

WORKSHOPS AND SHORT COURSES - FRIDAY

Duration: 09:00 to 17:45

Room: 1

WF03

Millimetre-Wave Technologies for 5G Mobile Networks and Short-Range Communications

Organisers

Laurent Dussopt, CEA-LETI, France.

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Abstract

Millimeter-wave (mmWave) radio technology is seen as a key enablers for 5G wireless mobile networks and future high data-rate wireless communication systems. They will open access to the wide spectrum resources available from 10 GHz to 100 GHz and even beyond to provide multi-Gbps broadband access to mobile users, high-capacity wireless backhaul links between access points/base-stations, and very high data-rate wireless solution for short-range or long-range applications. These application fields are very active throughout the world with several significant demonstrations already done. Regarding mmWave applications in 5G mobile networks, standardization activities already started in 3GPP and other standardization bodies while first regulations are expected in 2018 at the 2018 ITU-R World Radio-communication Conference. Systems operating beyond 100 GHz are less mature and very much open to innovation using latest device and manufacturing technologies.

The workshop will include several talks by high-level experts from industry and academia who will present their vision on the role of mm-wave communications in 5G and the main needs/requirement in this domain, state-of-the-art radio and antenna realizations both below and above 100 GHz, and advanced concepts for sub-mmWave and THz communications.



The 46th European Microwave Week

Programme

9:00 – 9:10 Welcome

9:10 – 9:55 5G mobile communications above 6 GHz: timelines, key technologies and recent R&D

Maziar Nekovee, Samsung R&D, United Kingdom.

9:55 – 10:40 User exposure at millimeter waves: electromagnetic and thermal dosimetry in V-band

Maxim Zhabodov, IETR - University of Rennes 1, France.

10:40 - 11:20 Coffee Break

11:20 – 12:10 Cost effective mmW system leveraging silicon technology and digital manufacturing

Cyril Luxey, University of Nice-Sophia Antipolis, France.

Frédéric Giancesello, STMicroelectronics, France.

12:10 – 13:00 Reconfigurable millimeter-wave transmitarray antennas for backhaul applications

Laurent Dussopt, CEA-LETI, France.

13:00 - 14:20 Lunch Break

14:20 – 15:10 Hardware and System Design for Wireless Fiber in the Millimeter-Wave Band

Amin Arbabian, Stanford University, USA.

15:10 – 16:00 300 GHz Fixed Wireless Links

Ingmar Kallfass, University of Stuttgart, Germany.

16:00 - 16:40 Coffee Break

16:40 – 17:30 THz Point to point links for back-hauling in future networks

Guillaume Ducourneau, IEMN, France.

17:30 - 17:45 Open discussion and concluding remarks