

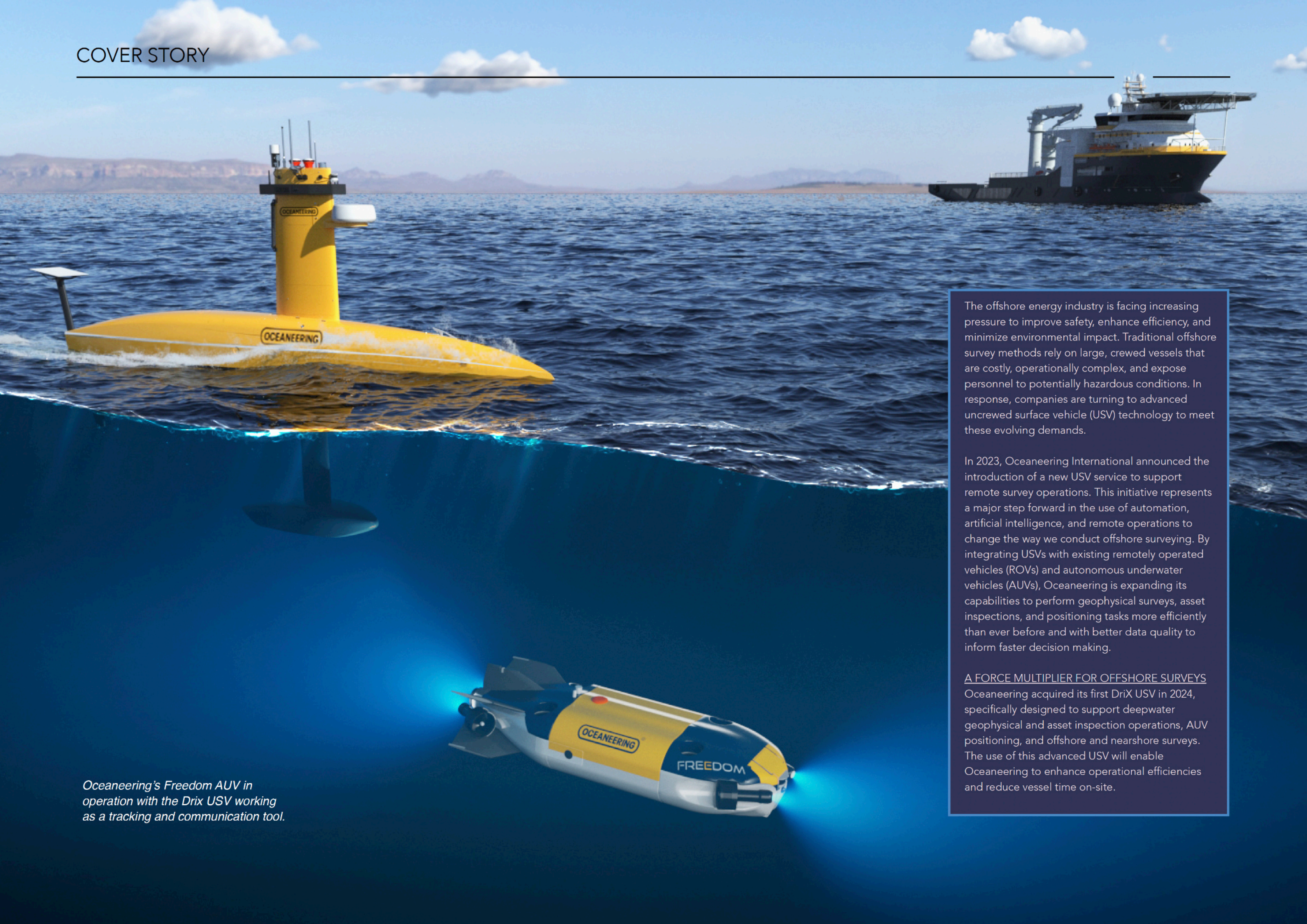
# REVOLUTIONISING REMOTELY OPERATED OFFSHORE SURVEYS

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*The DriX USV performing subsea scanning as part of its survey capabilities*



*Oceaneering's Freedom AUV in operation with the Drix USV working as a tracking and communication tool.*

The offshore energy industry is facing increasing pressure to improve safety, enhance efficiency, and minimize environmental impact. Traditional offshore survey methods rely on large, crewed vessels that are costly, operationally complex, and expose personnel to potentially hazardous conditions. In response, companies are turning to advanced uncrewed surface vehicle (USV) technology to meet these evolving demands.

In 2023, Oceaneering International announced the introduction of a new USV service to support remote survey operations. This initiative represents a major step forward in the use of automation, artificial intelligence, and remote operations to change the way we conduct offshore surveying. By integrating USVs with existing remotely operated vehicles (ROVs) and autonomous underwater vehicles (AUVs), Oceaneering is expanding its capabilities to perform geophysical surveys, asset inspections, and positioning tasks more efficiently than ever before and with better data quality to inform faster decision making.

