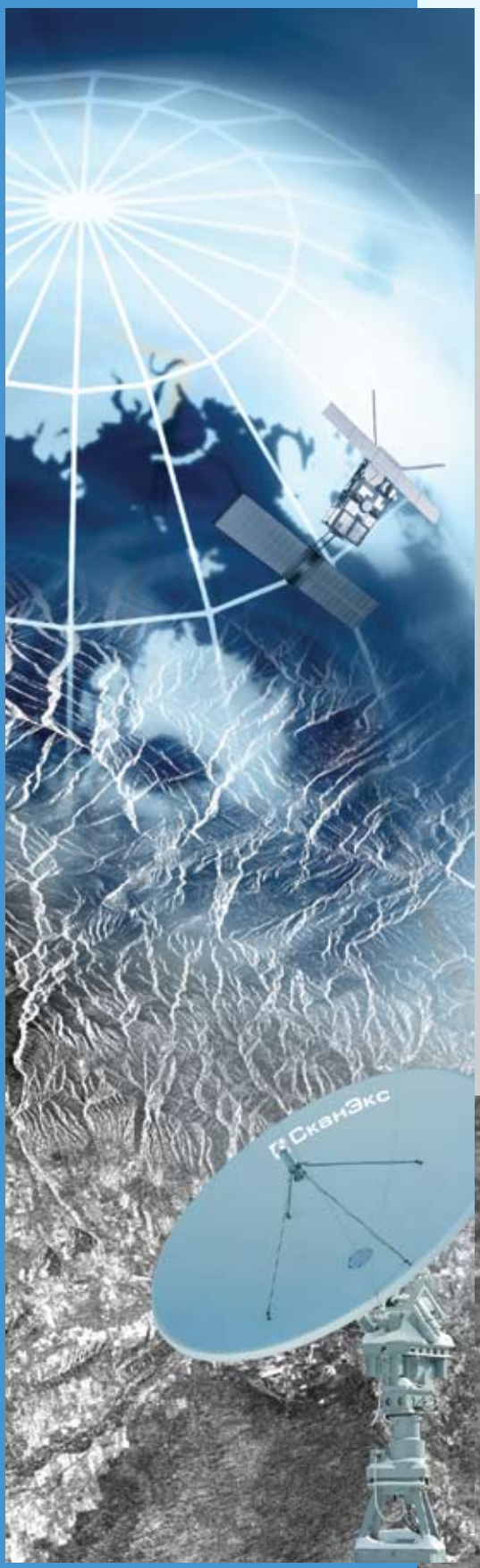
ScanEx ENVISAT Processor®

RADAR IMAGES SYNTHESIS



ScanEx ENVISAT ASAR Processor® (SESARP) 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) for the following imaging modes: Image Mode, Alternative Polarization Mode, Wide Swath Mode.

ScanEx ENVISAT ASAR Processor fully complies with international image synthesis quality standards, applied processing algorithms and output formats structure.

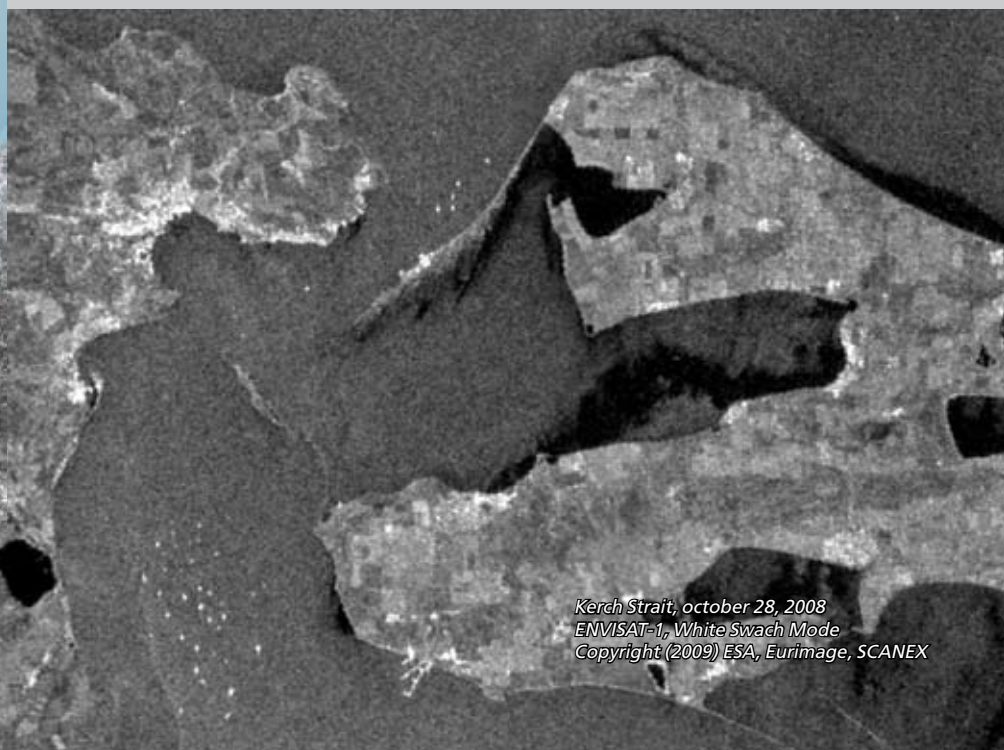
INPUT DATA:

