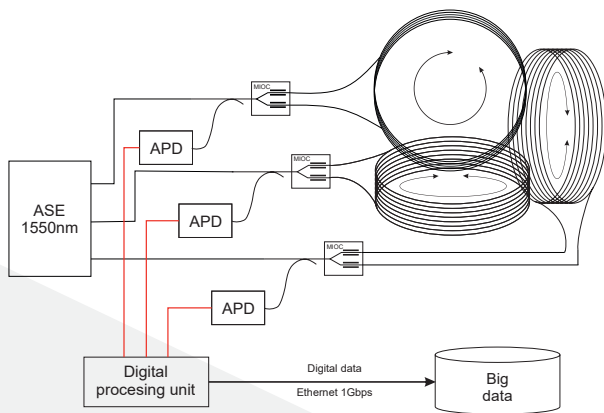


# FOSREM

## The wideband frequency FOG-based sensor and the network of synchronised Ultra Sensitive Seismographs

✓ **Multipurpose Earth & Space Photonic Sensor with Big Data output. A new approach to the nano measurement of angular velocity and angles.**



The sensor operates as a result of the measurement of a difference between two interfering light beams propagating around a closed (very long) optical path, in opposite directions,

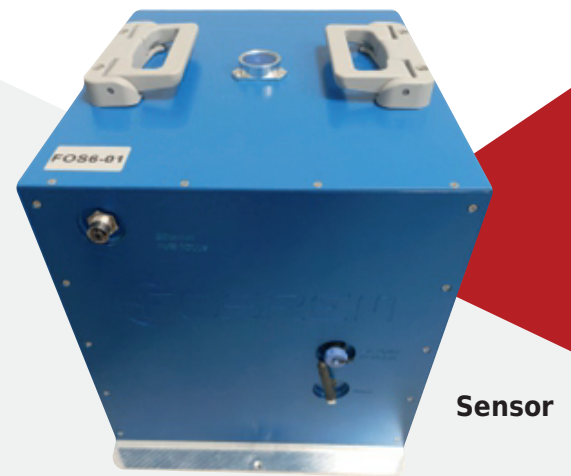
- Unique high-accuracy technology, so far available from 2 countries only;
- Sagnac effect, independent of Earth Gravity, for which the only frame of reference is Einstein's space-time;

The Sensor produces high-resolution Big Data output for the next step of profile computing. When synchronized in the time domain, the sensors provide unique new 3D information not available from a single sensor. In addition, Rubidium's high-frequency option improves the resolution of frequency domain operations, providing so far undiscovered data. The main business profiles are Microseismic sensing (gas & oil, thermal water, mining industry), military, autonomous vehicles (autonomous cargoships/drones/plains/robots), industry asset management.

✓ **FOSREM is based on a Highly Accurate Fibre Optic Sagnac Interferometer. FOS-6 is a 3-axial Fiber Optic Seismograph for Rotational Seismology.**

