**3GPP TSG-RAN4 Meeting #108-bis *R4-2317593***

**Xiamen, China, 9th Oct 2023 - 13th Oct 2023**

**Title:** WF on FR2\_multiRx\_UERF

**Source:** Sony, Qualcomm

**Document for:** Approval

# Topic #1: UE RF requirements

## Data process method on companies’ input

1. There are 9 starting UE orientation options per annex J of TS38.101-2 for multiRX.
2. Companies are encouraged to consider realistic packaging including metal and plastic housings, as well as H and V imbalance.
3. Three types of reference UE implementation (two panels on the **same** side, two panels on the **adjacent** side and two panels on the **opposite** side) will be used to determine the core requirement:
   * + If the AoA offset would be declared by UE

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| AoA offset (degrees) | 30 | 60 | 90 | 120 | 150 |
| Reference UE | same | same | adjacent | opposite | opposite |

* + - If the AoA offset would be specified in the standard.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| AoA offset (degrees) | 30 | 60 | 90 | 120 | 150 |
| Reference UE | Min (same, adjacent, opposite) | Min (same, adjacent, opposite ) | Min (same, adjacent, opposite ) | Min (same, adjacent, opposite ) | Min (same, adjacent, opposite ) |

## 1.2 Combining method

Option 1 – arithmetic mean

Option 2 – “or” combination

## 1.3 AoA offset

Further discuss if the AoA offset should be declared by UE or specified in the standard.

## 1.4 Additional RF impairment for 30 degree and 60 degree AoA offsets

Companies are allowed to provide further analysis if sufficient margin has been taken into account for 30 and 60 degrees AoA offsets.

## 1.5 NTC vs. ETC

**Background**

There are two options on how to specify the multi-RX spherical coverage requirement with respect to NTC vs. ETC:

• Option 1: keep core requirement wording for the multi-RX spherical coverage requirement consistent with that of the legacy requirement, i.e., with a similar note as NOTE 2 in 38.101-2 Table 7.3.4.3-1, i.e., “The EIS spherical coverage requirements are verified only under normal thermal conditions as defined in Annex E.2.1.”

• Option 2: Do not use the note in the multi-RX spherical coverage requirement, and RAN4 agrees the requirement shall be verified under NTC only. Also, RAN4 ask RAN5 to verify it for NTC only.

**Agreement**

Option 2 is agreed, and an LS is to be sent to RAN5.