**3GPP TSG-RAN WG4 Meeting #97-e R4-2014884**

**Online, 2nd Nov-13th Nov, 2020**

**Source:** KDDI

**Title:** TP for TR 37.717-11-21: DC\_3A\_n28A-n41A

**Agenda item:** 10.7.2

**Document for:** Approval

1. Introduction

This contribution is a text proposal for TR 37.717-11-21 to include DC\_3A\_n28A-n41A according to the request in [1].

2. Reference

1. RP-201477, New WID on Dual Connectivity (DC) of x bands (x=1,2,3,4) LTE inter-band CA (xDL/1UL) and 2 bands NR inter-band CA (2DL/1UL).

3. Text Proposal

**<Start of Text Proposal>**

6.x DC\_3\_n28-n41

6.x.1 Operating bands for DC

**Table 6.x.1-1: DC band combination of LTE 1DL/1UL + NR 2DL/1UL**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **E-UTRA and NR DC Band** | **E-UTRA and NR Band** | **Uplink (UL) band** | | | **Downlink (DL) band** | | | **Duplex**  **mode** |
| **BS receive / UE transmit** | | | **BS transmit / UE receive** | | |
| **FUL\_low – FUL\_high** | | | **FDL\_low – FDL\_high** | | |
| DC\_3A\_n28A-n41A | 3 | 1710 MHz | – | 1785 MHz | 1805 MHz | – | 1880 MHz | FDD |
| n28 | 703MHz | – | 748 MHz | 758 MHz | – | 803 MHz | FDD |
| n41 | 2496 MHz | – | 2690 MHz | 2496 MHz | – | 2690 MHz | TDD |

6.x.2 Channel bandwidths per operating band for DC

**Table 6.x.2-1: Supported bandwidths per DC band combination of LTE 1DL/1UL + NR 2DL/1UL**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | | **DC operating / channel bandwidth [MHz]** | | | | | | | | | | | | | | | |
| **E-UTRA and NR DC Configuration** | **UL Configuration** | **E-UTRA and NR Band** | | **SCS (kHz)** | **5** | **10** | **15** | **20** | **25** | **30** | **40** | **50** | **60** | **70** | **80** | **90** | **100** | **Maximum aggregated bandwidth**  **[MHz]** |
| DC\_3A\_n28A-n41A | DC\_3A\_n28A  DC\_3A\_n41A | 3 | | 15 | Yes | Yes | Yes | Yes |  |  |  |  |  |  |  |  |  | 150 |
| n28 | | 15 | Yes | Yes | Yes | Yes |  | Yes |  |  |  |  |  |  |  |
| 30 |  | Yes | Yes | Yes |  | Yes |  |  |  |  |  |  |  |
| 60 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| n41 | | 15 |  | Yes | Yes | Yes |  | Yes | Yes | Yes |  |  |  |  |  |
| 30 |  | Yes | Yes | Yes |  | Yes | Yes | Yes | Yes |  | Yes | Yes | Yes |
| 60 |  | Yes | Yes | Yes |  | Yes | Yes | Yes | Yes |  | Yes | Yes | Yes |

6.x.3 Co-existence studies

Based on the co-existence studies of DC\_3A-n28A and DC\_3A-n41, impact on own Rx of 3rd band is as follows.

- 2nd and 3rd order IMD generated by dual uplink of Band 3 + Band n28 may fall into own Rx of band 41.

- 2nd and 3rd order IMDs generated by dual uplink of Band 3 + Band n41 may fall into own Rx of band n28.

6.x.4 ∆TIB and ∆RIB values

ΔTIB,c and ΔRIB,c values for DC\_18A\_n3A-n41A are shown in the following tables.

**Table 6.x.4-1: ΔTIB,c**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB,c [dB]** |
| --- | --- | --- |
| DC\_3\_n28-n41 | 3 | 0.6 |
| n28 | 0.5 |
| n41 | 0.3 |

**Table 6.x.4-2: ΔRIB,c**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB,c [dB]** |
| --- | --- | --- |
| DC\_3\_n28-n41 | 3 | 0.2 |
| n28 | 0.2 |
| n41 | 0 |

6.x.5 MSD

Table 6.x.5-1 shows the required MSD:

**Table 6.x.5-1: MSD exception for Scell due to dual uplink operation for EN-DC\_3A\_n28A-n41A**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **E-UTRA Band / Channel bandwidth / NRB / Duplex mode** | | | | | | | | | | **Source of IMD** |
| **EUTRA CA** | **EUTRA CA** | **EUTRA band** | **UL Fc** | **UL BW** | **UL** | **DL Fc** | **DL BW** | **MSD** | **Duplex mode** |
| **DL Configuration** | **UL Configuration** | **(MHz)** | **(MHz)** | **CLRB** | **(MHz)** | **(MHz)** | **(dB)** |
| DC\_3A\_n28A\_n41A | DC\_3A\_n28A | 3 | 1780 | 5 | 25 | 1875 | 5 | N/A | FDD | N/A |
| n28 | 738 | 5 | 25 | 793 | 5 | N/A | FDD | N/A |
| n41 | 2518 | 5 | 25 | 2518 | 5 | 27.4 | TDD | IMD2 |
| 3 | 1715 | 5 | 25 | 1810 | 5 | N/A | FDD | N/A |
| n28 | 743 | 5 | 25 | 798 | 5 | N/A | FDD | N/A |
| n41 | 2687 | 5 | 25 | 2687 | 5 | 15.9 | TDD | IMD3 |
| DC\_3A\_n41A | 3 | 1720 | 5 | 25 | 1815 | 5 | N/A | FDD | N/A |
| n41 | 2510 | 5 | 25 | 2510 | 5 | N/A | TDD | N/A |
| n28 | 735 | 5 | 25 | 790 | 5 | 26.0 | FDD | IMD21 |
| NOTE 1: This band is subject to IMD3 also which MSD is not specified. | | | | | | | | | | |

**<End of Text Proposal>**