB received from the core network towards the UE.

In case of direct data forwarding, user plane handling for inter-System data forwarding from EPS to 5GS follows the following key principles:

- For each E-RAB accepted for data forwarding, the source eNB forwards data to the target NG-RAN node in the corresponding E-RAB data forwarding tunnel.

- Until a GTP-U end marker packet is received, the target NG-RAN node prioritizes the forwarded packets over the fresh packets for those QoS flows which are involved in the accepted data forwarding.

NOTE: The target NG-RAN node should remove the forwarded PDCP SNs if received in the forwarded GTP-U packets, and deliver the forwarded PDCP SDUs to the UE.

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| **Change Ends** |