

Minutes of WInSAR Business meeting 11 December 2019, 12:30-1:30 Pacific Standard Time  
Franciscan Room, Park Central San Francisco (formerly the Westin)

In person EC participation: Kristy Tiampo (Chair), Estelle Chaussard (Vice Chair), David Bekaert (Secretary), Chris Crosby (UNAVCO), William Barnhart, Gareth Funning (ex-officio), James Foster, Eric Hetland, Scott Baker (UNAVCO)

## **Agenda WinSAR Business Meeting, AGU**

*Agenda with 5 min talks per person:*

- Welcome and introduction from the WInSAR Executive Committee: Kristy Tiampo
- Report on WInSAR activities at UNAVCO: Scott Baker and Chris Crosby
- Update from NASA: Gerald Bawden
- Update from ESA: Jerome Benveniste
- Update on NISAR and ISCE: Paul Rosen
- Update on GMTSAR: David Sandwell
- Update from JAXA: Shin-ichi Sobue
- Update on UAVSAR: Yunling Lou
- Update from ASF: Nettie Labelle-Hamer
- Update from GEO Supersites: Michael Poland or Freysteinn Sigmundsson

### **Welcome and introduction from the WInSAR Executive Committee: Kristy Tiampo**

Kristy introduced the WinSAR mission and objectives, as well as the Executive Committee that was elected a year ago. WInSAR facilitates InSAR training for the community. This year training included:

- InSAR data interpretation and analysis for non-specialists
  - 1-day short course at SAGE/GAGE
  - Target end-users how to use processed InSAR data for your research
- InSAR processing and theory with GMTSAR
  - Multi-day course in San Diego CA
- InSAR theory and processing with ISCE
  - Multi-day course in Boulder CO
  - During this course Piyush for developing the ISCE installation video recording
- ARIA standard product, ARIA-tools, and time-serie processing using MintPy
  - One-day course at JPL

Kristy thanked all the community members supporting this effort, including the GMTSAR and ISCE teams, and mentioned that the provided courses were oversubscribed, stressing a WInSAR goal to provide additional training. The WInSAR EC is currently looking for other locations for hosting courses to increase course participation along the US East coast. Community members are welcomed and encouraged to email Kristy if they are interested in training.

### **Report on WInSAR activities at UNAVCO: Scott Baker and Chris Crosby**

Scott provided an overview of the WInSAR role in the broader UNAVCO organization. Activities include supporting the EC with project management, archive and operation/maintenance, tasking for data ordering and data ingest, portal and website, and in the past the ISCE software licensing. Key updates include:

- 9 new institutional members joined WInSAR in 2019, bringing the total registration count to 1672 members. A decline in new subscriptions was noticed compared to the past since the ISCE software became open-source.
- The current WInSAR data archive amounts to 136TB data of data available for download, of which more than 105TB is storage for ALOS wide swath data.
- The SSARA product archive was built under NASA ROSES 5 years ago. This is available to the community for storing satellite data as well as publication results and can be used to fill the gap on open-and-fair data policy enforced by publishers such as AGU.

### **Update from NASA: Gerald Bawden**

Gerald reported on the exciting time for SAR. When WinSAR was founded, we looked predominantly to other organizations for SAR data. This will change with the launch of NISAR.

Gerald provided updated on the recent roll changes at NASA HQ:

- Mike Freilich retired. The posting is re-opened and candidates are sought.
- Sandra Cauffman has become the acting Director for the Earth Science Division
- Paula Bontempi has become the acting Deputy director for Earth Science Division
- Gerald Bawden has become the program scientist for Geodetic Imaging, replacing Craig Dobson
- Thorsten Markus has become the Program Manager for Cryosphere, replacing Thomas Wagner

2017 Decadal survey update:

- Five Designated Observable were identified.
  - For the Surface deformation and Change Observable, which is likely to be a SAR mission, Paul Rosen is the program manager. Investigations include exploring international partnership for cost reductions.
- A new competed explorer flight line with 350 M cost constraint is planned for
- An incubator program is planned to identify new technology and mature these in preparation for next decadal survey.

ROSES updates:

- The 2019 NISAR science team sections have been made, with a strong focus on Calibration and validation.

- The LS-ASAR airborne campaign has started. This is a dual L and S band SAR on an airborne platform to create the first L+S SAR dataset in the USA. In total, 45 proposals were funded. The first phase of the campaign flew from 4-16 December of 2019 over Alaska. Later in spring there will be a phase to cover more of the central US. The data will be free and open on UAVSAR website

#### **Update from ESA: Jerome Benveniste**

- All sentinel-1 A/B mission operations are in nominal mode. Both satellites are in good health, with no degradation observed.
- Sentinel-1 is close to its full mission capacity, making it difficult to accommodate additional observations.
- The 2018 annual report has been released.
  - The report shows data access and interest from users.
  - The time of access has been improved < 5 hours.
  - Emergency services strongly rely on Sentinel-1.
  - A new high-level observation plan launched in January 2019.
- Going forward:
  - Working with RADARSAT constellation for mitigation of C-band interference between S1 and RCM
  - Analysing the option to launch Sentinel-1C earlier than planned. The idea is to optimize the constellation. This plan has been proposed to Copernicus and European commission. Subjected to decision is a strong community request for analysis ready product (ARD) such as radio terrain corrected observations.

