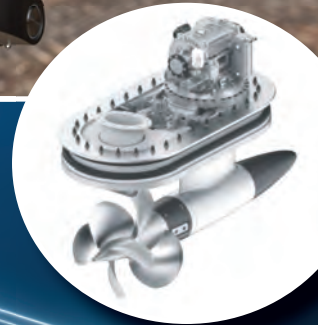
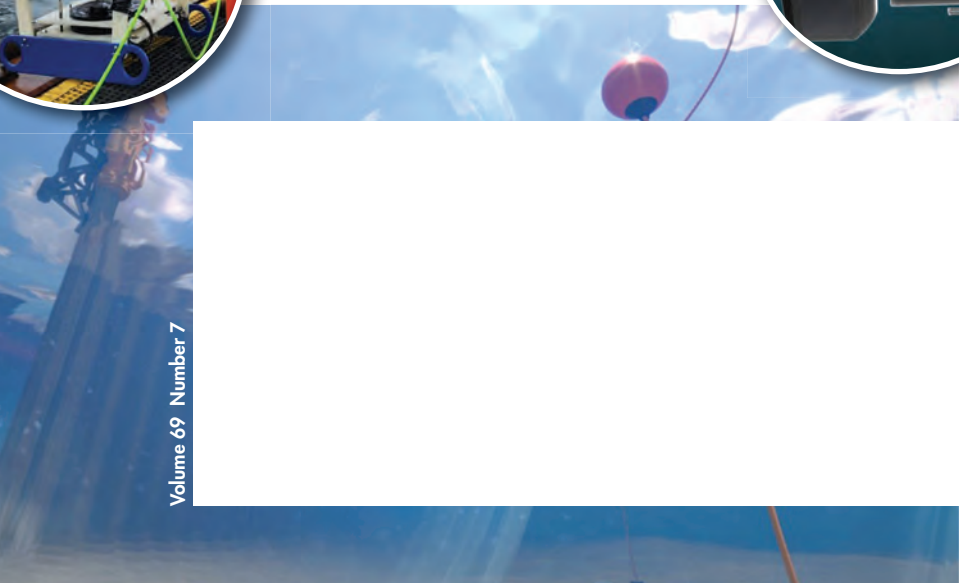
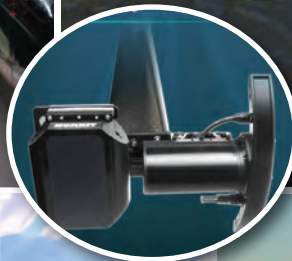


