Maptek Sentry Now Monitors Ground Movement in Cold Climates

Maptek has released a cold climate model of its award-winning mobile Sentry system for stability monitoring. The system allows for continuous, reliable measurements of ground movement, irrespective of the environment.

“Risk management remains a priority,” said Product Manager, James Howarth. “If anything, the reliable operation of technical equipment is even more critical in extreme conditions. Climate factors play an important role in the execution of any mining project. Extremely low-temperature conditions require considerable planning and logistics, especially from an operator safety perspective.”

Maptek Sentry is a mobile remote monitoring system that uses laser scanning to continuously measure ground movement with extremely fine spatial resolution and accuracy. Housed in a self-contained unit with autonomous power and communications capabilities, Sentry relies on sophisticated software to monitor, analyse and report in real-time.

The Sentry system can operate continuously from -20°C to +50°C, with operation for a limited time in temperatures below -20°C. It requires an XR3 cold climate laser scanner, which has been redesigned and tested to operate at these low temperatures. A removable neoprene jacket for the scanner provides extra protection against wind chill.

Maptek redesigned all the major components in the standard temperature Sentry mobile system, with significant changes to achieve the required cold climate specifications.

In deep cold weather, the charge acceptance of batteries is very low. Keeping batteries warm maximizes power output and the ability to accept a charge. The battery pack and housing in the Sentry system has been redesigned and insulated to keep the unit at a stable operating temperature. Other built-ins such as a generator, hydraulics and electrical systems were adapted to maintain energy efficient, cost-effective operation.

“What hasn’t changed is the proven capability to monitor multiple areas,” added Howarth. “Continuous remote monitoring ensures that despite conditions, mines can keep operating with the confidence that personnel and equipment are safe.”

The 3D point cloud data that has been collected while monitoring can be used for geotechnical analysis and other applications. The Maptek laser scanner can also be redeployed from the monitoring for routine survey tasks.