

# WORKSHOPS AND SHORT COURSES - MONDAY

Duration: 09:00 to 18:20

Room: 3



## WM02

### Millimetre-Wave Electronics for High Capacity Wireless Networks

#### Organisers

Claudio Paoloni, Lancaster University

Valerio Frascolla, Intel Deutschland GmbH

#### Abstract

The quantum leap for high capacity everywhere will be born from a new generation of wireless networks at mm-wave frequencies. Only those frequencies bands are wide enough to support the multigigabit data rate targeted by 5G networks. The challenge is formidable, due to the combination of a millimetre wave technology which is not yet completely mature and the link obstacles such as atmospheric attenuation, diffraction, range.

This workshop will offer the vision on the state of the art in the field of millimetre wave wireless networks through the latest update from renowned experts from operators, electronic manufacturers and academia. The complementary synergies of two large Horizon 2020 projects, mmMAGIC and TWEETHER, will disclose new routes for an integrated approach, for developing new electronic components and systems to define new architecture for anticipating the future of wireless communications.

This workshop is oriented to operators, service providers, manufacturers and academics in the field of wireless communications systems.

Four high calibre keynote speakers and six thematic talks will provide the audience an outstanding overview on millimetre wave wireless networks and stimulating concepts and materials for a lively and constructive discussion. We expect to seed a fresh vision for the future wireless communication paradigms.

A **World Café** will close the workshop to link ideas within a large group to leverage on the "collective intelligence" in the room: participants move among a series of small groups/tables where they continue the discussion in response to a set of questions, which are predetermined and focused on the specific goals of the workshop.

#### Programme

09:00 – 09:10

*Welcome and introduction of the workshop*

09:10 – 09:40

*Keynote: Millimetre-wave as the Key Technology to Solve the Backhaul and Front-haul Bottleneck for the Next Generation Mobile Networks*

Renato Lombardi, Huawei, Italy

09:40 – 10:00

*Millimetre-Wave Transceiver Design for Multi-Gigabit Mobile Backhaul Applications*

Chris Buck, Filtronic, UK

10:00 – 10:20

*MMIC Chip-Set Development for Broadband W-band Receivers and Transmitters*

Viktor Krozer, Goethe University of Frankfurt am Main, Germany

10:20 – 10:40

*TWEETHER – W-Band High Capacity Wireless Networks*

Claudio Paoloni, Lancaster University, UK

10:40 - 11:20

*Coffee Break*

11:20 – 11:50

*Keynote: Millimetre Wave Radio Systems - The Next Frontier*

Andy Sutton, BT, UK

11:50 – 12:10

*5G Architecture and Integration Solutions for an Edge-Less User Experience*

Krystian Safjan, Nokia Networks, Finland

12:10 – 13:00

*Round Table "Are the mm-Wave Technologies Mature for the Wireless Market?"*

13:00 - 14:20

*Lunch Break*

14:20 - 14:35

*Opening of the Second Part of the Workshop*

14:35 - 15:10

*Keynote: The mmMAGIC Project: New Frontiers in 5G Mobile Communications and Network Architecture Above 6 GHz*

Maziar Nekovee, Samsung, UK

15:10 – 15:35

*Radio Interface Design for mm-Wave Mobile Radio Access Networks*

Jian Luo, Huawei Technologies Dusseldorf GmbH, Germany

15:35 – 16:00

*6–100 GHz Channel Modeling for 5G: Perspective and Outcomes of mmMAGIC*

Wilhelm Keusgen, Fraunhofer Heinrich-Hertz-Institute, Germany

16:00 - 16:40

*Coffee Break*

16:40 – 17:10

*Keynote: Millimetre Wave Antenna Technology Evolution: from Wi-Fi to 5G*

Kei Sakaguchi, Fraunhofer, Germany

17:10 – 18:00

*World Café*

18:00 - 18:20

*Open Discussion and Concluding Remarks*