

# IMAGINE SAR INTERFEROMETRY

IMAGINE SAR Interferometry is a single, cost-effective module that fully integrates ERDAS IMAGINE's advanced interferometric processing capabilities. With this package, even the radar novice can extract high-quality digital elevation models (DEMs), generate Coherence Change products, or map Surface Displacement at the centimeter level.

## Expertise Strengthened Through Partnership

Recognizing the need for user-friendly, robust, and technically sophisticated interferometric tools, Hexagon's Geospatial division initially partnered with the German Aerospace Center (DLR). World-renowned for their development of the Space Shuttle Radar Topography Mission (SRTM)/X-SAR and the TerraSAR-X satellite, the collaboration with DLR leveraged expertise from both organizations to simplify state-of-the-art algorithms. Thus, the unmatched interferogram unwrapping technology that processed SRTM interferometric images forms the engine of IMAGINE SAR Interferometry.

In addition to DLR, continued partnership with other international experts such as Planetek Italia in Italy, Space and Defense Technologies (SDT) in Turkey, and Neva Ridge Technologies in the United States, ensure IMAGINE SAR Interferometry continues to deliver cutting-edge functionality.

## Capabilities

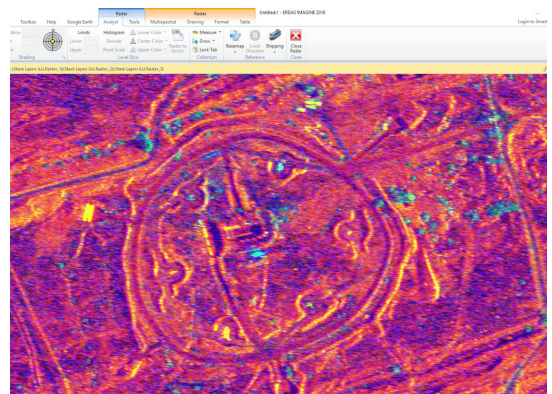
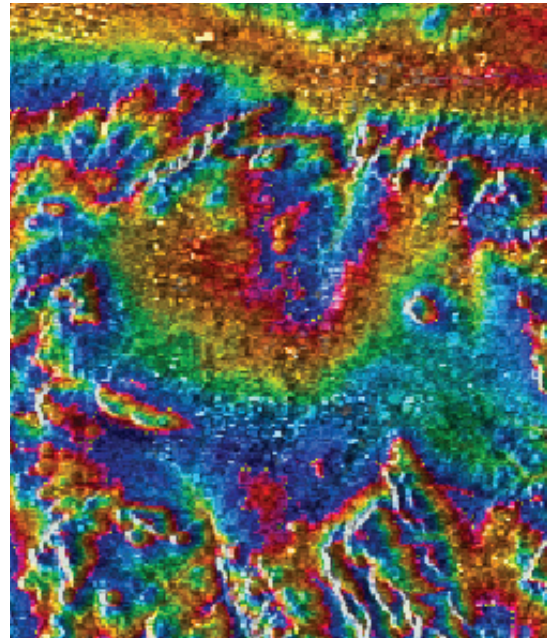
### Sentinel-1

ERDAS IMAGINE ingests more imagery types, including Sentinel-1 imagery, than any other remote sensing product in the market. With their paradigm of free data distribution and continuous imaging, the Sentinel-1 radar satellites have revolutionized the use of radar imaging. To increase the uptake of radar technology for myriad applications, ERDAS IMAGINE has fully automated processing of Sentinel-1 data so anyone can easily extract information; no need for radar expertise.

### Coherence Change Detection (CCD)

By comparing two radar images taken at different times, CCD functionality can detect changes at the wavelength scale. This means that surface change of an inch or less can be detected over areas of hundreds of square miles. This provides regional monitoring at a previously unattainable level.

Because CCD is such a powerful and useful change detection technique, Hexagon's Geospatial division and its partners have invested significant effort into developing operational tools to make exploiting this technology fast, accurate and easy. Simplifying, while building on our CCD capabilities, EZ-CCD and EZ Sentinel CCD are easy to use, requiring no radar expertise, but are computationally optimized to produce all CCD products 5 to 10 times faster than the traditional CCD workflow.



Interferometric ILU Change Detection Product showing detailed activity at surface-to-air missile (SAM) launch site.

