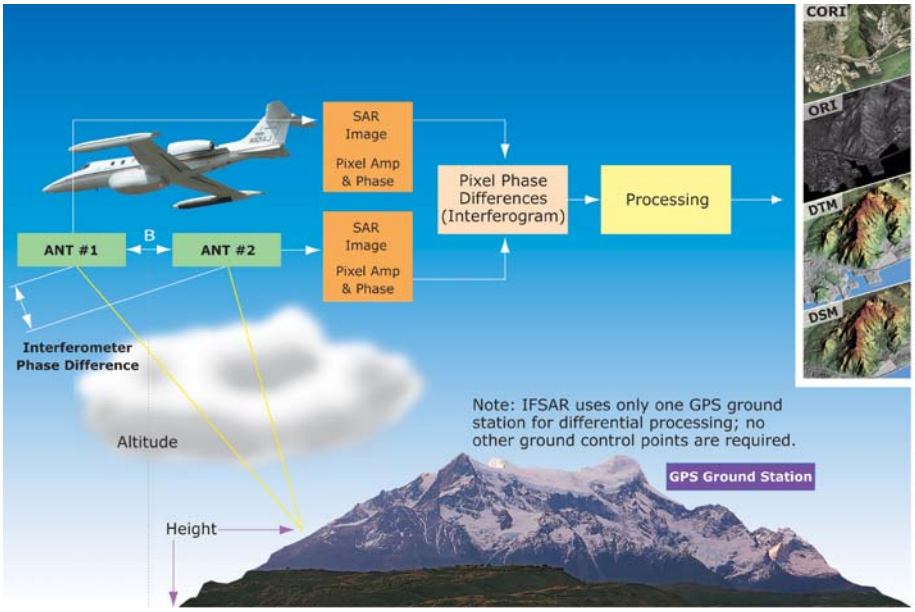
IFSAR Mapping Technology

The Process

Our proprietary airborne Interferometric Synthetic Aperture Radar (IFSAR) digital mapping technology is essentially a process of producing 3D map products by processing raw radar data collected by airborne IFSAR systems. Thematic information for a scene is derived from theSynthetic Aperture Radar (SAR) images. Height information is obtained in a single-pass mode by using the phase difference between two coherent SAR images, simultaneously obtained by two antennae separated by an across-track baseline.



The Products

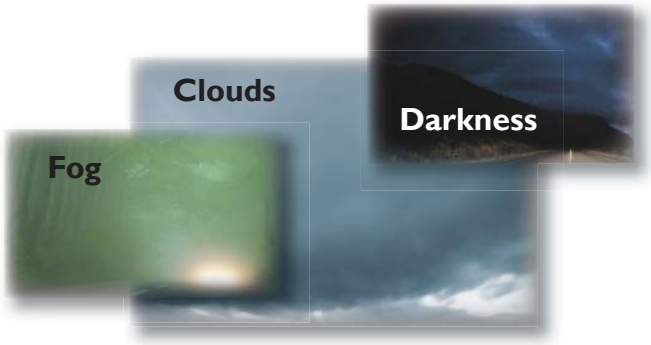
- Digital Surface Models
- Digital Terrain Models
- Orthorectified Radar Images
- Color Orthorectified Radar Images

The Demand

Demand for high-quality, low-cost IFSAR digital mapping data within the geospatial community. Continual advances in sensor development and georeferencing technologies, combined with exponential improvements of digital computing power, enable unparalleled functionality and flexibility in digital mapping. The highly accurate and affordable 3D digital mapping data afforded by our IFSAR technology enable a wide range of innovative geospatial solutions.

The Advantage

- Flexibility of system deployment
- Virtually nonexistent weather restrictions
- Profound cloud penetrating capability
- Rapid turn-around time
- Significant reduction in collection costs



The Objective

Spearheaded by our superior IFSAR mapping system, we are proactively mapping 17 European countries (NEXTMap® Europe) and the entire United States (NEXTMap® USA). Scheduled completion dates for the collection of data for these two initiatives are the end of 2007 and 2008, respectively.

The Alternative

Several competing technologies, such as the more familiar airborne Light Detection and Ranging (LIDAR) system, are used to generate map products at various scales, details, and accuracies. However, experts in the geospatial community recognize the fact that airborne IFSAR has matured as a complementary or even competitive 3D mapping technology (see reverse for IFSAR / LIDAR comparison table).

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The Comparison

	IFSAR	LIDAR
Collection Process	Collected from fixed wing aircraft at 6km to 9km in single-pass mode.	Collected from fixed wing aircraft and helicopter platforms at 50m to 3.5km; may require multiple passes.
Maximum Collection Rates	~ 4,000km^2/hr	~ 200km^2/hr
Wavelengths	X-band (~3cm). Penetrates clouds, haze, fog, dust, light rain and snow.	IR (~ 1nm). Cannot penetrate clouds and are heavily absorbed by water.
DEM Vertical Accuracy	1.0m RMSE	Between 15 and 50cm RMSE
DEM Horizontal Accuracy	2.0m	0.5 to 1.0m
Operating Speed	~750km/hr	~200km/hr
Ground Swath	5 – 9km	0.7 to 1km
Accuracy	Best accuracy around 0.5m in Z	Best accuracy around 10cm in Z
Applications	Ideal for larger areas requiring a lesser, yet widely acceptable, degree of accuracy.	Best suited for smaller areas and projects that require a high degree of accuracy.
Cost	~ $25 to $30/km^2	~ $150 to $250/km^2

Note: All comparisons in the table are based on industry averages and will vary based on atmospheric conditions, flight patterns, and project scope.

***** According to the National Oceanic and Atmospheric Administration Coastal Services Center, some LIDAR projects can run as high as $772/km^2 Source: http://www.csc.noaa.gov/crs/rs_apps/sensors/lidar.htm#cost, January 16, 2007.

The Benefit: Precision Elevation Data for Less Money

Our IFSAR data collection process wasn't developed to satisfy everyone's mapping needs. However, depending on the scope and requirements of your particular project, IFSAR is a proven alternative to LIDAR. In addition, IFSAR's ability to complement a LIDAR end-product with precise, less-expensive elevation data and geometries can save you and your organization considerable time and money.

Intermap is proactively meeting the growing global demand for superior, low-cost digital elevation datasets, imageries, and geometric models. Our experienced team of airborne IFSAR technology experts continue to take the geospatial mapping industry to an incomparable level of accuracy and affordability.

Likewise, our NEXTMap® suite of off-the-shelf products, along with our custom collections, has enabled a wide range of geospatial solutions for numerous commercial, government, military, and consumer applications, worldwide.

The Conclusion: Contact Us Today for More Information

Call toll-free 1-877-837-7246 or visit us online at www.Intermap.com to learn more about how mapping data generated by our IFSAR technology can quickly and affordably enable your geospatial solutions.

INTERMAP™ TECHNOLOGIES