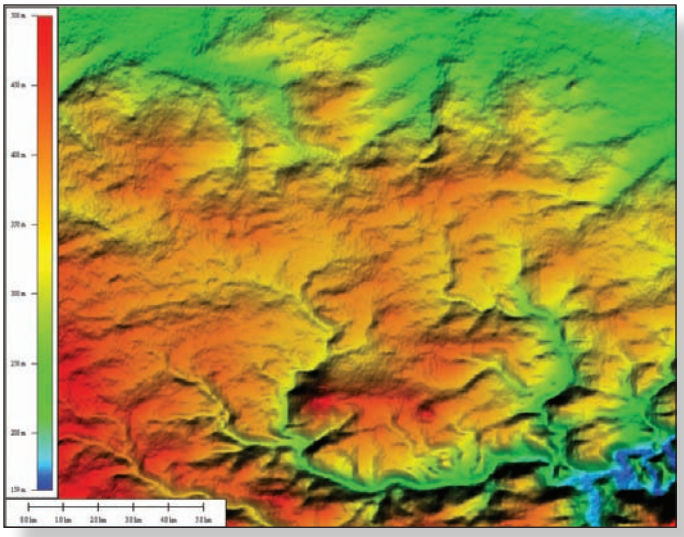
Product Sheet

NEXTMap® TopoSAR

INTERMAP™ TECHNOLOGIES

Providing "the big picture": wide-area mapping coverage, with data that is available worldwide and collected on-demand



Intermap Technologies' NEXTMap® TopoSAR meets the need for accurate and current elevation data that provides coverage over large areas – anywhere in the world. NEXTMap TopoSAR elevation models can be used for wide-area mapping as an alternative to data derived from interferometric synthetic aperture radar (IFSAR), light detection and ranging (LiDAR), or the shuttle radar topography mission (SRTM).

While LiDAR and photogrammetry technologies both result in accurate imagery and elevation data, they can not cost-efficiently provide the wide-area coverage supplied by satellite-acquired data – typically about 1,500 square kilometers per scene.

NEXTMap TopoSAR data provides worldwide coverage via satellite, while airborne platforms are subject to "no-fly" or "no-image" zone restrictions. Additionally, NEXTMap TopoSAR's spatial resolution is far superior to that of SRTM data, and because it is collected "on-demand," it is also more current than SRTM data.

Markets for NEXTMap TopoSAR data include forestry, oil & gas, government, and other industries that perform image interpretation, feature identification, large-area mapping, and other tasks enabled by its accurate and wide-area coverage. Specific geospatial applications include:

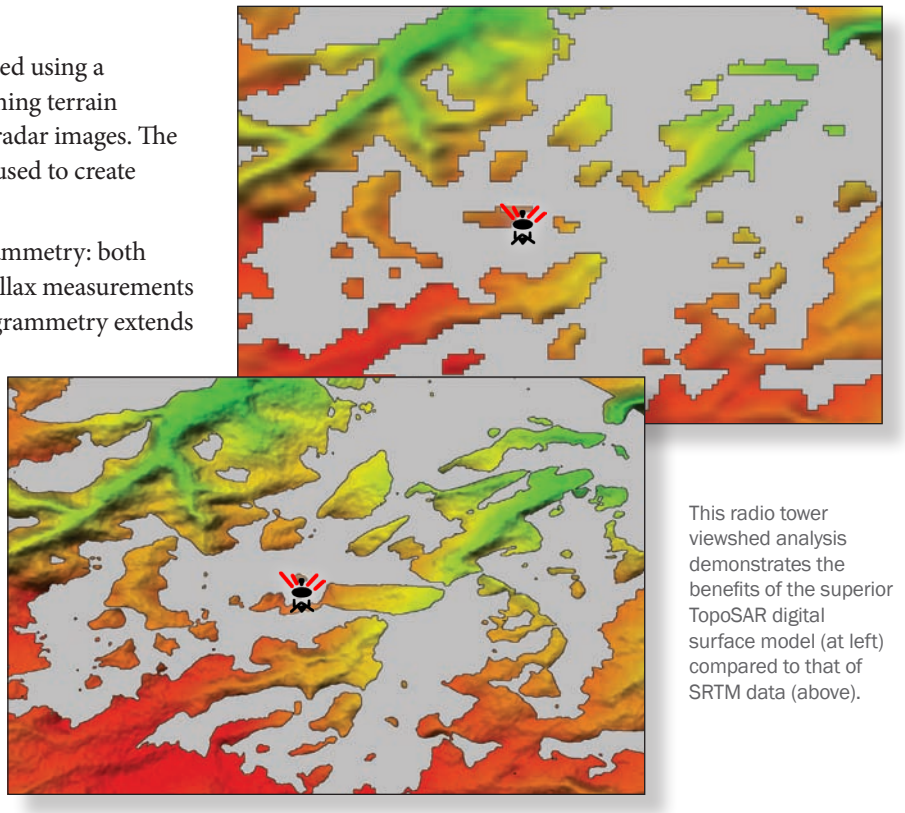
- Base mapping
- Surface analysis
- Flight simulation
- Image rectification
- Watershed analysis
- Image analysis

TopoSAR Product Development

The NEXTMap TopoSAR products are created using a technique, called radargrammetry, for obtaining terrain height with overlapping stereo pair satellite radar images. The resulting terrain height information is then used to create precise digital elevation models.

