

Communication QoS, Reliability, & Modeling

Symposium Co-Chairs

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Scope and Motivation

The future society is heading towards an increasingly digitized world, that is connected and data driven, where many services will be dependent on instant and virtually unlimited connectivity. As 5th Generation research reaches the twilight, the research community must go beyond 5G and look towards the 2030 connectivity landscape, namely 6G. It is worthy to note, that it is not clear exactly what 6G will be, but most certainly will consider immature technologies as part of the drive towards beyond 5G, but more specifically it will be influenced by the way in which data is collected, processed, transmitted and consumed within the wireless network.

Harnessing on the plethora of services offered by 5G technology, 6G aims to integrate an even richer set of services to its portfolio, that includes ultra reliable and low latency communications, massive IoT connectivity and ultra-fast connectivity targeting enabling the communication ethos "Services Everywhere, Infrastructure No Limits." This will be based on introducing new enabling technology that can target ambitious KPIs (Key Performance Indicators), that factor in 10-100 times more capability over 5G networks. This will require disruptive architectures that can build on 5G technology, to deliver market relevant solutions. High quality papers reporting on enabling technologies targeting B5G system QoS provisioning, modelling, and reliability are encouraged.

Topics of Interest

The Communication QoS & Reliability and Modelling seeks original contributions in the following topical areas, plus others that are not explicitly listed but are closely related:

- Advanced coding for higher order modulations
- Advanced IoT uplink waveforms/protocols for massive and low latency connectivity
- Advanced OFDM waveforms for massive IoT
- Advanced MAC and bandwidth aware connectivity for THz connectivity
- Advanced Waveforms for Integrated Communication and Radar Receivers

- AI (Artificial Intelligence)-based Spectrum Sharing and Coexistence including Shot-Range Connectivity
- AI-based Joint Optimization of Multi-RAT radio and Processing Resources
- B5G System Level Simulation Methodologies
- Cell Free MIMO for B5G
- Channel Aware Routing for THz Connectivity
- Cross-layer Design, Modeling and Optimization
- Design and Evaluation of Application / Service Oriented Networking
- Design and Evaluation of Energy Efficient Networks and Services
- Design and Evaluation of Software Defined Networking (SDN) Architectures and Networks
- Design and Evaluation of B5G Radio Networks
- Dynamic Bandwidth Modulation and Synchronisation for THz Systems
- In-band full-duplex transceiver for NGN
- Integrated self-backhauling, D2D and broadcasting for mmWave
- Integration of Objects, Devices and Systems in an IoT Environment
- IoT Platforms, Integration and Service Provisioning
- Large Intelligent Surfaces for B5G
- Location Aware Communications
- Massive Random Access for B5G
- Measurement and Evaluation Techniques of Energy Efficient Communication Systems
- Metrics and Models for Quality of Experience (QoE) and Quality of Service (QoS)
- MIMO for Advanced Positioning Accuracy and Radar Like Capabilities
- ML (Machine Learning) based Modeling for um (ultra Massive)-MIMO
- Multi RAT Connectivity including Unlicensed Band
- Multimedia Streaming, Adaptive Streaming, MPEG-DASH
- Network Measurement and Monitoring Techniques
- Pairing, Interference Cancellation and Power Control in NOMA systems
- Performance Evaluation and Design of Cloud Networks
- Performance Evaluation and Design of Cognitive Network Architectures
- Physical Layer Security for IoT Networks
- Quality and Performance for Network and Services
- Resource Allocation for Networks and Their Services
- RF Design for B5G Systems
- Software-Defined Networking (SDN) and Network Functions Virtualization (NFV)
- Quality and Performance in Overlay (including Peer-to-Peer) Networks
- Quality and Performance in Mobile Edge and Fog Computing Systems
- Quality and Resource Allocation for Network Services, VPN, Web
- Quality, Measurements and Performance in Cyber Physical Systems
- Quality, Measurements and Performance in IoT and Big Data Applications
- Security, Reliability, Privacy and Trust by Design and Performance Evaluation
- Quality, Scalability and Performance in the Internet
- Scalability and Performance of Edge Computing and Distributed Computing Systems
- Scalable mmWave communications
- TCP/IP Variants and Performance
- Ultra Massive MIMO for next generation networks
- Unified and scalable architectures for heterogeneous networks

- Wireless edge caching for Ultra-fast and low latency communications
- 3D um-MIMO channel modelling

Important Dates

Paper Submission: 15 April 2022 Notification: 25 July 2022 Camera Ready and Registration: 1 September 2022

How to Submit a Paper

All papers for technical symposia should be submitted via EDAS. Full instructions on how to submit papers are provided on the IEEE Globecom 2022 website: <u>https://globecom2022.ieee-globecom.org/</u>