

SPEAKERS

Meik Kottkamp has more than 25 years of technology experience in the cellular industry. He is Principal Technology Manager Wireless for Rohde & Schwarz in Munich and is responsible for strategic marketing and product portfolio development covering existing and new 3GPP technologies. His focus is 5G NR, specifically for industrial applications, and 6G research. Meik joined Rohde & Schwarz in August 2007 after working for 11 years for Siemens and NSN. He holds a Dipl.-Ing. degree of electrical and microwave engineering from the Leibniz University Hannover, Germany.

Francesco Linsalata (Member, IEEE) received PhD and M.Sc. degrees cum laude in Telecommunication engineering from Politecnico di Milano, Milan, Italy, in 2019 and 2022, respectively. He is a researcher and assistant professor at the Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico di Milano. His main research interests focus on V2X and UAV communications, Integrated Communication and Sensing, and physical layer design for 6G wireless networks. He was co-recipient of one best-paper award and recipient of one best student paper award.

Melanie Mauersberger is a Product Manager for signal and spectrum analysers at Rohde & Schwarz. She graduated in Electrical Engineering at the Technical University of Munich with research stays at the university of Bologna and Georgia Tech. Her expertise is in test and measurement of cellular infrastructure equipment. She has worked with manufacturer and operator customers globally on 5G NR base station and O-RU conformance tests.

Eugenio Moro is an assistant professor (RTDa) at Politecnico di Milano, Italy. He received his Ph.D cum laude in Information Technology from Politecnico di Milano in April 2023. He was a visiting student/researcher at Northeastern University, Boston MA, USA and Nokia Bell Labs, Stuttgart, Germany. His main research area is wireless networks, with a focus on optimization, virtualization, smart propagation environments and Open RAN.

INFOLINE

> 21st May 2024
> between 2.00 and 7.00 pm
> at Conference room Emilio Gatti, Politecnico di Milano

for registration:
[CLICK HERE](#)

Discover the latest updates in the world of wireless communications from test and measurement experts. Discover more on 5G evolution towards 6G, including O-RAN ecosystem. Rohde & Schwarz and the Polytechnic of Milan have the pleasure to invite you to the 5G Seminar.

In particular we will talk about:

- **5G Advanced Release 18 and its transit to 6G**
- **Research Activities on 5G/6G Technologies and networks**
- **Open-RAN: radio unit developments and energy efficiency**
- **Research activities on Open-RAN and programmable networks**

Wireless
Communications
Seminar Tour

5G TECHNOLOGY UPDATES

21st MAY 2024



PROGRAM

2:00 - 2:30 pm	Registration
2:30 - 2:45 pm	Introduction
2:45 - 3:30 pm	5G Advanced Release 18 and its transit to 6G Meik Kottkamp, Technology Manager, Rohde & Schwarz
3:30 - 4:00 pm	Research Activities on 5G/6G Technologies and networks Francesco Linsalata, Politecnico di Milano
4:00 - 4:30 pm	Coffe Break
4:30 - 5:15 pm	O-RAN: radio unit developments and energy efficiency Melanie Mauersberger, Product Manager, Rohde & Schwarz
5:15 - 5:45 pm	Research activities on Open RAN and programmable networks Eugenio Moro, Politecnico di Milano
5:45 - 6:00 pm	Q&A
6:00 - 7:00 pm	Demo and Cocktail

abstract

Since it is market introduction in 2019 based on 3GPP Release 15 specifications, 5G NR was largely deployed. Obviously, the technology evolves over time the same way as previous cellular generations like 4G, 3G and 2G did. This presentation reviews initially the main enhancements recently added in 5G Rel18 (5G Advanced). We will further illustrate the main research directions in 6G, for example sub-THz operation, integrated sensing and communication (ISAC) and reconfigurable intelligent surfaces (RIS) to name a few. This will also include initial test solutions relevant to 6G research.

abstract

While the fifth generation (5G) network rollout is in full swing, the landscape of wireless communication is at a transformative crossroads with the introduction of key sixth generation (6G) technologies. Each of these new technologies brings forth unique capabilities. Indeed, the 6G is expected to be the first generation of wireless networks with sensing embedded as a service. At the same time, the concept Network Digital Twins unlock predictive analytics for unprecedented efficiency and reliability. As a pivotal application, the vehicle-to-everything (V2X) technology, connected vehicles and drones, will enable a new mobility and connectivity paradigms. The talk will provide an overview of the current state of integration of these technologies within 6G network.

abstract

5G and the forthcoming 6G networks are being designed around the diverse connectivity needs of an increasingly heterogeneous user base, creating an ecosystem of unprecedented complexity in the Radio Access Network domain. Network programmability emerges as a crucial solution with a proven track record to effectively manage this complexity and ensure scalability in the face of evolving demands. This talk delves into Open RAN, a leading proposition for achieving universal programmability in radio access networks. From a cutting-edge research standpoint, we explore the capabilities of Open RAN, showcasing innovative applications of its principles and architectures and outlining future directions.

abstract

Opening the network architecture can pave the way for innovation and accommodate individual needs. As it also brings new challenges in terms of interoperability between the network equipment of different vendors, testing the equipment according to O-RAN and 3GPP specs is crucial. In the context of mobile networks in general and Open RAN networks in particular, there is a growing emphasis on improving energy efficiency. Radio units are responsible for a significant portion of the overall energy consumption in mobile networks. In this session, Melanie Mauersberger will talk about the required test steps from validating individual components to verifying end-to-end network performance and ways to determine and enhance the energy efficiency of radio units.