MARINE TECHNOLOGY REPORTER

September/October 2026
www.marinetechologynews.com



The 21st Annual MTR 1000



MISSION SPECIALIST

WRAITH

CONTROL THE DIVE

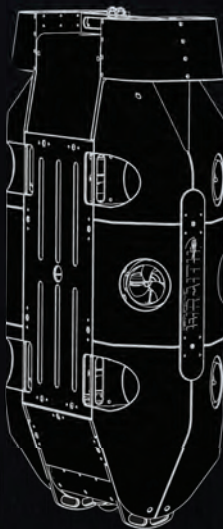
NOT THE CONDITIONS



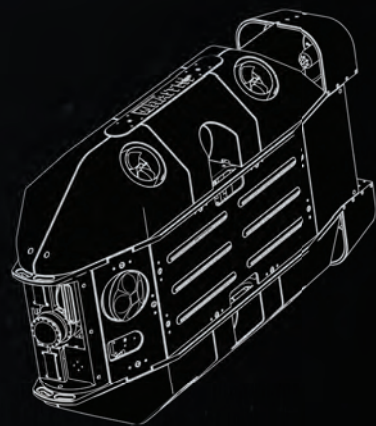
 6 DOF AGILITY  10 THRUSTER POWER  EXPANDED PAYLOAD  1000 M DEPTH



INSPECT SMARTER



DIVE FASTER



INTERVENE PRECISELY

VideoRay
AN  COMPANY



Explore what's possible at videoray.com

RTSYS
GROUP

THREE EXPERTISES FOR SUBSEA CRITICAL OPERATIONS

INSPECTION & INTERVENTION

MINE CLEARANCE

SEABED WARFARE

ASW TRAINING
& SONAR TESTING

rtsys.com

THE MTR100 2026

Company	Page	Company	Page
Anduril	11, 12, 36	Nautical Reach Systems	63, 65
Anekconnect	46	Nautilus Marine Service	44
AtlantiCan Growth Partners	65	Neptune Marine Products	45
Atlantic Aqua Farms	65	NOAA	57
Austal	34	Noise Control Engineering LLC	28
Bedrock Ocean	12	NORBIT Subsea	32
BIRNS	17	Nortek	29
Blueprint Subsea	17	Norwegian Subsea	32
Blue Robotics	45	Numurus, Inc.	72
Blue Trail Engineering	46	Ocean Aero	53
Boeing	34	Oceanbotics	30
Bollinger	34	Oceaneering	12
Canada's Ocean Supercluster	65,	Ocean Infinity	37
Cellula Robotics	8, 11, 63	Ocean Innovations	45
COVE	63	Open Ocean Robotics	51
David Clark Company	16	Ocean Power Technologies	32, 51
Davie Defense	36	OceanSight	29
Dragonfish Manufacturing	46	pHathom	65
Deep Ocean Engineering	16	Prevco	45
Deepwater Buoyancy	46	Raytheon Technologies	34
Deep Water Exploration	47	RBR	46
Defence Research and Development Canada	63	Reach Subsea	36
Del Mar Oceanographic	21	Rheinmetall	36
Devologic	47	R.M. Young Company	25
DWTEK	16	RS Aqua	30
Ecocoast	22	RTsys Underwater Technologies	68
ecoSUB Robotics	11, 20	Saab UK	71
EdgeLab	29	Saildrone	34
EdgeTech	22, 44	Saronic	51
Exail	36	Sea-Bird Scientific	46
Falmouth Scientific, Inc.	20	SeaTrac Systems	75
Fincantieri Marine Group	34, 35	SeaView Systems, Inc.	72
Fugro	36	Sensor Technology Ltd	23
General Dynamics	34	Sofar Ocean	51
General Oceanics	46	Sonardyne	54
General Oceans	20	Sonotronics, Inc.	74
GeoAcoustics	14	South Bay Cable	46, 74
Gdansk Shipyard	37	SRT Marine Systems	37
Global Ocean Design	45, 47	Star-Oddi	46
Hanwha Ocean Co., Ltd.	62	SubC Imaging	68
HII	34	SubConn	46
Huntsman Marine Science Centre	65	SubCtech GmbH	31
HydroSurv	27	Subsea Europe Services GmbH	76
Industrias FERRI, S.A.	63	SubSeaSail	12
Integer Technologies	12	SubSeaSonics	44
Intelatus Global Partners	34, 51	SUBSEA TECH	76
Intermoor	18	Sunfish, Inc.	70
International Fishing Devices	46	Systems Engineering & Assessment	8
Jaia Robotics	26	Teledyne Marine	11, 71
Jasco	46	Thales	35
JW Fishers Mfg., Inc.	21	ThayerMahan	11, 54
Klein Marine Systems	26	The Launch	63
KC-Denmark	47	Total Marine Technology	70
Kongsberg	35, 36, 37	Trawlworks	46
Kraken Robotics	11, 24, 35, 54	Ultra Maritime	11
Kraken Technology	36	Unisense Scientific	46, 48
Leidos	12	University of New Brunswick	62
Linden Photonics	27	UK Maritime Innovation Hub	40
Liquid Robotics	12	U.S. Navy	57
L3 Harris	12, 37	VARD	37
Maritime & Coast Guard Agency	40	VATN Systems	12
MARSS Group	53	VideoRay	12
MARTAC	53	WASSOC	47
Massa Products Corporation	26	Wilcoxon Sensing Technologies	77
McLane Research Laboratories	28	Xeos	47
Memorial University of Newfoundland	63, 65	XOCEAN	36
MetOcean Telematics	47	ZF	75
Mission Robotics	46	3M	47
Mythos AI	51		

Images in this Edition: All editorial images in this edition were supplied by the company they are associated with, unless otherwise specified.

Seaeye Falcon

Empowering



The professional portable underwater vehicle.

The Seaeye Falcon is the most versatile underwater electric robotic system in its class. Compact, powerful, and depth-rated to 300 m or 1,000 m, it empowers users in demanding missions, making it the trusted choice for critical underwater tasks worldwide.

