**3GPP TSG-RAN WG1 Meeting #104-e *R1-210xxxx***

**E-meeting, January 25th –February 5th, 2021**

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| *CR-Form-v12.1* |
| **[DRAFT] CHANGE REQUEST** |
|  |
|  | **38.214** | **CR** | xxxx | **rev** | **x**  | **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 | **X** | Radio Access Network | **X** | Core Network |  |

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| ***Title:***  | Draft CR on DMRS configuration for MsgA in 38.214 |
|  |  |
| ***Source to WG:*** | Moderator (ZTE), Huawei, HiSilicon |
| ***Source to TSG:*** | R1 |
|  |  |
| ***Work item code:*** | NR\_2step\_RACH-Core |  | ***Date:*** | 2021-01-27 |
|  |  |  |  |  |
| ***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 canbe 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:*** | 1. It is clear that there can be at most 2 ports configured per DM-RS CDM group for single-symbol DM-RS case. Then for MsgA PUSCH transmission, if a UE is not configured with *msgA-PUSCH-NrofPort*, the UE shall assume that it is only for the case of double-symbol DM-RS that 4 ports are configured per DM-RS CDM groups. This is also aligned with the possible DMRS configuration defined in TS 38.211 and TS 38.212.
2. For MsgA PUSCH transmission, only PUSCH DM-RS configuration type 1 is supported, and there is no higher layer parameter “*dmrs-Type*”. The corresponding correct description is already provided in TS 38.211.
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| ***Summary of change:*** | 1. Clarify that it is “for double-symbol DM-RS” for MsgA PUSCH transmission, when the UE is not configured with *msgA-PUSCH-NrofPort*.
2. Delete “For MsgA PUSCH transmissions, *dmrs-Type* is type 1.”
3. An editorial correction that “per DM-RS CDM group” instead of “groups”.
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| ***Consequences if not approved:*** | Incorrect number of ports is specified for single-symbol DM-RS case. Incorrect use of a non-applicable higher-layer parameter for PUSCH DM-RS configuration type. |
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| ***Clauses affected:*** | 6.2.2 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  |  |
| ***affected:*** |  | **X** |  Test specifications |  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications |  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

### 6.2.2 UE DM-RS transmission procedure

\*\*\* Unchanged text is omitted \*\*\*

When transmitted PUSCH is scheduled by DCI format 0\_1 with CRC scrambled by C-RNTI, CS-RNTI, SP-CSI-RNTI or MCS-C-RNTI, or corresponding to a configured grant, or being a PUSCH for Type-2 random access procedure,

- the UE may be configured with higher layer parameter *dmrs-Type* in *DMRS-UplinkConfig*, and the configured DM-RS configuration type is used for transmitting PUSCH in as defined in Clause 6.4.1.1 of [4, TS 38.211].

\*\*\* Unchanged text is omitted \*\*\*

For MsgA PUSCH transmission, if the UE is not configured with *msgA-PUSCH-DMRS-CDM-group,* the UEshall assume that 2 DM-RS CDM groups are configured. Otherwise, *msgA-PUSCH-DMRS-CDM-group* indicates which DM-RS CDM group to use from the set of {0,1}.

For MsgA PUSCH transmission, if the UE is not configured with *msgA-PUSCH-NrofPort,* the UEshall assume that 4 ports are configured per DM-RS CDM group for double-symbol DM-RS. Otherwise, *msgA-PUSCH-NrofPort* with value of 0 indicates the first port per DM-RS CDM group, while a value of 1 indicates the first two ports per DM-RS CDM group.

\*\*\* Unchanged text is omitted \*\*\*