



Sustainable Communications for Renaissance

Call for Papers

Symposium on Selected Areas in Communications: Backhaul/Fronthaul Networking & Communications Track

Track Chair

- Behrooz Makki, Ericsson Research, Ericsson, Sweden, behrooz.makki@ericsson.com

Scope and Motivation

To cope with the exponential growth of demand on wireless communications, along with improving the spectral efficiency and capacity, 5G and beyond will densify the network with many base stations (BSs) of different types. Such a network densification comes with new challenges, however. The BSs need to be connected to the operators' core network via a transport network. On a global scale, fiber and wireless technology are dominating media for backhaul/fronthaul communications, each with its own advantages and challenges. Particularly, to satisfy the quality-of-service requirements for a massive number of devices, there is a need to scale-up the rate, the reliability, and the latency of the backhaul/fronthaul networks with reasonable costs.

Topics of Interest

This symposium aims to foster research and innovation in the field of backhaul/fronthaul networking and communications, and provides a platform for dissemination of fundamental and applied results. We will address both the 5G and beyond 5G aspects of the backhaul/fronthaul networks from the academic and industrial perspectives. We focus on the wireless communication aspects of the backhaul/fronthaul networks. The call for papers is motivated by the network densification requirements, for which backhaul/fronthaul communication is a true enabler. To that end, we encourage researchers to submit recent findings including the following non-exhaustive list of topics:

- Caching in backhaul/fronthaul networks
- MIMO and efficient beamforming in backhaul/fronthaul networks
- Integrated access and backhaul networks
- Backhaul/fronthaul design requirements for rural and sparsely populated area
- Routing and topology adaptation in backhaul/fronthaul networks
- Resource management in backhaul/fronthaul networks
- Mobile backhaul/fronthaul networks
- Backhaul/fronthaul communications using free space optics
- Backhauling using non-terrestrial networks

- Wireless versus fiber: cost and performance analysis of backhaul networks
- Experimental demonstrations, tests, and performance characterizations of backhaul/fronthaul networks.
- Green backhaul/fronthaul solutions and energy consumption models for new backhaul/fronthaul technologies
- Software-defined radio/Cognitive radio based backhaul/fronthaul designs
- Integrated access and backhaul standardization
- AI and Machine Learning enhanced Edge Computing over backhaul/fronthaul networks
- Security and Mobility Management in backhaul/fronthaul networks
- Backhaul/fronthaul communication as an enabler for cloud, fog or edge computing
- Interference management in wireless backhaul/fronthaul networks
- Meshed communication in backhaul/fronthaul networks
- Hybrid wireless, fiber, satellite and/or optical solutions for backhaul/fronthaul communications.

Important Dates

Paper Submission: 11 October 2022

Notification: 18 January 2023

Camera Ready and Registration: 15 February 2023

Important Note

The authors of selected papers from this track will be invited to submit an extended version of their work for fast-track review and possible publication in the IEEE Open Journal of the Communications Society.

How to Submit a Paper

All papers for technical symposium should be submitted via EDAS. Full instructions on how to submit papers are provided on the IEEE ICC 2023 website: <https://icc2023.ieee-icc.org/>