OPEN PIT MINE MONITORING SYSTEM

OPMMS is a laser-measurement-based monitoring system for automatic and manual long-range profiling of open pits' slopes and surfaces and other mining applications.

OPMMS continuously performs remote scanning from predefined permanent locations automatically comparing the acquired scans to a reference one, and detecting displacements and changes. Manual on-the-fly analysis and output (statistics, inspection maps, classification charts, displacement and displacement rate graphs over time interval) are possible inside the inspected area. Alerts and customizable notifications by E-mail included.

OPMMS is an all-in-one solution composed of a Teledyne M3 or POLARIS terrestrial laser scanner fully controlled by processing software embedded on a dedicated rugged PC.

OPMMS is an all-in-one solution composed of:
• Long-range laser scanner (Teledyne M3 or POLARIS)
• Fully rugged PC
• Embedded software

OPMMS compares the acquired scans to a reference one and detects displacements and changes. Full control of acquisitions frequency.

OPMMS gives you the possibility to create a permanent setup with multiple regions of interest (ROI) at different resolutions.

OPMMS allows further data investigations, such as volumetric computations or planning and analysis of excavation processes.

GEXCEL
GEOMATICS & EXCELLENCE

BENEFITS

Keep under control movements of surfaces
Customize monitoring frequency and set notification thresholds, identify trends and watch multiple areas. Automatic notifications via E-mail and SMS when user-defined thresholds are overtaken.

Manage risk and safeguard workers, underlying potential dangerous areas
Safely survey pit high walls, rock falls, landslides, and glaciers. Risky areas are reported to the supervisors who can plan further onsite analysis with geotechnical teams, engineers and topographic surveyors.

Check mines productivity
Compare change detection and displacement measurements with respect to a reference scan. Extract slope and surface sections in user-defined areas. Get accurate volume computations and 3D models.

STRENGTHS

- Automatic slope monitoring.
- Alert notifications via E-mail and SMS.
- Full control of Teledyne M3 and POLARIS laser scanners.
- Intuitive setting of workflow.
- No external reference targets required.
- Multiple ROIs setting to watch multiple areas.
- Reference scans can be fixed along the monitoring session, chosen from an interactive timeline of acquisitions.
- Comprehensive dashboard with changes statistics and trends.
- Safe storage of monitoring 3D data.
- Direct connection with tools for deferred analyses (volumetric computations, profiles, cross-sections).

TECHNICAL SPECIFICATIONS

- Long range laser scanner control to schedule acquisitions over time.
- Automatic identification of changes in multiple ROIs[1] based on user defined thresholds.
- Changed areas display, supported by displacement and displacement rate graphs over time interval.
- E-mail and SMS[2] alert notifications when changes overcomes the user-defined thresholds.
- Remote access to the changed areas display[3].
- Mask function to exclude areas where vehicles, objects or people can interfere with the change detection.
- Laser scanner operations and internal status such as the temperature, battery level, power, and network connection are showed in real-time.
- Customizable scheduler function to run periodical lidar acquisitions.
- Possibility to insert intermediate reference scans along the time sequence.
- Monitoring session management: reviewable archive of monitoring sequences in time.
- Possibility to setup multi monitoring ROIs.
- Configurable thresholds and alerts.
- Automatic alignment between sequential scans (external control points are not required).
- Deferred analysis tools (profiles, sections, areas, volumes) for the lidar scans archived by OPMMS (direct connection to Reconstructor software).
- Reliable storage of the internal database and 3D scans.

(1) ROI: region of interest, rectangular viewpoints where the lidar periodically acquires 3D data.
(2) E-mail alerts included. Alert text messages are provided on-demand and subject to the availability of a text messaging local service provider. Subscription fees and traffic costs are not included.
(3) Possibility to set up remote access to the OPMMS control unit to display the changes from remote PCs connected to the same subnet.

MAIN APPLICATIONS

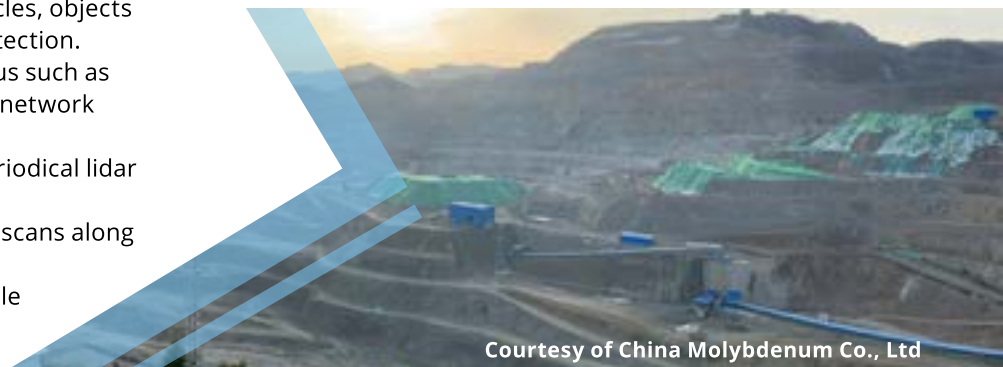Automatic Long-range Profiling · Automatic Alerts · Production Planning · Landslides Monitoring · Rock Falls Control · Volumetric Computations · Workers' Safety · Blasting Analysis · Rock Movements

Courtesy of China Molybdenum Co., Ltd

Reconstructor® ADD-ON
Advanced 3D point cloud analysis software
You can add Reconstructor to your OPMMS and get:
- Complete post-processing workflow for Lidar data from tripod, handheld, mobile sensors and UAV 3D point cloud.
- Powerful automatic target-less scans registration.
- Data export in several standard formats
- Full compatibility with several third-party software and cloud platforms.
- Point cloud editing, color camera calibration, mesh and DTM generation, volume/cut&fill volume calculations, cross-sections and profiles extraction.

GEXCEL
GEOMATICS & EXCELLENCE

Official distributor contact: