



**We protect humans by monitoring the
health of natural and built environments
using cutting-edge technologies**



→ PhotoMonitoring™



PhotoMonitoring™ is an advanced monitoring technology for the analysis and control of territory and structures developed by NHAZCA.

PhotoMonitoring™ was developed in response to the growing need for real-time monitoring solutions for territory and structures..

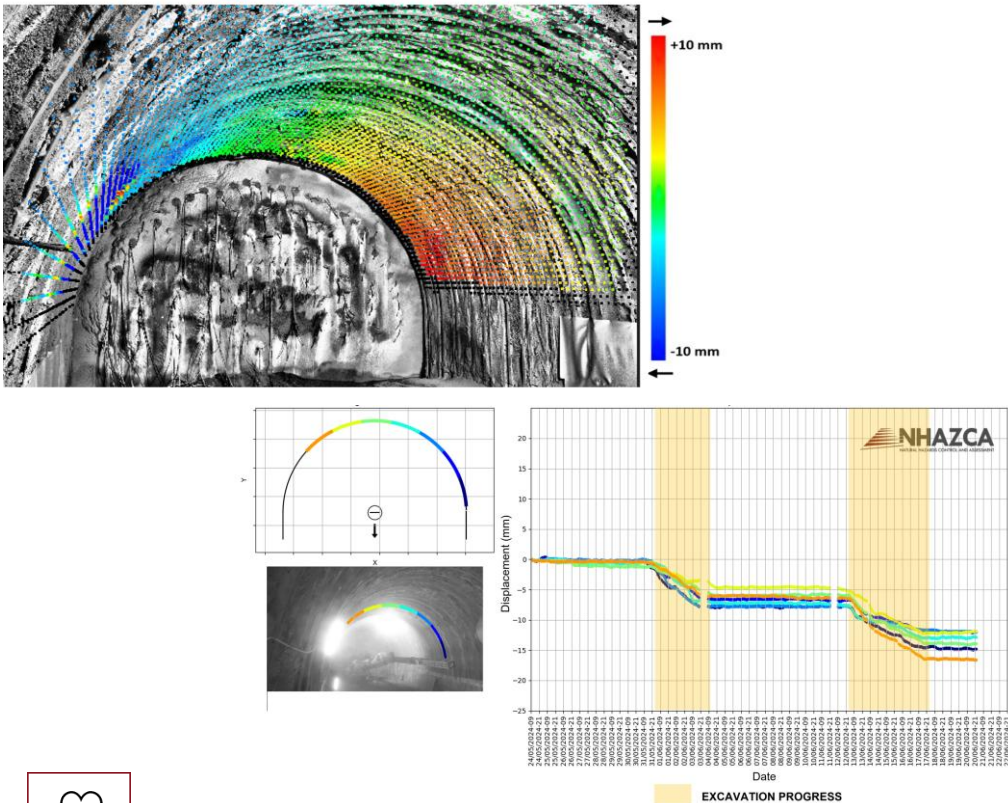
This new investigative methodology is based on a series of advanced image processing algorithms, such as digital image correlation and change detection, to identify variations and displacements with sub-pixel accuracy

Who Can Benefit from PhotoMonitoring™?





PhotoMonitoring™ for Tunnel Convergence Monitoring



- **PhotoMonitoring™ for Tunnel Convergence Monitoring** is an innovative and cost-effective solution for monitoring both existing tunnels and those under construction
- Through the periodic acquisition of images from one or more observation points, it is possible to measure the displacements of the tunnel intrados over time, using both a temporal approach (displacement time series at any visible point in the image) and a spatial approach (full-field displacement maps to reconstruct the overall deformation field)



KEY BENEFITS

No need for physical targets

PhotoMonitoring™ does not require the installation of targets or other objects within the area under investigation

Comprehensive spatial data

The technology shifts from point-based data to spatial data, providing a detailed and comprehensive view of structural deformation

Remote management

The system, which is fully automated and versatile in its configuration, can be managed entirely remotely

