ENVI® SARSCAPE® RELEASE NOTES

VERSION 6.3.0

March 2026

CONTENTS

I. WHAT'S NEW

1. HIGHLIGHTS

The most meaningful developments are listed below:

- New SAR missions support: *PALSAR-3*, *NISAR*, *BIOMASS*, and more data and formats.
- New workflows:
  - *Amplitude Classifier*
  - *Coherence & Amplitude Classifier*
  - *Ship Detection*
  - *Oil Spill Classification*
  - *Inverse-SAR Detection and Refocusing*
  - *Radar Cross Section*
- New Basic tools:
  - *RGIQE-RNIIRS* - Radar Generalized Image Quality Equation (RGIQE) and the Radar National Imagery Interpretability Rating Scale (RNIIRS)
  - *Oil Tank Detection*
  - *3D Point Estimation*
  - *Height Estimation*
- Displacement modelling: new possibility for multitemporal geophysical modelling – a sequence of seismic events.
- New more user-friendly graphic interface for workflows.

2. NEW FEATURES

2.1. SARscape GUI

Introduced new GUI for workflow appearance and behaviour. Introduction of new interactive tools.

2.2. Help

New structure for the SARscape help pages, fully integrated within the ENVI help content.

2.3. Import Data - SAR Spaceborne - Single Sensor

2.3.1. AIRSAT01

Preliminary support for data acquired by the *AIRSAT01* SAR Ku-band satellite sensor is added.

2.3.2. AIRSAT02

Preliminary support for data acquired by the *AIRSAT02* SAR Ku-band satellite sensor is added.

2.3.3. AIRSAT08-HS01

Preliminary support for data acquired by the *AIRSAT08-HS01* SAR X-band satellite sensor is added.

2.3.4. ALOS PALSAR-3

Preliminary support for data acquired by the *PALSAR-3* SAR L-band satellite sensor is included.

2.3.5. BIOMASS

Preliminary support for data acquired by the *BIOMASS* SAR P-band satellite sensor is provided.

2.3.6. Capella

New support for TIFF + JSON format is given.

2.3.7. ICEYE

New support for Cloud Optimised GeoTIFF + JSON and slant plane geometry in HDF5 data formats are added.

2.3.8. NISAR

New support for NISAR RSGC (slant range SLC) and GSLC format (geocoded SLC).

2.3.9. Synspective

New support for STRIX GRD (ground range) and SR-GRD (ground range super resolution) in tiff format.

2.3.10. SV-2 – SVN-2

Preliminary support for data acquired by the SVN-2 SAR X-band satellite sensor (StripMap and Sliding Spotlight modes) is provided.

2.4. Basic Module

2.4.1. Workflows

2.4.1.1. Amplitude Classifier

New workflow for classifying changes between two images based on amplitude. Images with up to a few degrees of angular separation are accepted.

2.4.1.2. Ship Detection

New workflow for *Ship Detection* over water bodies from SAR image is available. Optional *AIS Matching* is also available in this workflow – matching to ship position and voyage trajectory information provided by the Automatic Identification System (AIS).

2.4.1.3. Oil Spill Classification

New workflow for *Oil Spil Classification* that highlights oil spills over water bodies is introduced.

2.4.1.4. Inverse-SAR Detection and Refocusing

New workflow for *Inverse-SAR Detection* and *Inverse-SAR Refocusing* for moving targets in a single SAR image is included.

2.4.1.5. Radar Cross Section

New workflow for *Radar Cross Section* which indicates the level of detectability of an object by a radar is added.

2.4.2. Feature Characteristics

2.4.2.1. RGIQE-RNIIRS

New tool for rating the quality of SAR image according to the Radar Generalized Image Quality Equation (RGIQE) and the Radar National Imagery Interpretability Rating Scale (RNIIRS). This tool is located in the toolbox *Feature Characteristics* (formerly *Feature Extraction*) of the *Basic module*.

2.4.3. Oil Spill Classification

New tool for *Oil Spill Classification* that highlights oil spills over water bodies is introduced.

2.4.4. Moving Target Detection

2.4.4.1. Inverse-SAR Detection

New tool for detection of targets which are moving in the azimuth direction and so displayed as unfocused lines in SAR SLC images.

2.4.4.2. Inverse-SAR Refocusing

New tool for refocusing of detected target in a SAR image that is moving in the azimuth directions.

2.4.5. Oil Tank Detection

New tool for *Oil Tank Detection* and feature parameter extraction that uses Artificial Intelligence (AI) is included.

