3GPP TSG-RAN WG4 Meeting # 102-e R4-2205979

Electronic Meeting, 21 Feb – 03 Mar, 2022

**Source:** Huawei

**Title:** TP to TS 38.108: 9.5 (OTA Tx ON/OFF), 9.6 (OTA TX signal quality) and 9.8 (OTA Tx IMD)

**Agenda Item:** 10.13.3.1

**Document for:** Approval

# Introduction

Based on the worksplit agreed in [1] (Issue 3-3-2), in this contribution a TP to TS 38.108 section 9.5 (OTA Tx ON/OFF), 9.6 (OTA TX signal quality) and 9.8 (OTA Tx IMD) is provided for approval.

Related WF on the OTA Tx requirements for SAN was approved in [3].

TS 38.108 skeleton in [2] was used as the starting point.

# Conclusions

**Proposal 1**: Approve the attached TP to TS 38.108.

# References

[1] R4-2203080 Way Forward on NTN\_solutions\_Part1, RAN4#101bis-e

[2] R4-2203087 Skeleton for TS 38.108 NR Satellite Access Node radio transmission and reception v0.0.1, RAN4#101bis-e

[3] R4-2203034 WF on Tx RF requirement for SAN type 1-O, RAN4#101bis-e

# Annex A: TP to TS 38.108

*------------------------------ Modified sections ------------------------------*

## 9.5 OTA transmit ON/OFF power

The requirement is not applicable in this version of the specification.

## 9.6 OTA transmitted signal quality

### 9.6.1 OTA frequency error

#### 9.6.1.1 General

OTA frequency error is the measure of the difference between the actual SAN transmit frequency and the assigned frequency. The same source shall be used for RF frequency and data clock generation.

OTA frequency error requirement is defined as a *directional requirement* at the RIB and shall be met within the *OTA coverage range*.

#### 9.6.1.2 Minimum requirement for *SAN type 1-O*

The modulated carrier frequency of each NR carrier configured by the SAN shall be accurate to within 0.05 ppm observed over 1 ms.

### 9.6.2 OTA modulation quality

#### 9.6.2.1 General

Modulation quality is defined by the difference between the measured carrier signal and an ideal signal. Modulation quality can e.g. be expressed as Error Vector Magnitude (EVM). Details about how the EVM is determined are specified in annex B for FR1.

OTA modulation quality requirement is defined as a *directional requirement* at the RIB and shall be met within the *OTA coverage range*.

#### 9.6.2.2 Minimum requirement for *SAN type 1-O*

For *SAN type 1-O*, the EVM levels of each carrier for different modulation schemes on PDSCH outlined in table 6.5.2.2-1 shall be met. Requirements shall be the same as clause 6.5.2.2 and follow EVM frame structure from clause 6.5.2.3.

### 9.6.3 OTA time alignment error

The requirement is not applicable in this version of the specification.

*------------------------------ Next modified sections ------------------------------*

## 9.8 OTA transmitter intermodulation

The requirement is not applicable in this version of the specification.

*------------------------------ End of modified section ------------------------------*