



ULTRA² – the 2nd International Workshop on Ultra-Low Latency and Ultra-High Reliability in Wireless Communications

in conjunction with IEEE GLOBECOM 2015, Dec 6-10, San Diego, CA

Future wireless communications will not only be used for content distribution, where typically throughput per area is the most relevant KPI. For more and more applications system capacity may not be the critical point, but they rather have stringent latency and/or reliability requirements. Examples for such applications are

- User-specific 3D video rendering and augmented reality,
- Remote control (e.g. remote robotics, surgery etc.) ,
- Wireless automation of production facilities,
- Vehicular traffic efficiency and safety,
- Mobile gaming.

Effectively, many future applications will demand an end-to-end latency of a few ms, while fields such as wireless automation and control may in addition require reliabilities in terms of block error rates on the order of 10^{-9} . Current state-of-the art technology, such as LTE-A, is clearly far away from meeting these requirements. Optimizing wireless communications for latency and reliability requires a complete paradigm change in wireless systems design, and has to be reflected in various technology fields, 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 for technical experts from the radio, core network and application side to elaborate 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 The workshop chairs and TPC chairs solicit original, unpublished technical papers in the fields of (but not limited to):

- Latency and/or reliability requirements of future application domains,
- Means to reduce end-to-end latency and/or introduce higher reliability in either legacy systems (e.g. UMTS/WCDMA, LTE-A, WLAN, Bluetooth, WSA-N-FA) or in 5G cellular communications, including
 - Air interface and signal processing concepts,
 - Device-to-device / vehicle-to-vehicle communications, vehicle-to-infrastructure,
 - Advanced radio resource management techniques,
 - Redundant or multi-point transmission, multi-point connectivity,
 - Novel approaches towards session management and protocol stack,
 - Network infrastructure and core network concepts,
 - Cloud-RAN concepts in the context of latency- or reliability-critical applications,
 - Architectural enablers for distributed or edge computing,
- Fundamental trade-offs between latency, reliability and other KPIs (e.g. throughput) in wireless communications,
- Technical solutions to allow for a co-existence of traffic with stringent latency/reliability requirements and other traffic (e.g. with ultra-high throughput requirements).

GENERAL CHAIRS:

Dr. Patrick Marsch,
Nokia Networks, Poland
Dr. Andreas Festag,
Technische Universität Dresden, Germany
Prof. Hans Schotten,
Universität Kaiserslautern, Germany

TECHNICAL PROGRAM COMMITTEE:

To be confirmed

IMPORTANT DATES:

Paper submission: July 1st 2015
Author notification: September 1st 2015
Camera-ready: October 1st 2015

TPC CHAIRS:

Prof. Preben Mogensen,
Aalborg University, Denmark
Dr. Peter Fertl,
BMW, Germany

PAPER SUBMISSION:

Papers should follow the 2-column IEEE conference template and not exceed 6 pages (one additional page is possible for an extra fee of USD 100 upon acceptance), and be submitted through the EDAS paper submission website. Accepted papers will be available at IEEEExplore. At least one author of accepted papers is required to register at the full workshop rate.