**3GPP TSG-RAN WG1 Meeting #110bis-e *R1-220xxxx***

**e-Meeting, October 10 – 19, 2022**

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| *CR-Form-v12.2* |
| **[DRAFT] CHANGE REQUEST** |
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|  | **38.213** | **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:***  | Correction on parallel transmission of PRACH and SRS/PUCCH/PUSCH |
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| ***Source to WG:*** | Huawei, HiSilicon |
| ***Source to TSG:*** | RAN1 |
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| ***Work item code:*** | Tel17, NR\_newRAT-Core |  | ***Date:*** | 2022-09-30 |
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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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
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| ***Reason for change:*** | In RAN1#109-e, it was agreed to introduce a new feature group X-2 and a new Rel-17 RRC parameter for parallel PRACH and SRS/PUCCH/PUSCH transmissions across CCs in intra-band non-contiguous CA.AgreementIntroduce feature groups X-1 and X-2 as described below.* Introduce a new Rel-17 RRC parameter (UE-specific) to enable the UE behavior under X-2.

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| X. TEI | X-2 | Parallel PRACH and SRS/PUCCH/PUSCH transmissions across CCs in intra-band non-contiguous CA | Parallel PRACH and SRS/PUCCH/PUSCH transmissions across CCs in intra-band non-contiguous CA |  | *Yes* | n/a | UE cannot transmit parallel PRACH and SRS/PUCCH/PUSCH transmissions across CCs in intra-band non-contiguous CA | Per BC | No | Yes | n/a | This feature is the same as parallelTxPRACH-SRS-PUCCH-PUSCH, but for intra-band non-contiguous CA. This feature is enabled by a new UE-specific RRC parameter *intraBandNC-PRACH-simulTx-r17* | Optional with capability signaling |

The above agreement has already been reflected in TS38.214 V17.3.0 but it has not been captured in TS38.213 V17.3.0. Based on current specification, the UE can not transmit PRACH and PUSCH/PUCCH/SRS simultaneously in intra-band non-contiguous CA. |
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| ***Summary of change:*** | Clarify in TS38.213 that a UE can perform simultaneous transmission for PRACH and SRS/PUCCH/PUSCH in intra-band non-contiguous CA if its capability indicates so and the UE is enabled by RRC. |
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| ***Consequences if not approved:*** | For parallel PRACH and SRS/PUCCH/PUSCH transmissions, RAN1 specification is not consistent between TS38.213 and TS38.214. |
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| ***Clauses affected:*** | 8.1 |
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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 ...  |
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| ***Other comments:*** | **Impacted functionality:** Simultaneous transmission of PRACH on one uplink carrier and PUSCH/PUCCH/SRS on another uplink carrier in intra-band non-contiguous CA and with UE supporting *intraBandNC-PRACH-simulTx-r17* configuration. If the UE is implemented according to the CR and the gNB is not, the UE can transmit the two signals on the two carriers as intended and there is no interoperability issue. If the gNB is implemented according to the CR and the UE is not, the UE may not be able to transmit the two signals on the two carriers as intended and the usefulness of this UE capability is lost. There is no interoperability issue. |
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| ***This CR's revision history:*** |  |

## 8.1 Random access preamble

========================= Unchanged parts =========================

For single cell operation or for operation with contiguous carrier aggregation in a same frequency band or for operation with non-contiguous carrier aggregation in a same frequency band if the UE is not provided with *intraBandNC-PRACH-simulTx-r17*, a UE does not transmit PRACH and PUSCH/PUCCH/SRS in a same slot or when a gap between the first or last symbol of a PRACH transmission in a first slot is separated by less than $N$ symbols from the last or first symbol, respectively, of a PUSCH/PUCCH/SRS transmission in a second slot where $N=2$ for $μ=0$ or $μ=$1, $N=4$ for $μ=2$ or $μ=3$, $N=16$ for $μ=5$, $N=32$ for $μ=6$, and $μ$ is the SCS configuration for the active UL BWP. For a PUSCH transmission with repetition Type B, this applies to each actual repetition for PUSCH transmission [6, TS 38.214].