



ScanEx ENVISAT Processor[®]

Radar images synthesis

ScanEx ENVISAT ASAR Processor[®] application has been developed for creation (synthesis) of radar images from signal data, acquired by SAR sensor — Advanced Synthetic Aperture Radar (ASAR), mounted onboard European ENVISAT-1 radar satellite (ESA)

ScanEx ENVISAT ASAR Processor[®] enables to get a complete set of ASAR Level 1B output products (synthesized image) from ASAR Level 0 Product format files (radar hologram) based on MS Windows and Linux operating systems.

The application has a user-friendly GUI, intuitive software tools for generation and edition of parameters in standard dialogs; it enables to exert a complete and effective control of the data processing at all stages and to keep processing history records. Processing is carried out in “disc-to-disc” mode and the application has an improved productivity due to an efficient use of hardware, thus enabling to process ENVISAT-1 data in real-time.

Processing algorithms:

- Processing of data, acquired in Image Mode, in Alternative Polarization Mode and in Wide Swath Mode
- Amplitude and complex output products generation

- Generation of all types of output products for the supported modes:
 - Single Look Complex (SLC) — complex radar images, represented in antenna coordinate system «time — slant range»
 - Precision, Medium Resolution, Brows — georeferenced radar images in coordinate system «time — ground range» with different resolution values and incoherent accumulation rates
 - Ellipsoid Geocoded — geolocated radar images, represented in UTM coordinate system
- Selection of fragment for synthesis
- Efficient processing stages: raw data correction, range compression with range migration correction, Doppler estimation, azimuth compression with optional multi-look processing, image geolocation using satellite ephemeris data
- High-accuracy algorithm of radar hologram focusing in frequency domain
- Manual Doppler values correction throe image
- Sophisticated algorithms for the Doppler centroid estimation to handle subtle problems causing imagery «scalloping» and «banding»
- Radar images combined synthesis for further interferometric processing
- Radiometric corrections of output images: surface type, antenna pattern, slant range variations, along track gain variations, azimuth and range reference functions, used for signal focusing

ScanEx ENVISAT ASAR Processor[®] meets all international standards in image synthesis quality, used processing algorithms and output format structure.

Minimum system requirements:

- Intel Pentium IV or compatible
- MS Windows 2000/XP or Linux
- RAM 1Gb
- HDD 80 Gb

