

## Viridien Satellite Mapping

### Surface deformation monitoring

**Viridien Satellite Mapping** is a leading supplier of Interferometric Synthetic Aperture Radar (InSAR) solutions that detect, map and monitor surface deformation.

Our solutions provide a unique insight into the location, extent, magnitude and evolution of natural and anthropogenic surface deformation, increasing client knowledge to improve decision-making and reduce risk.

#### Experts in the commercial application of satellite InSAR

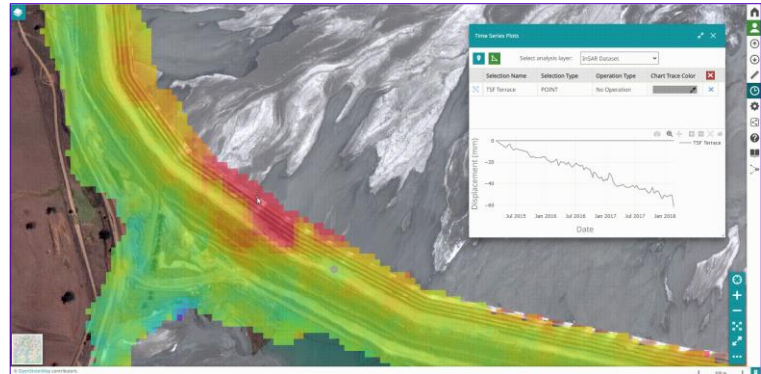
Since 1995, Viridien's Satellite Mapping team has been at the forefront of InSAR technology and were among the first companies in the world to provide commercial satellite InSAR services aimed at the detection, mapping and monitoring of ground and structure deformation. We are recognised as a world-leading authority on the application of satellite InSAR technologies and services to meet the challenging requirements of our clients.

#### Capabilities

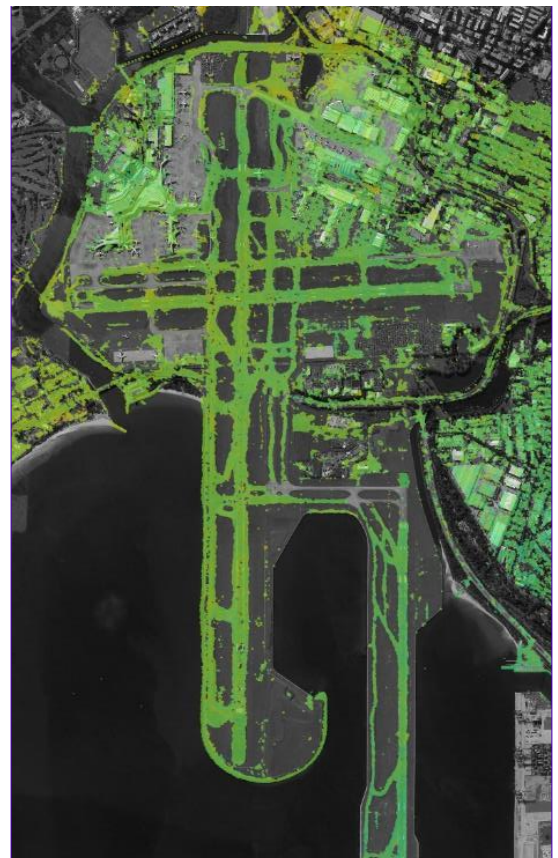
- Historical auditing and baselining – retrospective legacy deformation trends
- Remote, wide-area mapping – reduces need for 'boots on the ground' & covers 100s km<sup>2</sup> in a single satellite footprint
- High-density measurements
- Millimetric accuracy
- Ongoing monitoring – satellite images acquired every 11-12 days
- Complementary data source to be integrated with terrestrial sensors

#### Applications

- Engineering – baselining, tunnel settlement
- Critical infrastructure – terminals, pipelines, storage tanks, power stations, airports
- Geohazards and the environment – landslides, neotectonics, coastal stability
- Mining – active and residual mine subsidence, abandoned mine system recovery, tailings storage facilities (TSFs)
- Underground storage – gas, strategic hydrocarbon reserves, Carbon Capture Utilisation and Storage (CCUS)
- Geothermal – site assessment, production monitoring
- Oil and gas – onshore conventional and unconventional fields



Contains modified Copernicus Sentinel data 2024  
Background image © DigitalGlobe, Inc. 2018



Contains modified Copernicus Sentinel data 2024

**Viridien Satellite Mapping** works with engineering companies, surveyors, consultants and government bodies to map and monitor surface deformation associated with, and relevant to, critical infrastructure and large engineering projects.

## Hazard assessments

- Map natural (seismicity, faulting, landslides) and anthropogenic (mining, water abstraction/injection, oil extraction) deformation hazards
- Establish historical trends and monitor future change
- Provide remote observations – reduce exposure of personnel to hazards
- Forensic analysis of movement prior to catastrophe events

## Site selection

- Increase understanding of environmental conditions & ground status prior to site development
- Support and enhance geotechnical investigations – save time and money by using InSAR data to efficiently deploy ground sensors
- Site-specific and wide-area screening capabilities

## Project lifecycle monitoring

- Detect, map and monitor surface deformation through the full lifecycle of a project – planning, development, construction, operation, & closure
- Implement advanced geomonitring systems – complement and contextualise precise land surveys
- Support development claims- validate predicted deformation impacts
- Adhere to regulatory monitoring requirements and HSE commitments
- Identify and separate unrelated surface deformation features from present and historical impacts

## Complementary solutions

- Vendor-independent supplier of satellite imagery (optical and radar) and elevation data
- Expert geological and geomorphological interpretation



SAR data © ESA 2002-2010



© DLR e.V. 2010-2015, Distribution Airbus Defence and Space GmbH