

OPMMS[®]

OPEN PIT MINE MONITORING SYSTEM

Preventing Slope Failures Before They Happen

Autonomous LiDAR monitoring to support decision-making, geotechnical analysis, and improve worker safety.



MULTI-AREA MONITORING

Multiple Region of Interest (ROI) at different resolutions



EARLY DETECTION

Identify movement before it becomes a critical issue



SCANS COMPARISON

Use any previous scan as a reference for comparison



AUTOMATIC ALERTS

Email & SMS notifications based on your thresholds



PEOPLE PROTECTION

Monitor hazardous areas remotely and reduce risk



VOLUME COMPUTATION

Extract total volume and cut-and-fill volume

CRITICAL FACTORS



UNDETECTED GROUND MOVEMENT

To prevent accidents in quarries, managers need to monitor ground movements and identify potential hazards before they become critical.



UNSAFE SURVEY CONDITIONS

Highwalls and unstable benches can become inaccessible precisely when accurate measurements are most critical.



LIMITED SITUATIONAL AWARENESS

Many monitoring technologies can detect surface deformation but cannot quantify volume variations or assess large-scale changes.



SLOW DECISION-MAKING

Manual surveys and fragmented datasets delay analysis, reducing the time available to respond before conditions worsen.

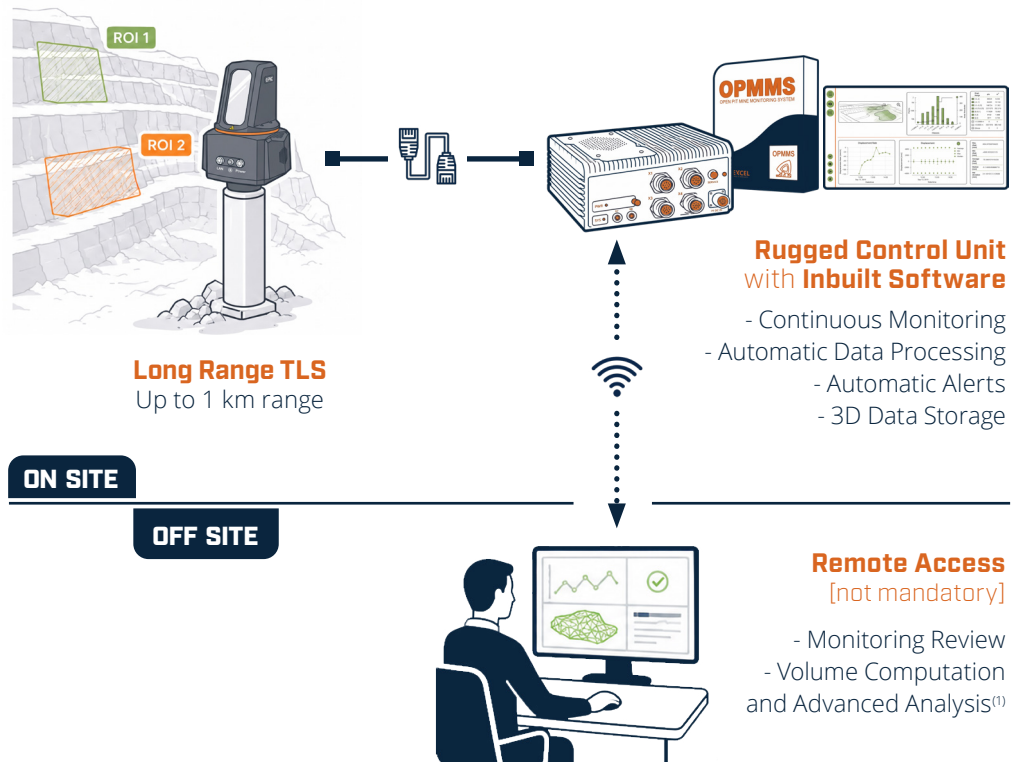


UNEXPECTED PRODUCTION INTERRUPTIONS

Emergency evacuations and unplanned equipment shutdowns can significantly impact productivity and operational costs.