2.4.6. Height Estimation

2.4.6.1. 3D Point Estimation

New interactive tool for reconstruction of the 3D coordinates of a point from two overlapping SAR stereo-images.

2.4.6.2. Height Estimation

New interactive tool for estimation of object's height from layover and shadow features on a single SAR image.

2.5. Preferences/Preferences specific

New sections are added for:

- *Feature extraction* – includes preferences for *Inverse-SAR (ISAR), Oil Spill Classification* and *Flooding Classification*
- *Displacement Amplitude Tracking*

Umbra new preferences are added in the possible sets to be loaded in *Preferences specific*.

3. IMPROVEMENTS

3.1. Performance improvements

The SARscape v6.3 includes restructuring that improve the overall processing performance, bug fixing, data quality of the following tools and processes:

- In *Basic Module*:
  - *Layover and Shadow Mask Generation* tool in *Intensity Processing – Geocoding* and in all the tools that are applying the same algorithm (e.g. *Geocoding and Radiometric Calibration*).
  - *Ship Detection* tool, also in *Ship Detection workflow*
  - *SAR AIS Matching* tool, also in *Ship Detection workflow*
- In *Interferometry Module*:
  - *Phase to Height Conversion and Geocoding* – step 5A of *Phase Processing*
  - *Phase to Displacement Conversion and Geocoding* – step 5B of *Phase Processing*
  - *Stereo Matching Process* – step 1 of *Stereo-Radargrammetry*
  - *Shift to Height Conversion and Geocoding* – step 3 of *Stereo-Radargrammetry*
  - *MAI Phase to Displacement Conversion and Geocoding* – step 3 of *MAI Processing*
  - *Amplitude Tracking Process* – step 1 of *Amplitude Tracking*
  - *Shift to Displacement Conversion and Geocoding* – step 3 of *Amplitude Tracking*

3.2. Import Data - SAR Spaceborne

3.2.1. Generic SAR data

Added possibility to use *Area of Interest (AOI)* file in projection different from GCS_WGS_1984. This possibility is added in all workflows which include *Import Generic SAR Data*.

3.2.2. SICD

Import SICD adds Squint Angle.

3.2.3. AIS

New option for importing predefined AIS format (*CSV DK, CSV NOAA*) or *Custom CSV format*. Simplification of the CSV format is introduced.

3.2.4. Sentinel-1 MultiDownload

New option to *Hide the console* is added. The tool is included in *Import Data - Download* folder.

3.3. Basic Module - Workflows

The ***Basic module*** has a new organisation – the new toolbox folder named ***Workflows*** contains the old group of *Coherence Workflows* (new name ***Coherence***) as well as the specified workflows for *Intensity Time Series*, *Intensity Single Image*, *Moving Target Detection* and several new workflows. *Flooding Classification* workflow is also included in the new *Workflows* toolbox group.

The new workflows enable either **automatic selection of SARscape preferences based on the chosen data type** or **manual selection from a list of predefined SARscape preferences**.

3.3.1. Intensity Time Series

A new workflow type for *Intensity Time Series* processing with direct access to the list of predefined *SARscape preferences* for chosen type of data is introduced.

3.3.2. Intensity Single Image

A new workflow type for *Intensity Single Image* processing with direct access to the list of predefined *SARscape preferences* for chosen type of data is introduced.

3.3.3. Flooding Classification

The parameters *High Scattering Point Threshold (dB)* and *Skip Refinement Step* are included.

Additional option for using shapefile with a *Land Mask* is included in the *Flooding Classification* step with an option for setting a buffer around the mask. Alternatively, an OpenStreetMap shapefile can be applied as Land Mask. A *Majority filter* is also included for smoothening the result.

3.3.4. Moving Target Detection

A new workflow type for *Moving Target Detection* with direct access to the list of predefined SARscape preferences for chosen type of data is introduced. The following parameters have been added *Generate Datacube, Number of Split Spectrum, Intensity of the split*.

3.3.5. Coherence - Coherence & Amplitude Classifier

The old workflows:

- *Coherence Change Detection (CCD) Workflow*
- *Coherence Interferometric Land Use RBG colour composite (ILU RGB) Workflow*
- *Coherence Multitemporal Coherence RBG colour composite (MTC RGB) Workflow*

are combined into a new workflow named ***Coherence & Amplitude Classifier***. The new workflow has new, more user-friendly, interface and includes options to choose *ILU* and/or *MTC outputs*, enabling also the generation of *RGB composites* created from *amplitude and coherence* pairs.

3.4. Basic Module - Intensity Processing

3.4.1. Multilooking

New parameter for *Multilook statistics* is added to calculate *Mean, Min, Max, Mode, Median*, and *Standard deviation*.