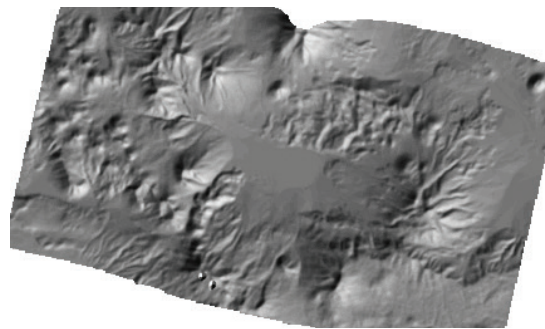
## Synthetic Aperture Radar Interferometry (InSAR) DEM

By exploiting the information contained in the radar phase, the InSAR capability can quickly extract high-quality DEMs. InSAR includes a user-friendly wizard that lets you step through the workflow, accepting or modifying the default parameters. The software then automatically processes input images to DEM products, leaving you free to work on other tasks.

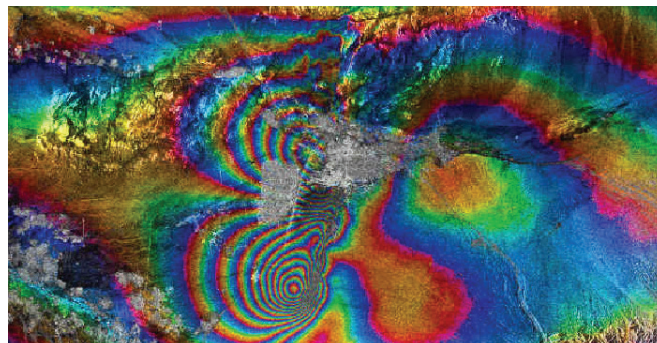
## Differential Interferometric SAR (DInSAR)

DInSAR quantitatively maps surface change at the sub-wavelength scale, providing the ability to precisely map surface displacement, anywhere in the world, from space. This opens up the potential to create regional subsidence maps in areas of oil and gas production, aquifer depletion, sub-surface mining, or tunneling. Natural phenomena, such as earthquakes or volcanoes, can be monitored or evaluated for relief efforts.

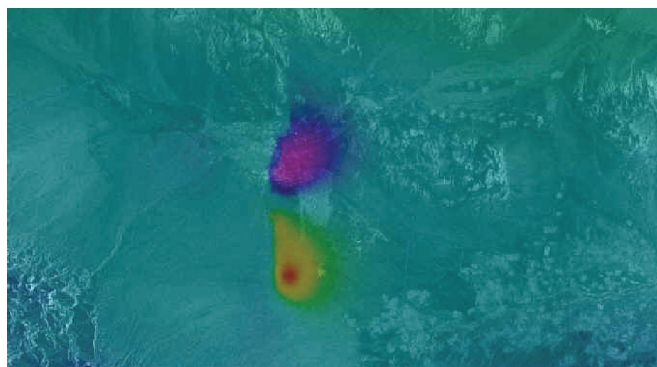
Recognizing that the hugely valuable information that can be extracted by advanced DInSAR analysis was beyond the expertise of most persons, Hexagon's Geospatial division partnered with Planetek Italia to develop a truly innovative solution. ERDAS IMAGINE can be used for routine wide-area monitoring, and areas of interest, or "hot spots", can be directly submitted from the IMAGINE SAR Interferometry interface for a very detailed time-series DInSAR analysis to be performed by experts. The resultant surface displacement information is delivered as a Shapefile back into ERDAS IMAGINE for evaluation and exploitation.



5-meter DEM calculated from full TerraSAR-X scene in fully automatic mode



Interferogram of earthquake in Bam, Iran. Note loss of coherence in the center due to building collapse.



Bam, Iran: Color-coded vertical displacement map fused with radar image.

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## About GEOSYSTEMS

GEOSYSTEMS is a software vendor and service partner for geospatial solutions and helps public authorities, private companies and educational organizations to easily transform location-based data into actionable information. As Hexagon Geospatial platinum partner, GEOSYSTEMS offers not only leading-edge products for remote sensing, photogrammetry, GIS and data management, but also Hexagon Smart M.App solutions for easy-to-use dynamic map experiences. In addition, GEOSYSTEMS develops customized applications, implements tailor-made workflows and provides excellent trainings.

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## About Hexagon

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications. Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous — ensuring a scalable, sustainable future.

Hexagon's Geospatial division creates leading platforms, applications and solutions for visualizing, analyzing, and deriving insight from location data. By interconnecting the geospatial and operational worlds, we help customers of all sizes — from sites to cities to nations — use 5D location intelligence to solve real-world, mission-critical challenges.

From snapshots in time to real-time streams, our technology enables autonomous connected ecosystems that deliver reliable, repeatable location information. We shorten the loop from data acquisition to action, helping clarify what was, what is, what could be, what should be, and ultimately, what will be, so we can build a thriving, sustainable world.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 20,000 employees in 50 countries and net sales of approximately 4.3bn USD. Learn more at [hexagon.com](http://hexagon.com) and follow us @ HexagonAB.