



## 4<sup>th</sup> Workshop on Integrated Sensing and Communication (ISAC)



### General Chair

- **Wen Tong** (Huawei Technologies Co. Ltd., Canada)

### Workshop Co-chairs

- **Fan Liu** (Southern Univ. of Science and Tech., China)
- **Jie Xu** (The Chinese Univ. of Hong Kong, Shenzhen, China)
- **J. Andrew Zhang** (Univ. of Technology Sydney, Australia)
- **Taneli Riihonen** (Tampere Univ., Finland)

### TPC Chair

- **Yuanhao Cui** (Beijing University of Posts and Telecommunications, China)

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### Important Dates

- ❖ Paper submission due:  
**January 20, 2022**
- ❖ Notification of acceptance:  
March 06, 2022
- ❖ Camera-ready papers:  
March 15, 2022

### Submission link

<https://edas.info/N28800>

### Webpage link

<https://isac.committees.comsoc.org/conferences/>  
<http://47.240.75.6:8088/index.php/home/>

### Scope

As the standardization of 5G is gradually being solidified, researchers are speculating what 6G will be. A common theme in many perspectives is that 6G Radio Access Network (RAN) should serve as edge infrastructure to provide site-specific services for surrounding users, rather than communication-only functionality. Jointly suggested by recent advances from the signal processing society and the communications society, radio sensing functionality can be integrated into 6G RAN in a low-cost and fast manner. Therefore, the future cellular network could image and measure the surrounding environment to enable advanced location-aware services, ranging from the physical layer to application layers. This type of research is typically referred to as Integrated Sensing And Communication (ISAC).

In essence, ISAC can acquire two main advantages over dedicated sensing and communication functionalities: 1) Integration gain to efficiently utilize congested resources for dual use of both communications and sensing, and even more interesting, 2) Coordination gain to balance dual-functional performance or/and perform mutual assistance. Benefiting from these two advantages, applications of ISAC have been extended to numerous emerging areas, including vehicular networks, environmental monitoring, Internet of Things, as well as in-door services such as human activity recognition.

### Topics

We seek original completed and unpublished work not currently under review by any other journal/magazine/conference.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:

- Fundamental information theoretical limits for ISAC
- Network architectures/transmission protocols/frame designs for ISAC
- Spectrum analysis and management of ISAC
- Full duplex/interference management techniques of ISAC
- Precoding/waveform/modulation/receiver design for ISAC
- Security and privacy issues for ISAC
- Machine learning/Network Intelligence for ISAC
- MIMO/Massive MIMO for ISAC
- Intelligent reflecting surface (IRS)/Holographic MIMO surface for ISAC
- Millimeter wave/THz technologies for ISAC
- ISAC for 6G unmanned aerial vehicles (UAV)
- ISAC for 6G vehicular-to-everything (V2X) networks
- Standardization progress of ISAC
- Wi-Fi sensing/positioning/detection for ISAC
- Experimental demonstrations and prototypes

### Paper Submission

The workshop accepts only novel, previously unpublished papers. The page length limit for all initial submissions for review is SIX (6) printed pages (10-point font) and must be written in English. All final submissions of accepted papers must be written in English with a maximum paper length of six (6) printed pages (10-point font) including figures. No more than one (1) additional printed page (10-point font) may be included in final submissions and the extra page (the 7th page) will incur an over length page charge of USD100. For more information, please see IEEE ICC 2022 official website: <https://icc2022.ieee-icc.org/authors>