Learn more at: saabseaeye.com



SAAB



www.marinetechologynews.com

NEW YORK

118 E. 25th St., New York, NY 10010
Tel: (212) 477-6700; Fax: (212) 254-6271

CEO

John C. O'Malley
jonalley@marinelink.com

President & COO

Gregory R. Trauthwein
trauthwein@marinelink.com

Managing Editor

Celia Konowe
celia@marinelink.com

Contributing Writers

Kevin Hardy
Edward Lundquist
David Strachan

Production Manager

Irina Vasilets
vasilets@marinelink.com

Production & Graphic Design

Nicole Ventimiglia
nicole@marinelink.com

Corporate Staff

Manager, Marketing
Mark O'Malley
momalley@marinelink.com

Accounting

Esther Rothenberger
rothenberger@marinelink.com

Manager, IT Services

Vladimir Bibik

Circulation

Kathleen Hickey
mtrcirc@marinelink.com

Advertising

Vice President, Sales and Marketing

Terry Breese
breese@marinelink.com
Tel: (561) 732-1185

MTR Sales Director

Mike Kozlowski
kozlowski@marinelink.com
Tel: (561) 733-2477

Advertising Sales Manager

Frank Covella
covella@marinelink.com
Tel: (561) 732-1659

John Cagni

cagni@marinelink.com
Tel: +1 (631) 472-2715

Editorial

Welcome back to the 21st MTR 100, our annual deep dive into the technologies, companies and people that drive the subsea market. We're excited for you to read about new updates from some of our regular submissions, as well as discover new companies, innovations and individuals. The MTR 100, while not an exact science, provides an overview of the trends and markets driving this industry forward. We cover autonomy and AI, digitalization, decarbonization, maritime and subsea defense — highlighting solutions across the globe.

Additionally, we address some hard-hitting sectors and themes. David Strachan explores subsea defense technologies, while Kevin Hardy delves into lander technologies. Wendy Laursen explores port security solutions. Greg Trauthwein highlights the storied career of Rear Admiral Tim Gallaudet, PhD, U.S. Navy (Ret.) and his new book, *Holding Fast in Heavy Seas: Leadership for Turbulent Times*. Philip Lewis "follows the money," analyzing the unmanned and autonomous surface and underwater vehicle markets. I sat down for an interview with Jonty Slater, assistant director at the UK Maritime Innovation Hub, a sub-function of the Maritime & Coastguard Agency, to discuss autonomous surface vessels and regulations. I also explore the waters of my own backyard in Atlantic Canada, highlighting the research and technologies that keep this region a leader of such a global industry.

Aside from the stories within these pages, we spent the last week of September at the OCEANS conference in Monterrey, collecting more ideas and exploring marine technologies on the west coast.

If you missed us at OCEANS, never fear—our team will be at Underwater Intervention/the International WorkBoat Show in New Orleans in early December. We'll be looking to make new connections and highlight your stories with onsite interviews and videos. If you're interested, drop us a note and we'll line something up.

I hope this year's MTR 100 broadens your horizons and we'll see you next month.



Scan the QR code
to access the
Marine Technology TV
YouTube page:



Celia Konowe

Celia Konowe
Managing Editor
celia@marinelink.com

MARINE TECHNOLOGY REPORTER

www.marinetechologynews.com

Vol. 69 No. 7

ISSN 1553-276

118 East 25th Street,

New York, NY 10010

tel: (212) 477-6700

fax: (212) 254-6271

Marine Technology Reporter (ISSN 1559-7415) is published monthly except for February, August, and December by New Wave Media, 118 E. 25th St., New York, NY 10010-1062. Periodicals Postage Paid at New York, NY and additional mailing offices.

POSTMASTER: Send all UAA to CFS. NON-POSTAL AND MILITARY FACILITIES send address corrections to Marine Technology Re-

porter, 850 Montauk Hwy., #867, Bayport, NY 11705.

The publisher assumes no responsibility for any misprints or claims or actions taken by advertisers. The publisher reserves the right to refuse any advertising. Contents of the publication either in whole or part may not be produced without the express permission of the publisher.

Copyright © 2026 New Wave Media.

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means mechanical, photocopying, recording or otherwise without the prior written permission of the publishers.

Subscription:
To subscribe please visit
www.marinetechologynews.com

The Map Only Tells Part of the Story



Sensing, imaging, and acoustic technologies reveal
what bathymetry alone cannot.

