

## TECHNICAL SPECIFICATIONS

Accuracy	+/- 0.1 mm (l.o.s.)
Spatial resolution	Range: 0.5 m Cross Range: 4.4 mrad (@1 km 0.5 m by 4.4 m; @2 km 0.5 m by 8.8 m)
Area Coverage	Extremely broad (e.g. @ 2 km an area around 5 km <sup>2</sup> )
Operating range	10 m to 4000 m
Operating temperature	-20°C to +55°C
Scan time	<6 min
Power consumption	<100 W
Radio frequency exposure (radiated power)	TBC, 0.400 W
Weight	<250 Kg, depending on the version
Environment	IP65

## SOFTWARE SPECIFICATIONS

<b>IBIS CONTROLLER</b> ACQUISITION & SYSTEM MANAGEMENT SOFTWARE	Acquisition parameter setting Data storage management Power supply control Status Information First result rendering Preliminary data processing Transfer data tools
<b>IBIS GUARDIAN</b> REAL TIME PROCESSING, DATA INTERPRETATION & EARLY WAR- NING SOFTWARE	Real-time processing Automatic Atmospherics Correction Alarm generation with user-defined levels Multiple alarm criteria based on area definition User-defined zones for alarm generation 3D interactive data handling Fully georeferenced results Output exportation to mine planning packages External DTM importation Processing of discontinuous datasets Status information



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MINING

# IBIS-M

Supporting the forecast of wall movement



IBIS-M features new radar technology designed to optimise mine safety and productivity

IDS: Leaders in Interferometric Radar for  
 environmental and civil engineering applications



# IBIS-M

## APPLICATIONS

As open-pit mines get deeper massive slope failures can occur with little warning. IDS introduces an advanced solution able to:

- Continuously monitor (24x7) mine wall movements with sub-millimetric accuracy from distances up to 4 Km.
- Provide reliable early warning for progressive slope movements that potentially lead to failure of mine walls.
- Map the long term evolution of slow moving slopes



## BENEFITS

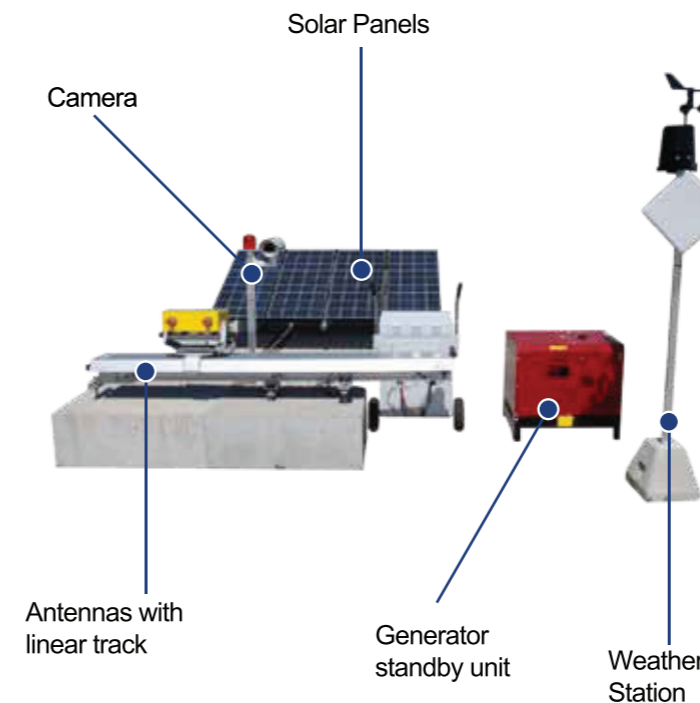
IBIS-M introduces an innovative technology setting new monitoring standards.

Having an on site IBIS-M unit provides:

- Safety improvements for personnel and equipment
- Reduced production delays due to slope instability warnings
- A better knowledge of the rock mass strength through long term monitoring
- **Limited personnel needed to operate the radar** thanks to the long working range (no need to move IBIS-M during blasting)
- **Broad picture of the pit walls** through the large area coverage
- **Simultaneously tracking of fast and slow moving portions of the slope** through long term acquisitions
- **High robustness reducing service disruptions** thanks to the limited moving parts and the low power consumption
- **Improved timing of alarm capabilities** thanks to higher spatial resolution and faster scan time
- **Low false alarm rate** thanks to the innovative radar technology
- **Easy to use results**, fully georeferenced outputs and exportable to mine planning packages
- **Adds-on solution:** from basic to premium configurations
- **Full suite of services:** helpdesk, on site support, remote control service and selection of support options.



## COMPOSITION



## SOFTWARE FEATURES

GUARDIAN is advanced software dedicated to the real-time processing of IBIS-M data, with specific tools for the interpretation of results and alarm generation. Key features:

- Real time processing with automatic atmospheric corrections
- Alarm generation with user-defined levels and multiple alarm criteria
- Processing of discontinuous data sets (through re-positioning of the system)
- Fully georeferenced outputs
- 3D interactive data handling
- User defined zones in alarm generation
- Exportability of outputs to mine planning software

## FEATURES

IDS endowed IBIS-M with a suite of advanced technologies designed to overcome the limitations of traditional slope radar systems, this new technology offers the market the following leading edge features:

- Highest spatial resolution available on the market (@1 km 0.5 x 4.4 m resolution cell), resulting in a smaller detectable area of failure.
- Longest operating range: from 10 m to 4000 m.
- Extremely broad coverage of the pit walls (e.g. @ 2 km an area around 5 km<sup>2</sup>)
- Acquisition time: minutes for a full resolution scan at long range (@2 km 5 minutes)
- Long term monitoring through permanent installations out of blasting restricted areas or precise re-positioning of the system
- Fully self powered operation by using solar panels plus batteries, turning to a diesel generator only as a back-up
- High service availability thanks to limited moving parts and low maintenance needed
- Fully remote operation through a wire-less radio link.
- Advanced atmospheric estimation: automatic correction of atmospheric
- Fully tested in harsh mining environments with extreme dust, rainfall, fog and wind and at high altitudes.
- Adds on configurations: modular solution with selectable tools depending on the user's needs.