3.4.2. Geocoding – Geocoding and Radiometric Calibration

The algorithm is improved to use *cos lia* to compute *Gamma 0*. The *ENVI RASTER SERIES dB* has been added as additional output.

3.4.3. Geocoding – Layover and Shadow Mask Generation

Supports PFA geometry.

3.5. Basic Module - Feature Characteristics

The toolbox folder *Feature Extraction* is renamed to ***Feature Characteristics***. The tools in this toolbox *Multi Temporal Coherence* and *Multi Temporal Features* are renamed to *Multitemporal Coherence* and *Multitemporal Features*.

3.5.1. Multitemporal Coherence

Additional parameter is added – *Generate Amplitude Time Series*.

3.5.2. Activity Index

Updated names of parameters and output files (e.g. *Minimum dB Threshold* to *Minimum occupation thr. in dB*). Changed function – instead of creating separate shapefile for each AOI and save the indexes in the dbf (one value for index per AOI), now it saves one shapefile for each index and save the list of values for the list of AOI.

3.6. Basic Module - Flooding

3.6.1. Flooding Classification

Additional option for using shapefile with a *Land Mask* is included with an option for setting a buffer around the mask. Automatically uses coastline file from *OpenStreetMap* in case external Land Mask shapefile is not provided. A *majority filter* is also included for smoothening the result, as well as *Parameters Selection (Automatic-select from input or Manual)*. The following parameter has been renamed from *High Scattering Point (dB)* to *High Scattering Point Threshold (dB). Filtered classified* file as an optional output is added.

3.6.2. Flooding Classification Refinement

Parameters Selection (*Automatic-select from input* or *Manual*) is included.

3.7. Basic Module - Ship Detection

3.7.1. Ship Detection

New *Optional files* for the Ship Detection processing are added, namely *DEM* and *Slant Range Reference file* to reproject in slant range geometry the products. The *Land Mask Shape file list* is moved from *Input Files* to *Optional files*. The tool automatically uses coastline file from *OpenStreetMap* in case external Land Mask shapefile is not provided.

3.7.2. SAR AIS Matching

Optional files are added to the tool – *DEM File* and *Slant Range Reference File*. New naming convention for the output files is introduced.

3.8. Basic Module - Moving Target Detection

The following parameters have been added - *Generate Datacube* and *Number of Split Spectrum.*

3.9. Interferometry Module – Workflows

New toolbox folder named ***Workflows*** is created in the ***Interferometry Module***, in which old workflows and toolboxes from the module are organised in three groups:

- *Interferometry - Automatic Refinement*
- *Interferometry - Manual GCP Refinement*
- *Coherence*

3.9.1. Interferometry - Automatic Refinement

The toolbox folder *Interferometry Without GCP Workflow* is renamed to ***Interferometry - Automatic Refinement***. The workflows inside are renamed as follows*:*

- *InSAR DEM* for the old *InSAR DEM Workflow*
- *Stereo DEM* for the old *Stereo DEM Workflow*
- *DInSAR Displacement* for the old *DInSAR Displacement Workflow*
- *DInSAR MAI Displacement* for the old *DInSAR MAI Displacement Workflow*
- *Amplitude Tracking* for the old *Amplitude Tracking Workflow*

3.9.1.1. InSAR TanDEM-X Bistatic DEM

The *InSAR TanDEM-X Bistatic DEM Workflow* which was located directly in the *Interferometry Module* now is included in the newly created toolbox folder *Workflow/Interferometry - Automatic Refinement* of the same module.

3.9.2. Interferometry – Manual GCP Refinement

New toolbox folder ***Interferometry - Manual GCP Refinement*** is created. It comprises the rest of the workflows which were located directly in the *Interferometry module* and are renamed as follows:

- *InSAR DEM with GCP* for the old *Interferometry Module – InSAR DEM Workflow*
- *Stereo DEM with GCP* for the old *Interferometry Module – Stereo DEM Workflow*
- *DInSAR Displacement with GCP* for the old *Interferometry Module – DInSAR Displacement Workflow*
- *DInSAR MAI Displacement with GCP* for *Interferometry module – DInSAR MAI Displacement Workflow*
- *Amplitude Tracking with GCP* for the old *Interferometry module – Amplitude Tracking Workflow*

3.9.3. Coherence

The toolbox *Coherence Workflows* is renamed to ***Coherence*** and is placed inside the new toolbox *Workflows*.

