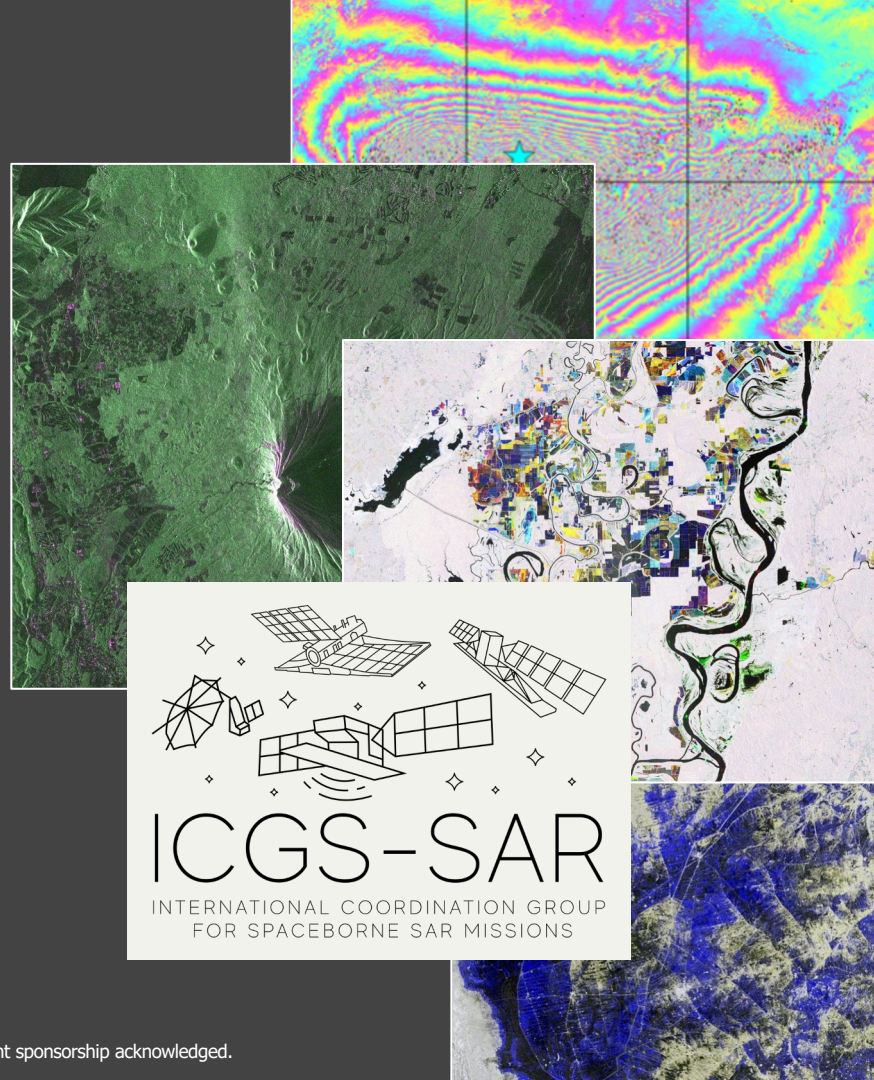
Working Group 2



Working Group 2

3rd International SAR Workshop
Saga Prefecture, Japan
6-8 November, 2024

Copyright 2024 California Institute of Technology. Government sponsorship acknowledged.

