

Recent advances in the design and optimisation of blended rolled edge compact antenna test ranges

Abstract:

This workshop will provide the attendee the opportunity to learn about recent developments in the design and manufacture of modern compact antenna test ranges (CATR) with a focus on the design and implementation of modern blended rolled edge (BRE) CATRs for 5G NR test applications. Classically, BRE CATR have largely been designed using methods that were closely aligned with the original design formulation that were predicated on managing the mechanical surface curvature-tension. In this workshop the attendee will be exposed to alternative, more modern, design methodologies which in contrast focus upon design and optimisation techniques that instead directly assess and manage the quality of the collimated pseudo-plane-wave in the quiet-zone (QZ). Aspects concerning the development of the design and modelling technique will be presented that also serve as an overview and introduction to efficient genetic optimisation technique together with presenting recent implementations that also illustrate the proof of concept of this new design approach.

Workshop outline:

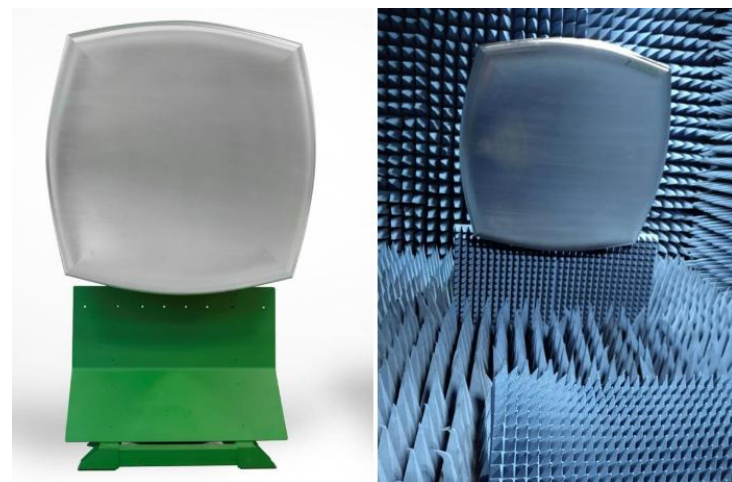
Please describe the format for the workshop, where appropriate identifying keynote speakers from your own and other organisations, panel, invited papers, technical sessions, and so on (100 words).

We encourage you to provide a graphical abstract: enclose a high-resolution picture relevant to the workshop content (it is a responsibility of the proposer that the picture can be published on EuCAP webpage without IP violation).

Workshop will consist of a single subject with possibility to ask question after the presentation. Main presenters will be:

Prof. Stuart Gregson

Dr.-Ing. Marc Dirix



Marc Dirix received the Dr.-Ing. in information and communication technology by the RWTH Aachen University, Germany in 2018. Previously, he had his Master Degrees in Information and Communication Technology by the same University in 2009. During 2004 to 2015, he worked as a



researcher and teacher at the Institute of High Frequency Technology of the RWTH Aachen University, Germany, where his main research topics were antenna measurements and material characterisation. In 2004, he has founded the Marc Dirix /RF company which focuses on material measurement automation for RF applications. In 2014, Marc was involved on the ESA funded EAML VIII project. In 2018, he joined Antenna Systems Solutions S.L. as application engineer and project manager where he is working developing antenna measurement systems ranging from micro- to mm-wave for the commercial and research market with reference customers worldwide, such as Saab, Viasat Antenna Systems, Telecom

Italia, Université Sophia Antipolis

Marc has many publications in the field of antenna measurements and material characterisation and has presented numerous papers at international workshops, congresses and symposiums, such as; Antenna Measurement Techniques Association (AMTA), European Conference on Antennas and Propagation (EuCAP), Loughborough Antennas & Propagation Conference (LAPC), ESA Antenna Workshop on Antenna and Free Space RF Measurements as well as publishing in renowned journals such as IEEE Transaction on Antennas and Propagation (TAP).

He has an extensive experience of managing and developing projects related to antenna measurements and characterisation; Compact Antenna Test Ranges and Near-Field systems, as well as antenna measurements automation. He is fully cognisant of the technical disciplines relevant to this project thanks to his 10+ years of professional industrial and academic experience.