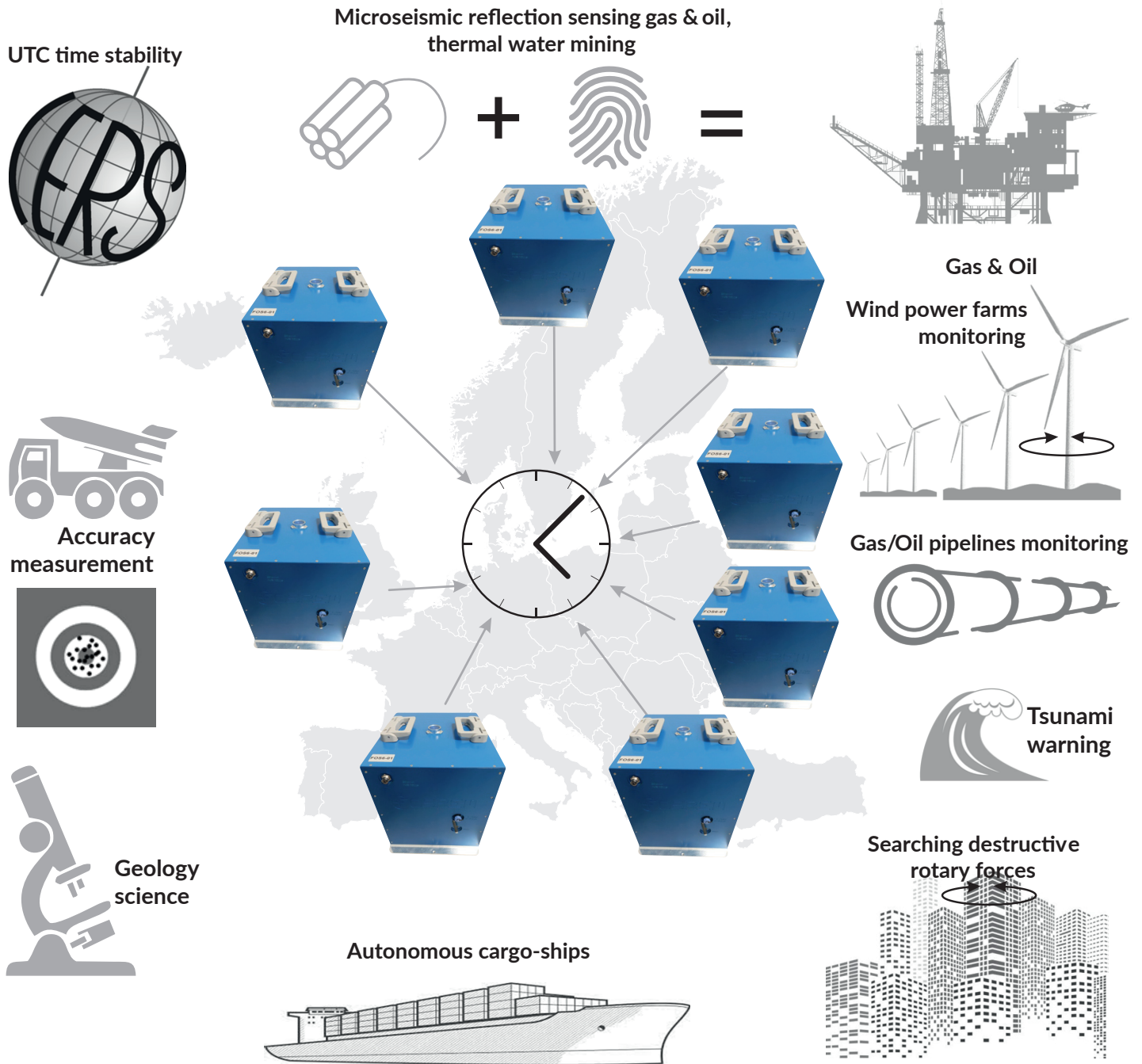
### Technical parameters

Rotational rate	<b>10 rad/s</b>
Dynamic range	<b>min. <math>50 \cdot 10^{-9}</math> rad/s, max. 10 rad/s</b>
Frequency band	<b>from 0.01 to 100 Hz</b>
Sensitivity	<b><math>2,5 \cdot 10^{-8}</math> rad/s/<math>\sqrt{\text{Hz}}</math></b>
Management	<b>Local and remote</b>
Data storage	<b>&lt; 512 GB SSD (inside PCU) Stored max. 30 days</b>
Interfaces	<b>1Gbps Ethernet RJ-45 w/ PoE (inside PCU)</b>
Synchronization	<b>GNSS (PCU), PTP IEEE 1588 (PCU to sensor)</b>
Communication	<b>TCP/IP, UDP (incl. WiFi, 4G options) wired and wireless</b>
Power Supply	<b>230 VAC and two additional 13.5 V power supply inputs Power consumption: 22 W (sensor)</b>
Dimensions	<b>Sensor: {D x W x H} 341 x 329 x 314 mm PCU: {D x W x H} 576 x 361 x 334 mm</b>
Ingress protection	<b>IP65</b>
Weight	<b>Sensor: 18 kg, PCU: 20 kg</b>





**Synchronized FOG-6 seismographs provide qualitatively new big dat. Ultra-high sensitivity combined with AI helps identify industrial events. Time domain operation enables Doppler measurement for event localization.**



**The FOSREM technology implemented as the FOS-6 seismograph is mature. The FOS-6 sensor is commercially available here and now. A network of synchronized FOS-6 sensors providing the new Doppler measurement localizing coordinates of industrial events is finalized now. This makes the solution helpful in the non-invasive search for natural deposits, detection of geological threats to the geological terrain, and building structures. The technology is dual-use. Elproma is ready now for a new challenge of designing a world-leading FOG-6 Fiber Optic Gyroscope.**