
Sustainable Communications for Renaissance

# Call for Papers

## workshop on Synergies of communication, localization, and sensing towards 6G

**SCOPE**

Research on 6G is now well underway and several large initiatives have been launched around the globe to define what this new generation of wireless networks will be. These definitions are supported by a wide variety of technological enablers, ranging from access in the THz spectrum, which brings massive bandwidths and laser-like beamforming capabilities, to the introduction of new antenna technologies and intelligent metasurfaces, which provide massive apertures and new ways of shaping the propagation medium. Due to the wide variety of envisioned use cases, 6G will not lead to a one-size-fits-all solution, but rather inspire a rich diversity in terms of devices, spectrum usage, and technologies. Common among many emerging services in need of 6G is the requirement for localization and sensing to be an integral part of 6G. The ability of 6G to locate and track active users as well as passive objects will be part of the core communications functionality and will enable and enrich a wide variety of futuristic services, including immersive augmented reality, robot collaboration, and environment/earth monitoring. These services will lead to a more inclusive and sustainable 6G ecosystem. The overarching vision of this workshop is that the synergies among localization, sensing, and communications within the 6G ecosystem require a common venue, not focusing on any specific technological enabler, but rather support a broad and diverse set of viewpoints, including those from industry (telecom and radar industries) and academia (communications, signal processing, and circuits communities).

**TOPICS OF INTEREST**

We seek original completed and unpublished work not currently under review by any other journal/ magazine/conference. Topics of interest include, but are not limited to:

- Use cases and applications of communication, localization, and sensing in a 6G context
- 6G communication, localization, and sensing in the millimeter-wave and THz bands
- Location-based network management and analytics
- Security and privacy aspects for localization and sensing
- Communication, localization, and sensing with reconfigurable intelligent surfaces
- Full duplex schemes for simultaneous communication and localization and/or sensing
- Air interface and waveform design for integrated communication, localization, and sensing
- Protocols for integrated communication, localization, and sensing
- Signal processing techniques (including machine learning, AI, and beamspace processing) for integrated communications, localization, and sensing
- Modeling of hardware, antennas, channels or propagation for joint communication and sensing
- Localization and sensing at different frequency bands
- Coexistence, coordination, and cooperation between radar and communication in 6G
- Communication and positioning with energy-neutral devices and massive IoT
- Energy-efficient, scalable (network and/or transceiver hardware) architectures and strategies for joint communication and sensing
- Location-aware ultra-reliable communications
- Context-aware localization systems
- THz imaging, positioning/localization, THz spectroscopy in 6G

**PAPER SUBMISSION**

All papers for Workshops 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/

**WORKSHOP CO-CHAIRS**

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**MAIN CONTACT**

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**IMPORTANT DATES**

**Paper Submission Deadline:**
20 January 2023
**Paper Acceptance Notification:**
6 March 2023
**Camera Ready and Registration for accepted papers:**
15 March 2023

**WEBPAGE LINK**

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