**3GPP TSG RAN WG1 #106-e R1-210xxxx**

**e-Meeting, August 16th – 27th, 2021**

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| **CHANGE REQUEST** |
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|  | **38.214** | **CR** |  | **rev** |  | **Current version:** | **16.6.0** |  |
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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 QCL-type for aperiodic CSI-RS |
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| ***Source to WG:*** | Moderator (CATT) |
| ***Source to TSG:*** | RAN1 |
|  |  |
| ***Work item code:*** |  NR\_eMIMO-Core |  | ***Date:*** | 2021-08-19 |
|  |  |  |  |  |
| ***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-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:*** | In section 5.1.6.1.1 of TS 38.214, the qcl-Type set to 'type-A' does not coincide with the definition of antenna ports quasi co-location in section 5.1.5 of TS38.214. Section 5.1.6.1.1 of TS38.214

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| - Periodic CSI-RS resource in one set and aperiodic CSI-RS resources in a second set, with the aperiodic CSI-RS and periodic CSI-RS resource having the same bandwidth (with same RB location) and the aperiodic CSI-RS being configured with *qcl-Type* set to 'type-A' and 'typeD', where applicable, with the periodic CSI-RS resources. |

Section 5.1.5 of TS38.214

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| For the case of two DL RSs, the QCL types shall not be the same, regardless of whether the references are to the same DL RS or different DL RSs. The quasi co-location types corresponding to each DL RS are given by the higher layer parameter *qcl-Type* in *QCL-Info* and may take one of the following values: - 'typeA': {Doppler shift, Doppler spread, average delay, delay spread}- 'typeB': {Doppler shift, Doppler spread}- 'typeC': {Doppler shift, average delay}- 'typeD': {Spatial Rx parameter} |

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| ***Summary of change:*** | In section 5.1.6.1.1 of TS 38.214, change the word 'type-A'. |
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| ***Consequences if not approved:*** | The spec is not precise. |
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| ***Clauses affected:*** | 5.1.6.1.1 |
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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 ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

#### 5.1.6.1.1 CSI-RS for tracking

<unchanged part omitted>

- Periodic CSI-RS resource in one set and aperiodic CSI-RS resources in a second set, with the aperiodic CSI-RS and periodic CSI-RS resource having the same bandwidth (with same RB location) and the aperiodic CSI-RS being configured with *qcl-Type* set to ‘ typeA’ and 'typeD', where applicable, with the periodic CSI-RS resources.

<unchanged part omitted>