**3GPP TSG-RAN WG4 Meeting # 102-e *R4-2206589***

**Electronic meeting, February 21 – March 3, 2022**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.307** | **CR** | **xxxx** | **rev** | **-** | **Current version:** | **15.9.0** |  |
|  | | | | | | | | |
| *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 | **X** | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** | Draft CR to TS 38.307 on NR intra-band CA BW class within FR1 (Rel-15) | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | ZTE Corporation | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_newRAT-Core | | | | |  | ***Date:*** | | | 2022-02-10 |
|  |  | | | |  | |  | | |  |
| ***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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | For NR intra-band contiguous CA configurations within FR1, the CA BW class “F” is invalid in the current RAN4 spec and should be removed from the release independent feature table for additional NR CA configurations. In addition, some terms such as “inter-band” instead of “interband” should be unified in notation in the specification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 1. Remove the invalid CA BW class “F” for intra-band contiguous CA configurations within FR1. 2. Unify the notations for different types of configurations. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The CA BW classes for NR intra-band contiguous CA configurations within FR1 are incorrect. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.2.1, 5.2.2, 6.2.1, 7.1, 8.1.1, 8.1.2, 8.1.2.1, 8.1.2.2, 8.1.2.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **X** |  | Test specifications | | | | TS/TR ... CR ... 38.521-1, 38.521-2, 38.521-3 | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

### *<< start of changes >>*

### *<< Unchanged sections omitted >>*

### 5.2.1 Intra-band CA

Requirements for a Rel-15 UE for additional NR intraband CA configurations within FR1 compared to TS 38.101-1 of Rel-15 [2] are introduced via this clause.

Table 5.2.1-1: NR intra-band CA within FR1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Feature | DL/UL | CA BW Class | Duplex-mode | Release  independent from | requirements to be fulfilled  (see 38.307 of the REL in which the CA configuration was introduced) |
| Intra-band contiguous CA configurations within FR1 | DL | C, D, E, G, H, I, J, K, L | TDD | Rel-15 |  |
| UL | A | TDD | Rel-15 |  |

### 5.2.2 Inter-band CA

Requirements for a Rel-15 UE for additional NR inter-band CA configurations within FR1 compared to TS 38.101-1 of Rel-15 [2] are introduced via this clause.

Table 5.2.2-1: NR interband CA within FR1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Feature | DL/UL | Maximum number of bands | number of CCs | CA BW Classes | Duplex-mode | Release  independent from | requirements to be fulfilled  (see 38.307 of the REL in which the CA configuration was introduced) |
| Inter-band CA configurations within NR FR1 | DL | 2 | 2 | A | TDD, FDD, SDL and FDD, SDL and TDD | Rel-15 |  |
| UL | 2 | 2 | A | TDD, FDD and TDD | Rel-15 |  |

### *<< Unchanged sections omitted >>*

### 6.2.1 Intra-band CA

Requirements for a Rel-15 UE for additional NR intra-band CA configurations within FR2 compared to TS 38.101-2 of Rel-15 [3] are introduced via this clause.

Table 6.2.1-1: NR intra-band contiguous CA within FR2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Feature | DL/UL | CA BW Class | Duplex-mode | Release  independent from | requirements to be fulfilled  (see 38.307 of the REL in which the CA configuration was introduced) |
| Intra-band contiguous CA configurations within FR2 | DL | B, C, D, E, F, G, H, I, J, K, L, M, O, P, Q | TDD | Rel-15 |  |
| UL | B, D, E, F, G, H, I, J, K, L, M, O, P, Q | TDD | Rel-15 |

Table 6.2.1-2: NR non-contiguous intra-band CA within FR2

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Feature | DL/UL | number of sub-blocks | maximum number of CCs within a sub-block | Duplex-mode | Release  independent from | requirements to be fulfilled  (see 38.307 of the REL in which the CA configuration was introduced) |
| Intra-band non-contiguous CA configurations within FR2 | DL | 2 | 4 | TDD | Rel-15 |  |
| 3 | 1 | TDD | Rel-15 |
| 4 | 1 | TDD | Rel-15 |

### *<< Unchanged sections omitted >>*

## 7.1 Additional NR inter-band CA configurations between frequency range 1 and frequency range 2

Requirements for a Rel-15 UE for additional NR inter-band CA configurations between FR1 and FR2 compared to TS 38.101-3 of Rel-15 [4] are introduced via this clause.

Table 7.1-1: NR inter-band CA between FR1 and FR2

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Feature | DL/UL | number of bands | maximum number of CCs | CA BW Classes | Duplex-mode | Release  independent from | requirements to be fulfilled  (see 38.307 of the REL in which the CA configuration was introduced) |
| Inter-band CA configurations for NR interworking between FR1 and FR2 | DL FR1 | 1 | 2 | A, C | FDD, TDD | Rel-15 |  |
| DL FR2 | 1 | 4 | A, D, E, F | TDD | Rel-15 |  |
| UL FR1 | 1 | 1 | A | FDD, TDD | Rel-15 |  |
| UL FR2 | 1 | 1 | A | TDD | Rel-15 |  |

### *<< Unchanged sections omitted >>*

### 8.1.1 Intra-band EN-DC

Requirements for a Rel-15 UE for additional EN-DC intra-band configurations within FR1 compared to TS 38.101-3 of Rel-15 [4] are introduced via this clause.

