**3GPP TSG-RAN WG1 Meeting #110bis-e *R1-221xxxx***

**e-Meeting, October 10 – 19, 2022**

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| *CR-Form-v12.2* |
| **[DRAFT] CHANGE REQUEST** |
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|  | **TS 38.214** | **CR** | **xxxx** | **rev** | **-** | **Current version:** | **17.3.0** |  |
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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 collision in Type 1B and Type 2 PPW for FR2 inter-band case |
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| ***Source to WG:*** | Moderator (Huawei), ZTE |
| ***Source to TSG:*** | RAN1 |
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| ***Work item code:*** | NR\_pos\_enh-Core |  | ***Date:*** | 2022-10-18 |
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| ***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 RAN4#104e meeting, the following agreements were achieved where the signals with the same Rx beam as PRS are affected even those signals are in different bands from PRS in FR2 for capability 1B and 2. Hence, TS 38.214 should be updated accordingly.

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| **Agreement in RAN4#104e:**When PRS is lower priority than the DL signals/channels the following applies for cap1A and 1B UEs:* If UE determines the presence of other DL signals/channels except SSB of higher priority than PRS in the PPW no later than [N symbol/T ms] before the start of the PPW, UE expects to receive the DL signals/channels and drop all DL PRS in the PPW.
* If UE determines the presence of other DL signals/channels except SSB of higher priority than PRS in the PPW later than [N symbol/T ms] before the start of the PPW, UE is not required to receive the other DL signals/channels except SSB of higher priority and may receive the DL PRS in the PPW.

When PRS is lower priority than the DL signals/channels the following applies for cap 2 UEs:* If UE determines the presence of other DL signals/channels except SSB of higher priority than PRS on a PRS symbol no later than [N symbol/T ms] before the PRS symbol, UE expects to receive the DL signals/channels and drop the PRS symbol.
* If UE determines the presence of other DL signals/channels except SSB of higher priority than PRS on a PRS symbol later than [N symbol/T ms] before the PRS symbol, UE is not required to receive the other DL signals/channels except SSB of higher priority and may receive the PRS symbol.

For inter-band case for FR2 for the DL signals/channels from a different FR2 band than the FR2 band of the DL PRS, if the same Rx beam is used for both FR2 bands and the DL PRS is determined to be higher priority, capability 1B and 2 UEs are not expected to receive the DL signals/channels. |

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| ***Summary of change:*** | Update description on collision issue across FR2 bands for type 1B and type 2 PPW according to RAN4’s agreement. |
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| ***Consequences if not approved:*** | The specification 38.214 is not complete on the collision issue between DL PRS and other signals on different FR2 bands in a type 1B and type 2 PPW. |
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| ***Clauses affected:*** | 5.1.6.5 |
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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 ...  |
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| ***Other comments:*** | Isolated Impact Analysis:If the UE is implemented according to this CR, while the network is not, the DL/signals channels in a different FR2 bands than the PRS FR2 bands that shares a common Rx beam may not be received.If the network is implemented according to this CR, while the UE is not, there is no inter-operability issue. |
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| ***This CR's revision history:*** |  |

5.1.6.5 PRS reception procedure

<Unrelated part omitted>

When the UE is expected to measure the DL PRS outside the measurement gap in a configured PRS processing window with *type1A* and if the DL PRS is determined to be higher priority than the DL signals and channels inside the PRS processing window, those DL signals and channels are not expected to be measured by the UE. When the UE is expected to measure the DL PRS outside the measurement gap in a configured PRS processing window with *type1B* and if the DL PRS is determined to be higher priority than the DL signals and channels inside the PRS processing window, those DL signals and channels in the same band as the DL PRS are not expected to be measured by the UE. When the UE is expected to measure the DL PRS outside the measurement gap in a configured PRS processing window with *type2* if the DL PRS is determined to be higher priority than the DL signals and channels inside the PRS processing window, those DL signals and channels from the impacted serving cells are not expected to be measured by the UE on the overlapped symbols with the DL PRS, where impacted serving cells refer to the serving cell on which the *DL-PPW-PreConfig* is configured for a frequency range 1 band, and all the serving cells in the same band as the DL PRS for a frequency range 2 band. When the UE is expected to measure the DL PRS outside the measurement gap in a configured PRS processing window with *type1B* or *type2,* and if the DL PRS is determined to be higher priority than the DL signals and channels inside the PRS processing window, the UE behavior is described in [11, TS 38.133] for inter-band case for frequency range 2 for the DL signals/channels from a different frequency range 2 band than the frequency range 2 band of the DL PRS.

<Unrelated part omitted>