



Call for Papers

Symposium on Selected Areas in Communications: Aerial Communications Track

Track Chair

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Scope and Motivation

Aerial communications refer to systems that involve aerial nodes (such as manned and unmanned aircrafts, floating balloons, and airships) with significantly higher altitudes than their terrestrial counterparts. On the one hand, those aerial nodes could be deployed as aerial base stations, relays, or access points, to provide wireless connectivity for ground users from the sky. Thanks to their appealing features, such as wide coverage with elevated altitude, the ability of on-demand deployment and fast responses, aerial-assisted wireless communications have found many promising applications, such as data traffic offloading, public safety, disaster relief, information dissemination and data collection. On the other hand, aerial nodes with their missions (such as package delivery, aerial photography, and surveillance) may also be connected to ground networks as new aerial users. Network-connected aerial nodes are expected to not only enable their truly remote command and control (C&C) with unlimited operation range but also to support their high-capacity payload communications. However, aerial communications are significantly different from conventional terrestrial communications, due to the high altitude and/or high mobility of aerial nodes, the unique channel characteristics of air-ground links, the asymmetric quality of service (QoS) requirements for C&C and mission-related payload communications, the stringent constraints imposed by the size, weight, and power (SWAP) limitations of aerial nodes, as well as the additional design degrees of freedom enabled by joint aerial mobility control and communication resource allocation. This track aims to foster research and innovation surrounding the study, design and development of aerial communications. The track solicits original, previously unpublished papers pertaining to the theoretical and practical aspects of aerial communications.

Topics of Interest

Original research articles are solicited in, but not limited to, the following topics:

- Networking architectures and communication protocols
- Agile, intelligent, and resilient aerial communications
- Air-ground and air-air channel modelling & measurements
- Spectrum management and multiple access schemes
- Interference mitigation
- Manned and unmanned aerial systems communication
- Aerial swarm communications and control
- Machine Learning and Artificial Intelligence
- Mobile edge computing for UAVs

- 3D aerial node placement and trajectory optimization
- Joint trajectory design and resource allocation
- Internet connectivity using aerial platforms
- UAV-supported data offloading
- Physical and cyber security in UAV communications
- Energy consumption and energy supplying methods
- UAV-assisted broadband services
- Cyber-physical models
- Integration of UAVs in 5G and 6G mobile networks
- Human and machine teaming in UAV
- Wireless power transfer for UAVs
- Digital twins for UAVs
- Experiments, demonstrations, and field tests
- Economic frameworks and business models
- Regulation, standards, and best practices
- Security and Privacy
- UAV-supported emergency communications

Important Dates

Paper Submission: 11 October 2023

Notification: 18 January 2024

Camera Ready and Registration: 15 February 2024

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 ICC 2024 website: <https://icc2024.ieee-icc.org/>