MIMO OTA Measurement System Analysis Proposals for a Specific Laboratory

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Abstract:

The measurement methodologies for performance evaluation of terminals using multi-antenna technology are deeply discussed in many standardization organizations by theoretical and practical ways. Except for accuracy, the repeatability and reproducibility(R&R) of a MIMO OTA Measurement System(MOMS) is especially important to a specific laboratory. From Measurement System Analysis(MSA) point of view, this paper introduces the exact definitions of accuracy & precision, and proposes a common procedure for Gage R&R analysis(GRR) of MOMS. Different from most of studies previously focusing on how to do MIMO OTA correctly, MSA or GRR is a bottoms-up method which is designed to analyzing variation of measurement system by studying the tested results in statistical ways. %GRR smaller than 30% is generally accepted as a rule of thumb, which set a target requirement for any of measurement system including MOMS. It offers a choice for a specific laboratory to evaluate its MOMS and ensure its output of measurements.