3.9.3.1. Coherence & Amplitude Classifier

The old workflows:

- *Coherence Change Detection (CCD) Workflow*
- *Coherence Interferometric Land Use RBG colour composite (ILU RGB) Workflow*
- *Coherence Multitemporal Coherence RBG colour composite (MTC RGB) Workflow*

are combined into a new workflow named ***Coherence & Amplitude Classifier***. The new workflow has new, more user-friendly, interface and includes options to choose *ILU* and/or *MTC outputs*, enabling also the generation of *RGB composites* created from *amplitude and coherence* pairs.

3.10. Interferometry Module - Phase Processing

3.10.1. Interferogram Generation (1)

Support for interferometric processing of NISAR GSLC data from slant range to geocoded displacement products. Automatic rainbow colour table for _int, _dint and _fint products.

3.10.2. Phase to Displacement Conversion and Geocoding (5B)

Significantly improved processing time. Supports PFA geometry of the data. Supports geocoded SLC data format.

3.11. Interferometry Module - Stereo-Radargrammetry

3.11.1. Stereo Matching Process (1)

New functionality is added to handle crossed track and cross platforms/sensors. The following output can be optionally generated – *Azimuth Shift*.

3.11.2. Shift Refinement and Re-flattening (2)

Optional files section is added with the following parameters – *Input Azimuth Shift File* and Azimuth *Synthetic Shift File.*

3.11.3. Shift to Height Conversion and Geocoding (3)

Optional files section is added with the following parameter – *Input Azimuth Shift File* and Azimuth *Synthetic Shift File.*

3.12. Interferometry Module - Amplitude Tracking

3.12.1. Amplitude Tracking Process (1)

The parameter *Max Displacement (m)* is added.

3.13. Interferometry Module - Displacement Modelling

3.13.1. Multitemporal modelling

The new "match event occurring times with dataset occurring times" option in the Non-Linear and Linear inversion panels is essential when modelling multiple co-seismic datasets that include different earthquakes occurring over time; when enabled, the software internally compares the acquisition dates of the InSAR pairs with those of the earthquakes to be modelled and, in the simultaneous joint inversion, ensures that only the sources of events that occurred within the specific time interval contribute to the modelling of each individual dataset.

3.13.2. Improved damping options for the slip/opening distributions

In the linear inversion, in addition to the damping applied to all sources, it is possible to introduce further constraints for each individual source; in the source panel, there are options to impose zero slip/opening along specific edges, as well as to apply a multiplicative factor to the general damping in order to optimize its specific slip/opening distribution.

3.14. Interferometry Stacking Module - PS & E-PS

3.14.1. Geocoding (5)

Additional option is added for selection of the *Geoid Type*.

3.15. General Tools

3.15.1. Data Export - Generate Color Composite

New operation type for *Dual Amplitude Change Detection (DACD)* is added.

3.15.2. Sample Selection – Sample Selection Geographic Data

The panel *DEM/Cartographic System* is removed.

3.15.3. Generate Ground Control Points

The tool *Generate Ground Control Points* is substituted with two tools:

- ***Generate Geometry Ground Control Points*** – Used in general processing steps such as *Manual Orbital Correction, Geocoding, Interferogram Generation*, and others, to correct SAR data in **slant range geometry** with respect to a reference geocoded SAR image or a DEM. This tool compensates for orbit inaccuracies, such as biases in **slant range distance** and/or **azimuth start time**.

- ***Generate Refinement Ground Control Points*** – Used in refinement processing steps within interferometric workflows, such as *interferometry with manual GCP refinement*, the *Refinement and Re-Flattening* step in *Phase processing*, *Stereo-Radargrammetry, MAI processing*, and others. In this case, the input and reference images must be in **the same geometry** (either both in slant range or both in ground range). This tool removes **residual phase or shift trends** (e.g., due to orbital state vector inaccuracies or offsets introduced during processing, such as unwrapping errors or atmospheric bias trends that can be modeled with a polynomial) before conversion into **3D height or displacement**.

