**3GPP TSG-RAN WG1 Meeting #118** ***R1-24xxxxx***

**Maastricht, Netherlands, August 19th – 23rd, 2024**

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| *CR-Form-v12.3* |
| **Draft CHANGE REQUEST** |
|  |
|  | **38.213** | **CR** |  | **rev** |  | **Current version:** | **18.3.0** |  |
|  |
| *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:***  | Editorial corrections to TS 38.213 for Rel-18 Positioning |
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| ***Source to WG:*** | Moderator (Intel Corporation) |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** | NR\_pos\_enh2-Core |  | ***Date:*** | 2024-08-20 |
|  |  |  |  |  |
| ***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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)Rel-20 (Release 20)* |
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| ***Reason for change:*** | Clause 7.3.1:* Incomplete higher-layer parameter for SRS transmission with frequency hopping
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| ***Summary of change:*** | Clause 7.3.1:* Replace “an indication” by “a configuration” to align with other paragraphs
* Update “XYZ” as higher-layer parameter name “SRS-PosTx-Hopping”
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| ***Consequences if not approved:*** | Specification is incomplete or incorrect. |
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| ***Clauses affected:*** | 7.3.1 |
|  |  |
|  | **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:*** |  |

### 7.3.1 UE behaviour

**<Unchanged text omitted>**

If a UE transmits SRS based on a configuration by *SRS-PosResourceSet* on active UL BWP $b$ of carrier $f$ of serving cell $c$, the UE determines the SRS transmission power $P\_{SRS,b,f,c}\left(i,q\_{s}\right)$ in SRS transmission occasion $i$ as

 [dBm]

where,

- $P\_{O\\_SRS,b,f,c}\left(q\_{s}\right)$ and $α\_{SRS,b,f,c}\left(q\_{s}\right)$ are provided by *p0-r16* and *alpha-r16* respectively, for active UL BWP $b$ of carrier $f$ of serving cell $c$, and SRS resource set $q\_{s}$ is indicated by *SRS-PosResourceSetId* from *SRS-PosResourceSet*, and-

- $PL\_{b,f,c}\left(q\_{d}\right)$ is a downlink pathloss estimate in dB calculated by the UE, as described in clause 7.1.1 in case of an active DL BWP of a serving cell $c$, using RS resource indexed $q\_{d}$ in a serving or non-serving cell for SRS resource set $q\_{s}$ [6, TS 38.214]. A configuration for RS resource index $q\_{d}$ associated with SRS resource set $q\_{s}$ is provided by *pathlossReferenceRS-Pos*

- if a *ssb-IndexServing* is provided, *referenceSignalPower* is provided by *ss-PBCH-BlockPower*

- if a *ssb-Ncell* is provided, *referenceSignalPower* is provided by *ss-PBCH-BlockPower-r16*

- if a *dl-PRS* is provided, *referenceSignalPower* is provided by *dl-PRS-ResourcePower*

 If the UE is in the RRC\_CONNECTED state and determines that the UE is not able to accurately measure $PL\_{b,f,c}\left(q\_{d}\right)$, or the UE is not provided with *pathlossReferenceRS-Pos*, the UE calculates $PL\_{b,f,c}\left(q\_{d}\right)$ using a RS resource obtained from the SS/PBCH block of the serving cell that the UE uses to obtain *MIB*. If the UE is in the RRC\_INACTIVE state, is not provided *SRS-PosRRC-InactiveConfig-ValidityArea*, and determines that the UE is not able to accurately measure $PL\_{b,f,c}\left(q\_{d}\right)$, the UE does not transmit SRS for the SRS resource set.

 The UE may indicate a capability for a number of pathloss estimates that the UE can simultaneously maintain for all SRS resource sets provided by *SRS-PosResourceSet* in addition to the up to four pathloss estimates that the UE maintains per serving cell for PUSCH/PUCCH transmissions and for SRS transmissions configured by *SRS-Resource*.

If a UE transmits SRS based on a configuration by *SRS-PosResourceSet* outside initial UL BWP of carrier *f* of serving cell *c* in RRC\_INACTIVE state, the active UL BWP *b* refers to the BWP configuration provided by *bwp-NUL* or *bwp-SUL* in *SRS-PosRRC-InactiveConfig* for the corresponding carrier.

If a UE transmits SRS on multiple SRS resources for positioning bandwidth aggregation according to *linkage* [6, TS 38.214], the UE calculates $P\_{SRS,b,f,c}\left(i,q\_{s}\right)$ using the same values of $P\_{O\\_SRS,b,f,c}\left(q\_{s}\right)$, $α\_{SRS,b,f,c}\left(q\_{s}\right)$, and $PL\_{b,f,c}\left(q\_{d}\right)$ for each of the multiple SRS resources.

If a UE transmits SRS based on a configuration by *SRS-PosResourceSet* in *SRS-PosRRC-InactiveValidityAreaConfig* in RRC\_INACTIVE state [12, TS 38.331], the active UL BWP *b* refers to the BWP provided by *bwp* in *SRS-PosRRC-InactiveValidityAreaConfig*. If the UE is not provided *pathlossReferenceRS-Pos* in *SRS-PosResourceSet*, or if the UE is provided *pathlossReferenceRS-Pos* in *SRS-PosResourceSet* and the UE cannot accurately measure the pathloss RS provided in *pathlossReferenceRS-Pos*, the UE calculates $PL\_{b,f,c}(q\_{d})$ using an RS resource from an SS/PBCH block with same index as the one the UE used to obtain *MIB*; otherwise, the UE uses the RS indicated by *pathlossReferenceRS-Pos* to calculate $PL\_{b,f,c}(q\_{d})$.

If a RedCap UE transmits SRS with frequency hopping outside the active UL BWP of carrier $f$ of serving cell $c$ in RRC\_CONNECTED state based on a configuration by *SRS-PosResourceSet* in *SRS-PosTx-Hopping*, the active UL BWP $b$ refers to the BWP provided by *bwp* in *SRS-PosTx-Hopping*.

If a RedCap UE transmits SRS with frequency hopping outside the initial UL BWP of carrier $f$ of serving cell $c$ in RRC\_INACTIVE state based on a configuration by *SRS-PosResourceSet* in *SRS-PosTx-Hopping*, the active UL BWP $b$ refers to the BWP provided by *bwp* in *SRS-PosTx-Hopping*.

**<Unchanged text omitted>**