Remote Monitoring for Mining

Precise, robust technology for safer, more efficient mining

Proactive risk management: near real-time updates and automated alerts

Low power, long life: safer, more affordable monitoring

Fast and flexible: quick to install and easy to adapt and expand

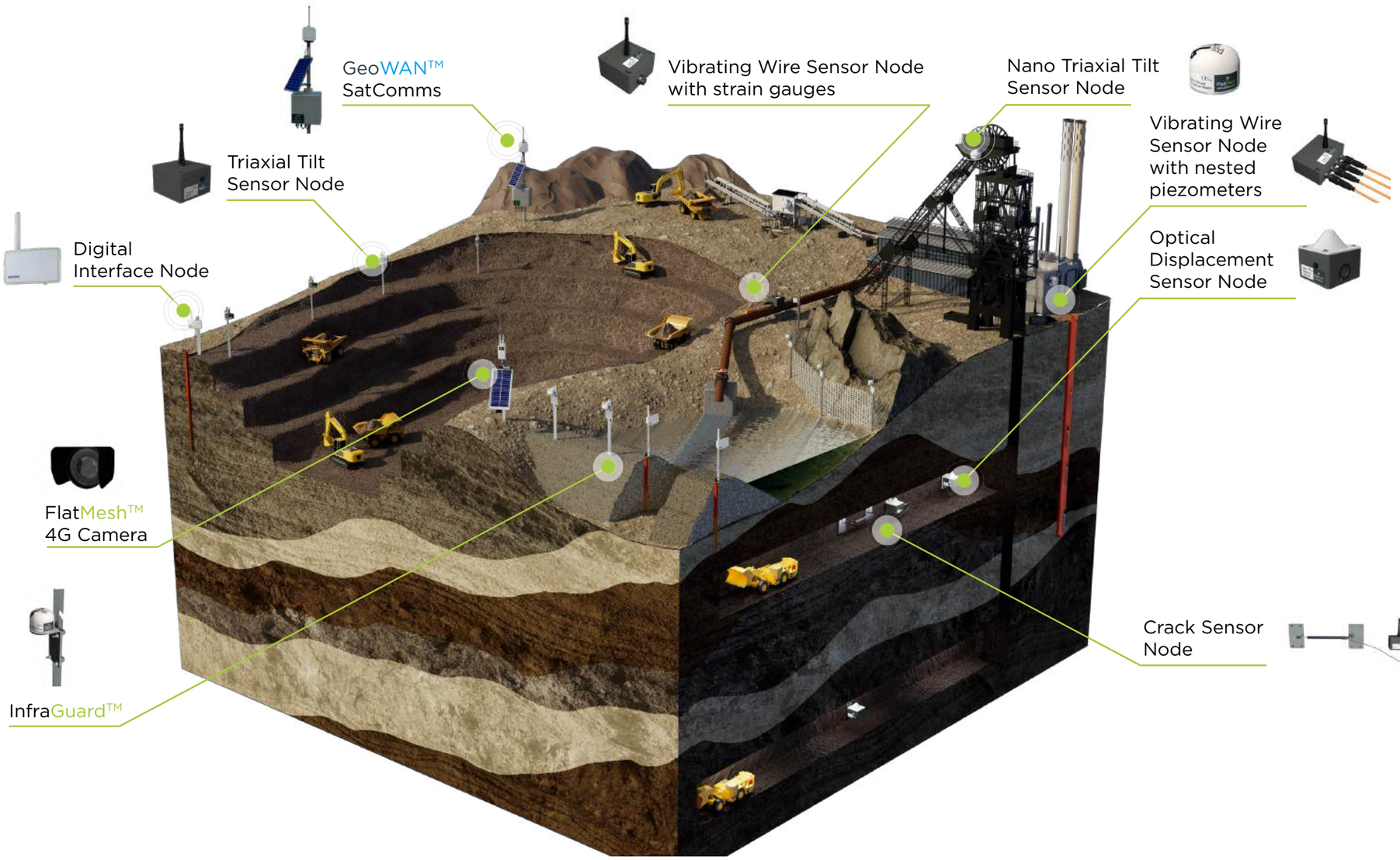
FlatMesh™ for fast response and dense networks with a mix of sensor types