3.16. Other renamed tools, workflows, toolbox folders and location changes

- *Basic Module/Workflows/Coherence/Coherence CCD Timeline* from *Coherence CCD Time Line Workflow*
- *Basic Module/Workflows/Coherence/Coherence CCD Timeline & PWR* from *Coherence CCD Time Line & PWR Workflow*
- *Basic Module/Workflows/Coherence/Coherence MICCD RGB* from *Coherence MICCD RGB Workflow*
- *BasicModule/Intensity Processing/Filtering/Adaptive Non-Local SAR Filtering* from *Adaptive Non Local SAR Filtering*
- *Basic Module/Intensity Processing/*: the toolbox folder *Projection Transformation* is moved out of folder *Geocoding*.
- *Basic Module/Feature Characteristics/Multitemporal Coherence* from *Multi Temporal Coherence*
- *Basic Module/Feature Characteristics/Multitemporal Features* from *Multi Temporal Features*
- *Gamma and Gaussian Filtering/Single-Channel Detection* from *Single Channel Detection*
- *Gamma and Gaussian Filtering/Multi-Channel Detection* from *Multi Channel Detection*
- *Interferometry Module/Workflow/Coherence/Coherence CCD Timeline* from *Coherence CCD Time Line Workflow*
- *Interferometry Module/Workflow/Coherence/Coherence CCD Timeline & PWR* from *Coherence CCD Time Line & PWR Workflow*
- *Interferometry Module/Workflow/Coherence/Coherence MICCD RGB* from *Coherence MICCD RGB Workflow*
- *Interferometry/Dual-Pair Differential Interferometry* from *Dual Pair Differential Interferometry*
- *Interferometry/Interferometric Tools/Multi-Baseline Estimation* from *Multi Baseline Estimation*
- *Interferometric Stacking/Post-Processing Tools* from *Post Processing Tools*
- *Polarimetry and PolInSAR/Polarimetry/Dual-Polarimetric Entropy Alpha Anisotropy Decomposition* from *Dual Polarimetric Entropy Alpha Anisotropy Decomposition*
- *General Tools/Data Transformation/Conversion from Complex to Phase and Module* from *Conversion Complex to Phase – Module*
- General Tools/Data Transformation/Conversion from Phase and Module to Complex from *Conversion Phase – Module to Complex*
- *General Tools/Data Transformation/Conversion from DEM to Slope and Aspect* from *Conversion DEM to Slope and Aspect*
- *General Tools/Mosaicking/Sentinel-1 Mosaicking* from *Mosaic Sentinel-1*
- *General Tools/Annotations/Generate Raster Annotations* from *Generate Annotations Raster*
- *General Tools/Annotations/Generate Ship Annotations* from *Generate Annotations Ships*

4. TASKS

4.1. New

- *Import AIRSAT01, [ImportAIRSAT01Format]*
- *Import AIRSAT02, [ImportAIRSAT02Format]*
- *Import AIRSAT08-HS01, [ImportAIRSAT08HS01Format]*
- *Import ALOS PALSAR 3, [ImportAlosPalsar3Format]*
- *Import Biomass, [ImportBiomassFormat]*
- *Rniirs computation, [BasicfeRniirsTool]*
- *Oil Spill, [BasicFeOilSpillClassification]*
- *Oil Tank Detection and Height Estimation, [OilTankDetection]*
- *Process ISAR Detection, [BasicFeaturesExtractionIsarDetection]*
- *Process ISAR Refocusing, [BasicFeaturesExtractionIsarRefocusing]*
- *Generic Filter, [WF_ToolsGenericFilterListSingleImage]*
- *Generic Filter, [WF_ToolsMultiTemporalGenericFilterSingleImage]*

4.2. Edits

- The parameter *Insert geo points [insert_geo_points_flag]* has been added to:
  - *Basic Multilooking, [BaseMultilooking]*
  - *Basic Non Local SAR filter, [BaseNonLocalSAR]*
  - *Coregistration, [BasicCoregistration]*
  - *Coherence Generation, [BasicFeCoherence]*
  - *Multi Coherence Generation, [BasicFeMultiCoherence]*
  - *Filtering Single Image Conventional, [DespeckleConventionalSingle]*
  - *Despeckle Multi-temporal DeGrandi, [DespeckleDeGrandiTimeBase]*
  - *Gamma Gaussian Map, [DetectedMultiGammaMap]*
  - *Gaussian DE Map, [DetectedMultiGaussDEMap]*
  - *Gaussian Gaussian Map, [DetectedMultiGaussGaussMap]*
  - *Gamma APM, [DetectedSingGammaAPM]*
  - *Gamma DE Map, [DetectedSingGammaDeMap]*
  - *Gamma Map, [DetectedSingGammaMap]*
  - *Process Import SICD, [ImportSICD]*
  - *Import Generic SAR Data, [ImportSarSelector]*
  - *Slant Sample Selection, [InSARSampleSelection]*
- Process *Import AIS, [ImportAis]*

  The following parameters have been removed:

  - *Time Stamp, [TIMESTAMP]*
  - *Type Of Mobile, [TYPE_OF_MOBILE]*
  - *MMSI, [MMSI]*
  - *Latitude, [LATITUDE]*
  - *Longitude, [LONGITUDE]*
  - *Navigational Status, [NAVIGATIONAL_STATUS]*
  - *ROT, [ROT]*
  - *SOG, [SOG]*
  - *COG, [COG]*

