



NYSERDA

Maritime Technical Working Group

Case Study Presentation

June 25, 2025 | Zoom Webinar



Purpose of today's meeting

1. To share state and member updates
2. Shipyard Operations and Facilities Discussion
3. Update on the Autonomous Vessel Uses in Offshore Wind Study



NYSDA

Member Updates

Shipyard Operations and Facilities Discussion



BUILDING THE FUTURE

STATEN ISLAND MARITIME
AND INFRASTRUCTURE



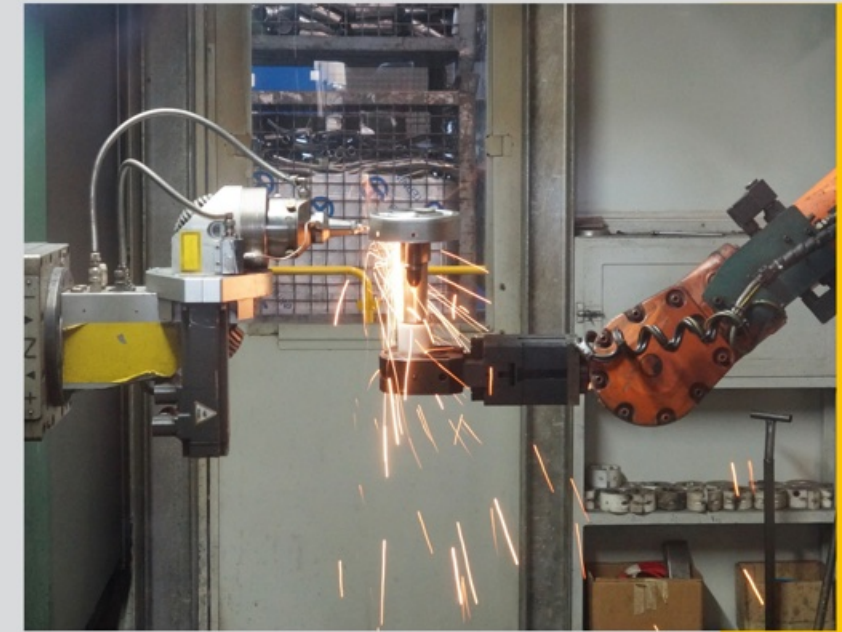
OUR MISSION

The Staten Island Industrial Alliance (SIIA) drives economic growth by building Staten Island's industrial workforce and supply chain. We prepare small businesses to compete for infrastructure, manufacturing, and clean energy projects through workforce training, industry partnerships, and direct business support.



