

## HYDRA-G

Interferometric Radar for Real-Time Monitoring of  
Civil Structures and Cut-Slopes



High-resolution radar system for early warning and real-time monitoring of buildings, dams, tunnels, mining infrastructures, and cut-slopes.

IDS GeoRadar: Innovative Interferometric Radar for Environmental and Civil Engineering Applications

[www.idsgeoradar.com](http://www.idsgeoradar.com)

**REMOTE SENSING MONITORING**

HYDRA-G is a compact, **remote sensing monitoring system** designed for early warning and real-time measurements of sub-millimetric displacements in buildings, dams, tunnels, mining infrastructures, and cut-slopes.

**REAL TIME REPORTS AND ALERTS**

HYDRA-G is able to provide **real-time monitoring** of civil structures and cut-slopes deformations and trigger **early-warning alerts in case of impending collapses to evacuate people and machinery at-risk.**

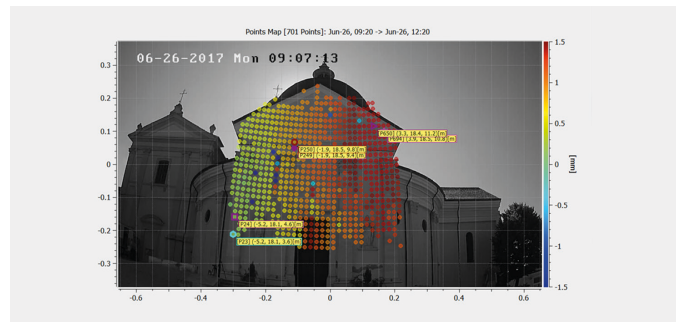
**PERFORMANCE FOR CRITICAL DECISIONS**

With a scan range up to 800 metres, the system provides the **high-accuracy and resolution radar technology.** HYDRA-G exploits the cutting-edge ArcSAR technology, providing a **spatial resolution of centimetres** with updated displacement information every 30 seconds.

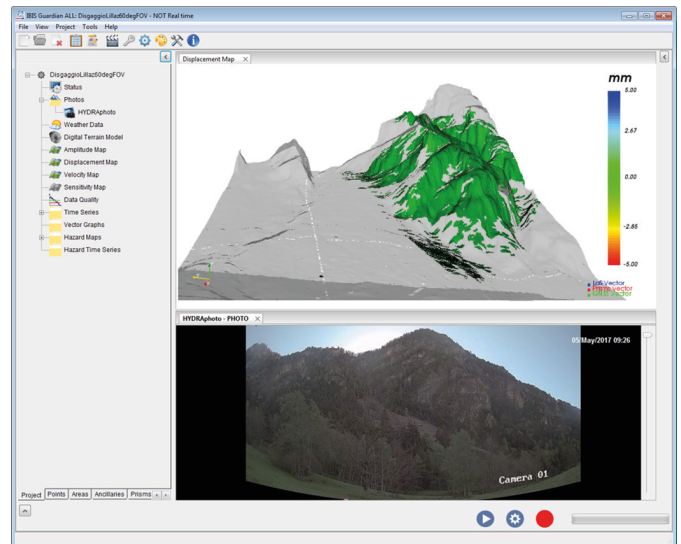
**INFORMATION AT A GLANCE**

An **optical and infrared HD camera** provides real-time visual inspection of monitored areas, and radar data are draped on a **3D model** of the scene created by the built-in laser.

The industry-leading HYDRA Guardian software provides an easy-to-use and powerful tool to visualize and interpret radar data, and perform **analysis of displacement trends of structure and cut-slope movements.** Moreover, SurfScan is a dedicated, **real-time building displacement and deformation analysis** software.



Building monitoring: real-time tracking of thousands of points in the monitored scenario



Cut-slope monitoring: displacement map and picture of the area

**BENEFITS**



**Non-intrusive technology:** no pointers or devices to be installed on the target.



**Fast acquisition rate:** 30 seconds for a full resolution scan.



**On-site results:** data provided in real time with instant processing.



**Compact and portable solution:** easily transportable from a location to another and installed by one single person.



**Hyper spatial resolution:** to detect even the smallest displacement with sub-millimetric displacement accuracy.



**Short range and large angular coverage capability:** to track in real-time thousands of points in the monitored scenario.



**3D representation and visual imaging:** to ease data interpretation of the monitored area.

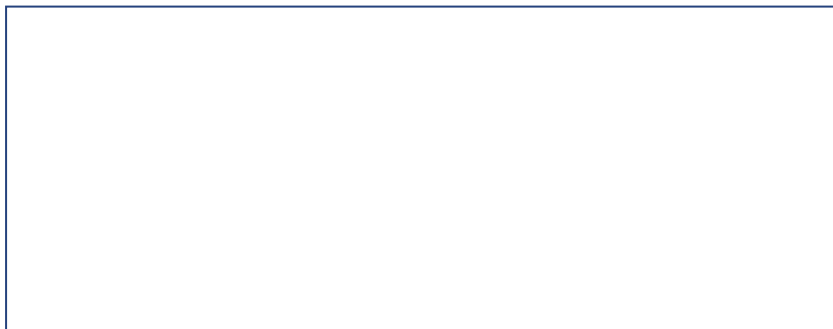


**High availability with low maintenance costs:** minimal moving parts and low profile design to guarantee robustness and maximum availability in harsh environmental conditions.

**MODULAR COMPOSITION**



TECHNICAL SPECIFICATIONS		SOFTWARE SPECIFICATIONS	
ACCURACY	<0.1mm (Line of Sight.)	<b>HYDRA Controller:</b> Acquisition & system management software	<ul style="list-style-type: none"> <li>Acquisition configuration and management</li> <li>Status information</li> <li>Preliminary data processing</li> </ul>
SPATIAL RESOLUTION	Range 0.2 m, Azimuth: 8 mrad @10 m, 0.2 m by 0.08 m @100 m, 0.2 m by 0.80 m @500 m, 0.2 m by 4.00 m		
MAX OPERATING RANGE	200 m (Low Power configuration) 800 m (High Power configuration)	<b>HYDRA Guardian:</b> Real time processing, data interpretation & early warning software	<ul style="list-style-type: none"> <li>Automatic atmospheric correction</li> <li>Alarm generation with user defined levels</li> <li>Multiple alarm criteria based on area definition</li> <li>Email and SMS alarm forwarding</li> <li>3D interactive data handling</li> <li>Output exportation to external software (GIS)</li> <li>External DTM importation</li> </ul>
FIELD OF VIEW	Up to 120° (Horizontal) x 30° (Vertical)		
OPERATING TEMPERATURE	-20°C to +55°C		
ACQUISITION TIME INTERVAL	30 seconds		
POWER CONSUMPTION	100W		
SUPPLY	110/220 V AC - 12/24 V DC		
SUPPLY AUTONOMY	2 hours without mains power		
ENVIRONMENT	IP65	<b>SurfScan:</b> 3D building monitoring software	<ul style="list-style-type: none"> <li>Single point of control for the complete monitoring system</li> <li>Customizable scanned area selection</li> <li>Point mapping over camera picture for easy data interpretation</li> <li>Quick campaign set-up procedure</li> <li>Flexible time series analysis panel for both real-time and post campaign analysis and reporting</li> <li>Easy report generation</li> </ul>
		The software is also suited for the monitoring of mining infrastructures.	



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