GeoWAN™ for long-range range monitoring

infraGuard™ for sudden event detection and automated cameras

SUB-EIGHT TECHNOLOGIES

Senceive
Wireless condition monitoring



InfraGuard™
Intelligent FlatMesh™ tilt sensors mounted on stakes detect rotational movement. They detect incremental deformation as well as sudden events as they happen, regardless of the pre-set sampling schedule. When a camera is integrated, users get scheduled photos, as well as immediate photos during sudden events.

FlatMesh™ 4G Camera
The solar-powered 4G Camera can take high quality black and white photos of your site day or night. It can be set to take photos at regular intervals, on demand, or when triggered by movements detected in nearby sensors.

Digital Interface Node
This wireless digital data logger is compatible with a large variety of sensors that carry a digital output and enables a simple connection to the Senceive back-end & front-end platforms. Interact and manage your data online and change reporting times and thresholds remotely.

Triaxial Tilt Sensor Node
GeoWAN™ wireless tilt sensors mounted on stakes to detect rotational ground movement. They send scheduled data updates and can trigger automated alarms when thresholds are breached.

GeoWAN™ SatComms
The GeoWAN™ Satellite Communications system can provide communication to remote locations with no cellular signal and enables a user to operate a GeoWAN™ wireless sensor network.

Vibrating Wire Sensor Node with strain gauges
The Vibrating Wire Sensor Node supports a variety of interface sensors such as crack or strain gauges and extensometers. Here it is connected to a strain gauge.

Nano Triaxial Tilt Sensor Node
The FlatMesh™ Nano is a wireless tilt meter for precise measurement of rotational movement in a compact, robust enclosure. With no external antenna, the Nano is ideal for the most challenging environments. It offers NFC for user-interaction.

Vibrating Wire Sensor Node with nested piezometers
An interface node that supports a variety of sensors such as crack or strain gauges and extensometers and piezometers.

Optical Displacement Sensor Node
The ODS combines a tilt meter and a laser displacement sensor. Together, they provide information about the stability of the structure the sensor is fixed to and the relative movement of a target structure.

Crack Sensor Node
The Crack Sensor Node is used to monitor structural movement including pile separation, crack movement and expansion joint movement.

Example Projects

Volakas Marble Quarry, Greece
Open pit and underground monitoring at one of the world's biggest white marble mines:

- Integrated structural and geotechnical monitoring solution - including slope stability above the surface and profile (convergence / divergence) in the underground workings
- Sensors included Optical Displacement Sensor (comprising laser displacement and tilt sensors), and wireless crack sensor
- GeoWAN™ long-range comms platform proved ideal for big site with patchy 4G coverage.

Mt Carlton, Australia
Monitoring pit wall and tailings dam deformation:

- Integrated solution including tilt sensors and piezometers
- Variable thresholds and reporting frequencies based on asset risk
- Enabled proactive risk management and early intervention with reduced need for manual surveys.

Senceive

Senceive users can choose the right wireless comms platform for their application. The intelligent FlatMesh™ platform provides highly responsive monitoring built on a robust mesh network connecting a high density of sensors of mixed types, with reporting at sub-minute intervals. The GeoWAN™ platform is the logical choice for longer-range deployments, where sensors can be located up to 15km from a Gateway.

Applications include the use of wireless tilt meters to monitor the stability and safety of slopes. Tailing dam integrity can be monitored using a range of instruments at the surface and deployed in boreholes to measure movement and conditions such as water pressure that can provide early warning of instability.

Innovative solutions such as InfraGuard™ can be deployed on slopes to send you alerts of small-scale movement that could indicate the early signs of a failure, with graded alerts of further movement, backed-up by photographic images.

Below ground, a combination of wireless monitoring sensors including optical displacement sensors and tilt meters can provide insight on tunnel convergence and divergence.

Senceive
Wireless condition monitoring

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