IEEE Communications Society
Integrated Sensing and Communication (ISAC) Emerging Technology Initiative (ETI)
Minutes of the 2021 IEEE ComSoc ISAC-ETI 2nd Meeting via Zoom
9:00 - 10:10 Shanghai (UTC+8), Monday 13 Dec 2021

Present ETI Members:

§1. Welcome
The Academic Chair announced the start of the 2021 IEEE ComSoc ISAC-ETI 2nd Meeting. The agenda is 1) Welcome, 2) Chairs’ Summary for 2021, 3) The Road Ahead for 2022, 4) Motion, 5) Q&A.

The Academic Chair, Dr. Fan Liu, announced several considerations of the meeting: Audiences will be muted during the meeting. Please DO NOT annotate on your screen – everyone can see it. Please kindly enter your name, email, and affiliation in the chat box for use of signing.

§2. Chair’s Summary for 2021
§2.1 Statistics
The Academic Chair, Dr. Fan Liu, first gave some statistics about publications stats, government funded projects and membership.

Publications Stats
In recent years, the number of ISAC publications have been increasing tremendously. Among them, topics can be roughly divided into three categories:

• Mostly Well-Recognized Topics: 1) Waveform Design, 2) Wireless Sensing, 3) Vehicular ISAC.
• Other Topics: 1) Fundamental Limitation and Tradeoffs, 2) Network Architectures, 3) THz ISAC.
• Emerging Topics: 1) Hardware and Transceiver Design, 2) Security and Privacy.
Government Funded Projects
More than 9.65 million USD, 109 million Euro, 12 million RMB, 1 million GPB was funded by Governments worldwide.

Membership
Our community is becoming large and worldwide. We are the largest ComSoc ETI now. We are perhaps the largest academic organization dedicated to ISAC!
- Our Members: 60 Founding Members → 871
- IEEE Fellows: 16 → 32
- WeChat Group Members: 0 → 1492
- WeChat Account Followers: 816 → 2983
- YouTube/Bilibili Followers: 0 → 679

Especially, Prof. Bruno Clerckx is promoted to IEEE Fellow. We have nominated 3 IEEE ComSoc Distinguished Lectures (DL) and 4 Symposium/Track Chairs for ICC’23. Prof. An Liu was finally chosen as the Track Chair of the SAC-ISAC Track.

§2.2 Working Groups

- **Publications Working Group (WG1)** led by Prof. Athina Petropulu (ex-officio) and Prof. Andrew Zhang. WG1 promised to work on special issues on top-tier journals and ISAC newsletters. Realizations include ISAC-Focus established, 5 special issues: ongoing, more proposal submitted.

- **Conferences and Events Working Group (WG2)** led by Prof. Christos Masourou (ex-officio) and Dr. Weijie Yuan. WG2 promised to work on Special Tracks, Workshops, Special Sessions, and Selected Area Symposium in GC/ICC. They also possibly function as IEEE Confs Liaisons and organize dedicated conference on ISAC. Realizations include 1 Dedicated Conference, 2 Regular Sessions, 6 Workshops, 7 Special Sessions, 11 Tutorials.

- **Education Working Group (WG3)** led by Prof. Jie Xu (ex-officio) and Prof. Marwa Chafii. WG3 promised to work on the IEEE ComSoc ISAC-ETI Webinar Series, Summer/Winter Schools,
and Online Courses/Tutorials. Realizations include 1st Season of IEEE ComSoc-SPS ISAC Webinar Series, Co-sponsored the OWSP Seminar Series, Summer/Winter Schools, 11 Tutorials have been delivered, ISAC Summer School in preparation.

- **Online Contents Working Group (WG4)** led by Dr. Yuanhao Cui (ex-officio). WG4 promised to work on ISAC-ETI Website, ISAC Research Library on GitHub, Best Readings and Social Medias. Realizations include ISAC-ETI Website almost completed, ISAC Research Library on GitHub established (96 Stars), Best Readings submitted, YouTube/Bilibili/Wechat established (697/2987 Followers), Technical Support for ISAC-Focus.

