

IoT System design & testing Solutions

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Milano 12-05-2017, Ore 09:00
POLITECNICO DI MILANO – SALA CONFERENZE DEIB Ed. 20
(di fronte campo sportivo “M. Giuriati”)
P.zza Leonardo Da Vinci, 32B - 20133 MILANO

Communication Technologies enabling the Internet of Things. The dedicate needs of IoT applications impact also the evolution of wireless communication technologies. In the cellular area, 3GPP's, eMTC and NB-IoT are paving the way to massive MTC, one vision of 5G. In the connectivity area, Bluetooth 5.0 just becomes reality. Lora Sigfox and many other LPWAN technologies expended rapidly recently. We would like to talk about the technology trend, challenges during IoT device design and testing solutions.

Registration is free. Reservations are required,

[click here for registrations.](#)

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Presso:



**POLITECNICO
MILANO 1863**

5G & IoT Seminar, May 12th, Politecnico di Milano

Special Guest:



9:00 - 9:30 **Registration**

9:30 - 9:45 **Welcome Address and Introduction**

9:45 - 10:30 **5G Technology Introduction, Market Status Overview and Worldwide Trials - Rohde & Schwarz – Guenter Pfeifer**

Abstract: After an introduction of the 5G use cases we will give an update on the 3GPP 5G timeline, the current market and trials status. We will highlight in particular the new 5G technology framework and air interface.

10:30 - 11:15 **IoT System Design Challenges and Testing Solutions - Rohde & Schwarz – Lothar Walther**

Abstract: Emerging communication technologies enabling the Internet of Things (IoT). The dedicated needs of IoT applications impact also the evolution of wireless communication technologies. In the cellular area, 3GPP's eMTC and NB-IoT are paving the way to massive MTC, one vision of 5G. In the connectivity area, Bluetooth 5.0 just becomes reality. Lora, Sigfox and many other LPWAN technologies expanded rapidly recently. We would like to talk about the technology trend, challenges during IoT device design and testing solutions.

11:15 - 11:45 **Coffee Break & Demos Setup**

- 5G 3GPP and Verizon pre-5G waveforms
- OTA beamforming measurements

11:45 - 12:30 **Large-scale Antenna Systems In mmWave Scenarios - Huawei Technologies Italia-Jonathan Gambini**

Abstract: The high frequency region of the electromagnetic spectrum has gained relevant interest as a candidate resource for next generation communications due to wide bandwidths availability. Radio nodes employing antenna arrays play a key role in mmWave scenarios characterized by poor link budget. In this talk, we provide an overview of the main architectural trade-offs of high frequency systems employing a large number of antennas, with focus on both co-located and distributed configurations.

12:30 - 14:00 **Lunch & Demos Setup**

- 5G 3GPP and Verizon pre-5G waveforms
- OTA beamforming measurements

14:00 - 14:45 **Challenges and Techniques for Characterizing Massive MIMO Antenna Systems for 5G - Rohde & Schwarz – Guenter Pfeifer**

Abstract: One of the key enablers for enhanced Mobile Broadband (eMBB) in 5G wireless communication systems besides using higher signal bandwidths in the millimeter-wave frequency region is the use of massive MIMO with multiple channels and beamforming to increase SNR.

However, the high number of antenna elements, limited test interfaces and the high integration with no RF Connectors pose a challenge and require over-the-air testing methodologies.

In this talk we give an overview of several OTA testing concepts and results from state-of-the-art measurements. Furthermore, we will highlight channel propagation measurements in the mm-Wave frequency region.

14:45 - 15:00 **Final issues and end of works**