Detect



Tow-free magnetic and
electromagnetic sensing for
confident seabed decisions

Inspect



Ultra high-resolution imaging
sonar to reveal critical details
in any visibility

Enable



Precision transducers
and arrays engineered for
acoustic performance



One company. Three technology leaders.

oceansight.com

Authors & Contributors



Laursen

Laursen

Wendy Laursen has 20+ years of experience as a journalist. In that time, she has written news and features for a range of maritime, engineering and science publications. She has completed a Master of Science research degree in marine ecology as well as diplomas in journalism, communication and subediting.

Lewis

Philip Lewis has over 30 years of corporate and commercial management and strategic planning experience in



Lewis

senior leadership team and Board positions, developing strategy, driving change and exceeding targets within the renewable energy, offshore & marine, shipping, heavy engineering, and unmanned and autonomous space, managing teams across Asia, the Middle East, Africa, Europe and the USA.

Strachan

David R. Strachan is a defense analyst and founder of Strikepod Systems, a research and strategic advisory focusing on autonomous undersea systems.



Strachan



ALL NEW DIGITAL MARKETING SOLUTION

THE MARINE TECHNOLOGY REPORTER E-MAGAZINE BRINGS IN-DEPTH NEWS AND INFORMATION TO READERS IN A NEW DIGITAL FORMAT, WITH EXPANDED MULTIMEDIA ADVERTISING SOLUTIONS.

These special editions will be distributed electronically to over 37,000 recipients. Premium positions, full and 1/2 page ads are available, with custom ad enhancements including: links, videos, interviews and company profiles.

For pricing or to learn how *Marine Technology Reporter* can help build brand awareness across multiple platforms, download our media kit on marinetechnologynews.com

MTR Editorial Advisors



Gallaudet

The Honorable Tim Gallaudet, PhD, Rear Admiral, U.S. Navy (ret) is the CEO of Ocean STL Consulting and host of *The American Blue Economy Podcast*. He serves on several boards, is a fellow at The Explorer's Club, and is a strategic advisor for a few dozen startups, research institutions, and nonprofits in the ocean, weather, climate, and space sectors. Gallaudet is a former acting Undersecretary and Assistant Secretary of Commerce, acting and Deputy Administrator of the National Oceanic and Atmospheric Administration (NOAA), and Oceanographer of the Navy. He has a bachelor's degree from the U.S. Naval Academy, and master and doctoral degrees from Scripps Institution of Oceanography.

Kevin Hardy is President of Global Ocean Design, creating components and subsystems for unmanned vehicles, following a career at Scripps Institution of Oceanography/UCSD. He holds patents in the field of ocean landers. He is on the academic advisory board of Instituto Milenio de Oceanografía at the Universidad de Concepción, Chile. Hardy received an honorary Doctor of Science degree from Shanghai Ocean University in 2018. He proposed making thick wall glass spheres to Nautilus Marine Service/Vitrovex (Germany) that opened the hadal depths to routine exploration. He writes for the *Journal of Diving History* and the *MTR*.



Hardy

Li-Ion PowerPack™ - Underwater power solutions

Transform into the cost-efficient and sustainable future

subCtech

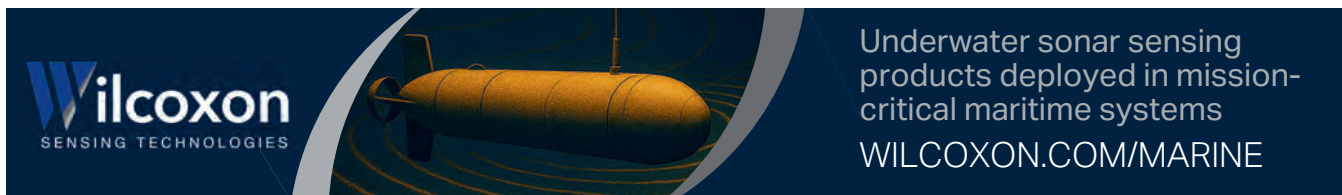
Vehicle Batteries

Energy Storage Systems

String Batteries

Subsea UPS

UN 38.3
ISO 9001
MILITARY STANDARD
CERTIFIED



Credit: Rebecca Shaw, Naval Oceanographic Office

FROM CONOPS TO KILL CHAINS: BUILDING THE ARCHITECTURE OF SUBSEA DOMINANCE

By David Strachan, Strikepod Systems

In Ernest Hemingway's novel *The Sun Also Rises*, Mike Campbell describes his progression toward bankruptcy as happening "gradually, and then suddenly."