WHAT WE DO

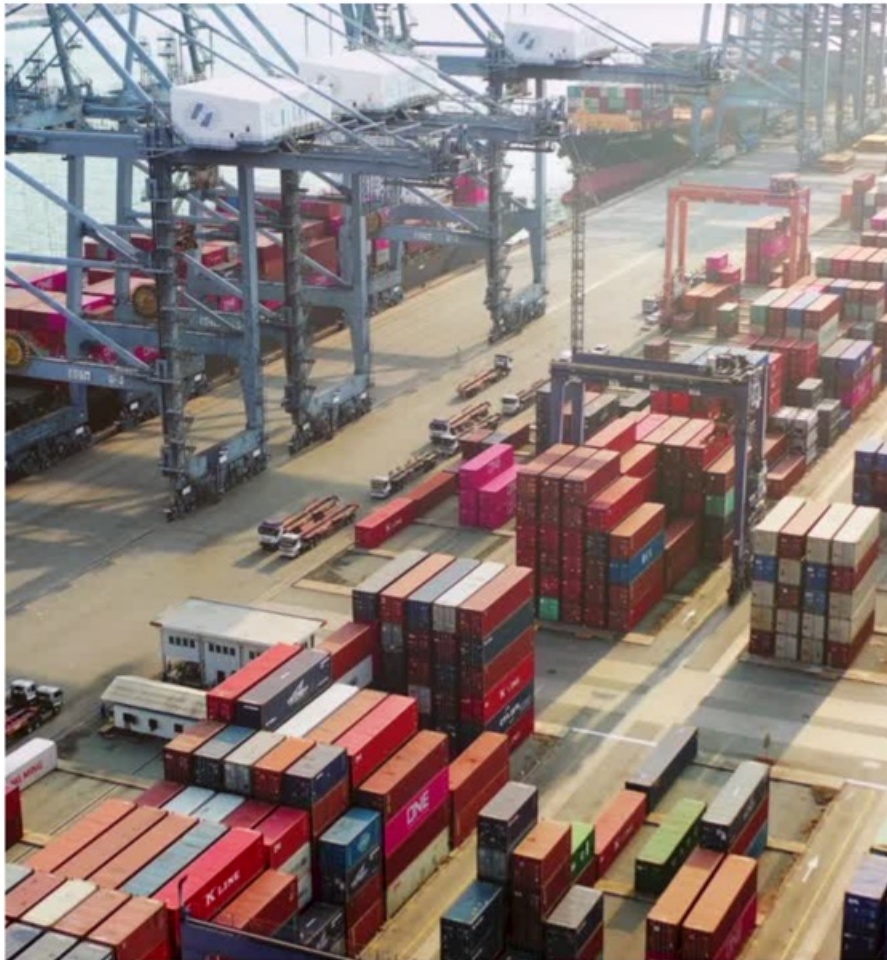
- **Help Local Businesses Grow:** We connect Staten Island companies to real contracts, supply chain opportunities, and industry partners, especially in offshore wind, infrastructure, and clean energy. We also help them meet project requirements and navigate new markets.
- **Train and Place Workers:** We support the current workforce by connecting them to training that helps them upskill and grow. We also help new workers , including students and career changers , get the training and certifications they need to enter high-demand industries.
- **Build Smart Infrastructure:** We work with developers, government agencies, and businesses to push for projects that are sustainable, resilient, and create real jobs for Staten Island residents.
- **Advocate for Staten Island's Future:** We work with the community, elected officials, and industry leaders to make sure Staten Island's businesses, workers, and neighborhoods have a voice in major projects and new opportunities.





STATEN ISLAND STANDS AT THE FOREFRONT OF NEW YORK'S GREEN ENERGY FUTURE.

- **20 miles** from the New York Bight offshore wind lease areas
- **Within 10 miles** of the Port of New York and New Jersey, one of the largest ports on the East Coast, handling over 9 million TEUs (Twenty-Foot Equivalent Units) annually.



