

Call for Papers

IEEE International Workshop on New Radio Technologies (in Conjunction with IEEE PIMRC 2017)

Different from conventional mobile network designs primarily optimizing the transmission efficiency of single service (e.g., voice/video streams), industry and academia have agreed with the manifold wireless features to be supported by the fifth generation networks (5G). In Sep. 2015, International Telecommunication Unit Radiocommunication Sector (ITU-R) has identified three categories for these upcoming wireless features, including enhanced mobile broadband, eMBB (for high data rate transmissions in ultra-high resolution voice/video streams, mobile social networks, virtual/sensory reality), ultra-reliable and low latency communications, URLLC (for low latency and reliable data exchange in unmanned driving, intelligent transportation systems, industrial automation), and massive machine-type communications, mMTC (for small size packets and massive amount of terminal in smart grid/city, sensor networks, Internet-of-Things). In the meantime, ITU-R has also identified the radio transmission requirements of 5G (also known as International Mobile Telecommunications 2020, IMT-2020), including 20 Gbps peak data rate, 100 Mbps user experienced data rate, 10 Mbps/m² area traffic capacity, 10⁶ devices/km² connection density, 1 ms latency and mobility up to 500 km/hr.

To this end, 3GPP consequently launched the standardization activity of 5G *New Radio* in 2016 to frame Release 15 as the Phase-I 5G specifications. To satisfy these unprecedented radio transmission requirements, a number of technologies not involved in LTE-Advanced will be adopted by *New Radio*, including utilizing spectrum above 6 GHz (up to 100 GHz), beamforming in both control and user planes, gNBs with multiple remote transmission/reception points (TRPs), frame structure with agile resource arrangement, non-orthogonal multiple access (NOMA), new waveforms, etc. In Phase-II specifications, New Radio sidelink transmissions, mobile backhaul, unlicensed access, ultra-dense network/access, etc. are also projected to be supported. In addition to these radio access technologies, network function virtualization (NFV), software-defined network (SDN), network slicing, open stack/architecture are also considerably studied for the next generation core network. The purpose of this workshop is to bring together state-of-the-art innovations, research activities (both in academia and industry), and the corresponding standardization impacts of New Radio, so as to understand the inspirations, requirements, and the promising technical options to boost and enrich activities in the area of New Radio.

Topics of interest (includes but not limited to)

- New waveforms, NOMA, multi-user superposition transmission (MUST), beamforming based radio access in New Radio
- Radio resource and interference management for eMBB, URLLC and mMTC
- Ultra-dense network, multiple TRPs, cloud radio access network, massive MIMO for New Radio
- Sidelink, mobile backhaul, unlicensed transmissions for New Radio
- SDN, NFV, network slicing, open architecture for next generation core
- Standardizations of New Radio
- Impacts of innovative applications supported by New Radio (e.g., wearable devices, unmanned vehicles/robots, drones, augmented reality, kinesthetic/sensory/virtual reality)
- Simulation platform, prototypes and field-try for New Radio

Extended version of accepted papers in this workshop with eminent quality will be recommended to a special issue in *Wireless Communications and Mobile Computing* (SCIE with impact factor 1.899).

Workshop Organizers

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Workshop Website

<http://nr-gc2017.niu.edu.tw>

EDAS Submission Link

<https://edas.info/N23916>

Important Dates

Submission deadline: July 28, 2017
Acceptance notice: Aug. 11, 2017
Final manuscript: Aug. 18, 2017