**3GPP TSG RAN WG1 #110R1-220xxxx**

**Toulouse, France, August 22nd – 26th, 2022**

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| *CR-Form-v12.2* |
| **Draft CHANGE REQUEST** |
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|  | **38.213** | **CR** |  | **rev** |  | **Current version:** | **16.10.0** |  |
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| *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)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network | **x** | Core Network |  |

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| ***Title:***  | Correction on PL RS determination for PUSCH scheduled by DCI format 0\_0 |
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| ***Source to WG:*** | Moderator (ASUSTeK), LG Electronics  |
| ***Source to TSG:*** | R1 |
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| ***Work item code:*** | NR\_eMIMO-Core |  | ***Date:*** | 2022-08-25 |
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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 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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
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| ***Reason for change:*** | When UE is not provided a spatial setting for a PUCCH transmission in FR2 but is provided with *enableDefaultBeamPL-ForPUSCH0-0* set 'enabled', there are two paragraph in TS 38.213 for determining PL RS for PUSCH scheduled by DCI format 0\_0, leading ambiguity for determining PL RS. **(One paragraph in TS 38.213)**- If - the PUSCH transmission is scheduled by DCI format 0\_0 and the UE is not provided a spatial setting for a PUCCH transmission, or … the UE determines a RS resource index $q\_{d}$ with a respective *PUSCH-PathlossReferenceRS-Id* value being equal to zero where the RS resource is either on serving cell$c$ or, if provided, on a serving cell indicated by a value of *pathlossReferenceLinking***(The other paragraph in TS 38.213)**- If - the PUSCH transmission is scheduled by DCI format 0\_0 on serving cell $c$, - the UE is not provided a spatial setting for PUCCH resources on the active UL BWP of the primary cell [11, TS 38.321], and- the UE is provided *enableDefaultBeamPL-ForPUSCH0-0*  the UE determines a RS resource index $q\_{d}$ providing a periodic RS resource configured with *qcl-Type* set to 'typeD' in the TCI state or the QCL assumption of a CORESET with the lowest index in the active DL BWP of the serving cell $c$ |
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| ***Summary of change:*** | Change the condition “the PUSCH transmission is scheduled by DCI format 0\_0 and the UE is not provided a spatial setting for a PUCCH transmission” to “the UE is not provided *enableDefaultBeamPL-ForPUSCH0-0* and the PUSCH transmission is scheduled by DCI format 0\_0 and the UE is not provided a spatial setting for a PUCCH transmission”. |
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| ***Consequences if not approved:*** | The confusion of determining PL RS exists. |
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| ***Clauses affected:*** | 7.1.1 |
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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:*** | **Impact analysis**Impacted functionality: PL RS determination.Inter-operability: 1. If the UE is implemented according to this CR but the network is not, there is no inter-operability issue foreseen.
2. If the network is implemented according to this CR but the UE is not, the UE behavior for determining PL RS for PUSCH scheduled by DCI format 0\_0 is unclear when the UE is not provided a spatial setting for a PUCCH transmission in FR2 but is provided with *enableDefaultBeamPL-ForPUSCH0-0* set 'enabled'.
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| ***This CR's revision history:*** |  |

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7.1.1 UE behaviour

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- is a downlink pathloss estimate in dB calculated by the UE using reference signal (RS) index $q\_{d}$ for the active DL BWP, as described in clause 12, of carrier $f$ of serving cell $c$

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- If

- the UE is not provided *enableDefaultBeamPL-ForPUSCH0-0* and the PUSCH transmission is scheduled by DCI format 0\_0 and the UE is not provided a spatial setting for a PUCCH transmission, or

- the PUSCH transmission is scheduled by DCI format 0\_1 or DCI format 0\_2 that does not include an SRI field, or

- *SRI-PUSCH-PowerControl* is not provided to the UE,

 the UE determines a RS resource index $q\_{d}$ with a respective *PUSCH-PathlossReferenceRS-Id* value being equal to zero where the RS resource is either on serving cell$c$ or, if provided, on a serving cell indicated by a value of *pathlossReferenceLinking*

- If

- the PUSCH transmission is scheduled by DCI format 0\_0 on serving cell $c$,

- the UE is not provided PUCCH resources for the active UL BWP of serving cell $c$, and

- the UE is provided *enableDefaultBeamPL-ForPUSCH0-0*

 the UE determines a RS resource index $q\_{d}$ providing a periodic RS resource configured with *qcl-Type* set to 'typeD' in the TCI state or the QCL assumption of a CORESET with the lowest index in the active DL BWP of the serving cell $c$

- If

- the PUSCH transmission is scheduled by DCI format 0\_0 on serving cell $c$,

- the UE is not provided a spatial setting for PUCCH resources on the active UL BWP of the primary cell [11, TS 38.321], and

- the UE is provided *enableDefaultBeamPL-ForPUSCH0-0*

 the UE determines a RS resource index $q\_{d}$ providing a periodic RS resource configured with *qcl-Type* set to 'typeD' in the TCI state or the QCL assumption of a CORESET with the lowest index in the active DL BWP of the serving cell $c$

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