Case Study:

DEEP WATER TESTING OF THE ISA200 AT LOCH NESS

Overview

As part of the pre-launch validation process, Impact Subsea conducted extensive field testing of the ISA200 Altimeter and Echosounder at Loch Ness, Scotland.

Renowned for its depth and challenging underwater terrain, Loch Ness provided an ideal environment to evaluate the performance of the ISA200 at long range and in dynamic field conditions.

Why Loch Ness?

Loch Ness was selected due to its significant depth, exceeding 200 meters (656 feet) in some locations, making it a suitable test site to verify the range capability and signal stability of the ISA200 in real-world conditions.

Impact Subsea Team on Loch Ness

Deployment Setup

The ISA200 was pole-mounted on a RIB (rigid inflatable boat) with its transducer oriented vertically downwards.

A GPS antenna was also installed onboard to log positional data. All measurements including altitude, ECHOGRAM and GPS position were logged simultaneously using the Impact Subsea seaView software.

Test Procedure

The boat traversed a known deep-water crossing from one side of the loch to the other. During the run:

- The ISA200 continuously measured depth beneath the vessel.
- Data was visualised in real-time and logged for post-survey analysis.
- The test aimed to determine maximum measurable depth, signal strength and data stability at speed.

ISA200 Loch Ness Profile with Distance Reading

ISA200 APPLICATIONS INCLUDE:

Scour Monitoring | Touchdown Monitoring | Hydro-graphic Survey | Motion Reference | Wave Height Measurement | Equipment Deployment | Under Ice Measurement | Underwater Positioning | ROV & AUV Altitude, Heading & Attitude |

IMPACT SUBSEA
INNOVATIVE SENSORS

Case Study:

DEEP WATER TESTING OF THE ISA200 AT LOCH NESS

Results

- A maximum depth of 215.036 meters (705.49 feet) was recorded, the deepest point located during testing at Loch Ness.
- The ISA200 maintained a strong, continuous return signal from both the sloped sides and the flat bottom of the loch.
- Even at maximum depth, the system displayed high return signal energy and correlation, highlighting that the ISA200 is capable of operating beyond the depths available in Loch Ness.
- The ECHOGRAM remained consistent and clear throughout the survey.
- The ISA200 sustained accurate underwater altitude measurements at speeds up to 4 knots, confirming its stability during dynamic operation.

The ISA200 sustained accurate altitude measurements at speeds up to 4 knots

Conclusion

The Loch Ness trials confirmed the ISA200's exceptional performance in deep water, validating its suitability for use in AUV, ROV and hydrographic survey applications where long-range measurement is critical.

The test results strongly indicate that the ISA200's operational range exceeds 215 meters, prompting further testing in deeper waters.

"The ISA200 represents a significant leap forward in highly compact, deep rated 200kHz echosounding technology.

Testing at Loch Ness not only confirmed the system's long-range capability but also showcased its ability to deliver consistent, high-quality data at speed."

Ben Grant, Managing Director, Impact Subsea.

impactsubsea.com
sales@impactsubsea.co.uk
+44 (0) 1224 460 850