A FORCE MULTIPLIER FOR OFFSHORE SURVEYS

Oceaneering acquired its first DriX USV in 2024, specifically designed to support deepwater geophysical and asset inspection operations, AUV positioning, and offshore and nearshore surveys. The use of this advanced USV will enable Oceaneering to enhance operational efficiencies and reduce vessel time on-site.



The DriX USV operating in adverse weather conditions due to the dual positional redundancy provided by Oceanering C-Nav Positioning Solutions.

DriX USV works in tandem with Oceanering's fleet of AUVs, such as the HUGIN Superior and Freedom hybrid ROV/AUV vehicle system.

By leveraging the USV as a tracking and communication tool, functions traditionally performed by large, crewed vessels, Oceanering can maximize the Geoscience data production output of its dedicated multi-service vessels (MSVs).

The DriX USV operates with an exceptionally low fuel consumption rate of only two liters per hour, reducing carbon emissions when compared to traditional survey vessels, making it a more sustainable solution for offshore operations.

**PROVEN TECHNOLOGY WITH A STRONG OPERATIONAL TRACK RECORD**

The DriX USV has accumulated thousands of operational hours since its introduction in 2016. It features AI-powered CortiX software and state-of-the-art sensors, allowing it to conduct over-the-horizon supervised autonomous operations.

The USV's robust stability enables it to operate in rough offshore conditions up to sea state 5 without compromising data quality. Its high-speed and efficient surveying capabilities reduce transit downtime and enable nearshore surveys to be conducted swiftly while maintaining optimal data quality.

**TRUE, DUAL REDUNDANCY**

Oceanering's USV services set a new standard by incorporating true, dual

positional redundancy for guaranteed continuity of service. This will be achieved through the use of two fully independent positioning correction services from Oceanering's C-NAV group, ensuring uninterrupted operations and significantly improving reliability.

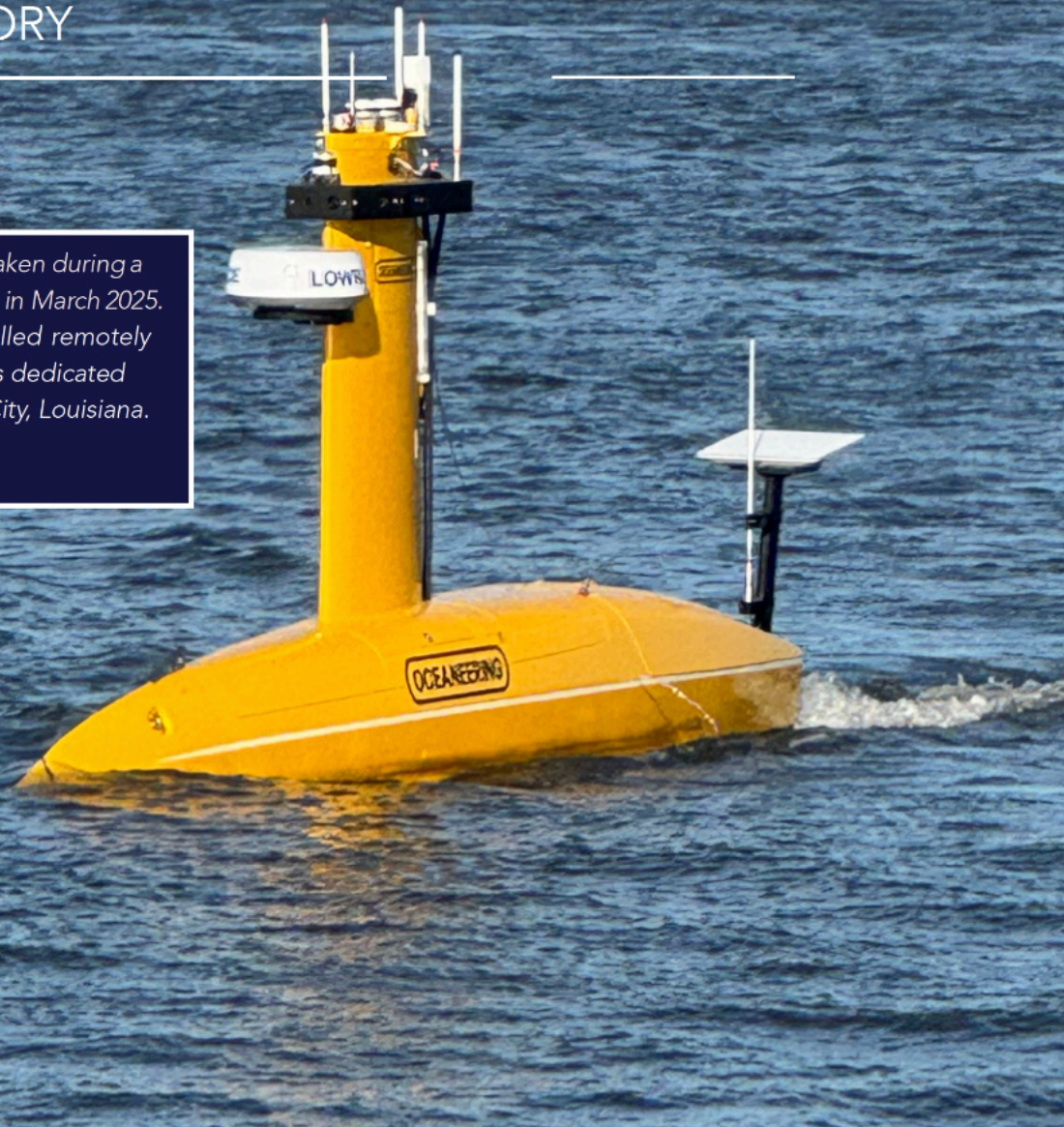
The C-NAV positioning technology enables the USV to maintain precise and consistent positioning even in challenging offshore environments. Launched in early 2023, C-NAV LEO is a satellite-based correction service delivered exclusively via the Iridium Short Burst Data service. The Iridium network provides truly global coverage, featuring 66 satellites in six polar orbits, along with 15 in-orbit spares for built-in redundancy.