- *Heading, [HEADING]*
- *IMO, [IMO]*
- *Callsign, [CALLSIGN]*
- *Ship Name, [SHIP_NAME]*
- *Ship Type, [SHIP_TYPE]*
- *Cargo Type, [CARGO_TYPE]*
- *Width, [WIDTH]*
- *Length, [LENGTH]*
- *Type Of Position Fixing Device, [TYPE_OF_POSITION_FIXING_DEVICE]*
- *Draught, [DRAUGHT]*
- *Destination, [DESTINATION]*
- *ETA, [ETA]*
- *Data Source Type, [DATA_SOURCE_TYPE]*
- *Number Of First Lines To Skip, [NUMBER_OF_FIRST_LINES_TO_SKIP]*
- *Speed Factor, [SPEED_FACTOR]*
- *Separator, [SEPARATOR]*

The following parameters have been renamed:

- from *Input File List* to *Input File* (parameter task name is the same *[INPUT_FILE_LIST]*)
- *AIS format*: parameter task name from *[INPUT_FORMAT_TYPE]* to *[AIS_FORMAT]*
- *Import Incorrect AIS*: parameter task name from *[IMPORT_INCORRECT]* to *[IMPORT_INCORRECT_AIS]*

- *Sentinel-1 automatic Multidownload, [ToolMultiGet]*
  The following parameter has been added:
  - *Hide Console, [HIDE_CONSOLE]*
- *Geocoding and Radiometric Calibration, [BasicGeocoding]*
  The following parameter has been added:
  - *Output ENVI RASTER SERIES dB, [OUTPUT_DB_ENVIRASTERSERIES]*
  - *Geocode coregistered images, [GEOCODE_COREG_IMAGES]*
- *Multi Coherence Generation, [BasicFeMultiCoherence]*
  The following parameters have been added:
  - *Generate Amplitude Time Series, [GENERATE_PWR_TS]*
- *Process Flooding Classification, [BasicFeFloodingClassification]*
  The following parameters have been added:
  - *Parameters Selection, [FLOODING_PARAMETERS_SELECTION]*
  - *Land Mask Shape File, [LAND_MASK_SHAPE_FILE]*
  - *Majority Filter Kernel Size, [MAJ_FILTER_KERNEL_SIZE]*
  - *Land Mask Buffer (m), [LAND_MASK_BUFFER_METER]*
  - *Filtered Classified File, [FILTR_SARSCAPEDATA]*

  The following parameter has been renamed:
  - from *High Scattering Point (dB)* to *High Scattering Point Threshold (dB) File* (parameter task name is the same *[HIGH_SCATT_POINT_TH]*)
- *Process Flooding Classification Refinement, [BasicFeFloodingClassificationRefinement]*
  The following parameters have been added:
  - *Parameter Selection, [FLOODING_PARAMETERS_SELECTION]*
- *Process Ship Detection, [BasicFeShipDetection]*
  The following parameters have been added:

- *DEM file, [INPUT_DEM_FILE]*
- *Slant Range Reference File, [INPUT_SLANT_FILE]*

The following parameters have been renamed:

- *Central Pixel Minimum Sigma0 [dB]:* parameter task name from *[MINIMUM_MEAN_SIGMA0_DB]* to *[CENTRAL_PIXEL_MINIMUM_SIGMA0_DB]*
- *Minimum Ship Size [pixels]*: parameter task name from *[MINIMUM_SHIP_PIXELS]* to [MINIMUM_SHIP_SIZE_PIXELS]

- *Process Basic Sar Ais Matching*
  Previous naming: *Process Basic Sar Ais Matching, [BasicSarAisClassification]*
  New naming: *Process Basic Sar Ais Matching, [BasicSarAisMatching]*
  The following parameters have been added:
  - *DEM file, [INPUT_DEM_FILE]*
  - *Slant Range Reference File, [INPUT_SLANT_FILE]*
  - *AIS Matched tracks Shape, [OUTPUT_AIS_MATCHED_TRACKS_SHAPE]*
  - *AIS Matched tracks short version Shape, [OUTPUT_AIS_MATCHED_TRACKS_SHORT_SHAPE]*
  - *SR AIS Shape, [OUTPUT_SR_AIS_SHAPE]*
  - *SR SAR-Ship Shape, [OUTPUT_SR_SAR_SHAPE]*
  - *SR SAR-AIS Shape, [OUTPUT_SR_AIS_SAR_SHAPE]*
  - *SR AIS Matched tracks Shape, [OUTPUT_SR_AIS_MATCHED_TRACKS_SHAPE]*
  - *SR AIS Matched tracks short version Shape, [OUTPUT_SR_AIS_MATCHED_TRACKS_SHORT_SHAPE]*