#### **Update on NISAR and ISCE: Paul Rosen**

- The NISAR launch date has slipped to May 2022 (5 months delay).
- The flight systems are in process of integration and testing
- NISAR passed the Mission System Critical Design Review in September 2019.
- The NISAR downlink has been increased.
  - Covering North America at 40 MHz HH/HV and 5 MHz VV/VH
  - Extend along North American Coast
  - Reduce culling at high latitude
  - Increase of radar sampling rate to improve image quality
- Science team activities:
  - A new NISAR Science Team has been selected with a focus on calibration and validation.
  - UAVSAR has been deployed on a 6am/6pm schedule during the growing season in the South East USA in support of the eco-systems component to NISAR. The acquired data will be used to generate NISAR sample products.
  - Science user handbook has been updated to detail the left looking scenario only.
- Paul showed images of the 12m antenna in partial and deployed state.

- ISCE 2.3 is officially open-source and available on github. Community users are contributing.
- ISCE 3.0 is the official processor for NISAR. Updates include speed up, configuration managers, and is planned to be more modular. In its current existence, ISCE3 is not ready for prime time, with the interface to change. Stable interfaces are planned for December 2020.
- A second jupyter notebook course in ISCE training was done during summer. A third unavco short course is anticipated in 2020.

### **Update on GMTSAR: David Sandwell**

The GMTSAR team has some partial 3 years development funding from ASF under cyberinfrastructure. The GMTSAR package is now available on Github, and is also being distributed through macports and homebrew. Currently 24k DEM downloads have been made from the GMTSAR website since March 2013

New GMTSAR features:

- S1 time-series processing capability
- split spectrum ionospheric corrections
- solid earth tide correction which the team are trying to move over into the GACOS system,
- integer ambiguity resolution.

Planned GMTSAR features:

- Ocean tide loading tide correction.
- Parallel sbas and xcorr
- automated testing.

David expressed special thanks to ESA and ASF for making the ESA Sentinel-1 data very easy accessible.

### **Update from JAXA: Shin-ichi Sobue**

- ALOS-2 launched in 2014, and has spent 5 years in orbit so far.
  - Attitude control has been nominal.
  - No degradation in power.
  - 110kg of fuel left, only 16 kg used.
- More than 200 million scenes are acquired each year. A kml file detailing how much a given location has been observed has been made available to the community.
- Open and free access to the scansar data has been announced
  - Challenged by processing the data. JAXA does currently not have enough capacity, but aims to have the data processed by December 2020.
- ALOS 3 is optical sensor with 7 years of mission operations, launch mid 2020
- ALOS 4 is SAR mission with 7 years of mission operations, launch mid 2020-2021

- ALOS 4 will have more frequent observations with a 14day revisit time and a 240 km swath
- Exporting option for NASA to downlink and process data over the US for making it public available. Needs further negotiation with NASA.

### **Update on UAVSAR: Yunling Lou**

#### UAVSAR update:

- The UAVSAR fleet consist out of three radars:
  - L,P, and ka band
  - L-band allows for repeat pass interferometry.
  - Ka-band is single pass interferometer
- Over the last year, the UAVSAR team has been integrating the ISRO S-band into the observation pod to collect data for the join S and L band campaign.
  - Acquisitions started December 2019.
  - Will take some time for processing this data.
- An upcoming experiment is planned for deep-seated landslides
  - The ka-band was used in the past for DEM generation.
- NISAR simulated products using UAVSAR as a proxy are being made available
  - search on the uavsar website under “simulated-nisar”.
  - Products are compatible with isce.

#### UAVSAR NextGen update:

- Objectives are to: 1) ensure robustness of current capabilities, 2) modernize the capabilities such it's a test bed for technologies that enable decadal survey new measurements.
  - e.g.. single pass L-band; along track InSAR, simultaneous multi-frequency capability, bistatic modes etc.
  - If there are other requests send email to Yunling Lou and Gerald Bawden.

### **Update from ASF: Nettie Labelle-Hamer**

The Alaska governor cut back the science budget. This is impacting the universities, however, ASF is fine given the funding that is being received is federal. ASF continues to work:

- ASF has completed the dirt work for the Ka band antennas, and is waiting for the antenna's to be installed. This is scheduled for January-February 2020.
- 3-year Getting Ready for NISAR project has been successfully completed.

#### Upcoming:

- ALOS 1 mirror site at ASF DAAC for PALSAR and AVNIR
- ASF User Working Group proposed to ESDIS for a Sentinel-1 RTC and a GRFN spin-off
- Capacity building through the DAAC and other funding for SAR data usage.

**Update from GEO Supersites: Michael Poland or Freysteinn Sigmundsson**

- New supersite under consideration for China and Russia.
  - China focused on seismicity; coseismic and postseismic deformation.
  - Kamchatka focuses on volcanoes.
- About 3k CSK images available for ESA-GEP
- 2019 training in Virunga and Ecuador