**3****GPP TSG-RAN WG4 Meeting #109 R4-2320101**

**Chicago, USA, 13th November – 17th November 2023**

Source: ZTE Corporation

Title: TP for TR38.718-03-01\_3DL\_xUL CA\_n34A-n40A-n41A/C

Agenda Item: 7.11.2

Document for: Approval

# **Introduction**

This contribution provides a text proposal to update the MSD for 3DL/xUL n34A-n40A-n41Ain TR38.718-03-01.

# **Reference**

[1] TR38.718-03-01,Rel-18 NR Inter-band Carrier Aggregation/Dual Connectivity for3 bands DL with x bands UL (x=1,2),v0.8.0

# Text Proposal

**----- Start of TP -----**

## 5.x n34A-n40A-n41A

### 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: Inter-band CA operating bands involving FR1 (three bands)

|  |  |
| --- | --- |
| NR CA Band | NR Band  (Table 5.2-1) |
| n34-n40-n41 | n34, n40, n41 |

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

Table 5.x.1.2-1: Supported bandwidths per CA band combination of band nX+nY+nZ

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| NR CA configuration | Uplink CA configuration or single uplink carrier | NR Band | Channel bandwidth (MHz) | Bandwidth combination set |
| CA\_n34A-n40A-n41A | CA\_n34A-n40A  CA\_n34A-n41A  CA\_n40A-n41A | n34 | See n34 channel bandwidths in Table 5.3.5-1 | 4 and 5 |
|  |  | n40 | See n40 channel bandwidths in Table 5.3.5-1 |  |
|  |  | n41 | See n41 channel bandwidths in Table 5.3.5-1 |  |
| CA\_n34A-n40A-n41C | CA\_n34A-n40A  CA\_n34A-n41A  CA\_n40A-n41A | n34 | See n34 channel bandwidths in Table 5.3.5-1 | 4 and 5 |
|  |  | n40 | See n40 channel bandwidths in Table 5.3.5-1 |  |
|  |  | n41 | CA\_n41C\_BCS 4 and 5 |  |

#### 5.x.1.3 ∆TIB,c and ∆RIB,c values

The ΔTIB,c and ΔRIB,c values are defined in the following:

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

|  |  |  |  |
| --- | --- | --- | --- |
| Inter-band CA combination | ΔTIB,c for NR bands (dB)8 | | |
| Component band in order of bands in configuration9 | | |
| n34-n40-n41 | 0.3 | 0.5 | 0.5 |
| NOTE 8: “-” denotes ΔTIB,c = 0.  NOTE 9: 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. | | | |

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

|  |  |  |  |
| --- | --- | --- | --- |
| Inter-band CA combination | ΔRIB,c for NR bands (dB)9 | | |
| Component band in order of bands in configuration10 | | |
| n34-n40-n41 | 0.3 | 0.3 | - |
| NOTE 9: “-” denotes ΔTIB,c = 0.  NOTE 10: 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. | | | |

### 5.x.2 Specific for 2 bands UL CA

#### 5.x.2.1 UE co-existence studies

The co-existence for the fallback 2DL/2UL of CA\_n34A-n40A, CA\_n34A-n41A and CA\_n40A-n41A have already been analyzed. In terms of the co-existence studies of corresponding fallbacks, it can be observed:

IMD3 and IMD5 issue caused by n40+n41 fall into the its own band n34 Rx;

No IMD issues caused by n34+n41 fall into the its own band n40 Rx;

IMD3 issue caused by n34+n40 fall into the its own band n41 Rx.

#### 5.x.2.2 REFSENS requirements

Based on co-existence studies additional MSD is needed to be defined, shown in table 5.x.2.2-1.

Table 5.x.2.2-1: 3DL/2UL interband Reference sensitivity QPSK PREFSENS and uplink/downlink configurations

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| NR CA Configuration | NR band | UL Fc  (MHz) | UL/DL BW  (MHz) | UL  LCRB | DL Fc (MHz) | MSD  (dB) | IMD order |
| CA\_n34-n40-n41 | n34 | N/A | 5 | N/A | 2015 | 18.3 | IMD31 |
|  | n40 | 2302.5 | 5 | 25 | 2302.5 | N/A | N/A |
|  | n41 | 2590 | 10 | 50 | 2590 | N/A | IN/A |
|  | n34 | 2020 | 5 | 25 | 2020 | N/A | N/A |
|  | n40 | 2320 | 5 | 25 | 2320 | N/A | N/A |
|  | n41 | 2620 | 10 | 50 | 2620 | 16.5 | IMD3 |
| NOTE 1: This band is subject to IMD5 also which MSD is not specified. | | | | | | | |

**----- End of TP -----**