3GPP TSG RAN WG5 Meeting #95-e draft3\_R5-223638

Electronic Meeting, 9th – 20th May 2022

**Title: LS to RAN4 on TT work for NR FR1 TRP TRS**

**Response to: -**

**Release: Rel-17**

**Work Item: NR\_FR1\_TRP\_TRS-Perf (911210)**

**Source: RAN5**

**To: RAN4**

**Cc: RAN**

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**Attachments:** -

# 1 Overall description

Following the finalization of the RAN4 R17 NR FR1 TRP TRS WI core part, during RAN5#95-e a new WID has been reviewed and endorsed to start a work item to deliver conformance test cases for NR FR1 TRP and TRS requirements [1]. As part of the objective of this new WI, it is stated that RAN5 has primary responsibility for Measurement Uncertainty (MU) assessment for FR1 TRP/TRS for which a preliminary/placeholder MU table has been added in Annex B of TR 38.834, further optimizing and finalizing MU values and then determine Test Tolerance (TT) for the defined test requirements.

As part of this work, any optimization of the MU assessment will be captured in the RAN5 NR FR1 TRP/TRS test specification, but also in TR 38.834 as part of the maintenance phase.

With regards to the derivation of TT for OTA testing, there has been precedence of RAN4 kindly providing recommendations on TT along with core requirements, methodology and MU.

1. [2] shows the earliest such precedence wherein the “*TRP and TRS OTA performance requirements, measurement uncertainty and test tolerance values are agreed as package as summarized*” in [3] as inputs to TS 34.114 [5], while allowing for further refinements to MU in RAN5.
2. The above precedence was continued in [4] wherein RAN4 provided test tolerance recommendations for LTE MIMO OTA.
3. For 5G NR FR2 OTA, due to ecosystem needs RAN4 shifted the MU work to RAN5 as per [6] in response to the RAN5 LS in [7] and RAN5 picked up all subsequent TT definitions.

Based on the process being followed in RAN4 to derive NR FR1 TRP TRS requirements built on performance campaign test results, RAN5 understands that there is a deep relation between radiated performance requirement definition in RAN4, derived from test campaign results, and TT as indicated by the precedence in 1) and 2) above.

Therefore, RAN5 respectfully requests RAN4 to provide recommendations on test tolerance values for NR FR1 TRP and TRS along with a thorough description of the core requirements definition process so implications from MU and TT can be clarified and considered during the definition of TT in the RAN5 test specification.

# 2 Actions

**To RAN4**

**ACTION:**  RAN5 respectfully asks RAN4 to take the above information into account and provide RAN5 with recommendations on test tolerance values for NR FR1 TRP and TRS along with a thorough description of the core requirements definition process so that implications from MU and TT can be clarified and considered during the definition of TT in RAN5 test specification.

# 3 Dates of next TSG RAN WG 5 meetings

TSG-RAN5 Meeting #96-e 15th – 26th August 2022 Online

TSG-RAN5 Meeting #97 14th – 18th November 2022 Canada, CA

# 4 References

1. R5-223317, “New WID on UE Conformance - Introduction of UE TRP (Total Radiated Power) and TRS (Total Radiated Sensitivity) requirements and test methodologies for FR1 (NR SA and EN-DC)”, Apple, Rohde & Schwarz, Vivo, 3GPP TSG RAN5 Meeting #95-e, May 2022
2. R4-081664,”Reply to LS R5-073340 on "Test Tolerances for OTA UE Antenna"”, TSG RAN WG4, 3GPP TSG RAN4 Meeting #47bis, June 2008
3. R4-081651,”Test Tolerance Proposal for OTA testing”, Orange, China Mobile, Nokia, Motorola, RIM, Telecom Italia, Telefonica, T-mobile, Vodafone, 3GPP TSG-RAN4 Meeting #47bis, June 2008
4. R4-1714204,”LS on MIMO OTA test tolerance”, TSG RAN WG4, 3GPP TSG RAN4 Meeting #85, November 2017
5. 3GPP TS 34.114
6. R4-1801260,”Response LS on Measurement Uncertainty Definition Responsibilities”, TSG RAN WG4, 3GPP TSG-RAN4 Meeting AH-1801, January 2018
7. R5-180092, “LS on Measurement Uncertainty Definition Responsibilities”, TSG RAN WG5, 3GPP TSG RAN WG5 Meeting 1-5G-NR Adhoc, January 2018