**3GPP TSG-RAN WG4 Meeting #111 R4-24xxxxx**

**Fukuoka, Japan, 20 – 24 May 2024**

**Source:** Ericsson, T-Mobile USA

**Title:** TP for 38.718-03-01 to add UL CA\_n41C-n71 and CA\_n41C-n77A for CA\_n41C-n71A-n77A

**Agenda item:** 6.10.2

**Document for:** Approval

# 1. Introduction

This contribution is a text proposal for 38.718-03-01 to add UL CA\_n41C-n71 and CA\_n41C-n77A for CA\_n41C-n71A-n77A.

# 2. Text Proposal

# ---Start of changes---

## 5.x CA\_n41-n71-n77

#### 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 n41+n71+n77NR CA configuration | | Uplink CA configuration or single uplink carrier | NR Band | Channel bandwidth (MHz) | Bandwidth combination set |
| CA\_n41C-n71A-n77A | n417,9  n777,9  CA\_n41A-n71A7  CA\_n41A-n77A7  CA\_n41C7  CA\_n71A-n77A7  CA\_n41C-n71A  CA\_n41C-n77A | | n41 | CA\_n41C\_BCS0 | 0 |
|  |  | | n71 | 5, 10, 15, 20 |  |
|  |  | | n77 | 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 |  |
|  |  | | n41 | CA\_n41C BCS 4 and 5 | 4 and 5 |
|  |  | | n71 | n71 channel bandwidths in Table 5.3.5-1 |  |
|  |  | | n77 | n77 channel bandwidths in Table 5.3.5-1 |  |

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

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

Table 5.x.2.1-1 lists Band n41A + Band n71C 2UL bands CA 1st order triple beat (IMD3) related to 2UL band 3CC (one band support intra-band ULCA) for the UE-to-UE coexistence analysis into the third receive band of Band n77, where Band n71C is the uplink band supporting two uplink carriers and Band n41 is the single uplink carrier.

**Table 5.x.2.1-1: Band n41 and Band n71 triple beat IMD products**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CC location | fU1L | fU2L | fU3L | fU1H |  | CBW |
| Frequency | 2496 | 2506 | 2686 | 2690 |  | 10 |
| CC location | fSCCL | fSCCH | fU2H | fU3H |  | Min ch. separation |
| Frequency | 663 | 698 | 2680 | 2500 |  | 0 |
| 1st order TB | IfU3L -fU1L- fSCCL| | IfU2L -fU1L + fSCCL| | IfU2L -fU1L- fSCCH| | IfU3L -fU1L + fSCCH| |  | Max ch. separation |
| Ranges | 473 | 673 | 688 | 888 |  | 190 |
| 1st order TB | IfU2L+fU1L-fSCCH| | IfU1H+fU2H-fSCCL| | IfU2L +fU1L+fSCCL| | IfU1H +fU2H+fSCCH| |  |  |
| Ranges | 4304 | 4707 | 5665 | 6068 |  |  |

Based on Table 5.x.2.1-1, 1st order triple beat IMD is not falling inside band n77 and no need to define MSD value.

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Table 5.x.2.1-2 lists Band n77A + Band n71C 2UL bands CA 1st order triple beat (IMD3) related to 2UL band 3CC (one band support intra-band ULCA) for the UE-to-UE coexistence analysis into the third receive band of Band n41, where Band n71C is the uplink band supporting two uplink carriers and Band n77 is the single uplink carrier.

**Table 5.x.2.1-2: Band n41 and Band n77 triple beat IMD products**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CC location | fU1L | fU2L | fU3L | fU1H |  | CBW |
| Frequency | 2496 | 2506 | 2686 | 2690 |  | 10 |
| CC location | fSCCL | fSCCH | fU2H | fU3H |  | Min ch. separation |
| Frequency | 3300 | 4200 | 2680 | 2500 |  | 0 |
| 1st order TB | IfU3L -fU1L- fSCCL| | IfU2L -fU1L + fSCCL| | IfU2L -fU1L- fSCCH| | IfU3L -fU1L + fSCCH| |  | Max ch. separation |
| Ranges | 3110 | 3310 | 4190 | 4390 |  | 190 |
| 1st order TB | IfU2L+fU1L-fSCCH| | IfU1H+fU2H-fSCCL| | IfU2L +fU1L+fSCCL| | IfU1H +fU2H+fSCCH| |  |  |
| Ranges | 802 | 2070 | 8302 | 9570 |  |  |

Based on Table 5.x.2.1-2, 1st order triple beat IMD is not falling inside band n71, and no need to define MSD value.

#### 5.x.2.2 REFSENS requirements

Based on the triple beat analysis of the added ULCA in Table 5.x.2.1-1 and Table 5.x.2.1-2, there is no triple beat impact and there is no need to define additional REFSENS requirements.

---End of changes---

# Reference

[1] RP-24xxxx, Revised WID:Rel-18 NR Inter-band Carrier Aggregation/Dual Connectivity for 2 bands DL with x bands UL (x=1,2), ZTE