

CTIA Certification Program Working Group Liaison Statement

To	3GPP TSG RAN4, 3GPP TSG RAN5
CC	3GPP RAN Plenary
Subject	LS to 3GPP RAN4/RAN5 Regarding CTIA MIMO OTA Test Plan Development
Date	21 August, 2015
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1. Introduction

The CTIA – The Wireless Association® MIMO OTA Sub Group would like to inform 3GPP TSG RAN4 and 3GPP TSG RAN5 regarding recent updates in the development of a MIMO OTA Test Plan within CTIA.

2. Discussion

In an LS to 3GPP TSG RAN 4 [1] and RAN5 [2] earlier this year, CTIA – The Wireless Association® informed RAN4 and RAN5 that preparation of a MIMO OTA test plan was nearing completion, with an expected release date of June, 2015. Today, the CTIA MIMO OTA Sub Group (MOSG) is pleased to inform 3GPP RAN4 and RAN5 that a MIMO OTA test plan has been released and is publicly available from the CTIA web site at the following URL:

http://www.ctia.org/docs/default-source/default-document-library/ctia_mimo_ota_test_plan_v1_0.pdf

This recently-released 2x2 downlink MIMO OTA test plan is the result of over three years of research and a significant development effort on the part of participating network operators, test platform manufacturers, mobile device vendors, and others.

The CTIA MIMO OTA Test Plan evaluates MIMO-capable LTE devices according to the following specification criteria:

- 1) The Multi-Probe Anechoic Chamber (MPAC) test system has been specified to generate a controlled 2x2 MIMO downlink.
- 2) The MPAC has been specified to emulate an SCME UMa downlink channel model.
- 3) LTE 2x2 downlink MIMO device performance has been specified in terms of a unique metric based on a controlled Signal to Interference Ratio (SIR) within the MPAC.

The CTIA MIMO OTA test plan introduces a new performance metric, **MIMO Average Radiated SIR Sensitivity (MARSS)**. This metric is especially relevant to network planners, device

manufacturers, consultants and others interested in quantifying a UE's sensitivity to MIMO performance impairment due to the co-channel interference typically seen in actual networks.

The second stage of CTIA's work calls for the completion of a test plan to evaluate an LTE UE's noise-limited transmit diversity (TM2) performance. The use of transmit diversity is especially relevant to VoLTE operation, and it provides a more realistic assessment of antenna efficiency. In addition, during transmit diversity tests it's not necessary to independently disable the UE's diversity receivers to make an accurate receiver performance measurement. Thus, the transmit diversity test could eventually replace the current SISO TIS (TRS) test procedures used today.

This forthcoming transmit diversity OTA test, in conjunction with the 2x2 downlink MIMO OTA test methodology which has just been released, will allow CTIA to evaluate LTE devices at each end of their operating continuum.

The CTIA MOSG will inform 3GPP RAN4 and RAN5 concerning the progress of the transmit-diversity work item, as well as providing notifications concerning updates to the CTIA MIMO OTA test plan.

Questions concerning the CTIA MOSG or the content of this LS should be sent to ota-mosg-info@ctia.org.

3. Actions

None.

Contact Info

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References

[1] R4-151040; *LS to 3GPP RAN4/RAN5 Regarding CTIA MIMO OTA Test Plan Development* (CTIA).

[2] R5-150613; *LS to 3GPP RAN4/RAN5 Regarding CTIA MIMO OTA Test Plan Development* (CTIA).

Date of Next CTIA MIMO OTA Subgroup Meeting:

CTIA MOSG #55

Las Vegas, NV, USA 9 September, 2015