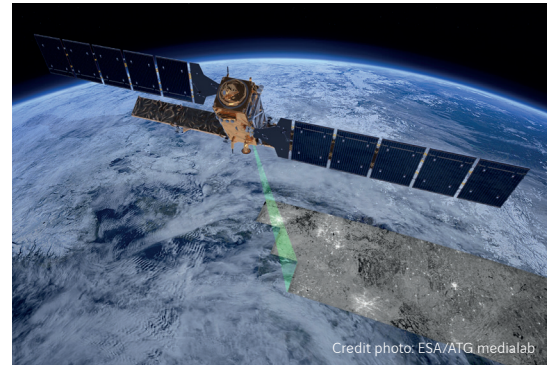


# Atlas InSAR

## Monitoring ground motion and infrastructure stability from space

### YOUR CHALLENGES & GOALS

- **Infrastructure or asset stability:** measuring subsidence, heave, differential settlements, tilts etc. caused by natural geological events or civil engineering works
- **Ground stability of wide areas:** measuring and understanding terrain motion and its causes over very extensive areas
- Measuring the **stability of remote, inaccessible areas, or infrastructure**, where site intervention is difficult, expensive, or risky
- Undertake **large scale monitoring** at a cost per point less than conventional manual optical survey monitoring
- **Analyze and map historic movements**
- **Identify** previously **undetected movements** not recorded by conventional monitoring technologies



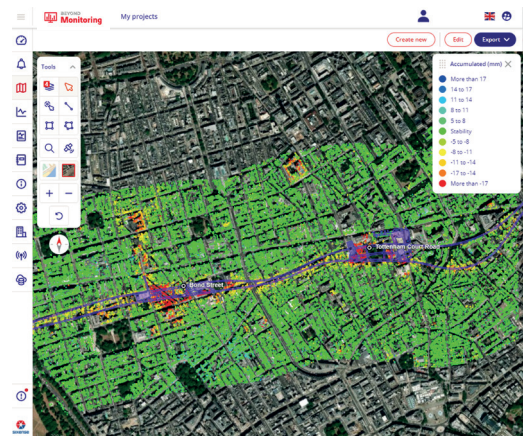
### OUR SOLUTION

Atlas InSAR is Sixense's **Interferometric Synthetic Aperture Radar (InSAR) solution** that measures **ground deformation and structural stability** from space with millimetric precision.

Using **satellite radar images** and **advanced signal processing**, Atlas InSAR provides millions of ground based and structural measurement points that supports design, construction or service and maintenance visits.

### FEATURES & BENEFITS

- **Optimize industrial operations** for an asset's life cycle using geospatial data
- **Coverage of large areas:** monitor **extensive, remote areas** including inaccessible or risky environments
- **Retrospective studies:** undertake historical ground motion analysis from 1992 to the present day using archived images
- **Reliable information** to settle subsidence claims
- **A non-invasive solution:** a remote solution, free of maintenance, and without the requirement to necessarily undertake site interventions
- **High density of measurement points > +/-50,000 per km<sup>2</sup>**
- **Millimetric precision** from 1 mm / year and 2-3 mm precision on single measurement points
- **Beyond Web GIS: a user-friendly interface** for a quick and easy storage, handling and interpretation of the the acquired data



## Sixense's

• 20 years of experience in instrumentation & monitoring.

• In-depth knowledge of measurements, civil engineering and geotechnics.

• The worldwide specialists in accurate and reliable measurements.

• Ability to offer optimised solutions combining the latest and most reliable technologies.

### CONTACT US

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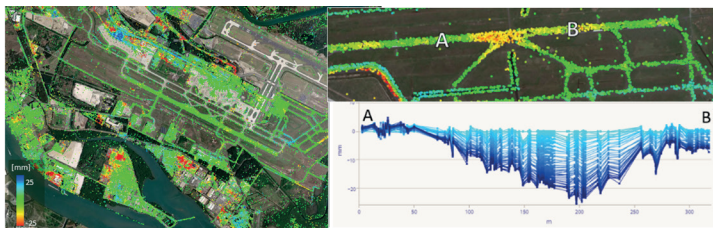
## TRANSPORT CORRIDORS: HIGHWAYS, RAILWAYS



The figure above shows 2 years of accumulated deformation on 200 km of motorway, and the filtering of areas affected by active deformation. Images Sentinel-1 ©ESA

- **Map ground and infrastructure motion** over hundreds of kilometers
- Quickly identify **active deformation areas** such as unstable slopes, natural heave/subsidence, areas prone to landslide, etc.
- Prioritize your on-site interventions to **protect transport corridors, assets, and traffic**

## KEY ASSETS: AIRPORTS, PORTS, DAMS, BRIDGES



The figure above shows 6 years of accumulated deformation at Brisbane Airport. The cross section presents spatial and temporal evolution of the motion along a section of the runway. Images TerraSAR-X ©Airbus

- **Understand the behavior** of your site and infrastructure over time
- Obtain **regular measurement data** to assist in the management of key assets and identify structural issues
- **Optimize long-term maintenance cost**

## URBAN MONITORING – BUILDINGS



The figure shows the impact of tunneling works on nearby buildings. Risk Index for single building is provided. Images TerraSAR-X © Airbus

- **Monitor the impact** of your construction activities on adjacent buildings and infrastructure
- Assess the **structural health of buildings** in zones vulnerable to subsidence, differential settlement, expansive soils etc.
- Obtain **unambiguous evidence** in case of unjustified claims

## REFERENCES

Olympia Odos motorway, Greece  
 HS2 Lot N1-N2 / S1-S2, UK  
 RER EOLE, Paris, France

Westconnex Stage 2, Sydney, Australia  
 Via 40 Express, Columbia  
 Crossrail, London, UK

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