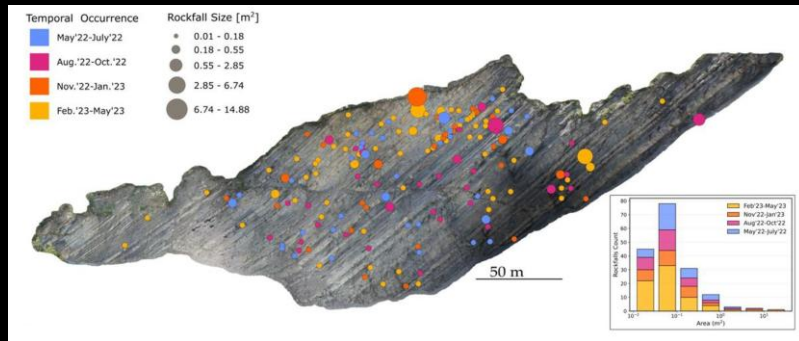


PhotoMonitoring™ for Rockfall Mapping (Rockfall Counter & Mapping)



The rockfall counter and mapping tool is useful for monitoring rock slopes or cliffs affected by rockfalls.

Through the periodic acquisition of images from one or more observation points, it is possible to detect, map and quantify rockfall events, even small ones, identifying the most susceptible areas of the slope



PhotoMonitoring enables the creation of detailed maps showing the distribution and frequency of rockfall events, supporting the development of appropriate preventive or protective measures and enhancing safety in at-risk areas



KEY BENEFITS

No need for physical targets

There is no need to install targets or other objects in the area under investigation

Change maps

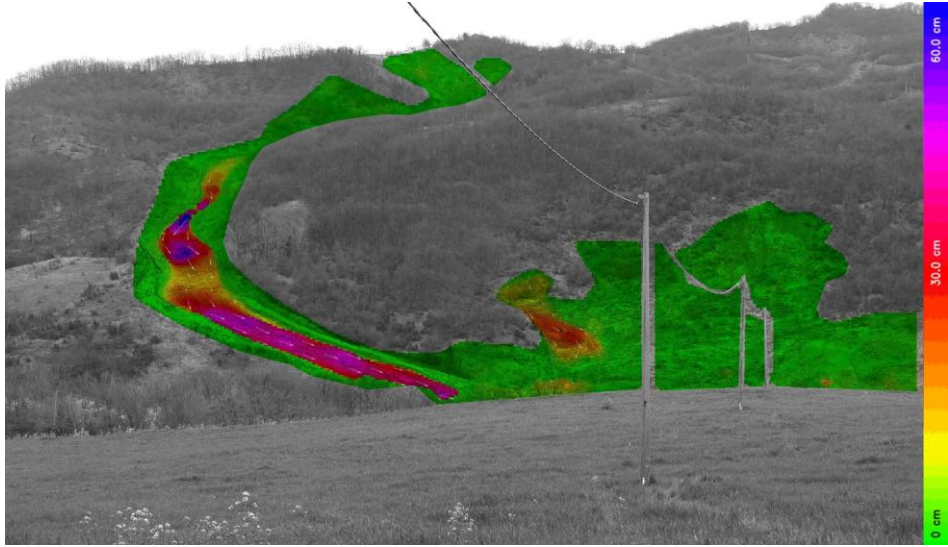
The system generates change maps of the visible portions of the slope or cliff, transitioning from point-based data to spatial data

Fixed observation point

The system uses a fixed observation point, eliminating uncertainty caused by repositioning the instrument for subsequent acquisitions.



PhotoMonitoring™ for landslides (Landslide Rapid Mapping)



|| **PhotoMonitoring™** for rapid landslide mapping, it is an innovative and relatively cost-effective solution to monitor the stability of a slope or cliff affected by landslide events

Using strategically positioned cameras, the system captures high-resolution images from one or more observation points, allowing for the monitoring of ground movements and mapping changes over time



KEY BENEFITS

Access to detailed maps

The system allows you to work on detailed maps of the visible portions of the slope or cliff, transitioning from point-based data to spatial data

Variable acquisition frequency

Users can easily adjust the image acquisition frequency, increasing or decreasing it based on weather conditions

Acting rapidly in Decision-making

PhotoMonitoring™ it serves as a decision-making tool for authorities, enabling them to adopt risk mitigation measures and protect vulnerable areas.

