



MEOS™ SAR Processing Facility

SAR Processing and Value Added Products

The **MEOS SAR (Synthetic Aperture Radar) Processing Facility** is used for environmental and marine surveillance. The Processing Facility is a flexible and modular system for acquisition, archiving, processing, analysis and distribution of radar data.

The MEOS SAR Processing Facility supports the following:

- Satellites:** RADARSAT-1, RADARSAT-2
ENVISAT and ERS 1/2
- Sensors:** SAR
- Transmission:** HR

MEOS SAR Processing Facility

The SAR Processing Facility is designed for the operational user with demand for high throughput and cost efficient operation. The system is well suited as engine for near real time services.

SAR Processing

Integrated in one coherent Station Control System, Kongsberg Spacetek provides a complete SAR Processing Facility. This includes a full range of high quality and high performance modules for processing and analysis of SAR data.

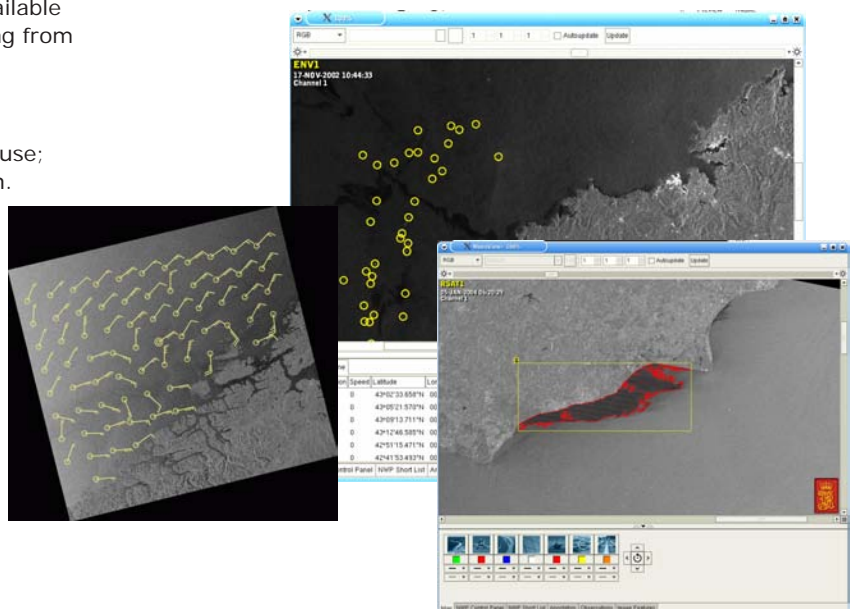
The SAR Processing Facility output products will be available in near real time to satisfy the demanding needs arising from current applications.

Value Added Products

The following Value Added Products are in operational use; Ship Detection, Oil Spill Detection and Wind Estimation.

Features

- Open architecture allows easy upgrading
- Linux or IRIX environment
- Flexible, modular and scalable design
- Multi-mission support
- Operational tested and in use in operational production
- Production oriented Station Control System
- Local and remote operation control
- Configurable Graphical User Interface for monitoring and control of the Processing Facility
- Advanced logging and display of site telemetry and status in real time
- ENVISAT ASAR Satellite Instrument Processor
- RADARSAT-1 Satellite Instrument Processor
- RADARSAT-2 Satellite Instrument Processor
- ERS Satellite Instrument Processor
- Open data access at all processing levels
- Quality Assurance Analysis Toolkit
- MEOS View visualisation tool
- Value added products
 - Ship detection
 - Oil Spill detection
 - Wind estimation
- Generation of browse and metadata files to different file formats: HDF5, JPEG, TIFF, GEOTIFF, PNG and PGM
- Archiving
- Web catalogue



Front-End System

The system provides the functionality to track the satellite, receive on radio frequency and deliver data to the ingest system. The Front-End System includes:

- Antenna
- Feed/downconverter
- Digital receiver/bitsynchroniser
- Satellite tracking controller

MEOS Direct Ingest System

The MEOS Direct Ingest System (MDIS) is a high performance data acquisition and first-level processing system, tailored for Earth observation ground stations. It is highly configurable and supports a wide range of missions.