Table 8.1.1-0: EN-DC intra-band UE power class

|  |  |  |  |
| --- | --- | --- | --- |
| Feature | Duplex-mode | Release  independent from | Requirements to be fulfilled  (see TS 38.307 of the release in which the band was introduced) |
| Intra-band contiguous EN-DC power class 2 | TDD | Rel-15 |  |
| Intra-band contiguous EN-DC power class 3 | FDD, TDD | Rel-15 |  |
| Intra-band non-contiguous EN-DC power class 2 | TDD | Rel-15 |  |
| Intra-band non-contiguous EN-DC power class 3 | FDD, TDD | Rel-15 |  |

Table 8.1.1-1: EN-DC contiguous intra-band configurations within FR1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Feature | DL/UL | maximum number of E-UTRA CCs | maximum number of NR CCs | Duplex-mode | Release  independent from | **requirements to be fulfilled**  (see 38.307 of the REL in which the CA configuration was introduced) |
| Intra-band contiguous EN-DC | DL | 3 | 1 | FDD, TDD | Rel-15 |  |
| UL | 1 | 1 | FDD, TDD | Rel-15 |  |

Table 8.1.1-2: EN-DC non-contiguous intra-band configurations within FR1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Feature | DL/UL | maximum number of sub-blocks | maximum number of E-UTRA CCs | maximum number of NR CCs | Duplex-mode | Release  independent from | requirements to be fulfilled  (see 38.307 of the REL in which the CA configuration was introduced) |
| Intra-band non-contiguous EN-DC | DL | 2 | 3 | 1 | FDD, TDD | Rel-15 |  |
| UL | 2 | 1 | 1 | FDD, TDD | Rel-15 |  |

### 8.1.2 Inter-band EN-DC

#### 8.1.2.1 Inter-band EN-DC within frequency range 1

Requirements for a Rel-15 UE for additional EN-DC interband configurations within FR1 compared to TS 38.101-3 of Rel-15 [4] are introduced via this clause.

Table 8.1.2.1-0: EN-DC inter-band UE power class

|  |  |  |  |
| --- | --- | --- | --- |
| Feature | Duplex-mode | Release  independent from | Requirements to be fulfilled  (see TS 38.307 of the release in which the band was introduced) |
| Inter-band EN-DC Power Class 2 | TDD | Rel-15 | Table B.4.6-1 |
| Inter-band EN-DC Power Class 3 | FDD, TDD, FDD and TDD | Rel-15 |

Table 8.1.2.1-1: EN-DC inter-band configurations without SUL within FR1

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Feature | DL/UL | maximum number of E-UTRA bands | maximum number of E-UTRA CCs | maximum number of NR bands | maximum number of NR CCs | Duplex-mode | Release  independent from | requirements to be fulfilled  (see 38.307 of the REL in which the CA configuration was introduced) |
| Inter-band EN-DC | DL | 4 | 5 | 2 | 2 | FDD, TDD,  FDD and TDD | Rel-15 |  |
| UL | 1 | 2 | 1 | 1 | FDD, TDD, FDD and TDD | Rel-15 |  |

Table 8.1.2.1-2: EN-DC inter-band configurations with SUL within FR1

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Feature | DL/UL | maximum number of E-UTRA bands | maximum number of E-UTRA CCs | maximum number of NR bands | maximum number of NR CCs | Duplex-mode | Release  independent from | requirements to be fulfilled  (see 38.307 of the REL in which the CA configuration was introduced) |
| Inter-band EN-DC | DL | 2 | 3 | 1 | 1 | FDD, TDD,  FDD and TDD | Rel-15 |  |
| UL | 1 | 1 | 2 | 2 | FDD, TDD,  FDD and TDD, FDD and TDD and SUL | Rel-15 |  |

#### 8.1.2.2 Inter-band EN-DC including frequency range 2

Requirements for a Rel-15 UE for additional EN-DC inter-band configurations including FR2 compared to TS 38.101-3 of Rel-15 [4] are introduced via this clause.

Table 8.1.2.2-1: EN-DC inter-band configurations including FR2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Feature | DL/UL | number of E-UTRA bands | maximum number of E-UTRA CCs | number of NR bands | maximum number of NR CCs | Duplex-mode | Release  independent from | requirements to be fulfilled  (see 38.307 of the REL in which the CA configuration was introduced) |
| Inter-band EN-DC | DL | 4 | 5 | 1 | 8 | TDD, FDD and TDD | Rel-15 |  |
| UL | 1 | 2 | 1 | 8 | TDD, FDD and TDD | Rel-15 |  |

#### 8.1.2.3 Inter-band EN-DC including frequency range 1 and frequency range 2

Requirements for a Rel-15 UE for additional EN-DC inter-band configurations including FR1 and FR2 compared to TS 38.101-3 of Rel-15 [4] are introduced via this clause.

Table 8.1.2.3-1: EN-DC inter-band configurations including FR1 and FR2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Feature | DL/UL | maximum number of E-UTRA bands | maximum number of E-UTRA CCs | maximum number of NR  bands | maximum number of NR  CCs | Duplex-mode | Release  independent from | requirements to be fulfilled  (see 38.307 of the REL in which the CA configuration was introduced) |
| Inter-band EN-DC | DL FR1 | 4 | 4 | 1 | 2 | TDD, FDD | Rel-15 |  |
| DL FR2 | 1 | 4 | TDD | Rel-15 |  |
| UL FR1 | 1 | 1 | 1 | 1 | FDD, TDD | Rel-15 |  |
| UL FR2 | 1 | 1 | TDD, | Rel-15 |  |

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### *<< End of changes >>*