**3GPP TSG-RAN WG4 Meeting # 111**  **R4-2410643**

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

**Source:** Huawei, HiSilicon

**Title:** TP for TR 38.718-03-01 to introduce CA\_n3A-n39A-n41A

**Agenda item:** 6.11.2

**Document for:** Approval

# 1 Background

This contribution provides text proposal on the NR CA band combination CA\_n3A-n39A-n41A as defined in Revised WID: Rel-18 NR Inter-band Carrier Aggregation/Dual Connectivity for 3 bands DL with x bands UL (x=1,2) [1]. It’s noted that the fallback combo CA\_n3A-n39A has been submitted in this meeting together and other fallback CA\_n3A-n41A/ CA\_n39A-n41A have been captured into the spec.

# 2 Text Proposal

##### ---Start of changes---

## 5.X CA\_n3-n39-n41

### 5.X.1 Common for 1 band UL and 2 bands UL CA

#### 5.X.1.1 Operating bands for CA

**Table 5.X.1.1-1: 3DL Inter-band CA operating bands**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NR CA Band** | **NR Band** | **Uplink (UL) operating band** | | | **Downlink (DL) operating band** | | | **Duplex Mode** |
| **BS receive / UE transmit** | | | **BS transmit / UE receive** | | |
| **FUL\_low – FUL\_high** | | | **FDL\_low – FDL\_high** | | |
| CA\_n3-n39-n41 | n3 | 1710 MHz | – | 1785 MHz | 1805 MHz | – | 1880 MHz | FDD |
| n39 | 1880 MHz | – | 1920 MHz | 1880 MHz | – | 1920 MHz | TDD |
| n41 | 2496 MHz | – | 2690 MHz | 2496 MHz | – | 2690 MHz | TDD |

#### 5.X.1.2 Channel bandwidths per operating band for CA

**Table 5.X.1.2-1: Supported channel bandwidths**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NR CA configuration** | **Uplink CA configuration**  **or single uplink carrier6** | **NR Band** | **Channel bandwidth (MHz) (NOTE 3)** | **Bandwidth combination set** |
| CA\_n3A-n39A-n41A | - | n3 | 5. 10, 15, 20, 25, 30 | 0 |
|  |  | n39 | 5, 10, 15, 20, 25, 30, 35, 40 |  |
|  |  | n41 | 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 |  |

#### 5.X.1.3 ∆TIB,c and ∆RIB,c values

For CA\_n3-n39-n41, the ΔTIB,c and ΔRIB,c values are given in the tables below.

Table 5.X.1.3-1: ΔTIB,c due to NR CA (three bands)

|  |  |  |  |
| --- | --- | --- | --- |
| **Inter-band CA combination** | **ΔTIB,c for NR bands (dB)\*** | | |
| **Component band in order of bands in configuration\*\*** | | |
| CA\_n3-n39-n41 | 0.5 | 0.5 | 0.54 / 1.05 |
| NOTE \*: “-” denotes ΔTIB,c = 0.  NOTE \*\*: The component band order in the configuration should be listed by the order of NR bands, such as for CA\_n1-n3-n5 the band order from left to right is n1, n3 and n5.  NOTE 4: The requirement is applied for UE transmitting on the frequency range of 2515-2690 MHz.  NOTE 5: The requirement is applied for UE transmitting on the frequency range of 2496-2515 MHz. | | | |

Table 5.X.1.3-2: ΔRIB,c due to NR CA (three bands)

|  |  |  |  |
| --- | --- | --- | --- |
| **Inter-band CA combination** | **ΔRIB,c for NR bands (dB)\*** | | |
| **Component band in order of bands in configuration\*\*** | | |
| CA\_n3-n39-n41 | 0.2 | 0.2 | 0.24 / 0.75 |
| NOTE \*: “-” denotes ΔRIB,c = 0.  NOTE \*\*: The component band order in the configuration should be listed by the order of NR bands, such as for CA\_n1-n3-n8 the band order from left to right is n1, n3 and n8.  NOTE 4: The requirement is applied for UE transmitting on the frequency range of 2515-2690 MHz.  NOTE 5: The requirement is applied for UE transmitting on the frequency range of 2496-2515 MHz. | | | |

#### 5.X.1.4 MSD requirement

Since CA\_n3-n39, CA\_n3-n41 and CA\_n39-n41 are the fallback combination of CA\_n3-n39-n41, and the studies for the corresponding MSD have been covered by these fallback combinations.

Generally, a separate antenna for band n41 can be used to multiplex with band n3 duplexer in main path. For Rx diversity path, two filters with frequency range 1805~1920MHz and band n41 frequency range can be combined.

##### ---End of changes---

# Reference

[1] RP-240166, “Revised WID: Rel-18 NR Inter-band Carrier Aggregation/Dual Connectivity for 3 bands DL with x bands UL (x=1,2)”, ZTE Corporation