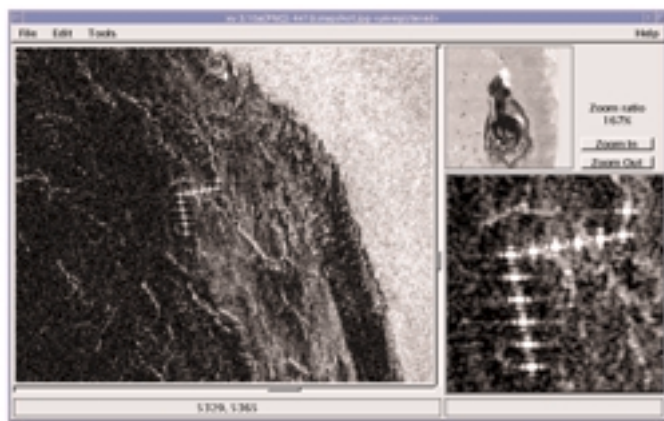# Focus™ Level 1 SAR Image Processor
Rapid Production of High-Quality Standard Level 1 Products

Features

- Full resolution SAR Level 1 processor for spaceborne SAR

- RSI-certified RADARSAT processor

- Ingests space agency standard (CEOS) Level 0 formats

- Produces space agency standard (CEOS) Level 1 output formats

- Phase-preserving Single-Look Complex (SLC) output for high-accuracy interferometric applications

- Ground range geometry, multi-looked and detected images for standard image processing

- Effectively utilizes multiple CPUs for maximum processing performance

- Sophisticated Doppler analyzer uses MLBF, MLCC, CDE, SDE and Ratio Algorithm for ultimate Doppler accuracy

- Autofocus algorithm corrects inaccurate state vector velocity

- Proven Range-Doppler algorithm for full resolution SAR image formation

- Full two-dimensional phase correction for high-squint angle data

- User-friendly Java GUI for full control over all SAR processing parameters

- Convenient batch processor for large processing jobs

- Fast image viewer with point target and geo-location measurements

- User can select area to be processed in along track and cross track direction

- Along track processing window selection based on latitude, longitude, line number, UTC date, and ground track distance

- Cross track processing window selection based on pixel number

- Instructive image quality plots (Range spectrum, Doppler vs. Range, Autofocus Correlation)

Vexcel image viewer showing point target array at Lake Frome, Australia.

Overview

VEXCEL'S FOCUS LEVEL 1 PROCESSOR is a high-performance and high-throughput SAR processor for Envisat-ASAR, ALOS-PALSAR, Radarsat, ERS1/2 and JERS1.

As a disk-to-disk processor, Focus imports the space agency standard Level 0 formats (mostly CEOS) and produces the standard Level 1 formats (also mostly CEOS).

A sophisticated Doppler analyzer exploits a suite of different algorithms for robust and high-accuracy Doppler estimation.

Efficiently using multiple hardware CPUs results in superior processing performance without sacrificing the outstanding image quality of the produced SAR imagery.

A user-friendly GUI allows for quick production of standard products while still providing full control over all SAR processing parameters. An integrated batch processor facilitates the handling of large volume processing jobs.

The Focus processor has been certified by RSI in a number of international ground stations.

Focus is a part of Vexcel's Apex™ Ground System Software and seamlessly integrates with Vexcel's Sky™ Level 0 processor, Phase™ Interferometric processor, and OrthoSAR™ ortho-rectification processor.

Options

- Low-resolution output (quicklook/browse)
- Envisat-ASAR, ALOS-PALSAR, Radarsat, ERS1/2 and JERS1 processing

Related Products

- Satellite Receiving Terminals
- VxDCS™ Data Ingest and Export System
- Apex Commander™ Operations Management System
- EarthFinder™ Data Catlog System
- Satellite Operating Agency (SOA) Interface and Swath Planner
- COP™ Control Processor
- Sky™ Level 0 Processor
- OrthoSAR™ Ortho-Rectification Processor
- Swath™ ScanSAR Processor
- RadarStereo™ Stereo SAR Processor
- Phase™ Interferometric SAR Processor
- RaMS™ SAR Mosaic Formation Processor

Technical Specifications

Hardware Platform

- SGI Octane, Fuel, O200, O300, O2X00
- SUN Sparc and Enterprise
- Compaq Alpha Servers
- Intel Linux Platforms

Hardware Requirements

- Minimum of 512 MB RAM
- Minimum 1 GB installation disk
- Minimum 1 GB processing disk (depending on input data size)

Radarsat

- Input: RSI CEOS L0, GERALD
- Output: RSI CEOS SLC, SGC, SGF, SGX

ERS1/ERS2

- Input: ESA CEOS L0
- Output: ESA CEOS SLC, PRI

JERS1

- Input: NASDA CEOS L0, MDPS
- Output: ESA CEOS SLC, PRI

ALOS-PALSAR

- Input: CEOS L0
- Output: CEOS SLC, SGF

Envisat-ASAR

- Input: ESA L0
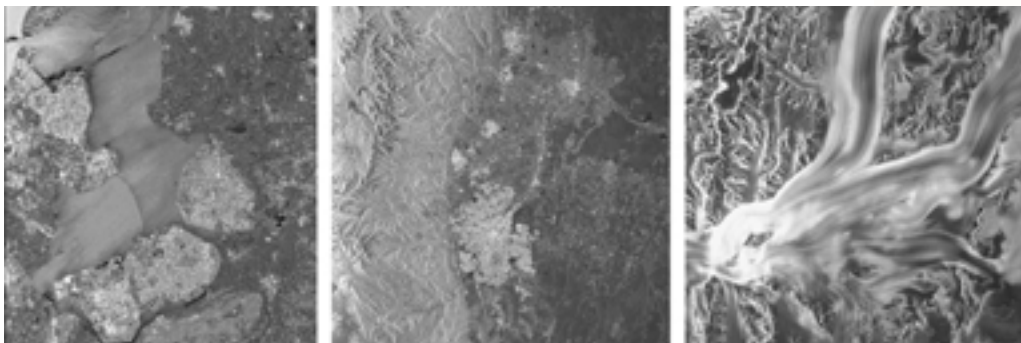- Output: ESA L1B (SLC and PRI)

All satellites and sensors

- Input: Vexcel STF (Archive Format)

left: ERS2 beam image of Netherlands, Europe

center: RADARSAT wide beam image of Colorado Front Range

right: RADARSAT standard beam image of Antarctica