A SEAMLESS, AUTOMATED MONITORING WORKFLOW

OPMMS[®] CONFIGURATION



Rugged Control Unit with Inbuilt Software

- Continuous Monitoring
- Automatic Data Processing
- Automatic Alerts
- 3D Data Storage

Remote Access [not mandatory]

- Monitoring Review
- Volume Computation and Advanced Analysis⁽¹⁾



KEY CAPABILITIES



Continuous 24/7 Monitoring

Autonomous data acquisition in harsh environment



Automatic Alerts in Near-Real-Time

Email and SMS notifications based on defined thresholds⁽²⁾



Multi-Area Monitoring

Multiple Region of Interest (ROI) at different resolutions⁽³⁾



Target-Less Setup

No prisms, reflectors or control points required



Flexible Scanning Frequency

Customize based on risk level and operational needs



Historical Comparisons

Use any previous scan as the reference for comparison



Automatic Change Detection

Centimeter-level change detection over large areas



Masking Function

Exclude moving objects (vehicles, equipment, vegetation)



Remote Access

View changes and manage the system from anywhere⁽⁴⁾



Secure Data Management

Reliable storage of scans and monitoring data

BUILT FOR...



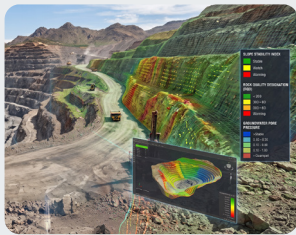
SLOPE STABILITY ANALYSIS



LANDSLIDE MONITORING

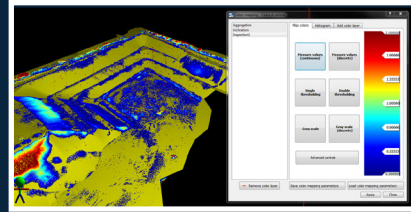


QUARRY ACTIVITY SUPPORT



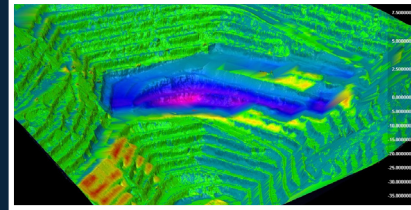
GEOTECHNICAL SUPPORT

ADVANCED ANALYSIS



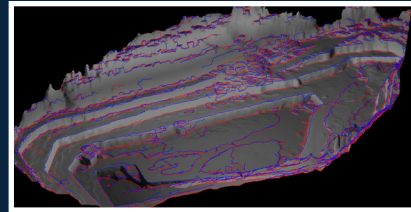
DISPLACEMENT & DEFORMATION ANALYSIS

Identification and tracking of unstable zones over time.



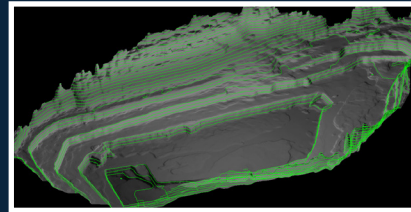
VOLUME COMPUTATION

Total volume and cut-and-fill volume extraction.



BREAKLINE DETECTION

3D polyline extraction for crest and toe delineation.



CONTOUR & PROFILE GENERATION

Automatic extraction of contour lines and terrain profiles.

INTEGRATES WITH YOUR ECOSYSTEM

OPMMS® can work with industry-leading software and platforms.

Add Reconstructor® software and get

- automatic targetless registration (cloud-to-cloud, cloud-to-mesh, mesh-to-mesh)
- DEM creation
- profiles and contours creation
- breaklines extraction
- cut-and-fill automatic volume computation
- **third-party tools and cloud platforms compatibility**
- **open data formats for maximum flexibility**

(1) Advanced 3D data analysis is available with the optional Reconstructor® software.

(2) Email alerts are included, SMS alerts are available on request and depend on the availability of a local SMS service provider. Subscription and messaging fees are not included.

(3) ROI (Region of Interest): User-defined rectangular areas where the LiDAR periodically acquires 3D data.

(4) Remote access to the OPMMS® Control Unit can be configured to allow users to view monitoring results from remote PCs connected to the same subnet.

OPMMS® helps improve open-pit mine management and worker safety.

Discover more. Contact Us.



Gexcel Srl
Headquarters: Brescia, Italy
www.gexcel.it | sales@gexcel.it

LOCAL DEALER CONTACTS

© Gexcel. All rights reserved. OPMMS and Reconstructor are Gexcel trademarks. All other trademarks mentioned belong to their respective owners. The use of trade names is for informational purposes only and does not imply any affiliation with or endorsement by the trademark holders. This document is intended for informational purposes only. Gexcel maintains the right to make changes to specifications and other information in this document at any time without prior notice.