



What's New in SARscape® 5.5.2 April 2019

The newest release of SARscape – version 5.5 – introduces some algorithmic improvements and new features.

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1 Import Data

1.1 Improvements

1.1.1 SICD

Original products, provided in SICD format (Sensor Independent Complex Data, imaging data format used by U.S. government), are imported into the SARscape Data Format for further processing. Only Single Look Complex data, containing a real and an imaginary component, are supported (Phase + Module complex products are not yet supported).

The supported sensors are: ALOS-2, CosmoSkymed, RADARSAT-2, Sentinel-1 A and Sentinel-1 B, TerraSAR-X, TandemX. Sentinel-1 bursts are kept separately inside a folder (two folder in case of two polarization) with extension ".split_burst_cut" created in the output directory. A `_slc_list` file is created as well. Please use this file as input for other processing such as interferometry or multilooking.

1.1.2 AIS import

Supported messages are: 1, 2, 3, 4, 5, 18, 19, 24, 27.

Limitation on message 27: due to the length of message 27, that sometimes can be shorter than other supported messages, and to errors in the reported coordinates, that sometimes can be replicated with different times, errors in precision can occur. They are managed in a separate file and the error message is reported in a dbf file.

1.1.3 Sentinel Data Download

SciHubGet deals with data provided through the Long Term Archive (LTA) by automatically triggering and monitoring the acquisition of files no longer available in the online storage.

2 Basic Module

2.1 Improvements

2.1.1 SAR AIS Matching

This tool, SAR AIS Classification in the former version, produces three shapefiles which include:

- `_SAR.shp`: shape file that show ships or similar objects over water bodies detected from the SAR image.
- `_AIS.shp`: shape file that shows ships or similar objects over water bodies detected from the AIS message.
- `_SAR_AIS.shp`: shape file that shows ships or similar objects over water bodies derived by the matching between the SAR image and the AIS message.



3 General Tools

3.1 Improvements

3.1.1 Digital Elevation Model Fusion

Point cloud in shapefile format (file size lower than 2 GB) and LAS format (file size higher than 2GB) created in SARscape or OpticalScape are supported. For Optical-SAR processing, this file must be the Optical input. It is compulsory to provide point clouds produced in the same cartographic system. Only LAS files produced with sarmap software are supported.

4 Interferometry Module

4.1 Improvements

4.1.1 Dual Pair Dual Pair Differential Interferometry

The software was completely restructured for Sentinel-1 data support.



5 SARscape in ArcGIS Pro

5.1 New features

SARscape is now integrated in ArcGIS Pro thanks to ENVI migration tools. The available tools are:

- SAR Flood Map
- SAR Ship Detection
- SAR DEM Extraction
- SAR Change Detection
- SAR Displacement mapping
- Sentinel-1 download
- SAR Image Geocoding
- SAR Time Series
- SAR Persistent Scatterers

SARscape in ArcGIS Pro supports two Cartographic System: GEO-GLOBAL and UTM Cartographic System.

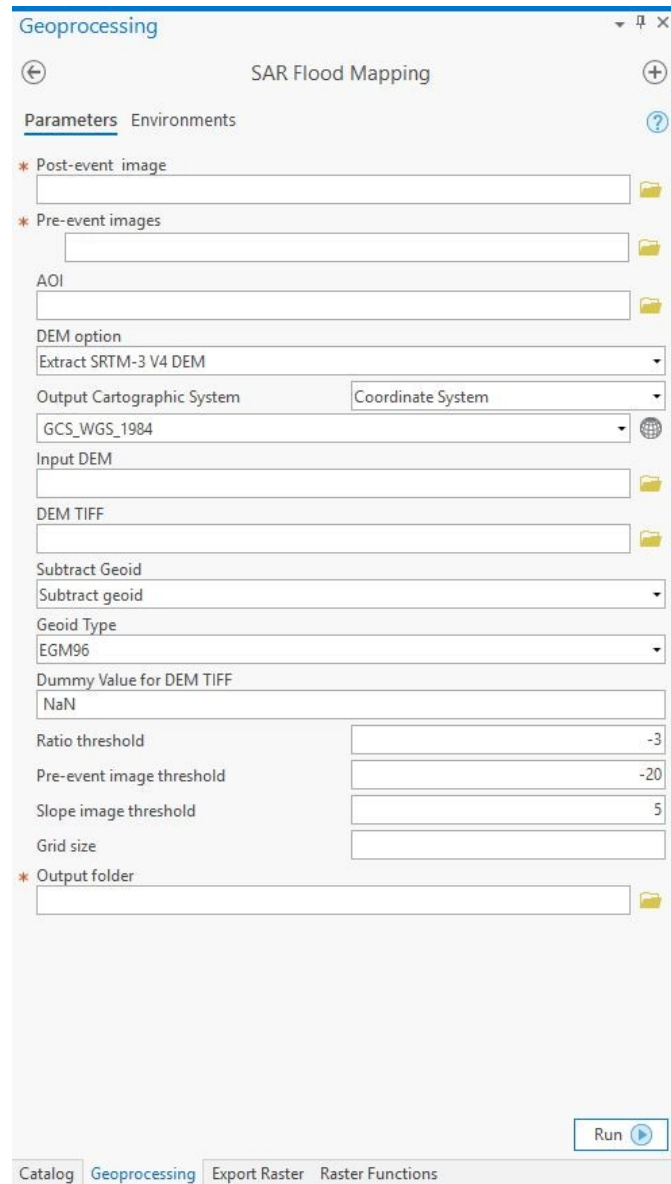


Figure 1 ArcGIS Pro pane of the Flood Mapping SARscape tool.

6 End-of-Life (EOL) announcement

With SARscape 5.5.2, the scansar interferometry generation ENVISAT ASAR WS reached the end-of-life.



7 Bug fixing

SARscape 5.5.2 includes the bug fixing provided in all the patch released for SARscape 5.5.0 and the last bug fixing not included in former patches.

- [20190401] Burst interferogram phase: jump removal along burst junction
- [20190401] Sentinel burst power mosaic: keep original calibration in power mosaic
- [20190401] Amplitude tracking refinement and reflattening shift height conversion for ground range data
- [20190401] Cluster interferometric handshake interrupted
- [20190401] PS read and write error handler
- [20190307] insert_geo_points_flag from preferences
- [20190307] Geo-localization for squinted data
- [20190307] Import FSAR
- [20190307] Sentinel Download check validity From / to data
- [20190205] Sentinel Download management empty From / to data
- [20190205] SBAS refinement (GCP in slant range were not correctly propagated)
- [20190205] PS using both PALSAR-1 FBD FBS
- [20190122] Common preferences: included Restore button
- [20190122] SRTM_3V4: new repository adress
- [20190122] GCP tool: stable delete/selection function
- [20190122] InSAR Tandem-X bistatic DEM Workflow
- [20190122] PS writing file inconsistency
- [20181218] Interferogram Generation error
- [20181218] Calibration problem in Sentinel-1 SLC
- [20181218] Bug fixing in CSV data for Import AIS and SAR AIS classification
- [20181218] PS improvements on atmospheric component estimation for correlated large areas
- [20181218] SciHubGet Linux version ID aligned