5th International Workshop on Emerging Technologies for 5G Wireless Cellular Networks

In conjunction with IEEE GLOBECOM 2016, Sunday, December 4, 2016, Washington, DC, USA, http://wcsp.eng.usf.edu/5g/2016/

Workshop Chairs

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Lingjia Liu, University of Kansas, USA

Technical Program Chairs

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Charlie (Jianzhong) Zhang, Samsung Electronics, USA
Peiying Zhu, Huawei Technologies, Canada

Keynote Speakers

TBA

Panel Program

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Yang Yi, University of Kansas
Di Yuan, Linköping University
Wolfgang Zirwas, Nokia Siemens Networks GmbH&CoKG
Yaning Zou, Technische Universität Dresden

Important Dates

Full Paper Submission: **1 July 2016, 11:59 pm (NYT)**
Acceptance Notification: 1 September 2016, 11:59 pm (NYT)
Camera-Ready Submission: 1 October 2016, 11:59 pm (NYT)
Workshop: 4 December 2016

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Call for papers

The wireless cellular network has been one of the most successful communications technologies of the last three decades. The advent of smartphones and tablets over the past several years has resulted in an explosive growth of data traffic over the cellular network not seen in previous generations. With the proliferation of more smart terminals communicating with servers and each other via broadband wireless networks, numerous new applications have also emerged to take advantage of wireless connectivity. As the fourth generation (4G) networks, namely 3GPP LTE-A, mature and become great commercial success, the research community is now increasingly looking beyond 4G and into future 5G technologies both in standardization body such as 3GPP, and in research programs such as 5GPPP in EU Horizon2020.

Fundamental requirements that have emerged for radio access networks in the 2020 and beyond era include: 1) Capabilities for supporting massive capacity and massive connectivity; 2) Support for an increasingly diverse set of services, application and users – all with extremely diverging requirements for work and life; 3) Flexible and efficient use of all available non-contiguous spectrum for wildly different network deployment scenarios. These requirements bring a number of challenges to the design of future wireless networks, including the capability of supporting diverse traffic characteristics, massive connectivity due to massive number of devices (including machine-type terminals), and the densification and heterogeneity of such networks.

This workshop will be a venue to brainstorm on and to identify the emerging concepts, technologies, and analytical tools for 5G cellular networks. We aim to bring together leading researchers in both academia and industry, and to provide a forum for researchers from diverse backgrounds to share their views on what 5G should be and to have an open dialogue on the future of wireless research. The goal is to identify key 5G technology drivers that can deliver significant capacity, coverage and user-experience benefits. Topics of interest include, but are not limited to the following:

- Novel radio access network (RAN) architectures
  - HetNets with overlay of high- and low-power nodes
  - CoMP (coordinated multi-point) transmission and reception
  - Distributed antenna systems
  - Advanced relaying, user terminal relaying
  - Small cell deployment, femtocells, picocells
  - Terminal intelligence, Context awareness
- Advanced radio resource management (RRM) techniques
  - Interference management, interference awareness
  - Inter-cell interference coordination (ICIC, eICIC)
  - Artificial intelligence in wireless communications
  - Congestion management
- Emerging technologies in physical layer
  - Interference-robust air interface
  - Higher-order massive MIMO, Active antenna systems (AAS)
  - Multiuser communications, Network information theory
  - Novel modulation and coding schemes, Waveforms beyond OFDM(A)
- Novel services
  - Enhanced voice and video, Telepresence
  - Machine-to-machine (M2M), machine-type communications (MTC)
  - Point-to-point (P2P) / device-to-device (D2D) communications
- mmWave communications
  - Channel characteristics and modeling, Feasibility studies
  - Initial access; Beamforming, beam tracking; Mobility solutions;
  - System design aspects
- Energy efficiency
  - Energy consumption models
  - Joint RF-baseband optimization; End-to-end energy optimization
- Spectrum
  - Aggregation of intra and inter-band carriers for both FDD and TDD
  - Cognitive radio and dynamic spectrum access,
  - Adaptive radio access techniques
- Prototype and test-bed for emerging 5G technologies