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IBIS-FS

An innovative sensor for remote monitoring of structural movements and deformations

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IBIS-FS

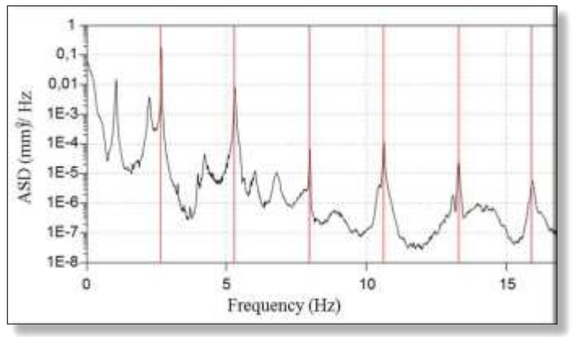
GEORADAR DIVISION

IBIS-FS

IBIS-FS is a microwave interferometry based system for remote static and dynamic monitoring of bridges and structures such as buildings, historical monuments, towers etc. IBIS-FS is able to remotely monitor for static applications such as structural load testing, structural displacement and collapse hazards as well as cultural heritage preservation without needing direct access to the site or the use of any invasive equipment. It is also able to perform dynamic monitoring applications including structural resonance frequency measurements, structural modal shape analysis and real time deformation monitoring.

IBIS-FS Beneits

- **Increase structural health monitoring eficiency** through the use of a non-invasive vibration monitoring technique.
- **Accurate and remote** monitoring of a bridge or structure without the need to mount any ixed point relectors on the surface.
- **Reduces the time necessary** for static or dynamic bridge structural testing to just a few minutes.
- **Real-time data** for structure desplacement

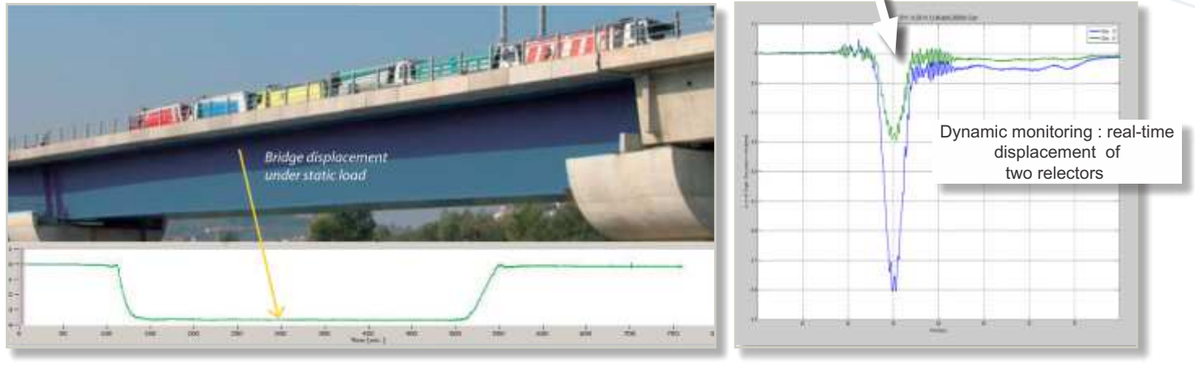


Structural resonance frequency

IBIS-FS Features

- **Remote sensing:** Real-time remote sensing at up to 1 km with no need for equipment to be installed on the monitored structure.
- **Accurate measurements:** Measures displacements of as little as 0.01mm and up to 0,5 Km. No standard instrument can achieve such accuracy.
- **Sampling:** Structural vibration sampling up to 200 Hz.
- **Always operative:** Operates day & night and in all weather conditions.

IBIS-FS monitoring an iron bridge



IBIS-FS static bridge monitoring

IBIS-FS Coniguration

IBIS-FS consists of portable radar head which can be mounted on a tripod anywhere within 1km of the target structure with a line of sight. IBIS-FS's IBIS Surveyor software is speciically developed to process the raw iles generated during measurement sessions and includes a complete set of features for the static and dynamic evaluation of the overall structural displacement. The software is able to display a power image of the monitored scenario, the displacement of the overall scenario and the displacement among selected points of the scenario. IBIS-FS is available with several type of antennas, depending on the application.

SYSTEM SPECIFICATIONS	
OVERALL WEIGHT (INCLUDING BATTERIES)	30 kg
RECOMMENDED LAPTOP	Panasonic CF-19 Tough-Book
AUTONOMY	More than 10 hours
MAXIMUM RANGE	1 km
FREQUENCY BAND	17.1- 17.3 GHz
DISPLACEMENT ACCURACY	0.01 - 0.1 mm (depending on range)
POWER SUPPLY	SLA Battery 12VDC 12 AH
SPATIAL RESOLUTION	0.5 MT. The resolution may change due to speciic country radio regulations
ACQUISITION FREQUENCY	UP TO 200 HZ
ENVIRONMENTAL	IP65
POWER CONSUMPTION	25.5 W
CERTIFICATION:	EC, FCC, IC

SOFTWARE SPECIFICATIONS	
IBIS Surveyor	IBIS Surveyor is equipped with a complete set of features for the static and dynamic evaluation of the overall structural displacement. The software includes: • power image of the monitored scenario • real -time and temporal histories of selected point displacement • Dynamic structural analuysis tools to identify the resonance frequencies and modal shapes of the monitored structures.

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