STATEN ISLAND - A MARITIME GATEWAY

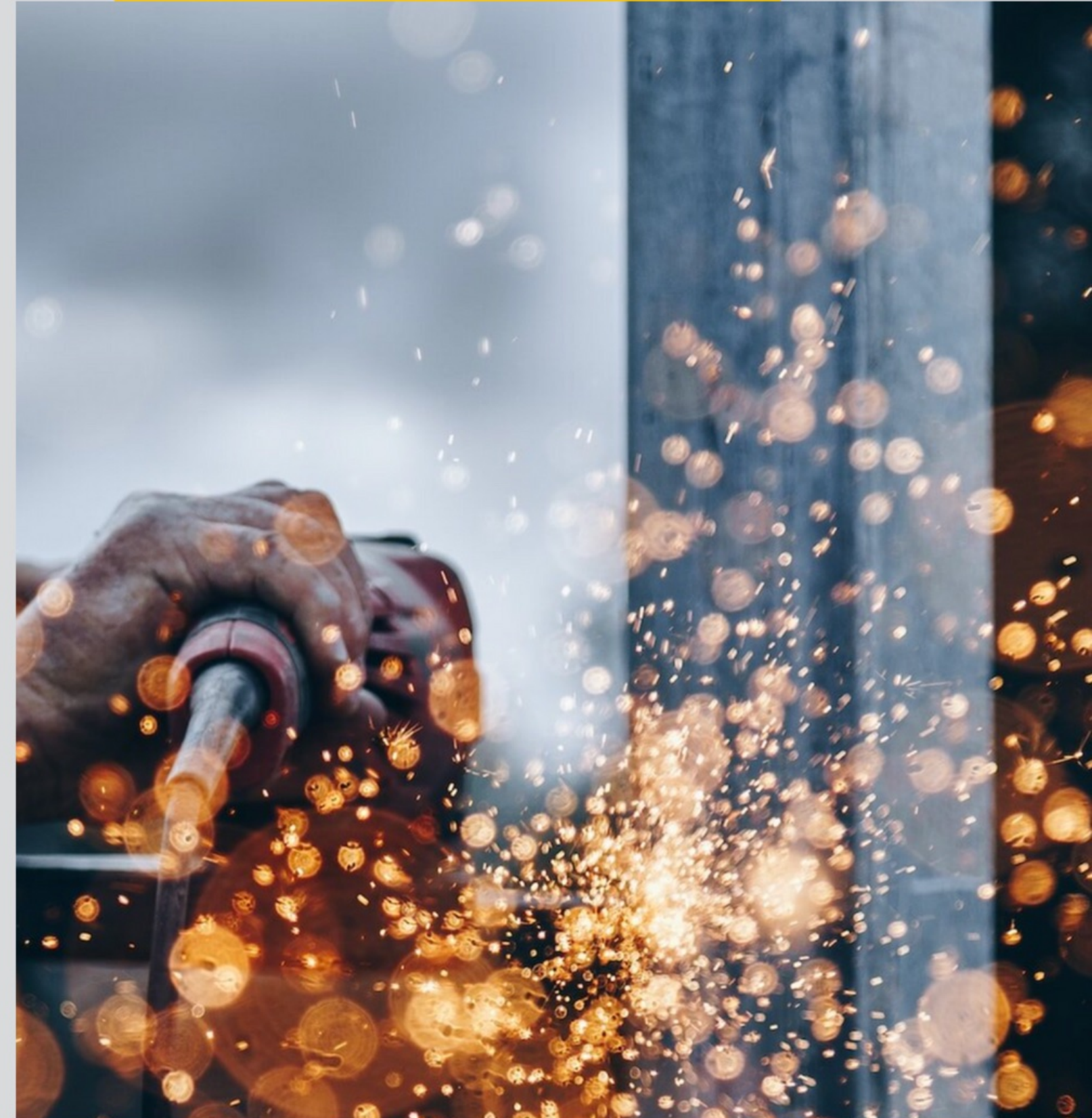
- **Strategic Location:** Situated along the Blue Water Highway, Staten Island offers direct access to major East Coast shipping routes.
- **Staten Island Ferry:** In 2024, the Staten Island Ferry transported approximately 16.7 million passengers, highlighting its role as a vital commuter link and tourist attraction.
- **Industrial Waterfront:** Areas like Howland Hook and the North Shore provide deepwater access and are primed for maritime and industrial development.

STATEN ISLAND - A MARITIME GATEWAY

- **Significant Infrastructure Investments:**
 - CMA CGM, a global shipping and logistics company, announced a substantial investment of at least \$200 million to expand and upgrade the Howland Hook Marine Terminal. This project is expected to create over 300 jobs and enhance the terminal's capacity by 50%, solidifying Staten Island's role in international trade.
- **Commitment to Sustainable Maritime Practices:**
 - The investment includes plans for zero-emissions equipment and sustainability enhancements, aligning with New York State's ambitious climate goals and promoting environmentally responsible maritime operations

DIVERSE INDUSTRY EXPERTISE

- **Shipbuilding & Vessel Repair** – Keeping OSW vessels and barges in peak condition.
- **Steel & Barge Fabrication** – Custom fabrication for OSW infrastructure needs.
- **Mooring & Pier Leasing** – Essential facilities for vessel docking, storage, and staging.
- **Construction & Real Estate** – Supporting development of operational and office spaces for OSW projects.
- **Mobile Concrete & Raw Materials** – Supplying concrete, sand, gravel, and stone for OSW facility construction.
- **Equipment & Barge Rental** – Cost-effective rentals of heavy machinery and barges to streamline project logistics.