Radar holograms (signal data), in ASAR Level-0 Product format

OUTPUT DATA:

All types of output ENVISAT Level-1products can be created via synthesis for Image Mode, Alternative Polarization Mode, Wide Swath Mode imagery:

IMS – Image Mode Single-Look Complex
IMP – Image Mode Precision
IMM – Image Mode Medium resolution
IMB – Image Mode Brows
IMG – Image Mode High-resolution Ellipsoid Geocoded
APS – Alternating Polarization Precision Single-Look Complex
APP – Alternating Polarization Precision Image
APM – Alternating Polarization Mode Medium resolution
APB – Alternating Polarization Mode Brows
APG – Alternating Polarization Mode High-resolution Ellipsoid Geocoded
WSM – Wide Swath Mode Medium resolution
WSB – Wide Swath Mode Brows



Kerch Strait, october 28, 2008
ENVISAT-1, White Swach Mode

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ScanEx ENVISAT Processor®

USER INTERFACE

- User-friendly GUI
- Integrated and effective control of the data processing at all stages
- Disc-to-disc data processing
- Batch processing option
- Improved productivity due to the hardware efficient use
- Intuitive software tools for interactive parameters editing in both standard dialogs
- Processing history record

PROCESSING ALGORITHMS

- Processing of data, acquired in Image Mode, in Alternative Polarization Mode and in Wide Swath Mode
- Generating integer and complex output products
- 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 random fragment for synthesis indicating a UTC time window
- Efficient processing stages: raw data correction, range compression with previous range migration correction, azimuth compression with optional multi-look processing
- High-accuracy algorithm of radar hologram focusing in frequency domain.
- Doppler frequencies field values calculation settings
- 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 correction of output images for antenna gain, along track gain variations, azimuth length and range reference
- Output scaling using look-up tables (LUT)

Minimal system requirement

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

User-friendly GUI to set up processing parameters

Venice, April 11, 2007
ENVISAT-1, Image Mode
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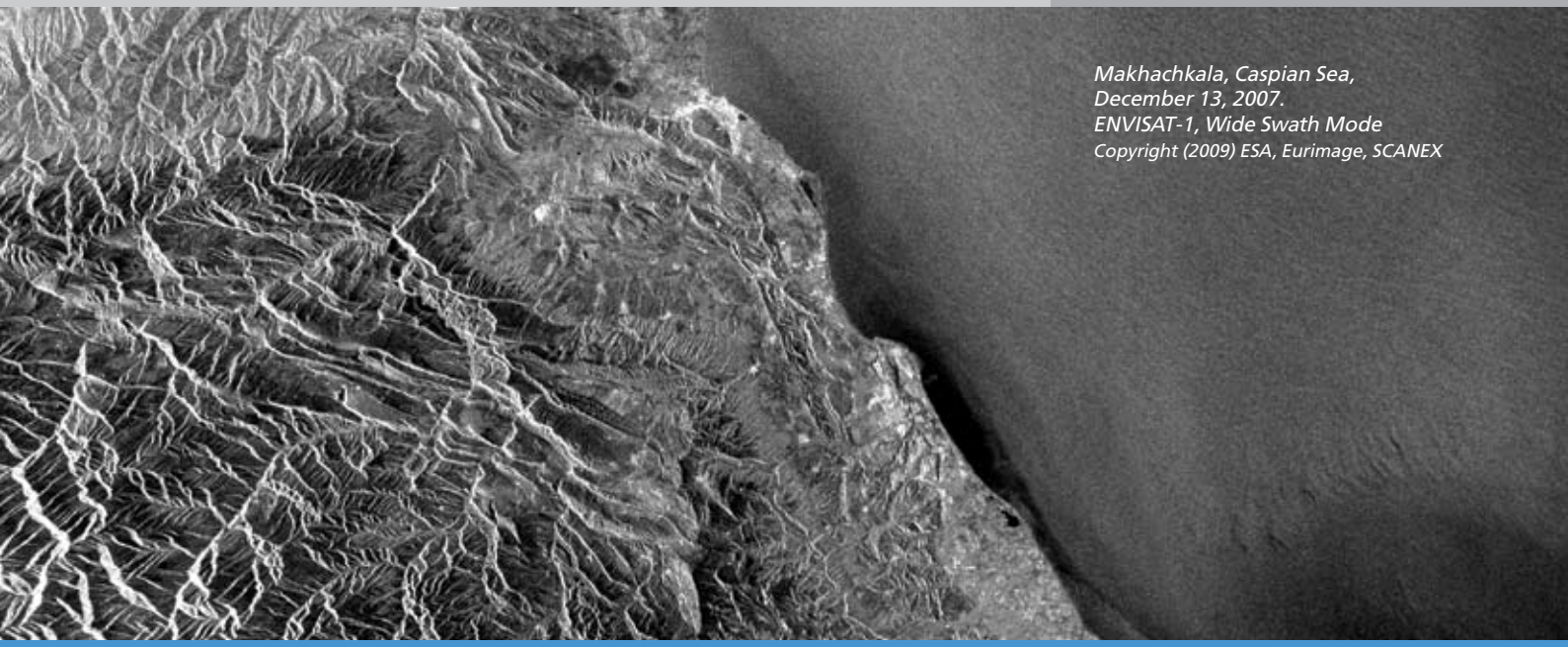

Makhachkala, Caspian Sea,
December 13, 2007.
ENVISAT-1, Wide Swath Mode
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