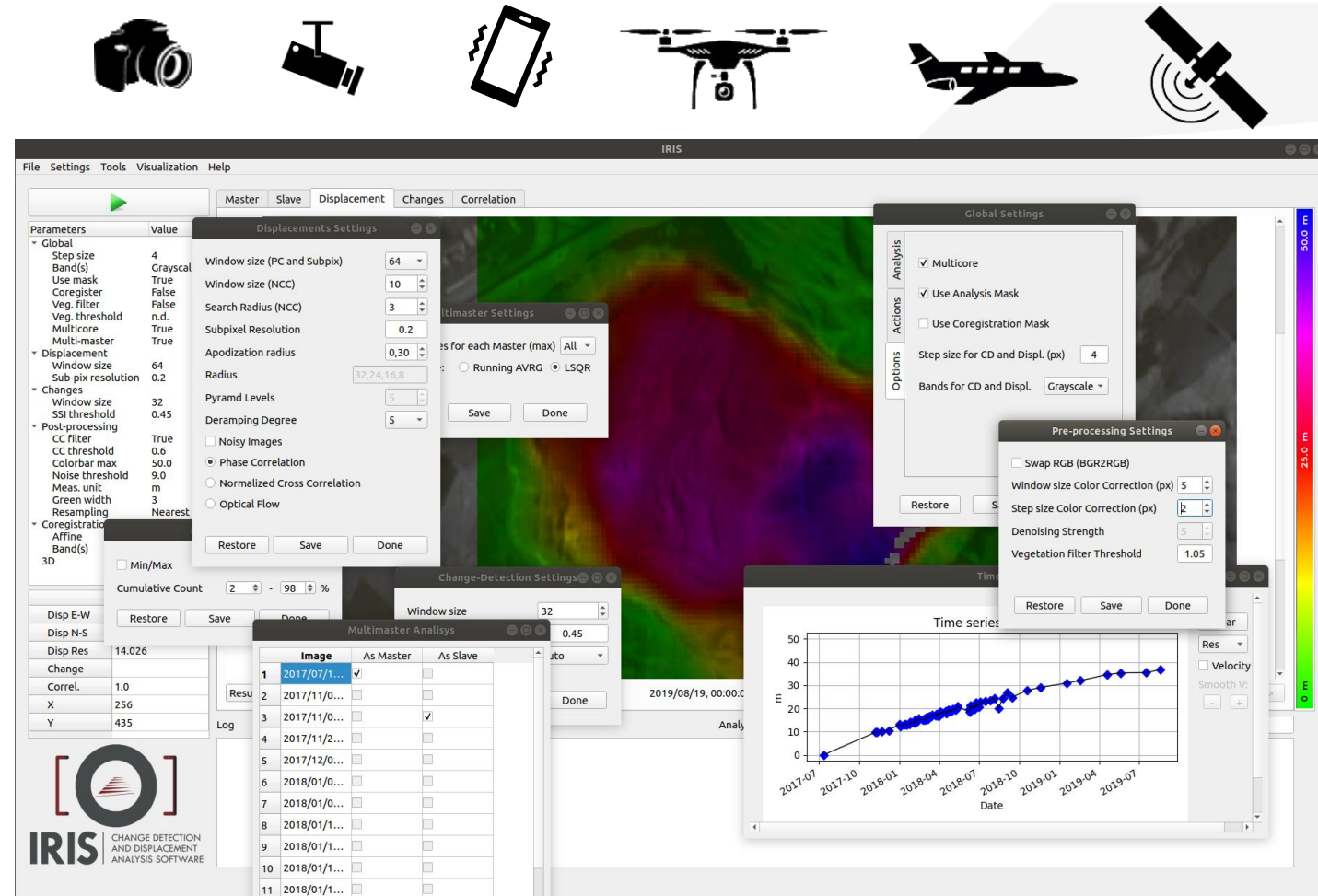
PHOTOMONITORING – IRIS SOFTWARE



IRIS, the new **PHOTOMONITORING** software developed by NHAZCA

Based on advanced image-processing algorithms conceived to analyze data acquired from **ANY TYPE OF PLATFORMS AND SENSORS**

Able to perform stand-alone analysis or **AUTOMATIC MONITORING**



Contacts

Contact us now and revolutionize the safety of your assets

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