

MARKET-LEADING INTELLIGENCE SOLUTIONS DERIVED FROM SATELLITE, ARIEL AND DRONE IMAGE ANALYSIS



DESIGNED ESPECIALLY FOR THE MINING INDUSTRY

Developed in collaboration with Terra Motion Limited and the University of Nottingham, MotionMonitor provides TSF managers and ESG compliance officers with a platform to access the latest ground movement measurements around their tailings dam facilities.

MotionMonitor works across numerous locations in which it performs regular monitoring in order to identify issues which may have previously gone undetected.

As a privately hosted cloud platform, it is perfect for organisations who want to analyse data in a secure environment and share their results through engaging visualisations.

MotionMonitor provides assistance in damage limitation strategies being implemented or where appropriate, action to prevent failure to be initiated, minimising financial and environmental impact as a direct consequence.

Constant Monitoring...

Providing constant monitoring of TSF dam stability and early warning of potential failure, achieved through satellite-derived time series analysis of ground movement trends.

Unconstrained by Surface ...

Unlike conventional InSAR-based techniques, APSIS provides data over all surface types including urban areas and both natural and vegetated terrain.

Archive Data Access...

Access to open-source satellite data with an archive dating back to 2015. Using data obtained from Sentinel-1, part of the Copernicus constellation.

Unique Data Processing...

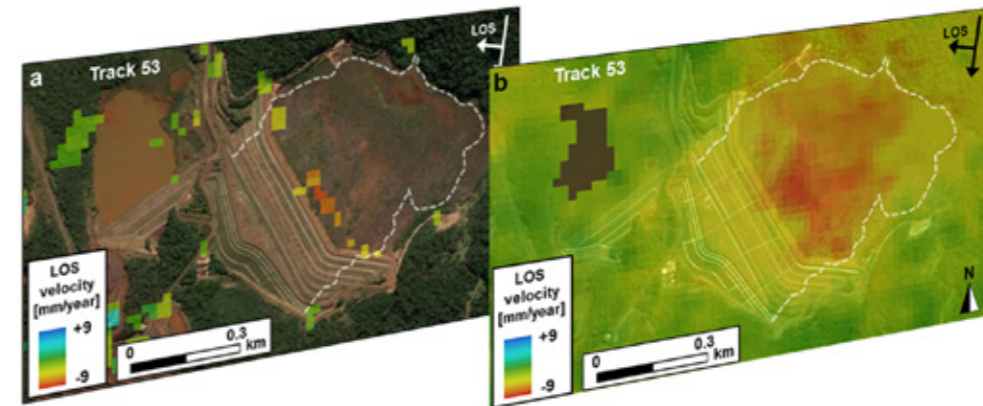
Underpinned by a unique data processing methodology known as APSIS (Advanced Pixel System using ISBAS), developed by Geospatial Insight's partner, Terra Motion.

Entirely Remote...

There is no requirement for associated ground equipment, unlike many other InSAR methods that require artificial corner reflectors to be placed across a site.

High Level Precision...

Millimetric accuracies provide high-level precision and detail, allowing motion to be assessed and monitored, supporting asset management and risk assessment.



Conventional InSAR Coverage (left)
 APSIS™ InSAR Coverage (right)

✓ Detection

✓ Precision

✓ Remote

✓ Accurate

✓ Secure



KEY TECHNICAL POINTS

- Full coverage means the entire spatial extent and dynamics of the motion and risk can be visualised and understood.
- Measures ground stability for both up and down surface movement (subsidence and heave) and across slope surface movement e.g. landslide.
- The millimetric surface movement beneath and surrounding TSF locations can also be viewed via a detailed and to-scale raster layer; highlighting areas with increasing surface subsidence, which may be of concern.
- Information is displays as points over time – colour coded to demonstrate the level of surface movement at a glance.
- The inverse velocity of the site is also determined and displayed over an extended time period and provides a more detailed understanding of the landscape, potentially contributing supporting insight into future surface movement in and around any given location.
- Each point can be interrogated to show a more in-depth understanding of the displacement measurements via a line graph, as well as a short-term and long-term moving average of the displacement.

“We apply advanced technologies, including machine learning, to produce evidence-based risk-relevant data and solutions that enables our clients to make better business decisions”

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