



IEEE Aerospace Electronic Systems ISAC Initiative Planning

M. Sabrina Greco

2023 AESSE Officer Strategic Planning Meeting

5 May (Cinco de Mayo) 2023

San Antonio, USA

ISAC Initiative

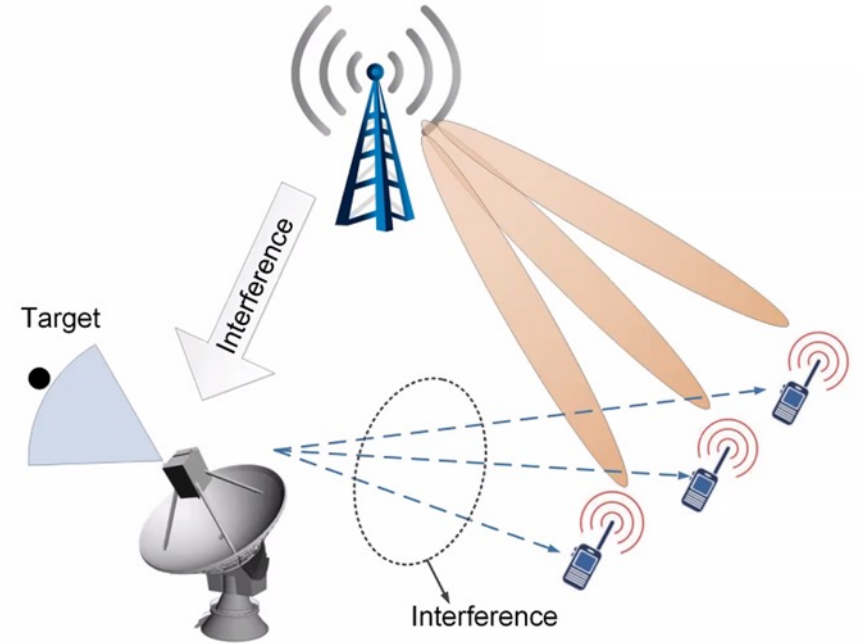
Integrated Sensing and Communications

2022

- First AESS ISAC workshop in Edinburgh, 23 October 2022

Report/Plan for 2023

- Joint AESS/COMSOC invited session at RadarConf 2023
- Co-sponsored Summer School with SPS and EURASIP
- Second AESS workshop
- Paper on the Magazine



1:30 **Mark Davis** – Welcome and introduction

1:40 **M. Sabrina Greco** – Integrated Sensing and Communications: the AESS Perspective

2:00 **Moeness Amin** - Communication Signal Steganography Using Radar

2: 30 **Christos Masouros** – Securing the Integrated Sensing-Communication Network

3:00-3:30 **Coffee break**

3:30 **Marco Lops** – Radar-Enabled Ambient Backscatter Communications

4:00 **Kumar Vijay Mishra** - Emerging Technologies for Distributed ISAC Systems

4:30 Concluding remarks

- **AESS ISAC Technical Working Group**
 - Confirmed members: Marco Lops (Italy), Patrick M. McCormick (USA), Ravi Adve (Canada), Justin G. Metcalf (USA), Kumar Vijay Mishra (USA/India), Fotis Koubiadis (Lockheed Martin, USA), M.S. Greco (Italy)
 - Looking for more diversity (geographical and technical)
 - The TWG has planned a paper on the Magazine (submission in Summer, led by Vijay Mishra and myself)
- **Joint AESS/ComSoc invited double special session at RadarConf 2023**
 - 10 papers, authors from USA, Italy, Sweden, Finland, Luxembourg, UK, China

- **Co-Sponsored Summer School**
 - **June 26-29**, Baiona, Spain (close to Vigo) Organizer: Nuria Gonzalez Prelcic (SPS)
 - AESS Spain Chapter support
 - Fabiola Colone and Kumar Vijay Mishra invited as instructors
 - **Registrations open!**
- **2nd AESS workshop**
 - 2 possible locations: India (the Region 10 chapter meeting will be held there) and/or Sydney in conjunction with the International Radar Conference and BoG meeting
 - Period: November 2023

Organized by

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2023 JOINT IEEE SPS-AESS AND EURASIP SUMMER SCHOOL ON INTEGRATED SENSING AND COMMUNICATION
26-29 June 2023, Baiona, Spain

General Chair
Nuria Gonzalez Prelcic
North Carolina State University, USA

Technical Program Chair
Mikko Valkama
Tampere University, Finland

Finance Chair
George Alexandropoulos
National and Kapodistrian University of Athens, Greece

Local Chair
Josep Jornet
Northeastern University, USA

VENUE
Parador de Baiona, Spain
paradores.es

REGISTRATION OPEN
conference.ece.ncsu.edu/isac/

This summer school intends to provide a complete perspective of all possible types of interaction between sensing and communication that can be exploited in current and future wireless systems. From strategies for coexistence and co-design of sensing and communication, to newer approaches that directly exploit the downlink/uplink communication signals for sensing, or more disruptive applications that go beyond providing position and velocity estimations. Emphasis will be placed on a multidisciplinary perspective, highlighting considerations often neglected related to hardware constraints, practical antenna designs for different frequency bands, or realistic architectures. The attendees will be exposed to top researchers from diverse backgrounds, representing the signal processing, aerospace, microwave, communications, and computing communities.

SESSIONS

- Technologies for coexistence and co-design
- Distributed integrated sensing and communication
- Passive radar
- Localization based on channel state information at mmWave
- Operation in THz bands
- Waveform optimization for joint radar and communication
- Multicarrier waveform design for integrated sensing and communication
- Beamforming for joint radar and communication with self-interference cancellation constraints
- Prototyping joint radar and communication systems
- RIS-aided joint radar and communication
- Gesture and human activity recognition
- Environmental radio mapping
- Sensor-aided communication in vehicular channels