Radargrammetry is very similar to photogrammetry: both techniques are fundamentally based on parallax measurements between two stereo images. However, radargrammetry extends the process by using radargrammetric range / Doppler equations to create the final result.

Using proprietary software, a high-density set of stereo points is collected over a project area. These points are then processed through range / Doppler equations, turning each stereo point into a three-dimensional estimate of the terrain. The point cloud of terrain estimates is then converted into a raster digital surface model (DSM).



This radio tower viewshed analysis demonstrates the benefits of the superior TopoSAR digital surface model (at left) compared to that of SRTM data (above).

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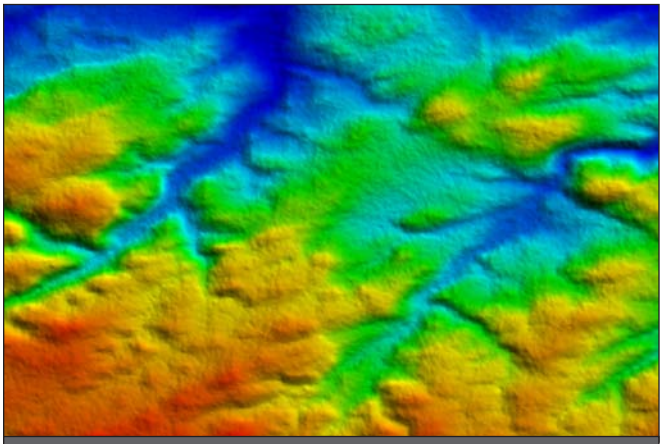
Orthorectified radar images (ORIs) are also generated by this process. Orthorectification removes distortions in the image data caused by terrain variations. The DSM and ORI data are presented in GIS-friendly 7.5 minute raster files.

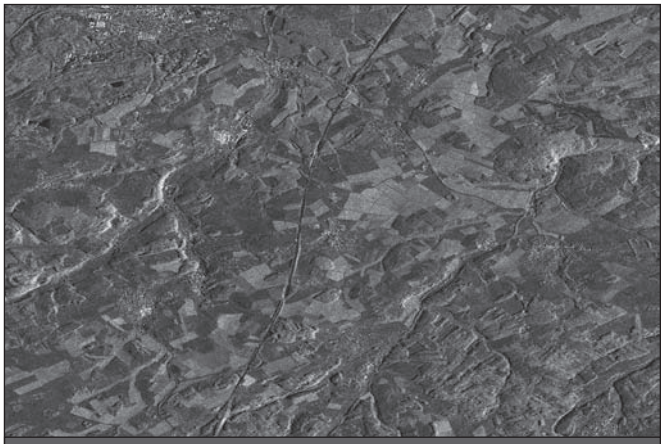
NEXTMap TopoSAR elevation models provide an excellent alternative to SRTM data in areas of the world in which airborne data collection is impractical. With its superior spatial resolution and up-to-date elevation information, NEXTMap TopoSAR provides a clear and cost-effective advantage.

NEXTMap TopoSAR Benefits

- Wide-area data coverage: a single stereo pair of radar images typically provides coverage of 1,500 square kilometers (about the size of the Hawaiian island of Oahu)
- Boundary-free acquisition: the technology is not limited by international border restrictions or "no-fly" zones
- Worldwide data availability: areas of interest are quickly captured and processed as needed – anywhere in the world
- Up-to-date information: radar imagery is collected "on-demand"; for comparison purposes, SRTM data was collected in 2000
- All-weather acquisition: the technology is not limited to collection in the light of day or cloud-free conditions



TopoSAR Digital Surface Model (DSM)



TopoSAR Orthorectified Radar Image (ORI)

NEXTMap TopoSAR Data Specifications:

DSM
Vertical datum: EGM 96
Horizontal datum: WGS84
Coordinate system: Geographic
Units: Decimal Degrees (Long, Lat)
File Format: 32-bit BIL format and header
Resolution / posting: 10m
Horizontal Accuracy: 5m (RMSE)
Vertical Accuracy: less than 5m (RMSE)*

ORI
Vertical datum: EGM 96
Horizontal datum: WGS84
Coordinate system: Geographic
Units: Decimal Degrees (Long, Lat)
File Format: 8-bit GeoTIFF
Pixel size: 2.5m
Horizontal Accuracy: 5m (RMSE)

* this value applies to unobstructed areas containing identifiable features and with slopes less than 10 degrees

For more information on NEXTMap TopoSAR, contact an Intermap sales manager at sales@intermap.com, call 1-877-837-7246, or visit www.intermap.com.