



Call for Papers

Paper Submission Deadline: October 17, 2022

EDAS Submission: <https://edas.info/newPaper.php?c=30044>

Website: <https://jcns-symposium.org/>

As the standardization of 5G-Advanced progresses, researchers are speculating what 6G will be. Integrating sensing functionality is emerging as a key feature of the 6G Radio Access Network (RAN), allowing to exploit the dense cell infrastructure for constructing a joint communication and sensing (JC&S) network. As such, the future outdoor and indoor networks could image and measure the surrounding environment to enable advanced environment and location-aware services, ranging from PHY to application layers. While positioning is already implemented in 4G and 5G standards, it is anticipated that JC&S will be at the heart of 6G and beyond systems. Indoor systems are following the same trend, the upcoming IEEE 802.11bf Wi-Fi sensing standard being a first step in this direction. New developments are expected to increase communications and sensing performance, relying, among others, on wider bandwidths, more antennas, and higher carrier frequencies. Advances in theoretical understanding of the performance and limitations, and new algorithmic solutions, including those based on machine learning, are needed to make that vision come true.

Despite having drawn huge attention from both academia and industry, many open problems remain to be investigated in JC&S. This symposium aims at bringing together researchers from academia and industry to identify and discuss major technical challenges, recent breakthroughs, and novel applications related to JC&S. Topics include but are not limited to:

- Fundamental information and estimation theoretical limits for JC&S
- Network architecture / transmission protocols / frame designs for JC&S
- Innovative hardware designs addressing power consumption, size, and cost benefits for JC&S
- RF system and antenna design for JC&S
- Spectrum analysis and management of JC&S
- Full duplex / interference management techniques of JC&S
- Precoding / waveform / modulation / receiver design for JC&S
- Security and privacy issues for JC&S
- Machine learning / Network Intelligence for JC&S
- AI-assisted JC&S
- MIMO / Massive MIMO / intelligent reflecting surfaces (IRS) for JC&S
- Fine range Doppler and angle estimation in wireless networks
- SLAM in wireless networks
- Millimeter wave / THz technologies for JC&S
- JC&S for highly mobile networks
- Chirp-based communication and sensing
- Hardware reuse and sharing for JC&S

- Standardization of JC&S
- Wi-Fi sensing / positioning / detection for JC&S
- Experiments, demonstrations, and prototypes

Papers outside the areas listed above, but related to the focus of the symposium, are also welcome. Manuscripts not exceeding 6 pages must be submitted through EDAS. Extended abstracts from 2 to 3 pages can also be submitted. Submissions should be formatted according to the IEEE conference template. Manuscripts will be peer-reviewed according to the standard IEEE process. All accepted (and presented) papers will be published in the symposium proceedings and will be submitted for inclusion into IEEE Xplore subject to meeting IEEE Xplore's scope and quality requirements.

EDAS submission on: <https://edas.info/newPaper.php?c=30044>

Deadlines:

Paper Submission Deadline: October 17, 2022

Acceptance Notification: Dec 2022

Final Paper Due: Jan 2023

Video Submission: Jan 2023

You can find more details about the conference and the paper submission process on:

<https://jcns-symposium.org/>

We would be delighted if you submit a paper and join us at this exciting event!

With best regards,

Gerhard P. Fettweis
General Co-Chair

André Bourdoux
Technical Program Co-Chair

Thomas Ußmüller
General Co-Chair

Fan Liu
Technical Program Co-Chair

Nuria Gonzalez Prelcic
Technical Program Co-Chair