- **Demonstration and Data Sets Working Group (WG5)** led by Dr. Taneli Riihonen (ex-officio) and Dr. Bhavani Shankar. WG5 promised to work on open testbeds, Demonstrations, baseline datasets for RF sensing, and possibly student competition. ISAC demos include passive sensing platform@SUSTech (Rui Wang), 5G NR sensing platform@TAU (Taneli Riihonen), 5G NR ISAC-V2x platform @BUPT (Qixun Zhang, Zhiyong Feng).

- **Industrial Activities Working Group (WG6)**
  In 2021, many companies, scientific research institutions, and operator companies have generated a lot of reports on ISAC.
  - Symposia related to 6G ISAC were held in China over 3 times
  - More than 6 White Papers on ISAC
  - Industries/Scientific research institutions interested in ISAC including Ericsson, Nokia, Huawei, ZTE, China Mobile, China Unicom, China Telecom, China Academy of Information and communications Technology, verband Deutscher Elektrotechniker (VDE), etc.

**More details**

- 6th Dec 2020, Ericsson announced its white paper "Ever-Present Intelligent Communication"
- 15th Feb 2021, Huawei showcased for the first time its ISAC with optical wireless prototype system
- 15th Apr 2021, The 1st Symposium on 6G ISAC was held in China
- 17th Sep 2021, IMT-2030(6G) Promotion Group officially released the “Research Report on Integrated Sensing and Communications”
- 6th Dec 2021, New VDE position paper: Joint Comms & Sensing as the Key Technology for the 6G Rollout
- 7th Dec 2021, China Unicom and Huawei jointly launched the "Smart Super Sensing Industry Promotion"

§3. The Road Ahead for 2022

§3.1 Springer Edited Book

This book will be led by Yonina C. Eldar, Christos Masouros and Fan Liu. The tentative title of the book is Integrated Sensing and Communications (ISAC).

The first part of this book is background and fundamentals for ISAC. The second part is physical layer signal processing for ISAC. The third part is ISAC applications and hardware implementations, and the last part is summary and prospect.

We will start to invite our members in ETI to write these chapters together, and we aim to publish this book in 2023.

§3.2 Planned Special issues

- IEEE WCM, proposal submitted
- IEEE JSAC SI on OTFS, proposal submitted
• Elsevier Signal Processing, in preparation
• EURASIP JASP, in preparation
• IEEEIoTJ, in preparation

§3.3 IEEE JSAC ISAC Series
IEEE JSAC ISAC Series will be towards dedicated ISAC Journal or Transactions.

§3.4 Conference
2nd IEEE JC&S Hybrid Symposium would be held on March 2022. ISAC-ETI is one of the sponsors.
IEEE ComSoc-SPS ISAC Webinar Series 2nd Season (Nov 2021 – Spring 2022) is in preparation. The ISAC Webinar Series is co-sponsored by both IEEE ComSoc ISAC-ETI, and IEEE SPS ISAC-TWG.

§3.5 Continue organizing WS, SS, Tutorials, and Panels at:
• ComSoc Conferences: GC, ICC, WCNC, PIMRC, ICCC
• SPS Conferences: ICASSP, SPAWC, EUSIPCO, SAM
• AESS Conferences: Radarconf, CIE Radar
• VTS Conferences: VTC-Spring, VTC-Fall

§3.6 Reach out to other communities
• IEEE International Symposium on Information Theory (ISIT)
• IEEE Intelligent Vehicle Symposium (IV)
• International Conference on Mobile Computing and Networking (MOBICOM)
• IEEE International Conference on Computer Communications (INFOCOM)
• IEEE MTT-S International Microwave Symposium (IMS)
• ……

§3.7 Datasets
• 5G Wireless Sensing Datasets – cooperation
• Human Activity Datasets
• Vehicle Network Datasets

§3.8 Summer School
• SPS Summer/Winter School
• ComSoc Summer School
• With GC/ICC

§4. Motion
• Upgrade to a TC at ICC 2022, but will be incorporated into the new TC structure at the end of 2022
• Remain as an ETI during 2022, and to be incorporated into the new TC structure at the end of 2022
• Upgrade to an IEEE Initiative (at an equivalent level with an IEEE Society), which will require significant efforts...

Our next meeting will be held next year ICC 2022. Goodbye and enjoy healthy and happy life!
Thank you again