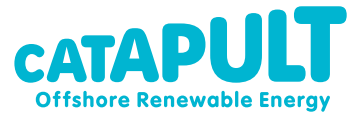


# HYDRASON: REAL-TIME SONAR SUBSEA HEALTH MONITORING



## CASE STUDY



### UK SME AUTONOMOUS ROBOTIC INNOVATION, ENABLING FASTER AND MORE ACCURATE SUBSEA ASSET MONITORING

ORE Catapult's unique subsea testing facilities enabled Edinburgh-based Hydrason Solutions Ltd. to undertake a representative programme of testing and successfully complete trials of their innovative condition monitoring technology.

Health monitoring of critical subsea assets in the field is an essential practice in order to identify issues as early as possible to optimise offshore wind farm operation and avoid high-cost maintenance offshore.

In response, Hydrason has developed an autonomous version of their low frequency sonar, which is based on dolphin echolocation ('ultra-wideband sonar'). The technology, known as 'BioSonar', is deployed using an autonomous underwater vehicle (AUV) and provides real-time survey feedback to operators, enabling a much faster response to potential issues.

Working with ORE Catapult, Hydrason developed a full-scale test programme for their technology, including the burying of pipes, submersion of subsea cables and deployment of an autonomous surface vehicle (ASV) in a controlled, representative subsea environment.

“ORE Catapult provided a unique facility for controlled testing for our technology, including the opportunity to work with objects buried in the sediment basin. The project management and support team at the ORE Catapult were great to work with and were responsive to all of our needs on site. We will look forward to working with them again in future projects.”

Chris Capus, CEO, Hydrason Solutions Ltd.



Developing UK SME innovation to support revenue and growth potential in offshore wind for Hydrason Solutions



Supporting the transition of client technology and expertise from oil and gas into offshore renewable energy



Reducing O&M costs in the offshore renewable energy supply chain with new autonomous, robotic solutions for industry

## CASE STUDY



The BioSonar technology detecting cables buried in the seabed of the saltwater dock facility



The ASV being deployed into the dock, with remote crane access alongside the dock area

Hydrason's technology was originally developed for pipeline inspection in the oil and gas industry, however, Hydrason now have their sights set on developing the system for use in offshore renewable energy cable tracking and condition monitoring. Subsea cables present an even bigger challenge as they contain more complex, multi-layer structures.

As part of the Holistic Operation and Maintenance for Energy from Offshore Wind Farms (HOME-Offshore) project, of which ORE Catapult is part, Hydrason will develop their technology further to provide accurate surveying of buried cables and their components, improving monitoring and better informing the causes and consequences of failures.

### AUTONOMOUS SUBSEA AND SURFACE TECHNOLOGY TEST & VALIDATION SERVICES

ORE Catapult's world-leading test and validation facilities and expertise provide clients with robotic and autonomous system technology and innovation. Our services apply to offshore installation, inspection, repair and data acquisition for surface and subsea applications.

#### Levenmouth 7MW Demonstration Turbine

Providing a live demonstration site for robotic technologies, clients can test and validate on or within the proximity of a full-scale live offshore turbine.

#### Saltwater docks and replica seabed

With versatile wet or dry docks, clients can design and deploy bespoke technology testing and demonstration in a controlled, representative environment.

#### Offshore Anemometry Hub

Access to an offshore structure, located 3Nm off the Northumberland coast, enables clients to test and demonstrate robotic technology in a live environment.