**3GPP TSG-RAN4 Meeting # 100-e *R4-2115844***

**Electronic meeting, August 16 – 27, 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.141-1** | **CR** | **<CR#>** | **rev** | **-** | **Current version:** | **15.9.0** |  |
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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 |  | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | Big CR for TS 38.141-1 Maintenance RF part (Rel-15, CAT F) | | | | | | | | | |
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| ***Source to WG:*** | MCC, Nokia | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_newRAT-Perf | | | | |  | ***Date:*** | | | 2021-08-29 |
|  |  | | | |  | |  | | |  |
| ***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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
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| ***Reason for change:*** | | This big CR merges the multiple endorsed draft CRs. The reason for change in each endorsed draft CR is copied below.  R4-2113496 Draft CR to TS 38.141-1 NRTC4 test configuration correction  This is draft CR to TS 38.141-1 with proposal to correct test configuration NRTC4 description.  Following description exist in specification in clause 4.7.6.1:  “*NRTC4 is based on re-using the previously specified test configurations (NRTC1, NRTC2 and NRTC3) applicable per band involved in multi-band operation. It is constructed using the following method*”  However NRTC4 should use NRTC1 configuration, thus to avoid confusion it is proposed to remove “(NRTC1, NRTC2 and NRTC3)”. Currently it is already descirbed in 4th bullet that only NRTC1 configuration is used:  *“- Each concerned band shall be considered as an independent band and the carrier placement in each band shall be according to NRTC1, where the declared parameters for multi-band operation shall apply. The mirror image of the single-band test configuration shall be used in each alternate band(s) and in the highest band being.”* | | | | | | | | |
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| ***Summary of change:*** | | The summary of change in each each endorsed draft CR is copied below.  R4-2113496 Draft CR to TS 38.141-1 NRTC4 test configuration correction  Correction to NRTC4 descriprtion by removing adding “(NRTC1, NRTC2 and NRTC3)”. | | | | | | | | |
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| ***Consequences if not approved:*** | | The consequences if not approved for each endorsed draft CR are coppied below.  R4-2113496 Draft CR to TS 38.141-1 NRTC4 test configuration correction  Definition of NRTC4 in conducted specification will be still ambigous. | | | | | | | | |
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| ***Clauses affected:*** | | R4-2113496 Draft CR to TS 38.141-1 NRTC4 test configuration correction  4.7.6.1 | | | | | | | | |
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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:*** | |  | | | | | | | | |

## **<Start of Change 1>**

4.7.6 NRTC4: Multi-band test configuration for full carrier allocation

The purpose of NRTC4 is to test multi-band operation aspects considering maximum supported number of carriers.

4.7.6.1 NRTC4 generation

NRTC4 is based on re-using the previously specified test configurations applicable per band involved in multi-band operation. It is constructed using the following method:

- The Base Station RF Bandwidth of each supported operating band shall be the declared maximum Base Station RF Bandwidth in multi-band operation (D.12).

- The number of carriers of each supported *operating band* shall be the declared maximum number of supported carriers per operating band in multi-band operation (D.18). Carriers shall be selected according to 4.7.2 and shall first be placed at the outermost edges of the declared maximum Radio Bandwidth. Additional carriers shall next be placed at the Base Station RF Bandwidths edges, if possible.

- The allocated Base Station RF Bandwidth of the outermost bands shall be located at the outermost edges of the declared maximum Radio Bandwidth.

- Each concerned band shall be considered as an independent band and the carrier placement in each band shall be according to NRTC1, where the declared parameters for multi-band operation shall apply. The mirror image of the single-band test configuration shall be used in each alternate band(s) and in the highest band being.

- If only three carriers are supported, two carriers shall be placed in one band according to the relevant test configuration while the remaining carrier shall be placed at the edge of the maximum *Radio Bandwidth* in the other band.

- If the sum of the maximum Base Station RF Bandwidths of each supported *operating bands* is larger than the declared *Total RF Bandwidth* BWtot (D.13) of transmitter and receiver for the declared band combinations of the BS, repeat the steps above for test configurations where the Base Station RF Bandwidth of one of the operating band shall be reduced so that the *Total RF Bandwidth* of transmitter and receiver is not exceeded and vice versa.

- If the sum of the maximum number of supported carriers per operating band in multi-band operation (D.18) is larger than the declared total maximum number of supported carriers in multi-band operation (D.19), repeat the steps above for test configurations where in each test configuration the number of carriers of one of the operating band shall be reduced so that the total number of supported carriers is not exceeded and vice versa.

4.7.6.2 NRTC4 power allocation

Unless otherwise stated, set the power of each carrier in all supported *operating bands* to the same power so that the sum of the carrier powers equals the rated total output power (Prated,t,AC or Prated,t,TABC, D.22) according to the manufacturer's declaration.

If the allocated power of a supported *operating band(s)* exceeds the declared rated total output power of the *operating band(s)* in multi-band operation, the exceeded part shall, if possible, be reallocated into the other band(s). If the power allocated for a carrier exceeds the rated output power declared for that carrier, the exceeded power shall, if possible, be reallocated into the other carriers.

4.7.7 NRTC5: Multi-band test configuration with high PSD per carrier

## **<End of Change 1>**