

IEEE GLOBECOM 2023

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CALL FOR PAPERS

Intelligent Communications for Shared Prosperity

SAC Symposium: Backhaul/Fronthaul Networking and Communications

Co-Chair

- Mona Jaber, Queen Mary University of London, London, UK. <m.jaber@qmul.ac.uk>

Scope and Motivation

The design of future networks is fuelled by the ever-increasing demand for high bandwidth, ultra-low latency, ubiquitous coverage, and inbuilt artificial intelligence in the communication system, as opposed to a conventional communication pipeline. It follows that today's networks will evolve from systems in which the fronthaul and backhaul are managed separately and incompatibly into an integrated flexible smart wireless backhauling/fronthauling infrastructure that will support future networks including 6G, IoT and emerging technologies such as driverless cars, autonomous vehicles or flying platforms, robotic control, smart buildings, and remote condition monitoring networks. The development of smart backhaul/fronthaul solutions for economical and ubiquitous networks will enable ultra-low latency, artificial intelligence, high data-rates and high reliability. Such integrated backhaul and fronthaul networks will meet the global information and communication requirements of future smart and resilient cities, providing ubiquitous connectivity and ensuring the convergence between the fixed and mobile side of the network and guarantee enhanced user experience and better scalability and latency.

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 encourage researchers to submit recent findings including the following non-exhaustive list of topics:

- Integrated access and backhaul (IAB) design and joint optimization.
- Backhaul/Fronthaul enabled by non-terrestrial networks (LEO satellite, unmanned flying platforms such as HAPs/MAPs/LAPs, balloons, and airships)
- Massive MIMO and Reconfigurable Intelligent Surfaces based backhaul/fronthaul for ultra-dense small cell deployment.
- Green backhaul/fronthaul solutions and energy consumption models.
- Higher frequency bands for backhaul/fronthaul design (FSO/mm-wave/THz)
- Scheduling techniques and radio resource management (RRM) and interference management in backhaul/fronthaul networks.

- Experimental demonstrations, tests, and performance characterizations of backhaul/fronthaul networks.
- AI and Machine Learning for Open RAN Backhaul/fronthaul
- AI and Machine Learning enhanced Edge Computing over backhaul/fronthaul networks
- Security, privacy, and mobility management in backhaul/fronthaul networks
- Hybrid wireless, fibre, satellite and/or optical solutions for backhaul/fronthaul communications

Biography of Co-Chair

Mona Jaber (Senior Member, IEEE) received the B.E. degree in computer and communications engineering and the M.E. degree in electrical and computer engineering from the American University of Beirut, Lebanon, in 1996 and 2014, respectively, and the Ph.D. degree from the 5G Innovation Centre, University of Surrey, in 2017. Her Ph.D. research was on 5G backhaul innovations. She was a Telecommunication Consultant in various international firms with a focus on the radio design of cellular networks, including GSM, GPRS, 3G, and 4G. She led the IoT Research Group, at Fujitsu Laboratories of Europe, from 2017 to 2019, where she researched IoT-driven solutions for the automotive industry. She is currently a Lecturer in IoT with the School of Electronic Engineering and Computer Science, Queen Mary University of London. Her research interests include zero-touch networks, the intersection of ML and IoT in the context of sustainable development goals, and IoT-driven digital twins. Mona was awarded the title of N2Women Rising Star in Computer Networking and Communications in 2022.

How to Submit a Paper

All papers for technical symposia should be submitted via EDAS. Full instructions on how to submit papers and important deadlines are posted at <https://globecom2023.ieee-globecom.org/>