**3GPP TSG-RAN WG4 Meeting #98-e R4-2102319**

**Electronic Meeting, 25 January – 5 February 2021**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.101-1** | **CR** | **0680** | **rev** |  | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | CR for improvements of intra-band tables | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_CA\_R17\_intra | | | | |  | ***Date:*** | | | 2021-01-15 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***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 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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Improvements of intra-band tables | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Intra-band CA configuration table is rewritten based on this logic:   1. Since order of carriers does not matter, never repeat X – Y as Y – X. 2. Use as few rows as possible 3. Avoid duplication 4. Avoid listing combinations in the BCS table that break the limitations on maximum BW for the bandwidth class 5. Avoid listing combinations in the BCS table that break the max aggregated BW limitation   Intra-band table for mixed contiguous and non-contiguous CA is rewritten based on new way with channel BW instead of Yes | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Improvements are not made | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 changes---

Table 5.5A.1-1: NR CA configurations and bandwidth combination sets defined for intra-band contiguous CA

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| NR CA configuration / Bandwidth combination set | | | | | | | | |
| NR CA configuration | Uplink CA configurations | Channel bandwidths for carrier (MHz) | Channel bandwidths for carrier (MHz) | Channel bandwidths for carrier (MHz) | Channel bandwidths for carrier (MHz) | Channel bandwidths for carrier (MHz) | Maximum aggregated  bandwidth (MHz) | Bandwidth combination set |
| CA\_n1B | - | 10 | 10,15 |  |  |  | 40 | 0 |
|  |  | 15 | 15,20 |  |  |  |  |  |
|  |  | 20 | 20 |  |  |  |  |  |
| CA\_n7B | CA\_n7B | 10 | 10, 15, 20, 30, 40 |  |  |  | 50 | 0 |
| 15 | 15, 20, 30 |  |  |  |
| 20 | 20, 30 |  |  |  |
| CA\_n40B | - | 20 | 80 |  |  |  | 100 | 0 |
|  |  | 50 | 50 |  |  |  |  |  |
| CA\_n41B | CA\_n41B | 10, 20, 30, 40, 50 | 10, 20, 30, 40, 50 |  |  |  | 100 | 0 |
| CA\_n41C | CA\_n41C | 40 | 80, 100 |  |  |  | 180 | 0 |
| 50, 60, 80 | 60, 80, 100 |  |  |  |  |  |
| 10 | 100 |  |  |  | 190 | 1 |