Unlike traditional GEO satellite positioning correction services that are positioned 35,000 km from Earth and have blind spots, the C-NAV® LEO correction service provides continuous, overlapping signals, even in remote regions. Iridium satellites function effectively even in adverse weather conditions. They move quickly, ensuring any temporary blockage in coverage does not affect correction accuracy.

This capability is critical for offshore survey operations where consistent and accurate positioning is essential. The integration of C-NAV technology into Oceanering's USV service reinforces the company's commitment to delivering the most reliable and efficient offshore survey solutions. By ensuring seamless,

# COVER STORY

Drix USV - photo taken during a recent deployment in March 2025. The USV was controlled remotely from the company's dedicated OROC in Morgan City, Louisiana.



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high-accuracy positioning even in the most remote offshore locations, the C-NAV technology enhances the performance of the USV and AUV fleets, further solidifying Oceaneering's leadership in autonomous and remote offshore operations.

**A BREAKTHROUGH IN REMOTE SURVEYING**

In March 2025, Oceaneering conducted the first deployment of a DriX USV in a survey role, controlled remotely from the company's dedicated Onshore Remote Operations Center

(OROC) located in Morgan City, Louisiana.

The project demonstrated the potential of remote-controlled USVs to efficiently carry out offshore operations. During the project, the USV successfully surveyed 372 kilometers of seabed. Over 33 hours of uninterrupted over-the-horizon piloting was conducted, with full control of the DriX maintained remotely.

The project demonstrated that the DriX USV can conduct comprehensive block and

pipeline route surveys using multibeam sonar and sub-bottom profiler (SBP) data, allowing for high-resolution imaging and precise mapping of subsea infrastructure.

Additionally, near real-time data analysis was performed by expert teams in Brazil and Morgan City, ensuring swift decision-making and improving the overall efficiency of the operation. The deployment reinforced the expectation that USV offshore surveys can improve safety by keeping surveyors onshore thereby minimizing offshore exposure risks.

It also enables simultaneous operations (SIMOPS) w, which allows Oceaneering to maximize the Geoscience data production output of its dedicated MSVs.

**A FUTURE-READY APPROACH TO OFFSHORE SURVEYS**

Oceaneering has been a pioneer in both remotely operated vehicles and remote operations. The company established its first dedicated OROC in 2015 in Stavanger, Norway. Since then, the company has logged over 100,000 hours of remote piloting and has transitioned more than 9,000 personnel days from offshore to onshore operations through its Remotely Operated Survey initiatives.

Oceaneering's USV service is a natural progression of our extensive remote operations experience. Combining USVs with Oceaneering's existing ROV and AUV fleets and onshore remote operations centers delivers significant opportunities to scale operations and drive greater efficiencies.

The DriX USV allows us to remotely gather the same high-quality data at a lower operational impact, without the need for an offshore-based crew. This reduces health, safety, and environmental risks while freeing up MSVs to complete other tasks.

Looking ahead, the USV service will continue to evolve,

supporting cost-effective growth in the offshore renewables market. Future plans include deploying larger USVs for towing sensors and creating a platform for remotely launching and recovering ROVs.

Customers will be able to complete AUV inspection and survey scopes that are combined with conventional survey, asset inspection, or remediation and reduce the risk of downtime associated with weather conditions. By integrating the latest in autonomous technology, Oceaneering is set to redefine how we explore and manage the world's oceans.