SKILLED WORKFORCE AND LABOR AVAILABILITY

- Staten Island has a **62.1% labor force participation** rate with a strong presence in skilled trades essential for OSW, including welding, fabrication, rigging, and heavy equipment operation.
- SIIA works directly with local employers, training partners, and labor organizations to expand workforce development in renewable energy and maritime industries.
- We're currently working to launch new training programs for deckhands and maritime roles, in collaboration with shipyards, workforce boards, and offshore wind developers. Helping local residents gain the credentials they need to access high-paying, future-ready jobs.



OPPORTUNITIES FOR DEVELOPERS & INVESTORS

SIIA connects Tier 2 developers with Staten Island's Tier 3 and Tier 4 vendors: including suppliers, fabricators, marine operators, and other essential small businesses that keep projects moving.

- We help identify, vet, and support local vendors so you can meet project requirements, community hiring goals, and supplier diversity targets.
- We work with training providers and unions to ensure a ready pipeline of skilled labor, including deckhands, riggers, heavy equipment operators, and trade support.
- We coordinate with industrial property owners, city agencies, and port partners to secure staging areas, laydown yards, and marine access.
- SIIA builds community and political support for your project by engaging local leaders, elected officials, and stakeholders from day one.

VESSELS FOR PORT & MAINTENANCE

01

Wind Turbine Installation Vessels (WTIVs)

WTIVs are the biggest and strongest ships, with massive cranes to lift and install wind turbine parts (towers, blades, and nacelles).



02

Service Operation Vessels (SOVs)

SOVs are the all-in-one support vessels that house technicians, tools, and equipment for repairing and maintaining turbines once they're installed.



03

Crew Transfer Vessels (CTVs)

CTVs are smaller, faster vessels used to transport workers to and from the wind farm. They ensure technicians can quickly get to turbines for regular checks and small repairs.



04

Cable-Laying Vessels (CLVs)

CLVs are responsible for laying cables on the ocean floor that connect wind turbines to the power grid onshore.



SUPPLIER LIST



Supplier Form

Don't Miss Out on Local Opportunities—Add Your Business to the SIIA Supplier List!

Green energy and infrastructure projects are transforming Staten Island. Developers are looking for local businesses like yours to join these initiatives.

Filling out the SIIA Supplier Form ensures:

- **You're Seen:** Developers turn to this list for trusted local suppliers.
- **You're Included:** Don't let opportunities pass your business by.
- **You're Represented:** Support Staten Island's economy by taking part.

[Submit Your Business Now](#)

It's quick, free, and ensures your business is part of Staten Island's future.

EVENT ALERT

An aerial photograph of the Triborough Bridge (Robert F. Kennedy Bridge) spanning the East River in New York City. The bridge's steel truss structure is illuminated by the warm, golden light of the setting or rising sun. The water below is dark, and the city skyline is visible in the background.

STATEN ISLAND TRANSPORTATION & INFRASTRUCTURE SUMMIT

SEPTEMBER 19th

9 AM- 4PM

College of Staten Island

TICKETS AVAILABLE

Members Free | \$25 GA

WHAT CAN WE BUILD TOGETHER?

2025 SUPPLIER LIST AVAILABLE -
CONTACT US FOR MORE INFO



PARTNERS & SUPPORTERS





KAMILLAH HANKS
COUNCILWOMAN
DISTRICT 49



VITO FOSELLA
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AWO Overview and Offshore Wind

Brian Vahey
Kyle Burleson



**The American
Waterways Operators**

The Tugboat, Towboat & Barge Industry Association

AWO: Tugboats, Towboats and Barges

The American Waterways Operators is the tugboat, towboat and barge industry's advocate, resource and united voice for safe, sustainable and efficient transportation on America's waterways, oceans and costs.