Hemingway may have been portraying financial troubles, but the same might be said for the evolution of undersea warfare. What began years ago as broad, visionary concepts of operation (CONOPS) has given way to a rapid proliferation of increasingly capable autonomous systems. The next phase is now underway: moving from a collection of concepts and technologies toward integrated, distributed kill chains. The following vignettes illustrate how these emerging architectures might come together across five mission sets.

ANTI-SUBMARINE WARFARE (ASW)

A maritime patrol aircraft (MPA) arrives on station. Scattered throughout the region are littoral battlespace sensing gliders (LBS-Gs) providing updated environmental data to characterize the sound velocity profile and improve acoustic detection and localization. Ten nautical miles away, a high-endurance XL-AUV towing a passive acoustic array patrols a

known submarine transit route, while five hundred meters below, a distributed wireless network of seabed acoustic nodes listens in the frigid darkness. A contact is detected and classified. The network transmits data via burst acoustic communications (ACOMMS) disguised as ambient noise, which is received by comms-enabled sonobuoys deployed by the MPA. Rather than break contact and surface or transmit via ACOMMS and risk counter-detection, the XL-AUV releases a small AUV, which reaches the surface and passes a compressed contact report over the horizon. Minutes later, the MPA fuses both reports into a track. The MPA then alters course, preparing sonobuoys to localize the contact and lightweight torpedoes to engage.

Persistence is the key to vigilance, and nowhere is this more apparent than ASW. With a range of 5,000 kilometers and a submerged endurance of 45 days, Cellula Robotics' fuel cell-powered Guardian AUV could provide an underwater "unblinking eye" for persistent ASW surveillance. Passive sensing could be provided by a compact KraitArray from Systems Engineering & Assessment (SEA), a 20mm diameter, low-SWaP towed sonar array compatible with both uncrewed underwater and surface platforms. Environmen-



Vice Adm. Rick Seif, Commander, Submarine Force, Atlantic Fleet, receives a brief from defense industry professionals at Joint Expeditionary Base Little Creek - Fort Story as part of Exercise Lanternfish 2026. Exercise Lanternfish is a capability development and demonstration event designed to enhance US Navy, AUKUS, and defense industry interoperability in defensive subsea and seabed warfare (SSW).

U.S. Navy photo by Mass Communication Specialist 1st Class Anderson W. Branch



Your sensors. Our software.
Survey the world!



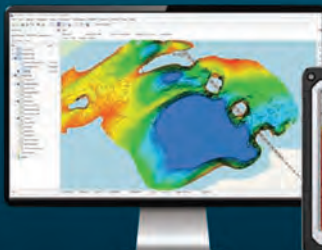
HYPACK® & HYSWEEP®

Survey and map your waters and shorelines to deliver all types of hydrospatial data.

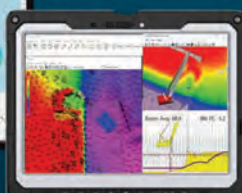


DREDGEPACK®

Manage and monitor dredging and placement projects to meet your required standards.

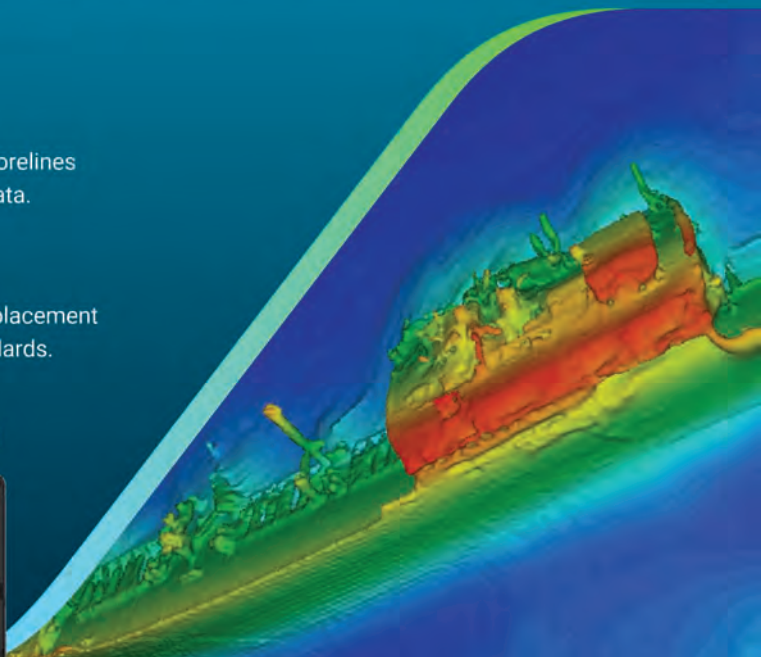


[Learn More](#)



HYPACK® LINK

Subscription-based service for remote monitoring of DREDGEPACK® field-to-office intelligence software





ThayerMahan's SeaGuard can be paired with its ShorePicket arrays to provide acoustic intelligence and warning.