| 15, 20 | 90, 100 |  |  |  |
| 40 | 80, 90, 100 |  |  |  |
| 50, 60, 80, 90 | 60, 80, 90, 100 |  |  |  |
| CA\_n46B | - | 20, 40, 60 | 20, 40 |  |  |  | 100 | 0 |
| CA\_n46C | - | 60, 80 | 60, 80 |  |  |  | 160 | 0 |
| CA\_n46D | - | 60, 80 | 80 | 80 |  |  | 240 | 0 |
| CA\_n46E | - | 80 | 80 | 80 | 80 |  | 320 | 0 |
| CA\_n46M | - | 20, 40, 60 | 20, 40 | 20, 40 |  |  | 140 | 0 |
| CA\_n46N | - | 20, 40, 80 | 20, 40 | 20, 40 | 20, 40 |  | 200 | 0 |
| CA\_n46O | - | 20, 60 | 20, 40 | 20, 40 | 20, 40 | 20, 40 | 220 | 0 |
| CA\_n48B | CA\_n48B | 5, 10 | 10, 15, 20 |  |  |  | 40 | 0 |
|  |  | 15, 20 | 15, 20 |  |  |  |  |  |
|  | - | 10 | 50, 60, 80, 90 |  |  |  | 100 | 1 |
|  |  | 15, 20 | 40, 50, 60, 80 |  |  |  |  |  |
|  |  | 40 | 40, 50, 60 |  |  |  |  |  |
| CA\_n48C | - | 10 | 100 |  |  |  | 140 | 0 |
|  |  | 15 | 90,100 |  |  |  |  |  |
|  |  | 20 | 90, 100 |  |  |  |  |  |
|  |  | 40 | 80, 90, 100 |  |  |  |  |  |
| CA\_n66B | - | 5 1 | 20, 40 |  |  |  | 50 | 0 |
|  |  | 10 | 15, 20, 40 |  |  |  |  |  |
|  |  | 15 | 15, 20 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| CA\_n71B | - | 5 | 20 |  |  |  | 25 | 0 |
|  |  | 10 | 15 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  | 10 | 20 |  |  |  | 35 | 1 |
|  |  | 15 | 15, 20 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| CA\_n77C | CA\_n77C | 50 | 60, 80, 100 |  |  |  | 200 | 0 |
| 60 | 60, 80, 100 |  |  |  |  |  |
| 80 | 80, 100 |  |  |  |  |  |
| 100 | 100 |  |  |  |  |  |
| 10 | 100 |  |  |  | 200 | 1 |
| 15, 20 | 90, 100 |  |  |  |
| 25, 30 | 80, 90, 100 |  |  |  |
| 40 | 70, 80, 90, 100 |  |  |  |
| 50, 60, 70, 80, 90, 100 | 60, 70, 80, 90, 100 |  |  |  |
| CA\_n77D | - | 100 | 100 | 100 |  |  | 300 | 0 |
| CA\_n78B | - | 20 | 50 |  |  |  | 70 | 0 |
| CA\_n78C | CA\_n78C | 50 | 60, 80, 100 |  |  |  | 200 | 0 |
| 60 | 60, 80, 100 |  |  |  |  |  |
| 80 | 80, 100 |  |  |  |  |  |
| 100 | 100 |  |  |  |  |  |
| 10 | 100 |  |  |  | 200 | 1 |
| 15, 20 | 90, 100 |  |  |  |
| 25, 30 | 80, 90, 100 |  |  |  |
| 40 | 70, 80, 90, 100 |  |  |  |
| 50, 60, 70, 80, 90, 100 | 60, 70, 80, 90, 100 |  |  |  |
| CA\_n78D | - | 100 | 100 | 100 |  |  | 300 | 0 |
| CA\_n79C | CA\_n79C | 50 | 60, 80, 100 |  |  |  | 200 | 0 |
|  |  | 60 | 60, 80, 100 |  |  |  |  |  |
|  |  | 80 | 80, 100 |  |  |  |  |  |
|  |  | 100 | 100 |  |  |  |  |  |
| CA\_n79D | - | 100 | 100 | 100 |  |  | 300 | 0 |
| NOTE 1: 5 MHz is not applicable for 30/60 kHz SCS. | | | | | | | | |

