

# The Evolution of Smart Wireless Environments

## Research and Industrial Perspectives

Smart Wireless Environment technologies (including static passive EM skins, reconfigurable passive EM skins or reconfigurable intelligent surfaces, smart repeaters, etc.) are recently emerging as key enable components of next-generation communication systems. The growing interest in such technologies from the academic and industrial viewpoint is motivated by the fundamental promise of the Smart Wireless Environment vision, which is the possibility to manipulate the propagation of complex environments according to the communications system needs.

This workshop will be aimed at providing a broad and multi-disciplinary view on the current trends, the ongoing initiatives, and the research and industrial perspectives in the field

### Workshop Program

- 09:00 - 09:30 "Metasurface driven intelligent antennas for future smart radio environments"  
Filiberto BILOTTI, University of Roma TRE, Italy (filiberto.bilotti@uniroma3.it)
- 09:30 - 10:00 "Two-timescale design for reconfigurable intelligent surface-aided massive MIMO systems"  
Marco DI RENZO, CentraleSupélec and CNRS, France (marco.direnzo@centralesupelec.fr)
- 10:00 - 10:30 "Static and reconfigurable EM skins: Design approaches, research trends, and open challenges"  
Giacomo OLIVERI, University of Trento, Italy (giacomo.oliveri@unitn.it)
- 10:30-11:00 - *Coffee Break*
- 11:00-11:30 "RIS-N: a characterization of metasurfaces for smart environments"  
Stefano MACI, University of Siena, Italy (macis@dii.unisi.it)  
Giuseppe VECCHI, Politecnico di Torino, Italy (giuseppe.vecchi@polito.it)
- 11:30-12:00 "Optimizations of millimeter-wave propagation environments using anomalous reflectors and splitters"  
Sergei TRETYAKOV, Aalto University, Finland (sergei.tretyakov@aalto.fi)
- 12:00-12:30 "Towards Inclusive, Immersive, and Intelligent Connectivity in 6G – The role of THz Communications and RIS"  
Angeliki ALEXIOU, University of Piraeus, Greece (alexiou@unipi.gr)
- 12:30-13:30 - *Lunch Break*
- 13:30-14:00 "Smart Electromagnetic Environment as enabler for 5G mmw: Research and industry trends"  
Renato LOMBARDI, HUAWEI Technologies, Italy (renato.lombardi@huawei.com)
- 14:00-14:30 "Internet of Surfaces: Self-configuring or externally-controlled RIS?"  
Vincenzo SCIANCALEPORE, NEC, Germany (vincenzo.sciancalepore@neclab.eu)
- 14:30-15:00 "Recent advances in space-time coding metasurfaces"  
Tie Jun CUI, Southeast University, China (tjcu@seu.edu.cn)  
Vincenzo GALDI, University of Sannio, Italy (vgaldi@unisannio.it)
- 15:00-15:30 "Orange's Experiments on Reconfigurable Intelligent Surfaces"  
RATAJCZAK Philippe, Orange, France (philippe.ratajczak@orange.com)

**Dates:** Wednesday March 29, 2023

**Location:** Teatrino Lorenese, Fortezza da Basso, V.le Filippo Strozzi 1, Firenze

**Duration:** 09:00-15:30

### Registration

The *EuCAP Perspectives 2023* entrance fee is 160 EUR and includes lunch and coffee breaks. To register for the Workshop please click the link at the bottom of the Flyer. During the registration it is possible to register only for the Workshop or also purchase the entrance to the EuCAP2023 conference for the same day. Participation to the Workshop is free of charge for registered EuCAP2023 delegates

### Workshop Organizers

- Filiberto BILOTTI, Università di Roma TRE, Italy (filiberto.bilotti@uniroma3.it)
- Marco DI RENZO, CNRS & CentraleSupélec - Paris-Saclay University, France (marco.direnzo@centralesupelec.fr)
- Giacomo OLIVERI, ELEDIA Research Center (ELEDIA@UNITN), University of Trento, Italy (giacomo.oliveri@unitn.it)

Register at: <https://eucaptool.eucap2023.org/registration#/?dcCode=PARWORK23>