**3GPP TSG-RAN WG4 Meeting #111 R4-2409930**

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

**Agenda item:** 7.9.3

**Source:** vivo

**Title:** WF for [111][336] NR\_FR1\_TRP\_TRS\_enh

**Document for:** Approval

# Introduction

This WF capture the discussion conclusion for Rel-18 FR1 TRP TRS WI.

# Topic #2: Rel-18 TRP TRS requirements related issues

### Sub-topic 2-1 RC Harmonization and lab alignment

**Issue 2-1-1: Total Harmonization MU**

*Conclusions:*

Total harmonization MU=AC MU+0.2dB

**Issue 2-1-2:** **Maintenance work for RC unavailable results**

*Conclusions:*

Allow to update RC harmonization data in maintenance phase when the unfinished n28 testing from lab 9 is done.

**Issue 2-1-3: Rel-18 RC harmonization conclusions**

***Conclusions:***

Conclude RC test method harmonization for bands>3GHz. FFS below 3GHz

### Sub-topic 2-2 Additional CBW for band n28/n41/n77/n78 requirements

**Issue 2-2-1: Scaling factor to derive requirements on alternate narrow CBW for n28/n41/n77/n78?**

**Conclusions:**

7dB offset value for n41/77/78 TRS, between 100MHz and 20MHz CBW.

**Issue 2-2-3: SPOT method for alternative CBW testing**

**Conclusions**:

Capture SPOT method into TR as alternative for TRS measurements when using different channel bandwidth configurations on the same channel.

### Sub-topic 2-3 Rel-18 TRP TRS requirements work

**Issue 2-3-1: Thresholds of UE information for measured data pool**

**Conclusions:**

* **Adopt the following values for the thresholds related to the devices pool for Rel-18.**
	+ *Minimum number of devices for each band, each device size, each power class: 40*
	+ *Minimum number of device models: 30*
	+ *Minimum number of devices' vendors: 5*
	+ *Percentage of devices from second-half 2021 to 2024: 100%*
	+ *Percentage of the devices that are certified by PTCRB/GCF/NAL-CTA/CE/FCC: 100%*

**Issue 2-3-1: Requirements discussion**

***Working procedure:***

* ***RAN4 will go to band-by-band discussion for new bands.***

**Issue 2-3-3: Requirements decision**

***Discussions for band n1 and n28:***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *requirements* | **Talk mode TRP**  | **Talk mode TRS**  | **Browsing mode TRP**  | **Browsing mode TRS** |
| n1 PC3 | n28 PC3 | n1 TRS | n28 TRS | n1 PC3 | n28 PC3 | n1 TRS | n28 TRS |
| *initial OEMs proposal* | 8 | 6 | -86 | -79.5 | 9 | 8.5 | -88 | -83 |
| *initial Operators proposal* | 10.96 | 8.19 | -89.38 | -82.11 | 12.92 | 11.3 | -91.21 | -85.33 |
| *WI Rapporteur proposal* | *10* | *7* |  |  | 11.0 | 10.0 |  |  |
| *Operator C1* | 10.5 | 8 | -87.5 | -80.5 | 12 | 11 | -89.4 | -83.8 |
| *OEMs C1* | 9.5 | 6.5 | [-87] | -80 | 10.5 | 9.5 | [-88.5] | [-83.5] |

***Discussions for band n41 and n78:***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *requirements* | **Talk mode TRP**  | **Talk mode TRS**  | **Browsing mode TRP (R17)** | **Browsing mode TRS (R17)** |
| n41 PC2 | n78 PC2 | n41 TRS | n78 TRS | n41 PC2 | n78 PC2 | n41 TRS | n78 TRS |
| *initial OEMs proposal* | 9 | 9 | -78.5 | -78.5 | 12.5 | 13 | -80 | -81.2 |
| *initial Operators proposal* | 13.46 | 13.58 | -82 | -83.42 |
| *WI Rapporteur proposal* |  |  |  |  |
| *Operator C1* |  |  |  |  |
| *OEMs C1* |  |  |  |  |

*80%-95% CDF as information*

**

# Annex: UE information statistics by RAN4 MCC (for information)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Total Devices** | **83** |  |   |   |
| **Total Models** | **81** |  |   |   |
| **Total number of device vendors** | **19** |  |  |   |
| **Percentage of devices per vendor** | **10** | **12.05%** | Vendor A |   |
| 15 | **18.07%** | Vendor B  |   |
| 3 | **3.61%** | Vendor C |   |
| 21 | **25.30%** | Vendor D |   |
| 12 | **14.46%** | Vendor E |   |
| 1 | **1.20%** | Vendor F |   |
| 3 | **3.61%** | Vendor G |   |
| 1 | **1.20%** | Vendor H |   |
| 6 | **7.23%** | Vendor I |   |
| 1 | **1.20%** | Vendor J |   |
| 1 | **1.20%** | Vendor k |   |
| 1 | **1.20%** | Vendor N |   |
| 1 | **1.20%** | Vendor O |   |
| 1 | **1.20%** | Vendor P |   |
| 2 | **2.41%** | Vendor Q |   |
| 1 | **1.20%** | Vendor R |   |
| 1 | **1.20%** | Vendor J |   |
| **Percentage of devices per power class per band** | 2 | **n1** | PC2 | 2.41% |
| 78 | PC3 | 93.98% |
| 0 | **n28** | PC2 | 0.00% |
| 77 | PC3 | 92.77% |
| 61 | **n41** | PC2 | 73.49% |
| 14 | PC3 | 16.87% |
| 70 | **n78** | PC2 | 84.34% |
| 6 | PC3 | 7.23% |
| **Percentage of devices per supported band** |  |  | n1 | 96.39% |
|   |   | n28 | 88.89% |
|   |   | n41 | 90.36% |
|   |   | n78 | 91.57% |
| **Percentage of devices per year of production** | 8 |   | 2021 | 9.64% |
| 30 |   | 2022 | 36.14% |
| 35 |   | 2023 | 42.17% |
| 10 |   | 2024 | 12.05% |
| **Percentage of devices with at least one certification** | **83** |  |   |  100.00% |
| **Percentage of devices for each certification** | **27** |  | GCF | 32.53% |
| **12** |  | PTCRB | 14.46% |
| **30** |  | NAL(CTA) | 36.14% |
| **30** |  | FCC | 36.14% |
| **35** |  | CE | 42.17% |
| **0** |  | Not Available |   |