The following parameters have been renamed:

- from *Input AIS [INPUT_GEO_AIS_FILE_NAME]* to *Input AIS File [INPUT_AIS_FILE_NAME]*
- from *Input AIS Track [INPUT_GEO_AIS_TRACKFILE_NAME] to Input AIS Track File [INPUT_AIS_TRACK_FILE_NAME]*
- from *Input Geo SAR Image [INPUT_GEO_SAR_FILE_NAME]* to *Input SAR File [INPUT_SARSCAPEDATA]*
- from *Input Detected Ship [INPUT_GEO_SHAPE_FILE_NAME]* to *Input Detected Ship File [INPUT_DETECTED_SHIP_FILE_NAME]*
- *Use Custom Distance Threshold*: parameter task name *from [USE_CUSTOM_DISTANCE] to [USE_CUSTOM_DISTANCE_THRESHOLD]*
- *Distance Threshold [m]:* parameter task name from *[PARAMETER_DISTANCE]* to *[DISTANCE_THRESHOLD]*

- *Moving Target Detection, [MovingTargetDetection]*
  The following parameters have been added:
  - *Generate Datacube, [GENERATE_DATACUBE]*
  - *Number of Split Spectrum, [PART_NUMBER]*
- *Phase to Displacement Conversion and Geocoding, [InSARPhaseToDisplacement]*
  The following parameters have been added:
  - *Reference, [REFERENCE_FILE]*
  - *Secondary, [SECONDARY_FILE]*
  - *Use DEM Cartographic System, [USE_DEM_CARTOSYSTEM_FLAG]*
- *Stereo Radargrammetry*
  Previous naming: *Stereo Radargrammetry, [InSARStereoSAR]*
  New naming: *Stereo Radargrammetry, [InSARMatchingStereoSAR]*

The following parameter has been added:
  - *Azimuth Shift, [DA_SARSCAPEDATA]*

The following parameters have been renamed:
  - *CC Range Window Size*: parameter task name from *[STEREO_CC_RANGE_WIN_SIZE]* to *[CC_RANGE_WIN_SIZE]*
  - *CC Azimuth Window Size*: parameter task name from *[STEREO _CC_AZIMUTH_WIN_SIZE]* to *[CC_AZIMUTH_WIN_SIZE]*
  - *CC Oversampling*: parameter task name from *[STEREO _CC_OVERSAMPLING]* to *[CC_OVERSAMPLING]*
  - *CC Threshold*: parameter task name from *[STEREO _CC_THRESHOLD]* to *[CC_THRESHOLD]*
  - *Synthetic Azimuth Shift*: parameter task name from *[AG_SINT_SARSCAPEDATA]* to *[AZ_SINT_SARSCAPEDATA]*

- *Refinement and Reflattening Stereo, [InSARRefinementAndReflatteningStereo]*
  The following parameters have been added:
  - *Input Azimuth Shift File, [INPUT_DA_FILE_NAME]*
  - *Azimuth Synthetic Shift File, [AZ_SYNTHETIC_FILE_NAME]*
- *Stereo Shift to Height Conversion and Geocoding, [InSARPhaseToHeightStereo]*
  The following parameters have been added:
  - *Input Azimuth Shift File, [INPUT_DA_FILE_NAME]*
  - *Azimuth Synthetic Shift File, [AZ_SYNTHETIC_SARSCAPEDATA]*

  The following parameters have been renamed:
  - from *Product Coherence Threshold [COHERENCE_THRESHOLD]* to *Product CC Threshold [CC_THRESHOLD]*
- *Amplitude Tracking*
  Previous naming: *Amplitude Tracking, InSARAmplitudeTracking*
  New naming: *Amplitude Tracking, InSARMatchingAtSAR*
  The following parameters have been added:
  - *Max Displacement (m), [AT_MAX_DISPLACEMENT_M]*

