

# OCEAN NEWS

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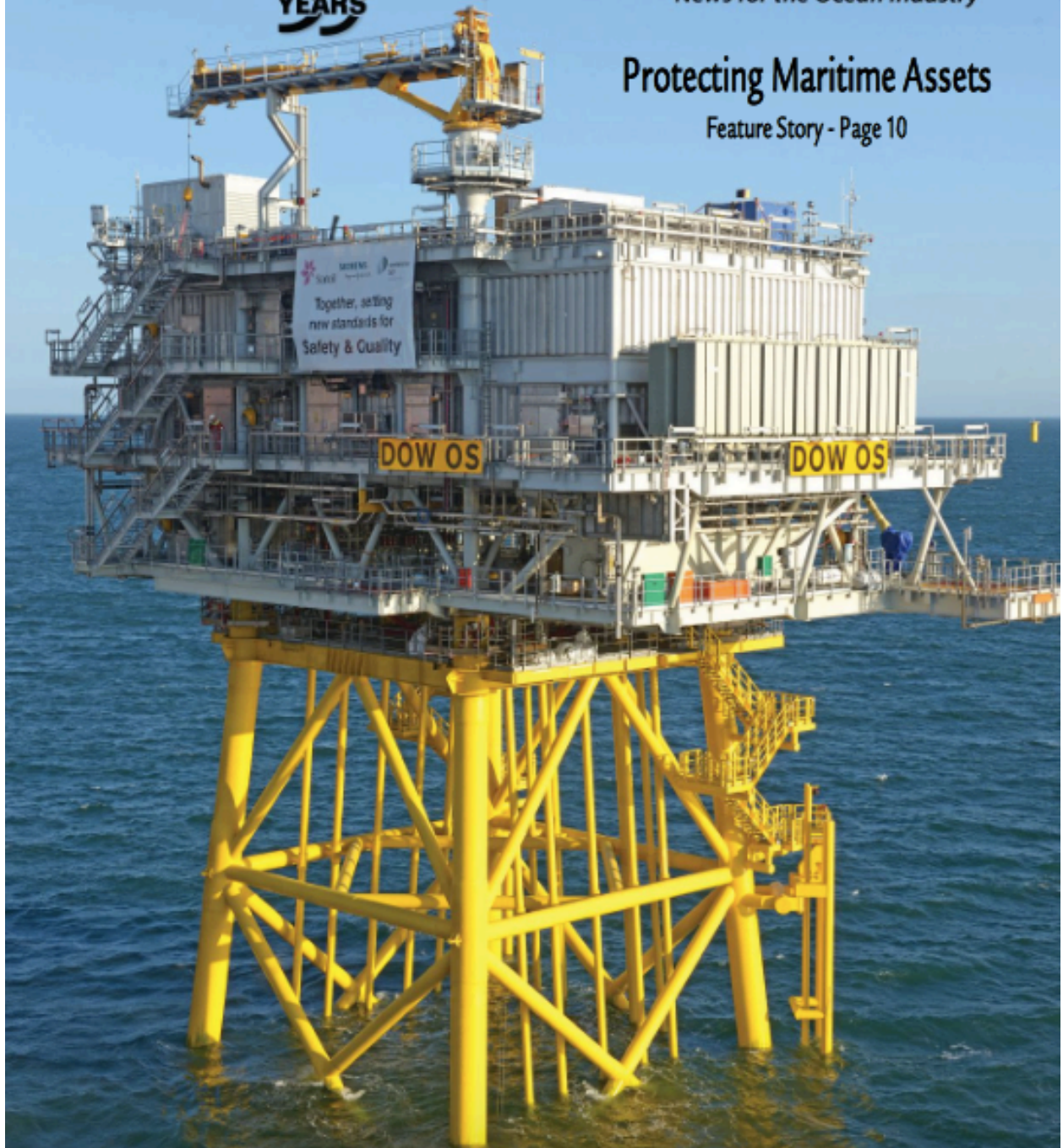
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Protecting Maritime Assets

Feature Story - Page 10





### WiBotic unveils wireless power solutions to charge AUVs

After refining its robotics technology in stealth mode for almost 2 years, WiBotic announced its wireless power solutions to charge the rapidly growing ecosystem of aerial (drones), mobile (industrial) and aquatic robots. With WiBotic wireless power solutions, AUVs can stay underwater, even when charging.

A reliable alternative to mechanical battery swapping for above- or sub-sea robotic vehicles is necessary for aquatic robots to become fully autonomous. Wireless charging affords the only viable option where there are environmental limitations. WiBotic wireless power solutions deliver efficient power through water and are not limited by fluidic motion, salinity or fouling. They offer the most flexible wireless charging range, regardless of the medium by which wireless power is transferred.

Adaptable to the charging needs of any robotic application, WiBotic wireless power solutions include a wireless battery management system (BMS) and fleet-level power management software. The wireless battery management system for individual robots can significantly increase the lifetime of each battery in that robot. Additionally, the fleet-level power management software dynamically monitors how an entire fleet of robots operates and uses the data to help create a custom operational plan to optimize the life of the entire collection of batteries in that specific fleet.

