

FACT SHEET

There are no limits...realize your geospatial potential with the Geomatica® Radar Image Processing. Because of its all weather and all-day monitoring capabilities, Radar remote sensing offers a number of advantages for Earth-surface and feature observation. Radar sensors can see through cloud and rain and at night, allowing for remote observation at any time. Some features, such as ice, ocean waves, and geological structures can often be seen better in radar images than in optical images.

Over the years, radar remote sensing has provided comprehensive, timely, and accurate information of the Earth's surface. Due to the unique nature of radar systems, specific tools are required to extract useable information from the data. The comprehensive radar functions in Geomatica allow you to fully exploit the power of radar for use in a wide variety of applications.

Geomatica Radar Capabilities Overview

- Supports a wide variety of radar sensors
- Orthorectification
- DEM extraction
- Advanced radar analysis tools
- SAR Polarimetry processing and analysis
- Radiometric terrain correction

Supported Sensors

Geomatica supports Synthetic Aperture Radar (SAR) imagery and associated metadata from an extensive variety of both satellite and airborne sensors, including: ALOS PALSAR, RADARSAT, RADARSAT-2, TerraSAR-X, Cosmo-Skymed, ENVISAT ASAR, ERS, JERS-1, AIRSAR, SIR-C, and CV-580.

Orthorectification

Use the power of Geomatica OrthoEngine to produce spatially accurate (orthorectified) radar data. The radar orthorectification option includes a SAR specific model that is designed to reduce the amount of user-input ground control required and saves considerable time without compromising the high spatial accuracy that OrthoEngine users have come to expect. Radiometric terrain and land cover correction options are also available when generating orthorectified radar images. For more information, please see the PCI Geomatics Orthorectification fact sheet.

DEM Extraction

Need accurate and up-to-date elevation information? Automatic Digital Elevation Model (DEM) extraction is available for both RADARSAT and ENVISAT ASAR data. For more information,

please see the PCI Geomatics DEM Extraction fact sheet.

Advanced Radar Analysis Tools

Geomatica contains dozens of algorithms and tools designed specifically for Radar data. Highlighted below are examples of radar analysis capabilities offered in Geomatica.

SAR Radar Analysis:

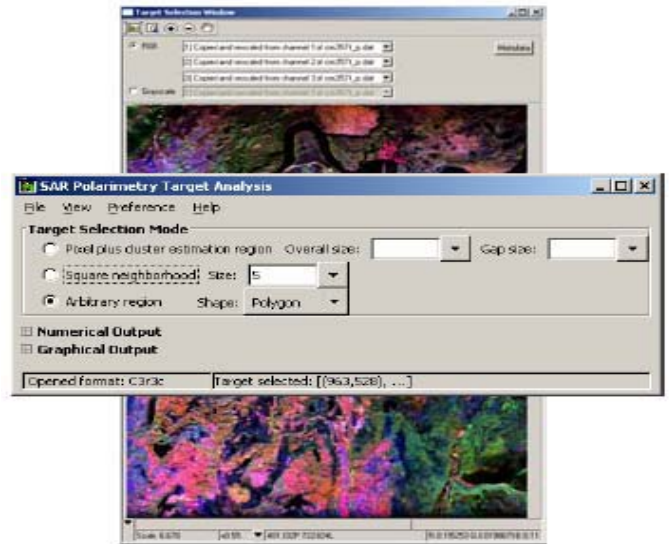
- Generate radar brightness
- Generate calibrated radar backscatter
- Create array segment of incidence angles
- SAR image change detection
- Texture Analysis
- Multiple SAR speckle filters
- SAR image Segmentation and
- Classification
- Airborne RADAR processing tools

SAR Polarimetry Workstation

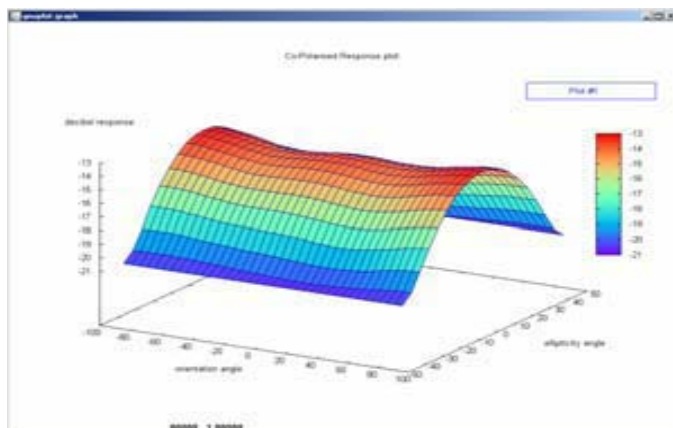
Several new sensors, such as RADARSAT-2 and ENVISAT-ASAR, provide an exciting promise of obtaining accurate Earth information by leveraging multiple polarization modes. Do you want to be at the forefront of an exciting new stage in remote sensing? Start with the best exploratory package available: PCI Geomatics SAR Polarimetry Workstation (SPW).

The SAR Polarimetry Workstation is a comprehensive toolkit designed to help develop techniques for applying SAR polarimetry to Earth monitoring and resource-management challenges. This state-of-the-art software provides a variety of metadata input, target selection, target analysis, and dataset processing utilities designed specifically for Polarimetric SAR data.

The dataset processing utilities include POLSAR specific filters, format conversions, full dataset target discriminators and classification algorithms. Designing project specific classifications is also a breeze with the interactive Cloude-Pottier Class Partitions interface.



SPTA Target Selection



SAR Polarization Signature Analysis

SAR Polarimetry Workstation – Target Analysis

All target analysis operations can be accomplished within one environment – the SAR Polarimetry Target Analysis (SPTA) interface. Polarimetric SAR (POLSAR) data analysis often involves the selection and analysis of specific features (targets) within a dataset. The PCI Geomatics SAR Polarimetry Workstation provides a complete set of tools and algorithms designed specifically for selecting and analyzing data targets.

Licensing

Orthorectification and DEM extraction of RADARSAT and ASAR data is available through the Radar Ortho and Auto DEM add-ons to Geomatica Core or Prime.

Advanced Radar Analysis tools are available as part of Geomatica Prime.

PCI Geomatics gratefully acknowledges the financial support provided by the Canadian Space Agency through the Earth Observation Application Development Program (EOADP). This support was essential to the development of the Radar Analysis tools and the SAR Polarimetry Workstation.

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