Table 5.5A.1-2: Void

### 5.5A.2 Configurations for intra-band non-contiguous CA

Table 5.5A.2-1: NR CA configurations and bandwidth combination sets defined for intra-band non-contiguous CA

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| NR CA Configuration | Uplink Configurations | Channel bandwidths for carrier  (MHz) | Channel bandwidths for carrier  (MHz) | Channel bandwidths for carrier  (MHz) | Channel bandwidths for carrier  (MHz) | Maximum  Aggregated bandwidth  (MHz) | Bandwidth combination set |
| CA\_n2(2A) | - | 5, 10, 15, 20 | 5, 10, 15, 20 |  |  | 40 | 0 |
| CA\_n3(2A) | - | 5, 10, 15, 20 | 5, 10, 15, 20 |  |  | 40 | 0 |
| CA\_n5(2A) | - | 5 | 5, 10, 15, 20 |  |  | 25 | 0 |
| 10 | 10, 15 |  |  |
| CA\_n7(2A) | - | 5, 10, 15, 20 | 5, 10, 15, 20 |  |  | 40 | 0 |
| CA\_n25(2A) | - | 5, 10, 15, 20 | 5, 10, 15, 20 |  |  | 40 | 0 |
| CA\_n41(2A) | CA\_n41(2A) | 40, 50, 60, 80 | 40, 50, 60, 80, 100 |  |  | 180 | 0 |
|  |  | 10, 15, 20, 40, 50, 60, 80, 90 | 10, 15, 20, 40, 50, 60, 80, 90, 100 |  |  | 190 | 1 |
| CA\_n48(2A) |  | 10, 15, 20, 40, 50, 60 | 10, 15, 20, 40, 50, 60, 80, 90, 100 |  |  | 1402 | 0 |
| CA\_n48(3A) | - | 10, 15, 20, 40,50, 60, 80, 90, 100 | 10, 15, 20, 40,50, 60, 80, 90, 100 | 10, 15, 20, 40,50, 60, 80, 90, 100 |  | 1402 | 0 |
| CA\_n48(4A) | - | 10, 15, 20, 40, 50, 60, 80, 90, 100 | 10, 15, 20, 40, 50, 60, 80, 90, 100 | 10, 15, 20, 40, 50, 60, 80, 90, 100 | 10, 15, 20, 40, 50, 60, 80, 90, 100 | 1352 | 0 |
| CA\_n66(2A) | - | 5, 10, 15, 20 | 5, 10, 15, 20, 40 |  |  | 60 | 0 |
|  |  | 5, 10, 15, 20, 25, 30, 40 | 5, 10, 15, 20, 25, 30, 40 |  |  | 80 | 1 |
| CA\_n71(2A) | - | 5,10 | 5,10,15, 20 |  |  | 30 | 0 |
| 15 | 15 |  |  |
| CA\_n77(2A) | CA\_n77(2A) | 20, 40, 80, 100 | 20, 40, 80, 100 |  |  | 200 | 0 |
|  |  | 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 | 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 |  |  | 200 | 1 |
| CA\_n78(2A) | CA\_n78(2A) | 10, 20, 40, 50, 60, 80, 90, 100 | 10, 20, 40, 50, 60, 80, 90, 100 |  |  | 200 | 0 |
|  |  | 10, 20, 25, 30, 40, 50, 60, 80, 90, 100 | 10, 20, 25, 30, 40, 50, 60, 80, 90, 100 |  |  | 200 | 1 |
|  |  | 10, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 | 10, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 |  |  | 200 | 2 |
| NOTE 1: Void.  NOTE 2: Parameter value accounts for both, the maximum frequency range of band n48 (150 MHz), and the minimum frequency gaps in between NR non-contiguous component carriers. | | | | | | | |

Table 5.5A.2-2: NR CA configurations and bandwidth combination sets defined for mixed intra-band contiguous and non-contiguous CA

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| NR CA configuration | | Uplink CA configuration | | NR Band | | Channel bandwidth (MHz) | | | | | | | | | | | | | | | | | | | | | | | | | | Bandwidth combination set | |
|  | |  | |  | | 5 | | 10 | | 15 | | 20 | | 25 | | 30 | | 40 | | 50 | | 60 | | 70 | | 80 | | 90 | | 100 | |  | |
| CA\_n48(A-B) | | CA\_n48B | | n48 | | 5 | | 10 | | 15 | | 20 | |  | |  | | 40 | | 501 | | 601 | |  | | 801 | | 901 | | 1001 | | 0 | |
|  | |  | | n48 | | See CA\_n48B Bandwidth Combination Set 0 in Table 5.5A.1-1 | | | | | | | | | | | | | | | | | | | | | | | | | |  | |
| CA\_n48(A-C) | | - | | n48 | | 5 | | 10 | | 15 | | 20 | |  | |  | | 40 | | 501 | | 601 | |  | | 801 | | 901 | | 1001 | | 0 | |
|  | |  | | n48 | | See CA\_n48C Bandwidth Combination Set 0 in Table 5.5A.1-1 | | | | | | | | | | | | | | | | | | | | | | | | | |  | |
| NOTE 1: This UE channel bandwidth is applicable only to downlink | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

---End of changes---