

# IBIS-FM

Real-time critical monitoring and long term planning at great operating distance

**IDS Ingegneria Dei Sistemi S.p.A.**  
GeoRadar Division, Via Enrica Calabresi 24, 56121 Pisa (PI) Italy  
Tel. +39 050 31241 Fax +39 050 3124201  
georadarsales@idscorporation.com

**IDS Brasil Engenharia de Sistemas Ltda.**  
Av. Paulista, 2300L, Andar Pilotis,  
CEP 01310-300 São Paulo – SP / Brasil  
Tel. +55 11 3060 9364 Fax +55 11 3060 9364  
idsbr@idscorporation.com

**IDS Brasil Engenharia de Sistemas Ltda. Belo Horizonte**  
Av. Prof. Mario Werneck, 26  
Conjto 503 Belo Horizonte - MG, Brazil, CEP 30455-610  
Tel. +55 31 3286 1195 Fax +55 31 3286 1195  
idsbr@idscorporation.com

**IDS North America Ltd.**  
155 Terence Matthews Cres. Ottawa, Ontario K2M 2A8 Canada  
Tel. +1 613 591-0500 Fax +1 613 591-0981  
idsna@idscorporation.com

**IDSNA, Inc.**  
14828 W 6th Ave., Suite 12-B, Golden, CO 80401,USA  
Phone: + 1 303 232 3047 Fax: + 1 720 519 1087  
idsna@idscorporation.com

**IDS Australasia Pty Ltd.**  
Unit 5, 3-5 Hinkler Court, Brendale, Queensland, Australia, 4500  
Tel. +61 7 3205 5524 Fax 61 7 3205 5536  
idsau@idscorporation.com

**IDS Australasia Pty Ltd, Perth**  
Unit 8, 3 La Fayette Boulevard, Bibra Lake, Western Australia, Australia 6163  
Tel: +61 8 9418 8719 Fax: +61 7 320 55536  
idsau@idscorporation.com



MODULAR LONG-RANGE RAPID SCAN SYNTHETIC APERTURE RADAR



## Developed in mines for mining

IBIS-FM is the first Synthetic Aperture Radar developed and designed specifically for real-time monitoring of mine walls. Every detail has been finely tuned to meet the demanding requirements of harsh mining environments. Constant collaboration with mining professionals ensures consistent improvements in technology and updates.

## Full coverage in time and space

The extremely high resolution and the proprietary multi-scale processing engine ensures that IBIS-FM accurately measures multiple scales of displacements ranging from sub-bench to overall slope movements, fast accelerations associated with the risk of collapse (cm/h) and early detection of very slow movements (mm/month) in support of mine planning and mitigation strategies. All in real time.

## Maximum output, with minimal input

IBIS technology is capable of providing reliable displacement data with sub-millimetric accuracy, made possible by employing the most advanced automatic atmospheric correction algorithm available on the market today, able to adapt in real time to all the sudden weather changes typical of extreme mining conditions, even in the most challenging climates. All with no user input required.

## Full-pit complete situation awareness

Integration of two or more IBIS systems with the FPM360 platform enables users to exploit the unique full-pit monitoring capability. The user is provided with a real-time universal view of the pit by stitching together multiple IBIS radar datasets in a single integrated visual platform, for complete management of slope pit hazards and perfect control of rock behavior. FPM360 reduces workload by removing the need to reproduce the same tasks on multiple workstations.

