



Acoustic Doppler Current Profiler technology to improve subsea installation, operations and maintenance data

BUSINESS PROFILE

- Established provider of technology for subsea survey, installation and operations and maintenance, especially those where robotic systems are used.
- Primary markets include oil and gas, offshore renewables, defence and ocean science.
- Sonardyne is an international company headquartered in Hampshire, with over 350 employees.

SUPPORT RECEIVED

- Business Transformation
- Funding Support

Solutions for the offshore wind industry



Enabling autonomous vehicles with navigation systems, measurement devices, positioning and data harvesting for wide-ranging data collection in and around offshore wind sites.

Technology can obtain data on currents, underwater noise, unexploded ordnances and scour to assist offshore wind developers - from consenting and site development, to construction and operations & maintenance.

Market-leading positioning system for the offshore wind sector.

Sonardyne International has been operating in subsea solutions for over 50 years and is a market leader in the manufacture of advanced subsea positioning, communications, navigation and monitoring products. Sonardyne has committed to growing its presence in offshore wind, with technology well-suited to supporting the sectors ambitious growth plans. To date, their technology has been used on a high proportion of major windfarms, from positioning cable laying of ScottishPower's East Anglia ONE and site assessment for potential offshore wind sites in Taiwan.

Impact of the support

Grant funding helped Sonardyne to develop topside communications link for their new ADCP, to measure sea current, wave height and temperature to optimise turbine and mooring placement.

Technology showcased at the opening of Offshore Renewable Energy Catapult's Digital Autonomous and Robotics Engineering (DARE) centre.

Revenue from OSW has grown from £1.2 million to £5 million, supported by a 10% increase in overall staff, including the establishment of a dedicated offshore wind applications team.

A closer look at current profiler technology

Acoustic Doppler Current Profilers (ADCPs) play a critical role in offshore wind development by measuring the water column to provide insights into currents, wave motion, and turbulence. These measurements inform key decisions on turbine placement, mooring strategies for floating turbines, scour risk to cables, array cable routing, and burial depth predictions. Sonardyne sought to solve this problem by enhancing its ADCP Seabed Lander technology, enabling it to deliver the high-resolution Metocean data needed to address these challenges effectively.



Before

In 2021, Sonardyne identified a need for higher resolution Acoustic Doppler Current Profiler (ADCP) technology to better distinguish between turbulence and dissipation and provide more accurate Metocean data in deeper offshore environments. Improving this function would provide developers with more accurate data, enabling them to determine the most appropriate installation solutions. Sonardyne applied for an innovation grant through OWGP to support the enhancement of its existing ADCP Seabed Lander technology. This project aimed to integrate the ADCP with a LiDAR buoy, enabling developers to access a seamless and comprehensive dataset. The development of this technology is particularly important for floating offshore wind projects, where precise data is essential to monitor scour and cross-correlate behaviour in mooring systems and dynamic cables, ensuring greater reliability and cost-efficiency in project planning.

During

Sonardyne implemented a structured project plan to deliver the enhanced Acoustic Doppler Current Profiler (ADCP) Seabed Lander technology, integrating it into their existing project management system. The plan comprised six key work packages: project management and requirements capture, ADCP processing and onboard testing, topside integration with buoy or vessel transceivers, external integration with the Lidar buoy, cloud development for data presentation, and offshore deployment, monitoring, and recovery of the ADCP system. The project was meticulously risk-assessed, with identified risks managed through mitigation strategies to ensure smooth execution.

After

The development of Sonardyne's enhanced Acoustic Doppler Current Profiler (ADCP) technology has delivered significant results for the company and the offshore wind sector. Successful trials in Plymouth have led to valuable engagements with key industry players. Since the project's inception, Sonardyne's offshore wind revenue has grown from £1.2 million to £5 million, supported by a 10% increase in overall staff, including the establishment of a dedicated offshore wind applications team. The deployment of the ADCP has demonstrated its value in providing developers with accurate data for better planning and decision-making. This success has also paved the way for Sonardyne to secure further support from OWGP, including a second Innovation Grant to develop a floating wind condition monitoring system and participation in the Wind Expert Support Toolkit (WEST) programme to refine their business strategy. These advancements have positioned Sonardyne as a key innovator in offshore wind technology.



The OWGP grant enabled us to connect the ADCP data to the Cloud much earlier than we had initially planned in our roadmap. This advancement resulted in a complete end-to-end package we can offer to our customers. OWGP has been very supportive of the project, even going so far as to introduce us to potential users of the system.



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