- Established in 1944
- Over 300 members operating across 38 states and Puerto Rico
- Over 5,000 towing vessels and 33,000 barges
- Supporting over 270,000 jobs
- Contributing \$30 billion to U.S. GDP

Safety First

- Coast Guard-AWO Safety Partnership
- AWO Responsible Carrier Program
- Safety Statistics Reporting Program

AWO in New York

- Eight members headquartered in NY/NJ
- Over 30 members doing business here
- Ports of NY/NJ
- Hudson River
- Ship Assist
- Barging
- Construction

NEW YORK ECONOMIC IMPACT

HOW DOES MARITIME
SUPPORT NEW YORK JOBS?

MARITIME INDUSTRY

31,330
TOTAL JOBS

\$2.6 BILLION
LABOR INCOME

HOW DOES MARINE
TRANSPORT BENEFIT
NEW YORK'S ECONOMY?

INDUSTRIES DEPENDENT ON
MARINE TRANSPORT

\$32 BILLION
TOTAL OUTPUT

\$4.4 BILLION
LOCAL PURCHASES

Tugboat, Towboat and Barge Industry

- Ship assist
- Offshore towing
- Dredging/Construction/Salvage
- Linehaul towing

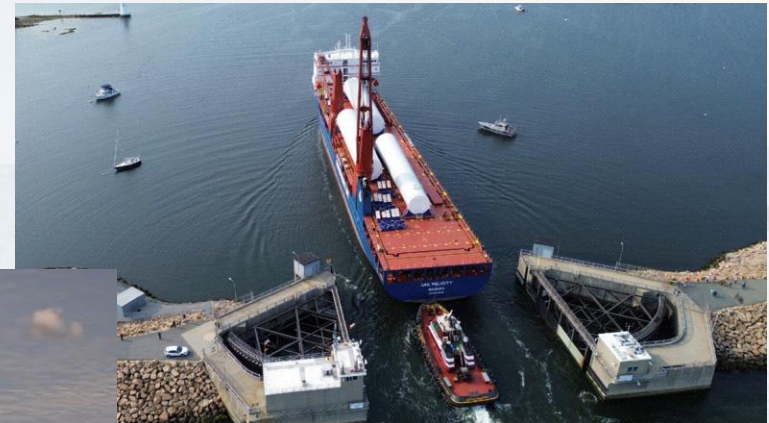
AWO and Sustainability

- AWO members have a longstanding commitment to environmental sustainability
- First hybrid tugboat in United States in 2010
- First all-electric tugboat in United States in 2024
- CEO-level sustainability task force produced Environmental Stewardship Best Practices

AWO and Offshore Wind

- Biggest opportunity for new business in a generation
- AWO Members are already at work.
- Crowley Wind Services
- Foss
- Great Lakes Dredge & Dock
- McAllister Towing

AWO and Offshore Wind



Thank You

Any Questions?

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Update on the Autonomous Vessel Uses in Offshore Wind Study

Study on Autonomous Vessel Usage for Offshore Wind in New York

Project Opportunity:

- Outcome of updated Research Agenda
- Topic 1.7 Jones-Act Compliant Vessel Availability

Project Overview:

Examine the current state of these technologies and explore their potential future use

Understand the implications of emerging autonomous and unmanned technologies for all of phases of an offshore wind project

Provide a resource for M-TWG members to learn about potential applications and constraints of these technologies in New York region



Project Deliverables

1. Literature Review
2. Stakeholder Engagement
3. Case Studies on Technology
4. Review of Impacts
5. Opportunities and Constraints
6. Final Report



Technology Key Terms

Fully Autonomous Vessel

A ship capable of navigating and operating on its own without human input, using advanced technology to make decisions independently.

Unmanned Surface Vessel

A vessel or ship that operates on the water's surface without any crew, either via remote control or autonomous systems.

Remote Operation Center

A facility where specialists manage and oversee real-time operations of remote-controlled vessels from a distance.

