EUROPEAN COOPERATION
IN SCIENCE
AND TECHNOLOGY

EURO-COST

CA15104 TD(16)02056
Durham, United Kingdom
October 4-6, 2016

SOURCE:
1. The Antennas, Propagation and Radio Networking section at the Department of Electronic Systems, Faculty of Engineering and Science, Aalborg University, Denmark
2. Huawei Technologies Sweden AB, Gothenburg, Sweden
3. Keysight Technologies Finland Oy, Finland
4. Oulu University, Oulu, Finland

Reproducing Standard SCME Channel Models for Massive MIMO Base Station Radiated Testing

Wei Fan, Fengchun Zhang, Tommi Jämsä, Mattias Gustafsson, Pekka Kyösti and Gert F. Pedersen

Abstract—Massive MIMO is a multi-user technology, where radio base stations (BSs) are equipped with a large-scale antenna array to simultaneously serve many terminals in the same time- frequency resource. Performance evaluation of such large-scale antenna systems in the design and development stage is challeng- ing. In this paper, we propose to evaluate massive MIMO BSs with a sectorized multi-probe anechoic chamber (MPAC) setup. A sectorized MAPC setup with 16 probe antennas distributed uniformly within [60o,60o] in azimuth domain is utilized to reproduce target channel models. A 8 ↠ 8 and a 16 ↠ 16 uniform planar array at 3.5 GHz are selected as the BS under evaluation, respectively. Radio channel emulation accuracies in terms of power-angular spectrum, spatial correlation and beamforming pattern are investigated for the proposed MPAC setup and desired channel models.

Wei Fan, Fengchun Zhang and Gert F. Pedersen are with the Antennas, Propagation and Radio Networking section at the Department of Electronic Systems, Faculty of Engineering and Science, Aalborg University, Denmark (email: wfa@es.aau.dk).

Tommi Jämsä and Mattias Gustafsson are with Huawei Technologies Sweden AB, Gothenburg, Sweden

Pekka Kyösti is with Keysight Technologies and Oulu University, Oulu, Finland