

Operational Time Series Monitoring

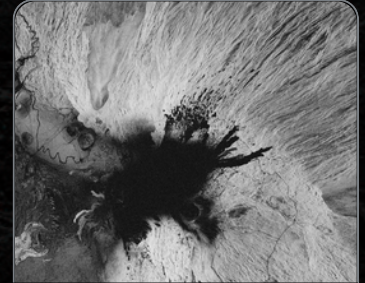
Interferometric Synthetic Aperture Radar (InSAR) is an advanced Earth observation technique that leverages the phase information inherent in Synthetic Aperture Radar (SAR) data to measure subtle changes in the Earth's surface. By processing multiple radar images of the same area over time, InSAR detects and quantifies surface changes at millimeter scale. This technology plays a crucial role in monitoring environmental changes, geological activity, and infrastructure stability.

InSAR is uniquely valuable for:

- Infrastructure, subsidence, and asset stability early warning and monitoring
- Environmental and geotechnical risk assessment
- Baseline establishment and coherent change monitoring
- Early identification of risk to guide inspection and intervention



MOUNT ETNA, ITALY
7.15.24 / COHERENCE / SPOTLIGHT



MOUNT ETNA, ITALY
7.18.24 / COHERENCE / SPOTLIGHT

Showcasing Volcano Eruption and Land Deformation Over 3-day Period

The Problem

InSAR is a proven, high-value technique for measuring ground movement and structural change. Yet only a few SAR data providers have operationalized InSAR at scale. Most systems are designed for isolated image collection, not continuous time-series analysis. The result? Critical trends are missed, confidence erodes, and decision-makers are left without consistent, actionable insights.

Capella InSAR: Built for Reliability

Capella's constellation is designed to deliver InSAR-ready SAR data engineered for repeatability, geometry diversity, repeatability, and long term consistency.

Multi-Orbit Geometry

- Unique 53° mid-inclination orbit enables sensitivity to north-south motion
- Sun-synchronous orbits for complementary viewing enabling 3D modeling
- Improves separation of vertical and horizontal deformation

High Frequency Revisit

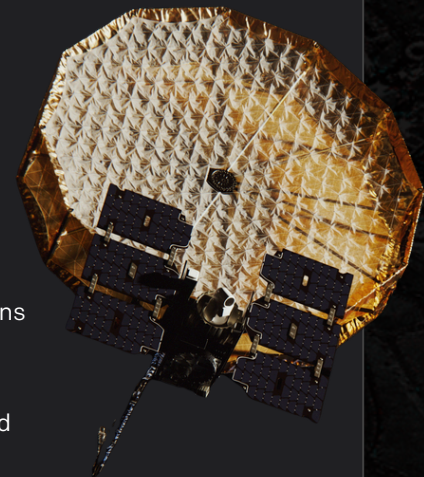
- 3-day repeat enables faster and earlier detection of deformation
- Supports denser, more statistically defensible time series

Repeat Pass Stability

- Demonstrated tight orbital control preserves phase quality across collections
- Produces cleaner phase history and more usable pixels per acquisition

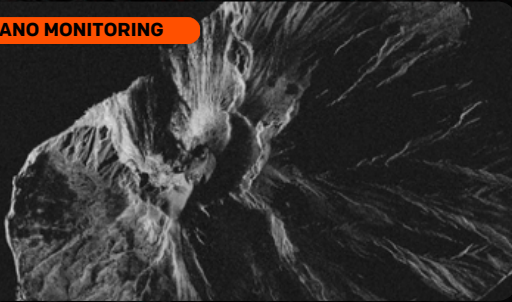
Open Exploitable Data

- Delivered via automated tasking in console or API with InSAR ready SLC and GEO products
- Compatible with leading third-party InSAR analytics workflows



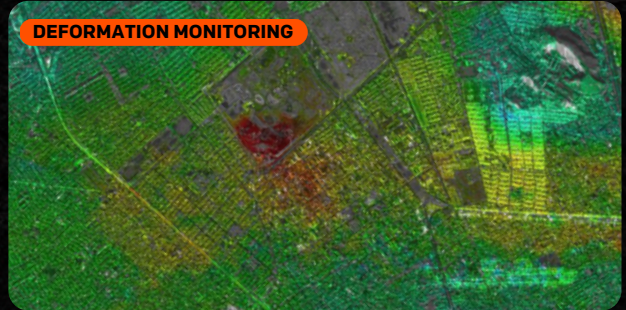
InSAR: Infrastructure, Environment, & Critical Monitoring

VOLCANO MONITORING



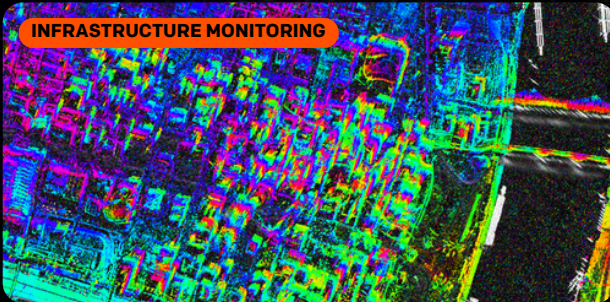
STROMBOLI ISLAND, ITALY
INSAR COHERENCE / SPOTLIGHT
Showcasing explosive volcano activity

DEFORMATION MONITORING



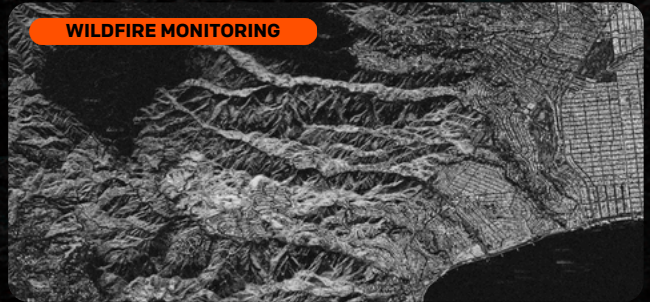
MEXICO CITY, MEXICO
SURFACE VELOCITY / SPOTLIGHT
Showcasing 3-day repeat deformation monitoring

INFRASTRUCTURE MONITORING



ST LOUIS, MISSOURI, USA
INSAR PHASE / SPOTLIGHT
Showcasing building, land, and bridge height

WILDFIRE MONITORING



PALISADES FIRE, CA
3-DAY COHERENCE / STRIPMAP
Showcasing burn area and spread

Capella's InSAR Advantage

Capella delivers InSAR-ready data engineered with precision for repeatability and scale enabling earlier detection, higher confidence, and continuous insight into subtle change across the globe.



Leverage Capella InSAR Today

- Access repeat-pass InSAR compatible SAR data
- Automated tasking and delivery via Capella Console or API
- Receive multi-temporal stacks over your areas of interest

Capella InSAR turns subtle change into mission-ready intelligence – built for real-world decisions.

See what's
changing,
today.

CONTACT US

To learn more about InSAR visit
capellaspace.com

