**3GPP TSG-RAN WG1 Meeting #1170xxxx**

Fukuoka City, Fukuoka, Japan, May 20th – 24th, 2024

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **38.213** | **CR** | **xxxx** | **rev** | **-** | **Current version:** | **18.2.0** |  |
|  |
| *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:***  | Corrections to the Pathloss RS in LTM TCI state |
|  |  |
| ***Source to WG:*** | Moderator (Fujitsu), Ericsson, Google, Huawei, HiSilicon, Nokia |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** | NR\_Mob\_enh2-Core |  | ***Date:*** | 2024-05-22 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-18 |
|  | *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)Rel-20 (Release 20)* |
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| ***Reason for change:*** | The measurement procedure of pathloss RS configured in LTM TCI state before and after cell swtich is not captured in the specification. |
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| ***Summary of change:*** | Clarify the UE behaviour to use pathloss RS configured in LTM TCI state. |
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| ***Consequences if not approved:*** | How to use the *pathlossReferenceRS-Id* configured in LTM TCI state is not defined.  |
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| ***Clauses affected:*** | 7, 21 |
|  |  |
|  | **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:*** | **Isolated Impact Analysis:**This CR has no isolated impact on network and UE behavior. |
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| ***This CR's revision history:*** | This is the first version of this CR. |

# 7 Uplink Power control

< Unchanged parts are omitted >

In the remaining of this clause, if a UE is provided *TCI-State* in *dl-OrJointTCI-StateList* or *TCI-UL-State,* and for each indicated one or two *TCI-State* or *TCI-UL-State* of a PUSCH, PUCCH, or SRS transmission occasion as described in [6, TS 38.214]

- in clauses 7.1.1, 7.2.1, and 7.3.1, the RS index $q\_{d}$ for obtaining the downlink pathloss estimate for PUSCH, PUCCH, and SRS transmission is provided by pathlossReferenceRS-Id-r17 associated with or included in the indicated *TCI-State* or *TCI-UL-State* except for SRS transmission that is not provided *followUnifiedTCI-StateSRS*, or by *pathlossReferenceRS-Id* included in *CandidateTCI-State* or *CandidateTCI-UL-State* indicated in the LTM Cell Switch Command MAC CE

- in clause 7.1.1, if *p0AlphaSetforPUSCH* is provided, the values of $P\_{O\\_UE\\_PUSCH,b,f,c}\left(j\right)$, $α\_{b,f,c}\left(j\right)$, and the PUSCH power control adjustment state $l$ are provided by *p0AlphaSetforPUSCH* associated with the indicated *TCI-State* or *TCI-UL-State*

- in clause 7.2.1, if *p0AlphaSetforPUCCH* is provided, the values of $P\_{O\\_UE\\_PUCCH}\left(q\_{u}\right)$ and the PUCCH power control adjustment state $l$ are provided by *p0AlphaSetforPUCCH* associated with the indicated *TCI-State* or *TCI-UL-State*

- in clause 7.3.1, if *p0AlphaSetforSRS* is provided,

- if *followUnifiedTCI-StateSRS* is provided for a SRS resource set, the values of $P\_{O\\_UE\\_SRS,b,f,c}\left(q\_{s}\right)$, $α\_{SRS,b,f,c}\left(q\_{s}\right)$, and SRS power control adjustment state $l$ are provided by *p0AlphaSetforSRS* associated with the indicated *TCI-State* or *TCI-UL-State*

- else, if *followUnifiedTCI-StateSRS* is not provided for a SRS resource set and for a SRS resource from the SRS resource set, the values of $P\_{O\\_UE\\_SRS,b,f,c}\left(q\_{s}\right)$, $α\_{SRS,b,f,c}\left(q\_{s}\right)$, and SRS power control adjustment state $l$ are provided by *p0AlphaSetforSRS* associated with *TCI-State* or *TCI-UL-State* of an SRS resource with lowest *SRS-ResourceId* in the SRS resource set and a RS index $q\_{d}$ for obtaining a pathloss estimate for the SRS transmission is provided by *pathlossReferenceRS-Id-r17* associated with or included in the *TCI-State* or *TCI-UL-State* of an SRS resource with lowest *SRS-ResourceId* in the SRS resource set

$P\_{O\\_SRS,b,f,c}\left(q\_{s}\right)$ is the sum of the component $P\_{O\\_UE\\_SRS,b,f,c}\left(q\_{s}\right)$ and a component *p0* provided by *SRS-ResourceSet* corresponding to the SRS resource set.

< Unchanged parts are omitted >

21 L1/L2-triggered mobility procedures

< Unchanged parts are omitted >

A UE can be indicated, by *LTM-Config*, candidate cells and SS/PBCH blocks per candidate cell for the UE to obtain synchronization and measure corresponding L1-RSRPs [10, TS 38.133]. A Candidate Cell TCI States Activation/Deactivation MAC CE can activate TCI states, provided by *CandidateTCI-State* or/and *CandidateTCI-UL-State*, associated with SS/PBCH blocks or TRS of corresponding candidate cells [11, TS 38.321]. The RS index for obtaining the candidate cell downlink pathloss estimate is provided by pathlossReferenceRS-Id in the *CandidateTCI-State* or *CandidateTCI-UL-State.* If the Candidate Cell TCI States Activation/Deactivation MAC CE activates TCI states, an LTM Cell Switch Command MAC CE can indicate a TCI state from the activated TCI states; otherwise, the LTM Cell Switch Command MAC CE can activate and indicate a TCI state, provided by *CandidateTCI-State* or/and *CandidateTCI-UL-State*. After reception of the LTM Cell Switch Command MAC CE, activated TCI states that are not indicated by the MAC CE are deactivated. The UE is provided configurations by *LTM-CSI-ReportConfigToAddModList* for reporting L1-RSRP measurements [6, TS 38.214] that include a number of candidate cells and a number of SS/PBCH blocks per candidate cell from the number of candidate cells.

< Unchanged parts are omitted >