**3GPP TSG-RAN WG1 Meeting #112-bis-e** **R1-230xxxx**

**e-Meeting, April 17th - April 26th, 2023**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **38.214** | **CR** | **XXX** | **rev** | **-** | **Current version:** | **17.5.0** |  |
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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:***  | Draft CR on SFN configuration for HST-SFN |
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| ***Source to WG:*** | Moderator (Intel Corporation) |
| ***Source to TSG:*** | R1 |
|  |  |
| ***Work item code:*** | NR\_FeMIMO-Core |  | ***Date:*** | 2023-04-25 |
|  |  |  |  |  |
| ***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 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:*** | In current TS 38.331, *sfnSchemePDCCH* and *sfnSchemePDSCH* are configured in *ServingCellConfig*, i.e., per-CC configuration. Hence, RAN1 specification should be updated to align with it. It should also be clarified that the SFN configuration is the same for all DL BWPs within a CC and the UE does not expect to be configured with *sfnSchemePDCCH* and *sfnSchemePDSCH* in the initial BWP as per the following agreement:

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| **Agreement**Enhanced SFN (scheme 1 or TRP-based pre-compensation scheme) for PDCCH and PDSCH is configured by using separate per-BWP RRC parameters* In Rel-17, all downlink BWPs (except initial BWP and FFS: BWP-DownlinkCommon) within a CC should be the same configuration of SFN scheme
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| ***Summary of change:*** | Remove description that *sfnSchemePDCCH* or *sfnSchemePDSCH* is configured for a BWP and add clarification that UE does not expect SFN configuration in initial BWP |
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| ***Consequences if not approved:*** | Misalignment between TS 38.214 and TS 38.331 and misinterpretation of SFN configuration in initial BWP.  |
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| ***Clauses affected:*** | 5.1  |
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|  | **Y** | **N** |  |  |
| ***Other specs*** |  |  |  Other core specifications  |  |
| ***affected:*** |  |  |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  |  |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
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| ***This CR's revision history:*** | This is the first version of the CR. |

## 5.1 UE procedure for receiving the physical downlink shared channel

< Unchanged parts are omitted >

When a UE is configured with higher layer parameter *sfnSchemePdsch* set to either *'*sfnSchemeA*'* or *'*sfnSchemeB*'* and

- if the UE reports its capability of *sfn-SchemeA-DynamicSwitching-r17* or *sfn-SchemeB-DynamicSwitching-r17*, the UE is indicated with one or two TCI state(s) in a codepoint of the DCI field *'Transmission Configuration Indication'* in DCI format 1\_1/1\_2, or

- otherwise, the UE is not expected to be indicated with one TCI state per any of TCI codepoint by MAC CE, and the UE is indicated with two TCI states in a codepoint of the DCI field *'Transmission Configuration Indication'* in DCI format 1\_1/1\_2, and

the UE procedure for receiving the PDSCH upon detection of a PDCCH follows clause 5.1 and the QCL assumption for the PDSCH as defined in clause 5.1.5.

When a UE is configured with both *sfnSchemePdsch* and *sfnSchemePdcch*, the UE shall expect that *sfnSchemePdsch* and *sfnSchemePdcch* are set to the same scheme, either *'*sfnSchemeA*'* or *'*sfnSchemeB*'*.

If a UE is configured with *sfnSchemePdcch* set to 'sfnSchemeA' and activated with two TCI states by MAC CE, and the UE does not report its capability of *sfn-SchemeA-PDCCH-only*, the UE is expected to be configured with *sfnSchemePdsch* set to *'sfnSchemeA'* and indicated with two TCI states in a codepoint of the DCI field *'Transmission Configuration Indication',* if the PDSCH is scheduled by DCI format 1\_1/1\_2.

If a UE is configured with *sfnSchemePdcch* set to 'sfnSchemeB' and activated with two TCI states by MAC CE, the UE is expected to be configured with *sfnSchemePdsch* set to *'sfnSchemeB'* and indicated with two TCI states in a codepoint of the DCI field *'Transmission Configuration Indication',* if the PDSCH is scheduled by DCI format 1\_1/1\_2.

When a UE is configured with *sfnSchemePdsch* and/or *sfnSchemePdcch*, the UE shall expect that the *sfnSchemePdsch* and/or *sfnSchemePdcch* configuration are the same within a CC, and the UE shall expect that the *sfnSchemePdsch* and/or *sfnSchemePdcch* configuration are the same in all CCs in a same frequency band if the UE is configured with CA, where the UE does not expect to be configured with *sfnSchemePdsch* and/or *sfnSchemePdcch* in initial BWP in each CC.

< Unchanged parts are omitted >