© 2026 ThayerMahan, Inc.



Credit: ThayerMahan, Inc.

tal sensing could be provided by Slocum Gliders from Teledyne Marine equipped with sensors that measure temperature, pressure, and salinity.

Ultra Maritime and Anduril Industries could offer another piece of the distributed acoustic picture. During the U.S. Navy's LANTERNFISH 2026 exercise, Ultra Maritime combined its passive Sea Spear deployable sonar (integrated with Anduril's Seabed Sentry sensor nodes) with an SSQ-125B active sonobuoy to passively detect and actively localize AUVs. The Navy has also sought ACOMMS-enabled prototype SSQ-125s capable of acting as communications gateways.

Micro-AUVs such as the ecoSUBu5 could also act as "data bubbles" to covertly smuggle high-bandwidth data through the air-sea interface. Cellula and ecoSUB demonstrated such a capability in 2022, using a Cellula Robotics Envoy (previously Solus-LR) as the host vessel.

PORT SECURITY

An intruder detection system senses an anomalous acoustic signature within the channel leading to a heavily trafficked naval harbor. A hydrophone array establishes a track, triggering a non-kinetic counter-UUV system to activate, disabling and defeating the incoming threat. An AUV is dispatched to obtain high resolution imagery of the seabed along the suspected approach route, which operators use to compare against baseline imagery. Something has changed, and an ROV is deployed to investigate.

Port security is evolving from discrete surveillance and response systems toward a persistent detect-localize-classify-neutralize architecture.

Forcys, now part of Kraken Robotics following its acquisition of Covelya Group, addresses the detection problem with its Sentinel IDS, an intruder detection sonar designed to detect, track and classify divers, swimmer delivery vehicles and AUVs in cluttered harbor environments. ThayerMahan, meanwhile, has developed SeaGuard,

a rapidly deployable non-kinetic AUV defeat system intended for ports and CUI defense. SeaGuard can be paired with ShorePicket, the company's acoustic monitoring system which uses low-profile, linear hydrophone arrays to provide acoustic intelligence and warn-

ing in high-traffic, noisy environments.

If a threat reaches the seabed, the problem becomes one of change detection, classification, and neutralization. Synthetic-aperture sonar from Kraken Robotics can generate detailed acoustic imagery, while optical



the uncommon Connection

South Bay Cables are the Uncommon Connection for tough jobs around the world. Quality and reliability are designed and manufactured into every cable we build.



**South
Bay
Cable**

1 (951) 659-2183
sales@southbaycable.com
southbaycable.com
A Proud US Manufacturer Since 1957

HIGHLY ENGINEERED  CUSTOM CABLE

systems from Voyis (now part of Kraken Robotics) can create high-resolution three-dimensional models for identification. The threat could then be interrogated and remotely neutralized using a Defender ROV from VideoRay (an AeroVironment Company) to deploy a remotely detonated charge.

EXPEDITIONARY SEA DENIAL

On a remote island deep inside an adversary weapons engagement zone (WEZ), a small detachment of Marines rotates a fleet of strike AUVs into a strategic waterway to autonomously engage enemy surface traffic. Some 600 nautical miles away, a low-profile autonomous craft is inbound, loaded down with critical supplies and additional rounds. Meanwhile, hybrid autonomous undersea and surface vehicles (AUSVs) maintain watch offshore, providing additional targeting data to the Marine operators and the mobile mines lurking below.

Pods of roaming, armed AUVs may sound futuristic, but platforms such as the VATN Systems' Skelmir S12, a swarm-enabled medium AUV with a range of between 125 and 200 nautical miles, could enable an austere Marine Corps expeditionary advanced base (EAB) to conduct sea denial operations by establishing a persistent, mobile minefield just offshore.

Covertly resupplying the Marines creates another problem. Leidos' Sea Specter offers an intriguing solution: a stealthy, long-range autonomous low-profile vessel (ALPV) inspired by narco submersibles and intended to deliver supplies or firepower into contested areas.

