**3GPP TSG-RAN4 Meeting #111 *R4-2410537***

**Fukuoka, Japan, May 20th – 24th, 2024**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **38.101-1** | **CR** | **2210** | **rev** | **1** | **Current version:** | **18.5.0** |  |
|  |
| *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:***  | CR for 38.101-1 to add general text descriptions on higher power class(es) applicability for higher order band combinations |
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| ***Source to WG:*** | Apple |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | HPUE\_FR1\_TDD\_NR\_CADC\_SUL\_R18  |  | ***Date:*** | 2024-05-20 |
|  |  |  |  |  |
| ***Category:*** | F |  | ***Release:*** | Rel-18 |
|  | *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)* *Rel-20 (Release 20)* |
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| ***Reason for change:*** | Since HPUE is normally introduced from lower order combinations and up, there is typically some time lag before the PC2 or PC1.5 support note indication can propagate up to the higher order combinations, this may render a power class support disparity issue between higher order and lower order DL combinations which have the same UL configurations. Adding general text descriptions on the rules of higher power class(es) applicability for higher order band combinations which do not require new MSD analysis in addition to the configuration specific PC2/PC1.5 notes can help bridge the gap on PC2/PC1.5 support between higher order combinations and its fallback combinations. |
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| ***Summary of change:*** | Add general text descriptions on the rules of higher power class(es) applicability for higher order band combinations to clause 5.5A.0.  |
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| ***Consequences if not approved:*** | The unintentional power class support disparity among the higher order combinations and its fallback combinations in the technical specifications would force UE to use the more complex FeatureSet signaling to indicate the different power class support in the fallback combinations. The UE would also be forced to use the default power class in the higher order combinations despite the UE is capable of supporting PC2 or PC1.5 in the higher order combinations.  |
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| ***Clauses affected:*** | 5.5A.0 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS 38.521-1 |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Revised from R4-2407089 |

<<< Start of changed sections >>>

## 5.5A Configurations for CA

### 5.5A.0 General

The configurations for CA operating band including Band n41 also apply for the corresponding CA operating bands with Band n90 replacing Band n41 but with otherwise identical parameters. For brevity the said configuration for CA operating bands with Band n90 are not listed in the tables below but are covered by this specification.

Non‑contiguous resource allocation and almost contiguous allocation are not applicable for each NR carrier of intra‑band contiguous and non-contiguous CA configurations.

For a CA configuration with one or more operating band supporting asymmetric channel bandwidths as specified in sub-clause 5.3.6, requirements are defined for an asymmetric UL and DL channel bandwidth combination of a supported asymmetric channel bandwidth combination set for an operating band of the CA configuration when the said UL and DL channel bandwidths are also contained in a supported bandwidth combination set of the CA configuration.

For a higher order band combination of which CA\_n20-n28 is a subset, the frequency range in band n28 is restricted for the higher order band combination to 703-733 MHz for the UL and 758-788 MHz for the DL.

The configuration tables for CA describe Bandwidth Combination Sets. Bandwidth Combination Set 4 and 5 contain all possible defined channel bandwidths for each band in the combination. The fact that BCS4 and BCS5 contain all channel bandwidths for each band does not alter if a bandwidth is mandatory or optional for a given band. Bandwidths that are identified as optional in Table 5.3.5-1 for a given release are still optional for UEs that support BCS4 or BCS5, where the bandwidths the UE supports for each band, the maximum bandwidth and/or minimum bandwidth for the band in the band combination are indicated in the UE capabilities. The minimum bandwidth per CC and maximum aggregated FDD, TDD and total bandwidth per band combination may be indicated only for BCS5 as described in 38.306 [15] and BCS5 shall not be indicated together with BCS4 for a CA configuration. For inter-band CA combinations including FR1 intra-band CA and with BCS4 or BCS5 in the following configuration tables, the Bandwidth Combination Sets for the FR1 intra-band CA are BCS4 or BCS5, respectively.

By default, power class 3 is applicable for the CA configurations listed in the following clauses. The applicability of higher power class(es) is indicated in the CA configuration tables in clauses 5.5A.1, 5.5A.2 and 5.5A.3. For inter-band CA configurations in clause 5.5A.3, the applicability of higher power class(es) for higher order band combinations is based on the following rules:

* For a configuration with intra-band CA in the DL, the inter-band UL CA configuration without intra-band CA in the UL may support the same higher power class(es) as with the configuration composed of the same bands without intra-band CA in the DL.
* For a configuration with intra-band CA in the DL, the higher power class(es) may be supported for single-carrier UL or intra-band UL CA when the same higher power class(es) are specified for all its fallback configurations.
* For a configuration with 3 or more DL bands and without intra-band CA in the DL, the higher power class(es) may be supported for single-carrier UL when the same higher power class(es) are specified for all its fallback configurations.
* For a configuration with 4 or more DL bands and without intra-band CA in the DL, the higher power class(es) may be supported for inter-band UL CA configuration when the same higher power class(es) are specified for all its fallback configurations.

A UE supporting a given power class for a CA configuration shall meet the corresponding transmitter and receiver

requirements in Clause 6 and Clause 7, respectively.

<<< End of changed sections >>>