



Sustainable Communications for Renaissance

Call for Papers

Symposium on Selected Areas in Communications: Integrated Sensing and Communication Track

Track Chair

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Scope and Motivation

Future 5.5G/6G wireless systems are expected to support diverse applications, such as autonomous driving, unmanned aerial vehicle (UAV), extended reality (XR) and Wi-Fi sensing, many of which requires both high-data rate communications and high-resolution sensing. With the wide deployment of massive MIMO and Millimeter wave (mmWave) or even Tera Hertz (THz) technologies, the future communication signals tend to have high-resolution in both time and angular domain, making it possible to perform high-resolution sensing using communication signals. Under this background, integrated Sensing and Communication (ISAC), in which the sensing and communication operations are jointly designed via the shared use of a single hardware platform and a joint signal processing framework, has emerged as a key technology towards the next-generation wireless standards.

This track welcomes manuscripts on all aspects of the modeling, design, analysis, optimization, signal processing and implementation of ISAC algorithms, protocols, architectures, and systems. Furthermore, contributions devoted to the channel measurements, system-level simulation, experimental performance demonstrations, prototyping, and field-tests of ISAC are solicited. High quality papers from both industry and academia are encouraged.

Topics of Interest

The Integrated Sensing and Communication track seeks original contributions in the following topical areas, plus others that are not explicitly listed but are closely related:

- Fundamental information theoretical limits for ISAC
- Unified approach/performance metric for ISAC
- Network architectures and protocol for ISAC
- Waveform/sequence/coding/modulation/beamforming design for ISAC
- Joint receiver design for ISAC systems
- MIMO, massive MIMO, and intelligent reflecting surface (IRS) for ISAC
- Millimeter wave and THz ISAC

- Machine learning/AI enabled ISAC
- Sensing-assisted communication and communication-assisted sensing
- Multi-band integrated sensing and communication
- Cooperative sensing and communication in ISAC
- Environment Side Information aided ISAC
- Wi-Fi sensing for indoor positioning and target detection
- ISAC for vehicular-to-everything (V2X) networks
- Unmanned Aerial Vehicle (UAV) aided ISAC
- Security and privacy issues in ISAC
- Channel measurement and modeling for ISAC
- System-level simulation, prototyping, and field-tests for ISAC

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.

Important Dates

Paper Submission: 11 October 2022

Notification: 18 January 2023

Camera Ready and Registration: 15 February 2023

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 2023 website: <https://icc2023.ieee-icc.org/>