C-PINS

Metrology with uncompromised efficiency

C-PINS is Zupt's proven inertial navigation system that delivers the precise measurements needed for subsea jumper and spool metrology. Used on more than 400 projects worldwide over the past 16 years, it has reduced vessel time by an average of 50 percent compared to traditional acoustic methods. This efficiency lowers costs, reduces risk, and keeps offshore construction on schedule.

Compact and self-contained, C-PINS requires a single subsea connection to an ROV for power and communication. Its streamlined design eliminates complicated setup, allowing survey teams to begin work immediately on any vessel, rig, or barge with a work-class ROV. The system is versatile, easy to deploy, and proven across a wide range of offshore environments.

C-PINS provides millimeter-level accuracy in real time, even in shallow water or in the presence of drilling noise and vibration. With live quality control available throughout data collection and a full deliverable provided within 24 hours, it gives clients the confidence to make critical decisions quickly. By combining speed, accuracy, and reliability, C-PINS ensures subsea metrology is faster and more cost-effective.

Accurate and precise metrologies

completed in half the time.

Capabilities:

- Fast to mobilize with a single ROV connection and minimal cabling
- Cuts vessel time by 50–70% compared to acoustic methods
- Includes real-time quality control with error and loop-closure monitoring
- Operates reliably in acoustically noisy environments such as drilling
- Processes data onboard for quick, dependable deliverables

Applications:

- Jumper and Spoolpiece Metrologies
- Pipeline Out-of-Straightness Surveys
- Buoy Setting for Well Installation
- Structure Installations
- Pipeline and Umbilical Installation
- USBL Smoothing
- Sparse LBL and Decommissioning

Specifications:

4,000m rated system

- 26cm diameter by 46.5cm long
- Weight in air 45kg / water 20kg

Accuracy

- Heading: ±0.05° over 30 m baseline. ±0.02° with longer baselines
- Pitch/Roll: ±0.01°
- Pos: ±30 mm accuracy over 30 m baselines

Conclusion:

Zupt's C-PINS has consistently demonstrated that inertial metrology is faster, more efficient, and more dependable than traditional acoustic methods. By cutting vessel time by more than half, it not only reduces project costs but also allows operators to accelerate offshore schedules without sacrificing accuracy. In extensive case studies, C-PINS achieved measurement precision within tight tolerances, including sub-degree attitude and heading accuracy, proving its reliability in even the most complex subsea environments.