

## On antenna value in the telecommunication industry: Information Theory and EM



Bruno Biscontini was born in Gualdo Tadino, Perugia, Italy, in 1976. He received the Laurea degree from the University of Perugia, Perugia, Italy, in 2002, and is currently working toward the Ph.D. degree at the Institute for High-Frequency Engineering, Technische Universität München (TUM), Munich, Germany., He has been a Research Assistant with the Institute for High-Frequency Engineering, TUM. He is presently Director RF&System Engineering at Huawei Technologies, Munich. His research interests are EM field theory, antennas, EM field computations, and Grid technology.



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### Abstract:

Current and incoming cellular communication systems demand increasing levels of performance and efficiency. Enhanced antenna systems, plus freshly incorporated radio-enhancement system components, are intended to contribute fundamentally to support the 5G-and-beyond requirements.

This workshop will focus on indicating and assessing technological directions that will boost the contribution at the RF resource level, through the deep understanding of the Information Theoretical potential of the Electro-Magnetic interface devices, e.g. antennas or RIS. Solutions



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like ultra-massive-MIMO or smart environment get intertwined with concepts such as Degrees of Freedom or Capacity, revealing with clarity the profit the industry can exploit from them.

**Workshop outline:**

Presentations, followed by Q&A + Panel discussion

Duration: 100 minutes