WiBotic wireless power solutions are easy-to-implement and highly customizable for specific deployments. When an AUV approaches the WiBotic wireless charging platform, it automatically detects its presence and wirelessly charges the battery – just as fast, if not faster, than a standard plug-in charger. This enables the system to work fully autonomously for the lifetime of the battery. In other words, there is no longer a need for human intervention for daily maintenance, charging or battery management. Alerts are triggered if the power systems are compromised in any way.

WiBotic wireless power solutions are safe, reliable and scalable. They provide adaptive near-field wireless charging and have a higher efficiency across wider ranges than both standard inductive and other resonant systems. In addition, they have the most flexible wireless power range on the market and work in harsh weather conditions (wind, rain, snow) as well as underwater.

For more information, visit [www.wibotic.com](http://www.wibotic.com).

### James Fisher Subsea completes removal of UXO at German offshore wind farm

James Fisher Subsea (JF Subsea), a world leader in the location, identification and disposal of deep-sea unexploded ordnance (UXO) and part of James Fisher and Sons plc, provided critical expertise to a high priority project at Nordergründe offshore wind farm located 16 km off the North Sea coast of Germany.

Offshore wind farm development and management specialists, wpd offshore solutions (wpd), approached JF Subsea to use its innovative and safe excavation techniques to survey the precarious area and remove all unexploded munitions. The UXOs, which had been released by Central Powers and Allied forces during WWI, had delayed planned construction works and were at risk of costing the developer millions as a result.

Of the 224 targets identified, 72 were deemed to be UXOs and had to be detonated with minimal impact to sea life. JF Subsea's project manager, Max Clements, said: "Due to the project's potentially dangerous complexities—such as rough tide, heavily buried ordnance and inclement weather—the team was prepped to be ready at a moment's notice whenever a suitable weather window opened up."

"As with all UXO operations safety was of the utmost priority and from the planning stages we ensured we had project specific equipment, world-class expertise and encompassing method statements in place," Clements added.

Due to the complex and unpredictable nature of the project, JF Subsea had to work within narrow weather windows and often in shallow waters with rough tides. Target location, ROVs, detonation specialists and bespoke UXO support vessels were all used as part of a turnkey solution, ensuring the precise and efficient delivery of the project.

Two vessels were deployed for the duration on the project, with specialist divers used to locate and remove the UXOs during the day and ROVs dispatched to detect and excavate through the night. This dual-pronged approach sped up the clearance process and reduced the delay to the client's start date.

"Offshore wind turbine sites are often plagued with UXOs and are a continual problem we come up against during construction. Due to the expertise JF Subsea showed throughout the excavation process we will most likely be using their services again," said Jan Patrick Daniel, offshore project manager at wpd.

For more information, visit [www.jfsubsea.co.uk](http://www.jfsubsea.co.uk).

### Fundy Tidal Project underwater sensor platform completes successful sea trial

Efforts to understand the unique environmental conditions in the Minas Passage of the Bay of Fundy are moving forward.

After a 27-day sea trial, a team comprised of staff at the Fundy Ocean Research Center for Energy (FORCE) working in concert with crew on the Dominion Victory have successfully recovered an underwater monitoring platform, known as FAST-1.

"To explore the energy potential in the Bay of Fundy responsibly, we have to understand it," said FORCE general manager Tony Wright. "We're building a series of subsea instrument platforms that will give us a clearer picture of what's happening at the FORCE test site."

The platform was retrieved in mid-July, and analysis of sensor data is now underway. Reliable site data is critical to all aspects of in-stream tidal energy development, including both turbine design and understanding any effects on the marine ecosystem.

The Fundy Advanced Sensor Technology (FAST) program encompasses three separate underwater platforms, onshore radar, meteorological instruments, and a tide gauge. Headlining the program is FAST-1. At 4.5-tonnes and 4-m in length, this platform is designed for frequent deployment and recovery to enable instrument testing and monitoring.

The platform's current sensor array includes:

- Acoustic Doppler current profilers (ADCP) and the Vectron (measuring current speed and turbulence);
- Acoustic zooplankton and fish profiler (assessing zooplankton and fish density and depth distribution);
- Water quality sensors (measuring water conductivity, temperature, and salinity);
- Optical sensor (measuring sedimentation size, distribution and volume concentration using laser diffraction);
- Tide, turbidity, and current sensors; and
- Orientation sensor (measuring pitch, roll and heading—crucial to platform placement and the analysis of all other instruments).

These include the Aanderaa SeaGuard Platform, the Sequoia LISST, ASL acoustic profiler, Nortek Signature 500, and the TRDI Sentinel V s100.

The FAST program is in addition to FORCE's regulated environmental effects monitoring programs, which in 2016 focus on fish, lobster, marine mammals, seabirds, and marine noise.

For more information, visit [www.fundyforce.ca](http://www.fundyforce.ca).