**3GPP TSG RAN WG1 Meeting #110R1-220XXXX**

**Toulouse, France, August 22 - 26, 2022**

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| *CR-Form-v12.2* | | | | | | | | |
| **[DRAFT] CHANGE REQUEST** | | | | | | | | |
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|  | **38.214** | **CR** |  | **rev** | **-** | **Current version:** | **17.2.0** |  |
|  | | | | | | | | |
| *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:*** | Corrections on UE power saving enhancements for NR in TS 38.214 | | | | | | | | | |
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| ***Source to WG:*** | MediaTek, Huawei, HiSilicon, ZTE, Sanechips | | | | | | | | | |
| ***Source to TSG:*** | R1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_UE\_pow\_sav\_enh-Core | | | | |  | ***Date:*** | | | 2022-08-26 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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 can be 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:*** | | Some parameter names for Rel-17 UE power saving are not aligned with the parameter names used in TS 38.331. | | | | | | | | |
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| ***Summary of change:*** | | Updates on the parameter names to align with TS 38.331：   1. Modify the name of the parameter ‘*TRS-ResourceSetConfig*’ in 38.214 2. Update the parameter name of “*numberOfresources*” to “*nrofResources*”; 3. Update “*scramblingID*” to “*ScramblingID*”; | | | | | | | | |
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| ***Consequences if not approved:*** | | Some parameter names for Rel-17 UE power saving are not aligned with the name used in TS 38.331. | | | | | | | | |
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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 parts are omitted >

A UE in RRC\_IDLE or RRC\_INACTIVE can receive a higher layer configuration of TRS occasions via a *trs-ResourceSetConfig*.

- For frequency range 1, the UE may be configured with one or more TRS resource set(s), where each TRS resource set configured by a *TRS-ResourceSet* consists of four periodic NZP CSI-RS resources in two consecutive slots with two periodic NZP CSI-RS resources in each slot. If no two consecutive slots are indicated as downlink slots by *tdd-UL-DL-ConfigurationCommon*, then the UE may be configured with one or more NZP CSI-RS set(s), where a *TRS-ResourceSet* consists of two periodic NZP CSI-RS resources in one slot.

- For frequency range 2 the UE may be configured with one or more TRS resource set(s), where each TRS resource set configured by a *TRS-ResourceSet* consists of two periodic NZP CSI-RS resources in one slot or by a *TRS-ResourceSet* of four periodic NZP CSI-RS resources in two consecutive slots with two periodic NZP CSI-RS resources in each slot.

Each NZP CSI-RS resource, defined in Clause 7.4.1.5.3 of [4, TS 38.211], is configured by the higher layer parameter *TRS-ResourceSet* with the following restrictions for a UE in RRC\_IDLE or RRC\_INACTIVE:

- the number of periodic NZP CSI-RS resources configured by a *TRS-ResourceSet* is given by *nrofResources*

- the time-domain locations of the two CSI-RS resources in a slot, or of the four CSI-RS resources in two consecutive slots (which are the same across two consecutive slots), is one of

- , , or for frequency range 1 and frequency range 2,

- , , , , ,  or  for frequency range 2.

- where the first symbol location in a slot is indicated by *firstOFDMSymbolInTimeDomain* in the *TRS-ResourceSet* and the second symbol location in a slot is *firstOFDMSymbolInTimeDomain +* 4

- a single port CSI-RS resource with density  given by Table 7.4.1.5.3-1 from [4, TS 38.211]*.*

- the bandwidth and the frequency location of the NZP CSI-RS resource, is given by the higher layer parameter *nrofRBs*, *startingRB* and *frequencyDomainAllocation* in a *TRS-ResourceSet* and applies to all resources in a *TRS-ResourceSet*. Bandwidth, *nrofRBs*, and the initial CRB index, *startingRB*, of the NZP CSI-RS resource configured by *TRS-ResourceSet* are not restricted by initial DL BWP.

- UE is not required to receive TRS occasions outside the initial DL BWP.

- the periodicity for periodic NZP CSI-RS resources, is given by the higher layer parameter *periodicityAndOffset* configured b*y* a *TRS-ResourceSet*, is one of slots where 10, 20, 40, or 80 and where µ is defined in Clause 4.3 of [4, TS 38.211], applies to all resources in a *TRS-ResourceSet*. The slot offset given by the higher layer parameter *periodicityAndOffset* configured b*y* a *TRS-ResourceSet* provides the location of the first slot containing the periodic NZP CSI-RS resources configured by b*y* a *TRS-ResourceSet.*

- the UE does not expect the *TRS-ResourceSet* to be configured with the periodicity of  slots if the bandwidth of NZP CSI-RS resource is larger than 52 resource blocks.

- the UE may assume the sub-carrier spacing of the NZP CSI-RS resources configured by *TRS-ResourceSet* to be same as the sub-carrier spacing of the initial DL BWP.

- *powerControlOffsetSS* given bya *TRS-ResourceSet* applies to all resources in a *TRS-ResourceSet*.

- the QCL information for periodic NZP CSI-RS resources, is given by the higher layer parameter *ssb-Index* configured by a *TRS-ResourceSet*, is a SS/PBCH block, applies to all resources in a *TRS-ResourceSet*.

- One or more *ScramblingIDs* where if a single *ScramblingID* is configured, it applies to all NZP-CSI-RS resources in the resource set, otherwise, each NZP-CSI-RS resource is provided with a *ScramblingID*.

- the UE may assume the following quasi co-location type(s):

- 'typeC' with an SS/PBCH block and, when applicable, 'typeD' with the same SS/PBCH block.

#### < Unchanged parts are omitted >