**3GPP TSG-RAN WG4 Meeting #104-e *R4-2213137***

**Electronic Meeting, 15 - 26 August, 2022**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.101-3** | **CR** | **DraftCR** | **rev** | **-** | **Current version:** | **15.18.0** |  |
|  | | | | | | | | |
| *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 |  | Core Network |  |

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| ***Title:*** | Draft CR for 38.101-3 to improve the wording for simultaneousRxTx clarification | | | | | | | | | |
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| ***Source to WG:*** | Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_newRAT-Core | | | | |  | ***Date:*** | | | 2022-07-11 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-15 |
|  | *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:*** | | For the simultaneousRxTx clarification for CA and DC in clause 5.2A.1 and 5.5B.1, there are two kinds of band combinations, i.e. lower order and higher order band combinations. But it’s very hard to distinguish them in these clarification. That’s why the wording for simultaneousRxTx clarification need to be improved. | | | | | | | | |
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| ***Summary of change:*** | | The wording for simultaneousRxTx clarification is improved to distinguish lower and higher order band combinations. | | | | | | | | |
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| ***Consequences if not approved:*** | | There are some ambiguities in simultaneousRxTx clarification. | | | | | | | | |
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| ***Clauses affected:*** | | 5.2A.1, 5.5B.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS 38.521-3 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

## **<<Start of Change>>**

### 5.2A.1 Inter-band CA between FR1 and FR2

NR carrier aggregation are designed to operate in the operating bands defined in Table 5.2A.1‑1. The band combinations include at least one FR1 operating band and one FR2 operating band.

If the mandatory simultaneous Rx/Tx capability applies for a lower order band combination, the mandatory simultaneous Rx/Tx capability also applies for the lower order band combination when the applicable lower order band combination is a subset of a higher order band combination.

Table 5.2A.1-1: Band combinations for inter-band NR CA between FR1 and FR2

|  |  |
| --- | --- |
| NR CA Band | NR Band |
| CA\_n8-n2581 | n8, n258 |
| CA\_n71-n2571 | n71, n257 |
| CA\_n77-n2571 | n77, n257 |
| CA\_n78-n2571 | n78, n257 |
| CA\_n79-n2571 | n79, n257 |
| NOTE 1: Applicable for UE supporting inter-band carrier aggregation with mandatory simultaneous Rx/Tx capability. | |

## **<<End of Change>>**

## **<<Start of Change>>**

### 5.5B.1 General

The operating bands and bandwidth classes are specified for operation with EN-DC, NGEN-DC, NE-DC or NR-DC configured. The EN-DC, NGEN-DC or NE-DC band combinations include at least one E-UTRA operating band.

For EN-DC or NE-DC configurations indicated by column "Single Uplink allowed" (e.g., problematic band combinations as defined in TS 38.306 [11]) in tables in this clause the UE may indicate capability of not supporting simultaneous dual and triple uplink operation due to possible intermodulation interference to its own primary downlink channel bandwidth of PCell or PSCell if the intermodulation order is 2 or if the intermodulation order is 3 for the combinations when both operating bands are between 450 MHz – 960 MHz or between 1427 MHz – 2690 MHz.

In the case for EN-DC or NE-DC configurations listed in tables in this clause for which the intermodulation products caused by the dual and triple uplink operation fall into the receive band but do not interfere with its own primary downlink channel bandwidth of PCell or PSCell as defined in Annex I the UE is mandated to operate in dual and triple uplink mode. Single Uplink is also allowed for certain band combinations where intermodulation or reverse intermodulation products could create difficulty for meeting emission requirements.

For EN-DC combinations of order 3 or higher, "Single Uplink allowed" UL configurations captured in Table 5.5B.2-1, Table 5.5B.3-1, and Table 5.5B.4-1 apply.

If multiple UL DC configurations are listed for multiple DL DC configurations, valid uplink configurations are such that uplink does not have more carriers than downlink.

Non‑contiguous resource allocation and almost contiguous allocation are not applicable for E‑UTRA or NR carrier part of intra‑band EN‑DC configuration.

If the mandatory simultaneous Rx/Tx capability applies for a lower order DC configuration, the mandatory simultaneous Rx/Tx capability also applies for the lower order DC configuration when the applicable lower order DC configuration is a subset of a higher order DC configuration.

## **<<End of Change>>**