**3GPP TSG-RAN WG4 Meeting #** **104-bis-e R4-2217121 R4-22xxxxx**

**Electronic Meeting, October 10 – October 19, 2022**

Source: China Unicom

Title: WF on requirements for HPUE\_Basket\_FDD

Agenda Item: 5.20, 5.22

Document for: Approval

# **1 Introduction**

This document is the way forward for thread [104-bis-e][116] HPUE\_Basket\_FDD.

The purpose of this document is to capture agreements/guidelines agreed in this meeting, so that they can later be reflected for requirements analyses and TP/CR preparations in the upcoming meetings.

# **2 Way Forward**

## HPUE for FDD single band

### **TR Skeleton**

Agreement: Agree on the TR skeleton in R4-2215852.

Way Forward: Companies may provide TPs based on the TR skeleton format.

### **Tx power & Tolerance**

Agreement:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| NR  band | Class 1 (dBm) | Tolerance (dB) | Class 1.5 (dBm) | Tolerance (dB) | Class 2 (dBm) | Tolerance (dB) |
| n5 |  |  |  |  | 26 | +2/-3 |
| n8 |  |  |  |  | 26 | +2/-33 |
| n25 |  |  |  |  | 26 | +2/-33 |
| n26 |  |  |  |  | 26 | +2/-33 |
| n66 |  |  |  |  | 26 | +2/-3 |
| n71 |  |  |  |  | 26 | +2/-3 |
| n85 |  |  |  |  | 26 | +2/-33 |
| [n28] |  |  |  |  | [26] | [+2/-33] |

Way Forward: Further confirm whether *Note 3* is needed for n28 PC2.

### **A-MPR**

Agreement: Taking the proposals on A-MPR in this meeting as reference/starting point, companies may bring more detailed analysis, measurements, and simulations in the upcoming meetings.

Way Forward: Companies may bring further analyses on A-MPR in the next meeting.

### **Receiver Sensitivity Degradation**

Agreement: Results submitted in this meeting can be taken as reference/starting point, and wait for more inputs by companies from upcoming meetings.

Way Forward: Companies may bring further analyses on Receiver Sensitivity Degradation in the next meeting.

### **UE Architecture**

Agreement: Analyses on both 1Tx and 2Tx requirements are considered at current stage. Requirements will be discussed based on companies’ contributions.

Way Forward: Companies may bring further analyses in the next meeting for 1Tx/2Tx architecture.

### **Requirements Evaluation**

Agreement: Reuse the Rel-17 methodology and RF assumptions in R4-2119946 (WF on NR FDD PC2 HPUE, RAN4#101-e) to evaluate A-MPR and MSD requirements for the requested FDD bands. Companies are encouraged to share the evaluation results for interested band(s), which can be captured in the TR via TPs. The RF requirements for the given band(s) are determined after reasonable amount of data is accumulated.

Way Forward: Companies may bring further analyses in the next meeting based on agreed assumptions.

## HPUE for CA with PC2 on FDD carrier

### **DL CA\_n1-n78 with UL PC2 n1**

Agreement: Under 1Tx architecture, Same ∆TIB, c and ∆RIB, c values of PC3 CA\_n1-n78 can be applied to DL CA\_n1-n78 with UL PC2 n1. No specific REFSENS requirements (i.e. MSD) defined for DL CA\_n1-n78 with UL PC2 n1.

Way Forward: To prepare TP/CRs based on the agreement.

### **DL CA\_n3-n78 with UL PC2 n3**

Agreement: Under 1Tx architecture, same ∆TIB, c and ∆RIB, c values of PC3 CA\_n3-n78 can be applied to DL CA\_n3-n78 with UL PC2 n3. No specific REFSENS requirements (i.e. harmonic mixing MSD) defined for DL CA\_n3-n78 with UL PC2 n3.

**Reference sensitivity exceptions and uplink/downlink configurations due to UL harmonic** from a PC2 aggressor NR UL band **for NR DL CA** **FR1**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **UL band** | **DL band** | **UL BW** | **SCS of UL band** | **UL RB Allocation** | **DL BW** | **MSD** | **UL/DL fc condition** | **UL/DL harmonic order** |
| **(MHz)** | **(kHz)** | **LCRB** | **(MHz)** | **(dB)** |
| n3 | n78 | 5 | 15 | 25 (RBstart=0) | 10 | 27.1 | NOTE 2 | UL2/DL1  direct-hit |
| n3 | n78 | 10 | 15 | 50 (RBstart=0) | 100 | 16.6 | NOTE 2 | UL2/DL1  direct-hit |
| NOTE 2: The requirements should be verified for UL NR-ARFCN of the aggressor (high) band (superscript HB) such that in MHz and  with carrier frequency in the victim (lower) band in MHz and  the channel bandwidth configured in the higher band. | | | | | | | | |

Way Forward: To prepare TP/CRs based on the agreement for 1Tx; Companies may bring further analyses in the next meeting for 2Tx.

# **4 Reference**

[1] R4-2217769 Email discussion summary for [104-bis-e][116] HPUE\_Basket\_FDD Moderator(China Unicom)