
W11: From 4G to Beyond 5G (B5G) Systems: Expectations, Realities and Disruptions

This workshop is sponsored by the Wireless World Research Forum (WWRF). The speakers in this workshop deliberate where the wireless and mobile technologies have been, where they are, and what needs to happen to match the expectations with realities and where are the gaps to fulfill those promises as we develop successive generations of wireless standards. The workshop addresses the following topics concerning the gap between the near-term commercial deployments of LTE-A, LTE-A Pro and the longer-term vision of 5G and Beyond systems.

- Has 4G (including LTE Adv Pro) truly exhausted its potential to meet most of the requirements of the 5G wireless systems and whether is it soon expected to reach the level of maturity in deployment so as to justify yet another new generation of wireless systems (such as 5G) which would mean significant capital expenditure by the mobile operators?
- User studies to validate whether 4G (LTE/LTE-A Pro) is not adequate to meet the requirements of the new use cases being defined for the 5G system to a very large extent. Update on the 5G standards and product developments to validate whether the deployment schedule of 2020 could be realistically met and whether there are compelling business cases to justify the investments in 5G systems.
- Interworking of 5G systems with the present-day wireless systems (3G to LTE-A Pro) and migration strategies to ensure that the evolved system would continue to work seamlessly and in a manner that is profitable for different actors in the value chain.
- Technology differentiators and research advances from 4G to 5G systems and beyond.
- Is 5G disruptive enough to justify investments by the operators or 4G would continue to evolve beyond LTE-A Pro until a new 6G standard appears truly disruptive in its approach with new internet protocols, quantum computing, RF energy harvesting, High-Altitude Platforms (HAPS), massive MIMO, cooperative networks, Artificial Intelligence (AI) techniques etc.?

Organizers:

Sudhir Dixit, Basic Internet Foundation & WWRF
Vino Vinodrai, Vinodrai & Associates Inc and WWRF

Vinod Kumar, WWRF
Angela Alexiou, University of Piraeus & WWRF

Program

Tuesday, 26 September 2017 14:00-15:30 Varley

Business Considerations in 4G to 5G and Beyond Systems

Chair: Vino Vinodrai, Vinodrai & Associates Inc and WWRF

1 5G New Deployment Scenarios: Opportunities and Challenges

Reinaldo Valenzuela, Nokia Bell Labs

2 Building the Road to 5G

Derek McAvoy, Bell Canada

3 Initial Results on Deep Learning for Joint Channel Equalization and Decoding

Geoffrey Ye Li, Georgia Institute of Technology

4 Quantifying the Real Benefit of Coordination

Catherine Rosenberg, University of Waterloo

Tuesday, 26 September 2017 16:00-17:30 Varley

Technology Advances in 4G to 5G and Beyond Systems

Chair: Sudhir Dixit, Basic Internet Foundation & WWRF

1 Cognitive Dynamic System as the Supervisor of Complex Wireless Communication Networks for 5G

Simon Haykin, McMaster University

2 Urban Mobility Management: From Real-Time Awareness to Integrated Control

Alberto Leon-Garcia, University of Toronto

3 Asymmetric Links Beamforming for mmWave Overlay in LTE-based Heterogeneous Network

Alexander Maltsev, Andrey Puduev, Ilya Bolotin, Intel; Olesya Bolkhovskaya, University of Nizhny Novgorod

4 Panel Discussion