What's New in SARscape 5.0.001

The newest release of SARscape – version 5.0 – introduces significant improvements to simplify and advance your SAR analysis. The following topics are the points of major interest:

- Integration within ENVI 5.0 SP2
- Native support of x64 platforms
- Support of RISAT-1 and SICD data
- GPS data are supported
- New processing chain for Geophysical Modeling
- DEM fusion tools

General

- Processing functionalities and interfaces have been redesigned to be more users friendly and better performing within the new ENVI 5.0 environment
- The Data Import functions have been moved from the Basic Module to the main menu
- The 64 bit implementation is a major step forward to solve memory allocation related problems, which were often reported when working with large datasets. It also provides advantages in terms of processing performance
- GPS data (SINEX and GSI format) can be ingested and used as input for any processing where GCP files are needed
- The Test Datasets have been restructured. They can now be selected and executed directly from the main SARscape menu. Moreover they are associated with a .sav file which allows handling each specific step, and the relevant processing parameters, through the batch interface
- SICD (Sensor Independent Complex Data) and RISAT 1 data are supported

Tools

- DEM fusion – It includes a set of functionalities, which are dedicated to combine Digital Elevation Models. These tools allow merging DEMs generated by SARscape and/or other sources
- Point Gridding algorithm to convert a DEM from shape format to raster format. (reference -Lazzaro D., Montefusco L.B., Radial Basis Functions for the multivariate interpolation of large scattered data sets, Journal of Computational and Applied Mathematics, 140, pages 521-536, 2002)
- GPS tools: under-sampling, filtering, slant range propagation and projection

Basic Module

- Null values, which are found within some COSMO-SkyMed original data, are automatically interpolated during the multilooking step.

Focusing Module

• A “generic data” focusing has been implemented to handle space borne products, which are not among those already supported (sensor-specific panels).

Interferometry Module

• The main menu interface has been redesigned in order to simplify and fasten the processing chain understanding and execution

• The Geophysical Modeling includes a set of functions intended to model geodetic data which characterize a generic displacement source (in this release, tectonic and volcanic phenomena are considered)

• The Remove Residual Phase Frequency (automatic estimate of residual fringes from the complex interferograms) has been modified and improved

• Bug fixing for Radarsat2 data. The co-registration and the interferograms generation has been improved

Interferometric Stacking Module

• Persistent Scatterers - The processing can be performed without any limitation in terms of data dimensions

• Phase Unwrapping (SBAS) - Problems related to the network creation in the 3-D approach, have been solved

• SBAS incremental processing – It allows the continuous displacement monitoring, getting rid of the inconvenience to reprocess the old data (previously available and processed temporal stack). Only new entry acquisitions are handled after the first SBAS iteration

• Temporary or redundant products are not kept among the final SBAS outputs anymore; this strongly reduces the required disk space. Moreover the entire repository structure has been improved to avoid failures when folders are moved or renamed

• Bug fixing for Radarsat2 data refinement and re-flattening in SBAS