Working Group 2 Accomplishments

ICGS-SAR
INTERNATIONAL COORDINATION GROUP FOR SPACEBORNE SAR MISSIONS

- The goal of the ICGS-SAR is to coordinate present and future international constellations of SAR satellites
  - Foster the exchange and sharing of data
  - Exploit synergies between observations
  - Improve resilience and sustainability of the observation systems

- The Working Group 2 has focused on mechanisms for coordination of observation requirements for future missions
  - Developed a database of missions, characteristics, timelines, observational goals
  - Coordinated database with CEOS database
  - Developed a quantitative experiment to demonstrate the value of this coordination

Quantitative Coordination Experiment

ICGS-SAR
INTERNATIONAL COORDINATION GROUP FOR SPACEBORNE SAR MISSIONS

- Use the aquisition plans of existing L-band missions and quantify the improvement of observation products through mission cooperation and coordination
- JPL used its NISAR/SDC science performance tool to estimate surface deformation and biomass observation product performance
- CSA developed a multi satellite planning tool and will perform an experiment on aquisition planning optimization
- First results to be presented at this workshop
- If the quantitative approach is deemed useful:
  - Optimization can be performed on existing systems to support WG1 objectives
  - The benefits of coordinating future systems observation requirements can be demonstrated and quantified

Responsible and Sustainable Advances in SAR Missions and Technology





IAC Special Session

Guy Seguin., Chair, INSARSAT
Dirk Geudtner, Co-chair, ESA

October 16th, 2024

Objectives and expected Outcomes

- **The objective of this session is to initiate a strategic discussion on a more responsible and sustainable development of advanced SAR Missions and Technologies.**

- **The main topics of the session will span from SAR missions, harmonization and coordination toward a *System of Systems Architecture* to support multi-frequencies imaging, improve coverage and revisit, including systematic coverage for disaster response and climate change monitoring, as well as to achieve cost/benefits trade-offs.**

- **The session will result in a joint paper identifying challenges for SAR mission developers in ensuring responsible advances in SAR missions and technologies in view of sustainable SAR benefits.**

- **This paper may also support the discussions at the forthcoming meeting of the International Coordination Group for Spaceborne Aperture Radar (SAR) Missions, in November 2024 at JAXA, by suggesting some actions toward a common strategy highlighting benefits and a roadmap. (too late for this meeting)**

Program



15h00: Objective of the Session and expected outcomes
Dr. Guy Seguin, INSARSAT

15h04: Copernicus Programme: SAR missions
Pier Bargellini, Copernicus Space Segment Programme Manager, *ESA*



15h12: Italy and Synthetic Aperture Radar: A Perfect Match
Dr. Francesco Longo, Head EO Division, ASI

15h20: The NASA-ISRO SAR Mission and Prospects for Continuity
Dr. Paul A. Rosen, NISAR Project Scientist, Jet Propulsion Laboratory, California Institute of Technology



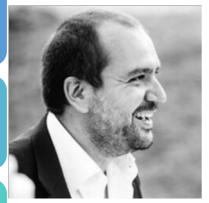
15h28: The Contribution of Commercial Radar Service
Alexander Kaptein, Head of Future SAR Programs, Airbus DS - Intelligence

15h36: SAR Constellations for Sustainable Development: A New Era in Environmental Insight
Ornella Bombaci, Director, Bids Department, Thales Alenia Space Italia

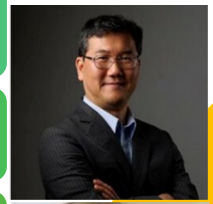


15h44: Synspective Business for Sustainability and Advances in SAR Technology
Toshihiro Obata, Head, Technology Strategy Office, Synspective

15h52: Panel responses to audience's questions & identified challenges, handled by the facilitators;
Matteo Emmanuelli Airbus DS-I & Annamaria Nassisi, Thales Alenia Space Italia









Bio: https://www.iafastro.org/events/iac/international-astronautical-congress-2024/technical-programme/special-sessions/wednesday-16-october/responsible-and-sustainable-advances-in-sar-mission-and-technology.html

Identified Challenges

- Governance
- Frequency allocation protection against 5G/6G ground networks
- Export Regulation
- Data complexity
- Calibration
- InSAR capability and background data
- Onboard processing market perspective and technical gap
- Customer education
- Commercial market sustainability along government investments, IRIDE and Starshield
- Revisit time

Conclusion

There is a need for SAR strategic development discussions.