

Topographic Mapping with GeoSAR



Acquiring high resolution geospatial data over large and remote areas, Fugro's GeoSAR airborne radar system, quickly and accurately maps geographic regions obscured by clouds or dense vegetation.

GEOSAR TOPOGRAPHIC MAPPING APPLICATIONS

Fugro's GeoSAR radar mapping system efficiently maps large land expanses, regardless of clouds, foliage, or terrain. Whether projects are located in high latitudes or in equatorial zones, GeoSAR's high accuracy elevation and imagery support new and updated topographic mapping at 1:50,000 and 1:25,000 scales. GeoSAR topographic mapping comprise:

- Detailed topographic data.** GeoSAR elevation data provide accurate topographic information, including spot heights, breaklines, and contours. Because GeoSAR maps through clouds and beneath tree canopy and vegetation, it is possible to deliver a near bare earth elevation model. Large-scale topographic maps support regional or national decision making for a variety of land management, economic development, engineering, and military applications.
- Custom land-cover data.** GeoSAR multi-band imagery, combined with radar elevation data, provides valuable and detailed thematic information in a variety of application domains, such as geology, forestry, agriculture, and hydrology. GeoSAR allows users not only to identify standard land cover types, but also to differentiate between soil types (soft woods vs. hard woods), crops (rice vs. sweet potatoes), wetlands (mangrove vs. peat bogs), and other features depending on the application.
- 3D feature extraction with PurVIEW.** The combination of GeoSAR data and the PurVIEW 3D extraction software enables users to perform large-area mapping and map updating directly to a GIS desktop. PurVIEW's Synthetic Stereo which converts any two dimensional image with accompanying DEM into a 3D scene on the fly, allows for easier exploration and interpretation of GeoSAR imagery.



The GeoSAR Gulfstream-II jet aircraft.



A topographic map with water features, roads, and forested areas identified blended with a thematic map generated from X- and P-band radar imagery.



Feature classification using X- and P-band GeoSAR imagery.

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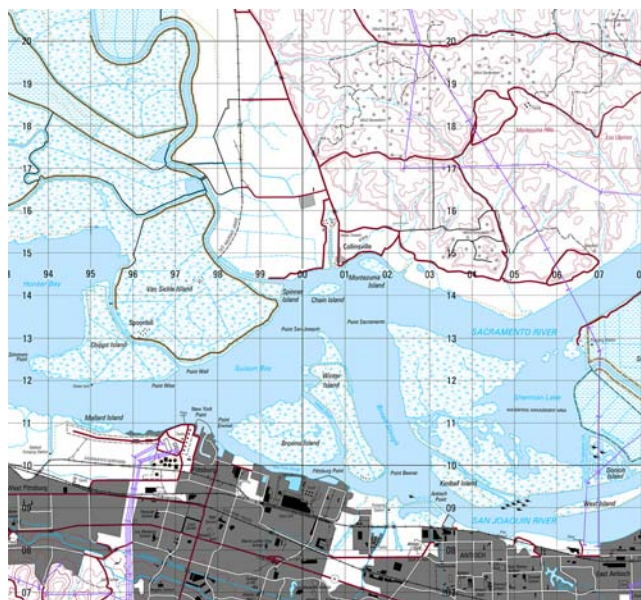
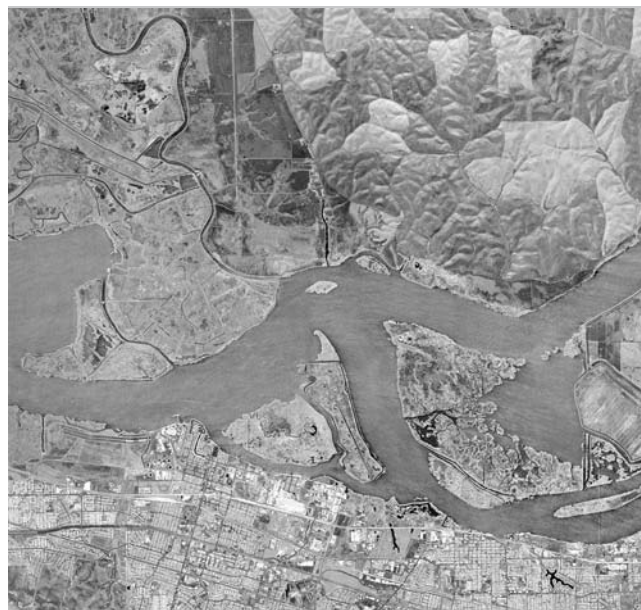
About GeoSAR Radar Mapping

GeoSAR is an airborne radar mapping system that produces 3D terrain data and imagery for generation of topographic maps and other derived products.

The system uses a technology known as interferometric synthetic aperture radar. Widely referred to as IFSAR, this technology is the radar equivalent of stereo vision in photogrammetry. GeoSAR is the world's only radar mapping system that simultaneously maps the ground beneath foliage (using P-band) and the surface features above the terrain using (X-band), in a single pass. The system's dual-band, dual-sided configuration rapidly acquires high resolution elevation data and radar imagery over regions previously considered inaccessible due to extreme weather and/or rugged terrain. GeoSAR is available worldwide exclusively from Fugro.

GeoSAR Advantages

- **Mapping through clouds and forests.** GeoSAR penetrates clouds and foliage to simultaneously collect detailed 3D surface and ground feature information, even in regions of perennial cloud-cover and dense tropical or boreal forests.
- **Combined terrain and thematic data.** Along with accurate 3D terrain data, GeoSAR delivers cloud-free, multi-band imagery that can be analyzed to accurately map local land cover and infrastructure.
- **Accuracies for 1:50,000 and 1:25,000 scale mapping.** GeoSAR is capable of working in all types of climates and terrain to deliver the high accuracy imagery and elevation data required for new or updated topographic mapping over large coverage areas.
- **Low-risk/high-efficiency operations.** GeoSAR operates at very high altitudes and incorporates a LiDAR terrain profiler for in-air ground control. This makes it both safe and reliable for rapid mapping over rugged landscapes and dangerous environments.



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