**3GPP TSG RAN WG1 #102-e R1-20xxxxx**

**e-Meeting, August 17th – 28th, 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **[Draft] CHANGE REQUEST** | | | | | | | | |
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|  | **38.214** | **CR** |  | **rev** | **-** | **Current version:** | **16.2.0** |  |
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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 | **X** | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | CR on PUSCH skipping with overlapping UCI on PUCCH | | | | | | | | | |
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| ***Source to WG:*** | vivo | | | | | | | | | |
| ***Source to TSG:*** | R1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_newRAT-Core, TEI16 | | | | |  | ***Date:*** | | | 2020-8-25 |
|  |  | | | |  | |  | | |  |
| ***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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
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| ***Reason for change:*** | | Following two cases on dynamic UL skipping were discussed in RAN1 and related conclusions were made below.   * Case 1: dynamic PUSCH skipping without overlapping CSI/HARQ-ACK on PUCCH * Case 2: dynamic PUSCH skipping with overlapping CSI/HARQ-ACK on PUCCH   For Case 1, it was agreed in RAN1#100-e meeting that when a UL grant without UL-SCH field or UL-SCH =1 (if present) is detected by a UE configured with *skipUplinkTxDynamic*, the corresponding PUSCH transmission is skipped by the UE if no transport block for the PUSCH transmission is generated by MAC and there is no CSI/HARQ-ACK on PUCCH overlapping with the PUSCH.  For Case 2, RAN1 agreed that in Rel-15, the UE behavior is undefined. Case 2 was further discussed in Rel-16 and RAN1 made the following agreement.  **Agreement**  For UL skipping of dynamic UL grant in non-CA and CA case, when there is PUCCH carrying UCI overlapping with a set of PUSCHs, the PUSCH with UCI multiplexing from the set cannot be skipped. MAC generates MAC PDU for the PUSCH and the UCI is multiplexed on the PUSCH. | | | | | | | | |
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| ***Summary of change:*** | | To capture the UE behavior for Case 1 in 38.214 section 6.1 that a PUSCH is not transmitted by the UE when the UE does not generate a transport block. | | | | | | | | |
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| ***Consequences if not approved:*** | | Inconsistent UE beahvior in RAN1 and RAN2 specification about UL skipping for case 1, and ambiguous UE behavior for case 2. | | | | | | | | |
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| ***Clauses affected:*** | | 6.1 | | | | | | | | |
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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:*** | | **Isolated impact analysis:**  The CR has isolated impact to only skipping of dynamic UL grant.  1. If the gNB is implemented according to this CR while the UE is not,  UE may or may not transmit a PUSCH, then there may be misunderstanding for gNB whether the PUSCH is transmitted by the UE.  2. If the UE is implemented according to this CR while the gNB is not,  there is no impact on gNB. | | | | | | | | |
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| ***This CR's revision history:*** | |  | | | | | | | | |

## 6.1 UE procedure for transmitting the physical uplink shared channel

<unchanged part omitted>

A UE shall upon detection of a DCI format scheduling a PUSCH transmit the corresponding PUSCH unless the UE does not generate a transport block as described in [10, TS38.321]. Upon detection of a DCI format 0\_1 or 0\_2 with "UL-SCH indicator" set to "0" and with a non-zero "CSI request" where the associated "reportQuantity" in *CSI-ReportConfig* set to "none" for all CSI report(s) triggered by "CSI request" in this DCI format 0\_1 or 0\_2, the UE ignores all fields in this DCI except the "CSI request" and the UE shall not transmit the corresponding PUSCH as indicated by this DCI format 0\_1 or 0\_2. When the UE is scheduled with multiple PUSCHs by a DCI, HARQ process ID indicated by this DCI applies to the first PUSCH, as described in clause 6.1.2.1, HARQ process ID is then incremented by 1 for each subsequent PUSCH(s) in the scheduled order, with modulo 16 operation applied. For any HARQ process ID(s) in a given scheduled cell, the UE is not expected to transmit a PUSCH that overlaps in time with another PUSCH. For any two HARQ process IDs in a given scheduled cell, if the UE is scheduled to start a first PUSCH transmission starting in symbol *j* by a PDCCH ending in symbol *i*, the UE is not expected to be scheduled to transmit a PUSCH starting earlier than the end of the first PUSCH by a PDCCH that ends later than symbol *i*. The UE is not expected to be scheduled to transmit another PUSCH by DCI format 0\_0, 0\_1 or 0\_2 scrambled by C-RNTI or MCS-C-RNTI for a given HARQ process until after the end of the expected transmission of the last PUSCH for that HARQ process.

<unchanged part omitted>