

IPOZ GIPSEA® Metrology system is a depth rated survey instrument that enables the accurate measurement of relative positions and depths of subsea structures, as well as their orientations (heading, pitch, and roll) in a single ROV dive.

The IPOZ GIPSEA® consists of a self-contained underwater component in a compact subsea housing, that incorporates an inertial measurement unit (IMU). Using an ROV to transfer the housing between subsea structures a set number of times, the system can calculate a 3D position within an accuracy of 5cm (2") or less for baselines of up to 50m (165'). This is achievable in just a few hours.

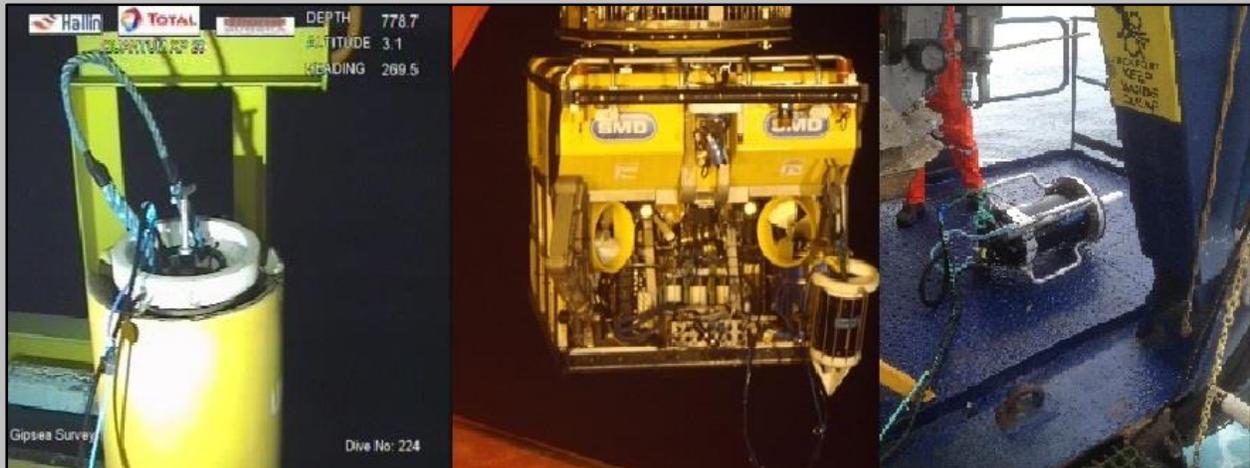
No More Network By contrast, traditional acoustic metrologies can take over a day to carry out, with transponder arrays to install and repeated ROV dives to extract readings from multiple individual sensors.

Rigorous Testing IPOZ has conducted extensive trials in realistic environments to test the accuracy and reliability of GIPSEA® and are continually improving procedures and software to meet and exceed the needs of the industry.



Operationally Proven The IPOZ GIPSEA® Metrology system has been used extensively in deepwater developments around the world where the versatility and simplistic nature of the system has proved invaluable. In one-to-one comparisons against conventional metrology methods, the GIPSEA® system achieves the same degree of accuracy in a fraction of the time. GIPSEA®'s ability to adapt to standard and challenging mechanical interface and docking designs ensures the system is a viable option for virtually any subsea infrastructure.

Increased Reliability and Productivity Using GIPSEA® for metrology dramatically reduces the duration of subsea surveys and the subsequent calculation of results. The process does not require acoustic line of sight and is immune to acoustic interference caused by fluid injection, production, or drilling. The simple methodology reduces the opportunity for errors, requiring less equipment and personnel to conduct the surveys.



SYSTEM SPECIFICATIONS

This inertial measurement unit is an autonomous instrument composed of 3 accelerometers and 3 gyroscopes, and is capable of computing three-dimensional positions and orientations without external information. The IPOZ GIPSEA® Inertial Metrology™ system has been optimized for ROV operations and is rated to 3000m (10,000').

Real-Time Accuracy:

- 3D position: 0.1m (.32') per 100m (325') between receptacles (1/1000)
- Heading: 0.05 degree
- Pitch and Roll: 0.02 degree

Post-Processed Accuracy:

- Horizontal Position: < 0.05m (0.16') average for metrology
- Depth: < 0.05m (0.16') average without depth sensor
- Depth: < 0.03m (0.1') average with depth sensor

Communications:

- Linked to the ROV via a single umbilical, the GIPSEA requires an RS232 or RS422 link at 38400-115200 bd.
- Data recording and live streaming is controlled and monitored by a single Windows (XP or 7) equipped PC using proprietary GIPSEA Software.

IMU Specifications:

- Vibration: Mil-Prf-71185
- Shock: Mil-Prf-71185
- Power Mil-Std-1275A,
- Power consumption: <30W
- Operation temp: -54C +71C
- MTBF >20,000h

Power:

- Input Range: 10-30v with internal battery backup
- Current Draw: 1.5 amps at 24V when internal battery is fully charged