Remotely-Operated Vessel

An unoccupied, remote-controlled machine controlled by an operator from a surface vessel, used for tasks like underwater exploration and inspections.



Case Study 1: Sea Machines

Technology Overview

- SM300 Autonomous Command and Control System
- Converts conventional crewed vessels into remotely-operated or fully autonomous vessels
- Full integration with command-and-control and communication systems
- Autonomous capabilities include route planning and real-time obstacle/collision avoidance
- Capable of retrofitting existing vessels and platforms



Case Study 1: Sea Machines

Applications

- Autonomous and remote-helm operations:
 - Hybrid cargo vessel *Captain Ben Moore*, currently operating between Norwalk, CT and Huntington, NY
- Hybrid and unmanned surveying and monitoring:
 - Survey vessel *Sigsbee*, hydrographic surveying in Galveston Bay, TX
 - Unmanned survey vessel *SELKIE7*, offshore asset inspections and environmental monitoring
- Tugboat operations (demonstration):
 - Remotely commanded vessel *Nellie Bly*, conducted a 13-day voyage for demonstration of remote and autonomous operations



Nellie Bly (Photo by Sea Machines Robotics)

Case Study 2: Fugro

Technology Overview

- Unmanned Surface Vessels and Remotely Operated Vehicles
- 9- to 18-meter class unmanned surface vessels
 - *Blue Shadow, Blue Essence, Blue Prism, and Blue Eclipse*
- Remotely operated vessels
 - *Blue Volta and Blue Amp*
- Multiple surface and subsea mission configurations and applications
- Stand-alone or fleet operations
- Remotely operated vessels launched from unmanned surface vessel



Case Study 2: Fugro

Applications

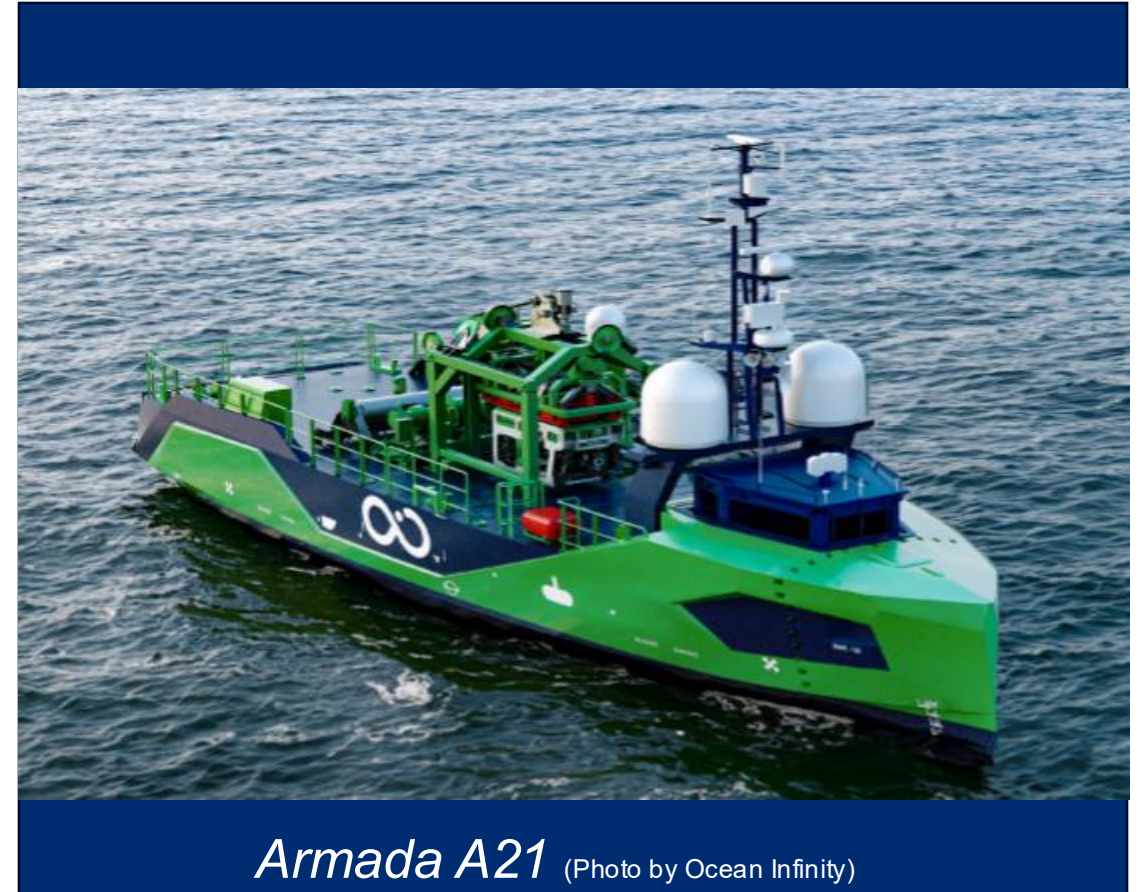
- Asset inspection and maintenance:
 - Remote inspections of wind turbine foundations, mooring and anchoring systems, cables, and pipelines in the North Sea
- Seabed Surveying:
 - Hydrographic and geophysical surveys in the North Sea and Middle East
 - Unexploded ordinance detection
- Environmental Monitoring:
 - Real-time monitoring for presence of marine mammals, water quality, and underwater noise