  The following parameters have been removed:
  - *Amplitude, [AT_CC_APPLY]*

  The following parameters have been renamed:
  - *CC Azimuth Window Size*: parameter task name from *[AT_CC_AZIMUTH_WIN_SIZE]* to *[CC_AZIMUTH_WIN_SIZE]*
  - *CC Oversampling*: parameter task name from *[AT_CC_OVERSAMPLING]* to *[CC_OVERSAMPLING]*
  - *CC Threshold*: parameter task name from *[AT_CC_THRESHOLD]* to *[CC_THRESHOLD]*
- *Shift to Displacement Conversion and Geocoding, [InSARPhaseToDisplacementAmplTrack]*
  The following parameter has been renamed:
  - From *Product Coherence Threshold* to *Product CC Threshold* (parameter task name is the same *[COHERENCE_THRESHOLD]*)
- *Stereo Cluster, [InSARStereoCluster]*
  The following parameters have been renamed:
  - *CC Range Window Size:* parameter task name from *[STEREO_CC_RANGE_WIN_SIZE]* to *[CC_RANGE_WIN_SIZE]*
  - *CC Azimuth Window Size:* parameter task name from *[STEREO_CC_AZIMUTH_WIN_SIZE]* to *[AZIMUTH_WIN_SIZE]*

  - *CC Oversampling*: parameter task name from *[STEREO_CC_OVERSAMPLING]* to *[CC_OVERSAMPLING]*
  - *CC Threshold:* parameter task name from *[STEREO_CC_THRESHOLD]* to *[CC_THRESHOLD]*
- *Remove Residual Phase Frequency, [InSARRemoveResidualPhaseFrequency]*
  The following parameters have been renamed:
  - *Win center Shape File* to *Win center Shapefile* (parameter task name is the same *[WIN_CENTER_GCP_NAME]*)
- *PS Geocoding, [InSARStackPSGeocode]*
  The following parameters have been added:
  - *Geoid Type, [GEOID_TYPE]*
- *ESBAS Geocoding, [InSARStackESBASGeocode]*
  The following parameters have been added:
  - *Displacementsc, [InSARStackESBASGeocode]*
  - *Geocoded Velocity, [VELOCITY_GEO_SARSCAPEDATA]*
- *Shape Displacement Utility [InSARStackShapeDisplacementUtility], Point Gridding [OS_PointCloudDEMInterpolation], Digital Elevation Model Validation [ToolsDEMValidation]*
  The following parameters have been renamed:
  - *Input Shape Files* to *Input Shapefiles* (parameter task name is the same *[INPUT_FILE_LIST]*)
- *Convert point shapes to tiles, [ShapeToTile]*
  The following parameter has been renamed:
  - *Delete temp shape files* to *Delete temp shapefiles* (parameter task name is the same *[DELETE_SHAPE_FILES]*)
- *Geo Sample Selection, [ToolsManualSelection]*
  The following parameters have been removed:
  - *DEM, [DEM_FILE_NAME]*
  - *Output reference height, [OCS_REFERENCE_HEIGHT]*
  - *Out ENVI Cartographic System, [OUTPUT_ENVI_CARTOGRAPHIC_SYSTEM]*
  - *Out Cartographic System, [OUTPUT_CARTOGRAPHIC_SYSTEM]*

5. THIRD-PARTY LIBRARIES AND DATA NOTICE

All the third-party libraries used in SARscape version 6.3 have been updated – consult the document *SARscape_3rdParty_IPs.pdf* that can be found in the installation package.

5.1. New

- OpenStreetMap

II. BUG FIXING

SARscape 6.3.0 includes the bug fixing provided in all the patch released for SARscape 6.1.0.

III. END-OF-LIFE ANNOUNCEMENT

With the next SARscape major release, the *RAMP DEM Extraction* tool will reach end-of-life due to online unavailability of this DEM data.

In the next SARscape release the two groups of *Interferometry workflows – with Automatic refinement and with Manual GCP refinement* will be combined in one group, in which the type of refined will be selected as an optional condition.

IV. NISAR DATA SUPPORT

NISAR **RSLC** data are compatible with all SARscape tool.

NISAR **GSLC** compatibility with SARscape functions:

Tool	Tool
Coherence estimation	Polarimetric Entropy Alpha Anisotropy Decomposition
CCD workflow	Polarimetric Entropy Alpha Anisotropy Classification
Multilooking	Dual-Polarimetric Entropy Alpha Anisotropy Decomposition
Geocoding (it applies cartographic transformation and resampling)	Single Image Filtering
Interferometry (up to Phase to Displacement)	De Grandi Spatio-Temporal Filtering
Remove Residual Phase Frequency	Adaptive Non-Local SAR Filtering
Sample selection (Sample Selection Geographic Data)	Gamma APM
Polarimetric Signature	Gamma Map
Polarimetric Features	Gamma DE Map
Polarimetric Synthesis	Wishart Gamma Map
Pauli Decomposition	Wishart Gamma DE Map
Krogager Decomposition	EDPSVI