MEOS Station Control System

The MEOS Station Control System (SCS) consists of the SCS and the SCS Graphical User Interface (GUI) as the main components. The SCS is responsible for process management, visualisation of current and planned operations in the system as a whole, mission planning, retrieval and visualisation of health status and management of status events.

SAR Satellite Instrument Processor Modules

Kongsberg Spacotec offers a set of high quality and high performance SAR Satellite Instrument Processors for processing data from the MDIS or disk up to Level 1 type data:

- ENVISAT ASAR (Level 1b)
- RADARSAT-1 (CEOS)
- RADARSAT-2 (GeoTIFF and XML)
- ERS (CEOS)

All processors uses the EETF algorithm for single beam modes, SPECAN for multiple beam modes, SPECAN-CZ for SLC multiple beam modes and B-EETF for multi-polarization modes. All algorithms comply with satellite operators product formats and data quality standards.

Quality Assurance Analysis Toolkit

The Quality Assurance Analysis Toolkit gives the operator an option to do quality analysis of the SAR Satellite Instrument Processor output-products. This includes:

- Geographical positioning
- Sidelobe analysis
- Resolution analysis
- Distributed target calibration analysis
- Point-target calibration analysis

MEOS View Visualisation Tool

The MEOS View visualisation tool is specially designed to be used in an operational environment. MEOS View includes a thumbnail view of the product archive as well as a thumbnail view of processed products and value added products if available. Geographic information can be placed on images as overlays.

Value Added Products

- Ship Detection. An automatic detection of vessels in SAR imagery. The results can be exported as metadata and viewed in MEOS View.
- Oil Spill Detection. A semi-automatic oil spill detection support system. Results can be exported as reports and visualised and analysed in MEOS View.
- Wind Estimation. A wind field detection from SAR imagery. The results are viewed in MEOS View.

Tape Archival and Retrieval

Supports archiving and retrieval of rawdata and products to LTO, DLT, SDLT or DAT drive or jukebox.

Generating of Browse and Metadata Files

Browse image generation converts from any SAR Satellite Instrument Processor output product to other conventional file formats (HDF5, JPEG, TIFF, GEOTIFF, PNG and PGM). The output from this module is optionally resampled, histogram adjusted and geocoded/projected. In addition the module can add grid lines and point crosshair markers to the output-images, do land/sea masking, do incidence angle radiometric corrections and output metadata information together with the output images.

Distribution

Distributes rawdata and products over network via FTP, UDP or NFS.

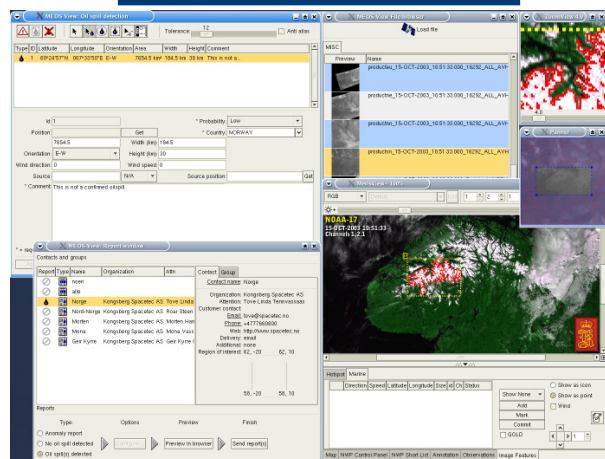
Catalogue and Browse

All image and metadata output from browse image generation can be inserted into a fully searchable archive system, including web interfaces to show search results, details and full resolution products.

Supported Platforms

Linux and SGI IRIX.

Display Examples



MEOS View, with File Browser and Oil Spill Detection package

Note:
MEOS is a registered trademark of Kongsberg Spacotec AS.
Specifications are subject to change without notice.

KONGSBERG SPACOTEC AS

Prestvannveien 38 P.O.B. 6244 NO-9292 Tromsø NORWAY
Phone: +47 77 66 08 00 Fax: +47 77 65 58 59 Email: marketing@spacotec.no www.spacotec.no



KONGSBERG