Case Study 3: Ocean Infinity

Technology Overview

- Unmanned Surface Vessels
- 8- to 86-meter class unmanned or minimally-crewed vessels
 - *Armada* series A8, A21, A36, A78, and A86
- Multiple mission configurations and applications
- Capable of physical sampling and testing
- Stand-alone or fleet operations
- Autonomous and remotely operated vessels launched from unmanned surface vessel (A36, A78, A86)



Armada A21 (Photo by Ocean Infinity)

Case Study 3: Ocean Infinity

Applications

- Asset inspection and maintenance:
 - Pipelines, cables, floating and fixed foundations in the North Sea
- Seabed Surveying:
 - Hydrographic surveys and seabed mapping in North Sea, Indian Ocean and Pacific Ocean
 - Unexploded ordinance detection
- Environmental Monitoring:
 - Acoustic marine mammal monitoring, water quality, benthic habitat, underwater noise in North Sea, Baltic Sea, and Atlantic Ocean
- Geotechnical and Geophysical Sampling:
 - Cone penetration tests and vibracoring in the North Sea and U.S. West Coast



Case Study 4: XOCEAN

Technology Overview

- Unmanned Surface Vessels
- 2.5- to 5.8-meter unmanned surface vessels
 - XO-250, XO-450, and XO-580
- Oceanographic, hydrographic, and environmental data collection
- Over-the-horizon communication and remote operation
- Operates in shallow and deepwater for extended missions
- Capability for towing underwater sensor arrays



XO-450 (Photo by XOCEAN)

Case Study 4: XOCEAN

Applications

- Seabed Surveying:
 - Bathymetric surveying, sub-bottom profiling, magnetometry, and scour monitoring in Southern Ocean, North Sea, Irish Sea, Taiwan
- Environmental Monitoring:
 - Fish population survey in North Sea
- Construction Monitoring:
 - Surveying around turbine sites during construction in North Sea
- Note: Demonstration testing in New York waters (*see photo*)



XO-450s (Photo by XOCEAN)

Lessons Learned



Source: Fugro GAO-24-107059

- Autonomous vessels offer new opportunities for mariners while reducing exposure to offshore risks
- Autonomous vessels can operate in sea states and/or water depths that pose significant risks to mariners
- Offshore missions can be completed by autonomous vessels or remote-controlled vessels while potentially reducing project timelines, costs, and environmental impacts
- Autonomous vessels require the harmonization of standards and rules for control and data security

Project Schedule:

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State Updates

Next Steps



NYSERDA

Thank you!