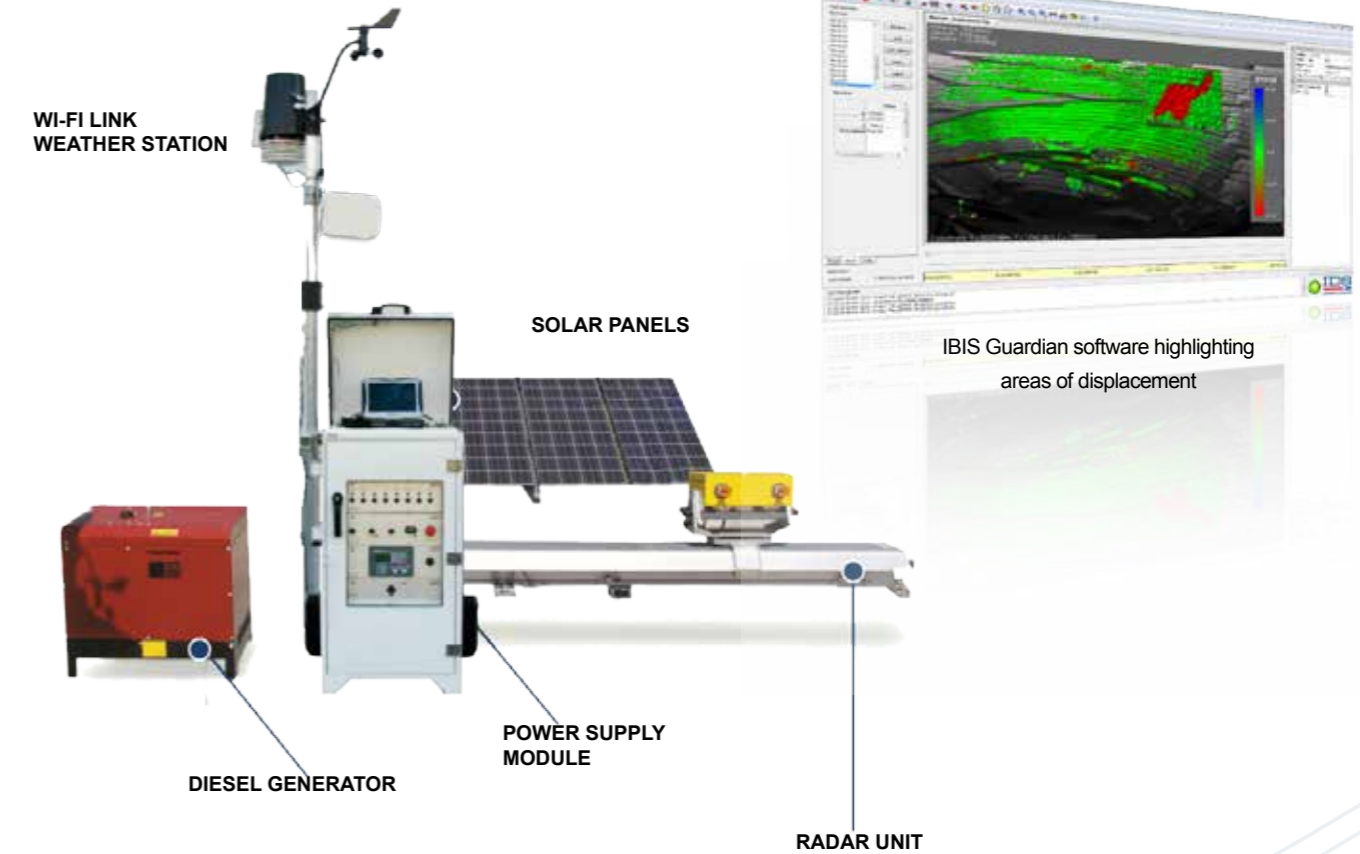
## Professional design and top class availability

R&D and production of IBIS radars is performed completely in-house. This ensures that our customers are provided with the highest technological standards, with the maximum flexibility to move through the design and troubleshooting phases quickly and easily in order to deliver an unrivalled operational availability and the lowest maintenance costs on the market.

## Be focused, we do the rest

IDS's international network of professional engineers is able to provide a world class maintenance service: training, and complete 24/7 after-sales support, even in the most remote locations in the world.

## Modular Composition

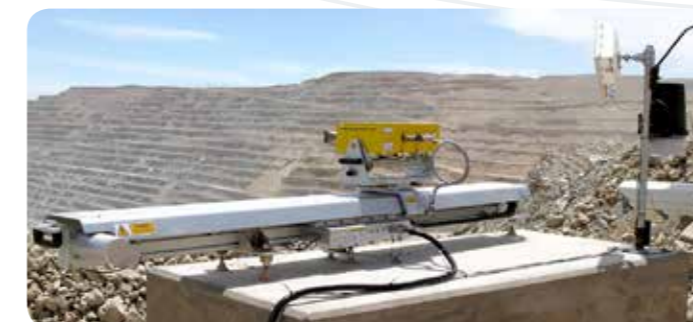


## Hardware features

- High spatial resolution (0.5 x 4.4m resolution cell at 1000m)
- Long operating range (from 10m to 4500m)
- Rapid scan time (3 minutes)
- Broad area coverage (around 5000m<sup>2</sup> at 2000m)
- Fully remote operation (wireless radio link) and optimized file size for low bandwidth
- Self-powering option using a combination of solar panels and batteries, with back-up diesel generator
- Operates in all weather conditions and temperatures (-25/-50°C\* to 55°C)

## Software features

- Alarm generation with user-defined levels and multiple alarm criteria
- One-touch project setup with automatic geocoding
- Zero delays in data processing and alarm generation, providing a seamless workflow for immediate user reaction
- 3D interactive data handling and fully georeferenced output
- Exportability of output to most mine planning software suites and the possibility to import digital layers
- Built-in geotechnical analysis tools



\*Indoor

## APPLICATIONS

- Safety critical monitoring (rapid displacements)
- Early detection of slow movements in support of mine planning and geotechnical analysis
- Long-term continuous monitoring (long-term datasets within a single project)
- Long-range (4500m) broad area coverage
- Tailings dam and waste dump monitoring

## BENEFITS

- One technology for tactical and strategic monitoring with full-scale coverage in time and space
- The most advanced automatic atmospheric correction, able to react to sudden changes of atmosphere. No stable areas required and data is available from the second scan
- Set-and-forget semi-permanent installation (indoor/outdoor)
- Proven high in-service availability: limited number of moving parts and low maintenance requirements (minimum downtime)
- Modular composition with optional tools available to fulfil the specific requirements of end users
- Common hardware components and critical parts shared among all IBIS radars, providing cost savings and quick troubleshooting
- Integration with the FPM360 full pit monitoring network