

# **Ultra-Reliable and Low-Latency Communications in Wireless Networks (URLLC) Call for Papers**

## **1. Introduction/Overview**

The coming Internet of Things in 5G and beyond 5G promises to bring wireless connectivity to “anywhere, anytime, anything” ranging from tiny sensors to vehicles and planes. This requires that the system is able to support massive connected devices, and is able to support much more stringent requirements on latency and reliability than what current standards cannot guarantee. Among the various current research and standardization activities, the one aimed at the design of 5G, where the end-to-end Latency is 1 ms and the Reliability is 99.999%.

Actually, many emerging applications require Ultra Reliable and Ultra Low Latency Communications. For example, in industry scenario, the wireless communications in the coming automatic manufacturing should satisfy the ms level latency, and the reliability of the continue production is 99.999%. All of the stringent requirements in latency and reliability need a complete change in wireless systems design, such as air interface design, signal processing on both the device and infrastructure side, network infrastructure and architecture considerations, control / user plane design, session management and protocol stack design. The workshop provides a platform to discuss the recent research on latency and reliability requirements of future applications or provide solutions to significantly reduce end-to-end latency and/or increase reliability in wireless communications systems.

The objective of the Workshop on Ultra-Reliable and Low-Latency Communications in Wireless Networks is to present new research on Ultra-Reliable and Ultra Low-Latency Communications. This workshop will attract contributions exploring the following topics of interest (but not limited to):

- Latency and/or reliability requirements in future applications
- Air interface and signal processing for URLLC
- Device-to-device / vehicle-to-vehicle communications, vehicle-to-infrastructure
- Resource management techniques for URLLC
- multi-point transmission, multi-point connectivity, etc
- Network infrastructure and core network concepts
- Cloud-RAN for URLLC applications
- Edge computing for URLLC
- URLLC in UMTS/WCDMA, LTE-A, WLAN, Bluetooth, WSAF, or 5G cellular systems
- Co-existence of traffic with stringent latency/reliability requirements and other traffic

## **2. Workshop organizers:**

- 1) Zhi Chen, University of Electronic Science and Technology of China, China  
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- 2) Guodong Zhao, University of Electronic Science and Technology of China, China  
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## **3. Program committee members**

Meryem Simsek	Technische Universitat Dresden, Germany
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Zhisheng Niu	Tsinghua University, P. R. China
Rui Zhang	National University of Singapore, Singapore
Sheng Zhou	Tsinghua University, P. R. China
Edward Au	Huawei Technologies, Canada

### **Potential invited speakers:**

Tony Quek	Singapore University of Technology and Design, Singapore
Yonghui Li	The University of Sydney, Australia
Chenyang Yang	Beihang University