Offshore intelligence warning and targeting data could be provided by the SubSeaSail HORUS, a small wind- and solar-powered semi-submersible platform designed for low signature, long endurance ISR missions.

CRITICAL UNDERWATER INFRASTRUCTURE (CUI) DEFENSE

A transoceanic cable operator is alerted via distributed acoustic sensing (DAS): contact detected near a section of cable located hundreds of meters below the surface. A resident AUV is dispatched to investigate, processing its survey data onboard to identify the anomaly rather than transmitting terabytes of raw data. A compressed ACOMMS transmission is relayed via a loitering USV providing a communications gateway to operators ashore, who acknowledge the finding and authorize neutralization. The vehicle deploys a small shaped charge from an integrated neutralization module, which is then activated remotely via acoustic signal.

The defense of vulnerable subsea infrastructure continues to gain attention, and persistent autonomous operations could transform CUI defense from periodic survey missions to continuous awareness.

During LANTERNFISH 2026, Bedrock Ocean, Integer

Technologies, and Liquid Robotics demonstrated an architecture linking AUVs, persistent ACOMMS, and shore-based mission awareness to address critical undersea infrastructure protection. All three companies bring an important piece of the kill chain to bear – Bedrock with a fleet of modular AUVs purpose-built for subsea imaging; Integer Technologies, with DIGIT UxV mission assurance software, which fuses real-time operational state with predictive digital twins; and Liquid Robotics with its high-endurance Wave Glider USV, providing a gateway between the surface and undersea domain.

Oceaneering brings decades of subsea inspection and intervention experience to this problem set. Its Freedom AUV is a resident-capable vehicle that can dock with Oceaneering's Liberty resident system to charge its batteries and transfer data without having to surface. And Freedom's unique tooling interface could conceivably be used to actuate a mine-neutralization module, such as one designed to deploy small, remotely detonated charges.

SUBSEA STRIKE

An XL-AUV approaches a contested maritime chokepoint. On the ocean floor below, an energy depot is powering an enemy passive acoustic sensing array. Waiting inside the XL-AUV's payload bay is a complement of smaller autonomous vehicles, some configured with advanced imaging sonar and target recognition software, while others carry high-powered warheads. The imaging vehicles are released, capturing high resolution imagery of the seabed that is processed by onboard target recognition software to confirm the depot's location. Targeting data is transmitted back to the XL-AUV and passed to the strike AUVs, which slip quietly from the payload bay.

Seabed warfare is often framed around cables and pipelines, but could increasingly encompass UUV-launched kinetic strikes against other forms of infrastructure: sensors, effectors, and energy outposts. Anduril's Dive-XL paired with the company's Copperhead family of AUVs offers one potential architecture. Copperheads can be fitted with side scan sonar for survey missions, or high-powered warheads for strike.

Meanwhile, crewed submarines themselves are becoming autonomous system motherships. In March of this year, L3Harris received a DIU contract for its Iver4 900 Torpedo Tube Launch and Recovery (TTLR) system. Such a capability would extend the submarine's organic sensing capability, but it also would enable precision engagements against seabed targets.

The next phase in the evolution of undersea warfare may be less about developing new platforms than connecting those that already exist. AUVs, USVs, distributed sensors, sophisticated payloads, and advanced processing are providing the individual links. The challenge now is integrating them across the air-sea interface and throughout the water column into distributed operational kill chains.



Credit: SubSeaSail

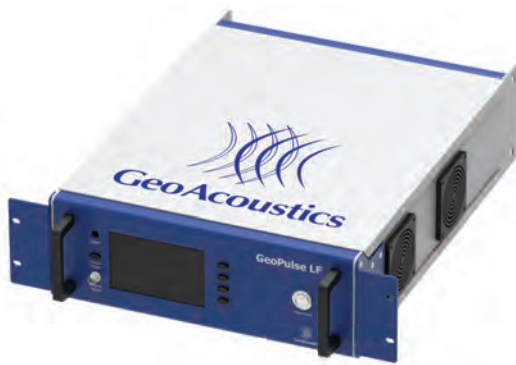


Credit: Oceaneering

YellowScan Navigator.

An innovative bathymetric LiDAR solution for exploring underwater and ground topography.

YellowScan



GeoAcoustics Ltd

Norfolk, England
geoacoustics.com

President/COO: Richard Dowdeswell
of employees: 22

GeoAcoustics Ltd is a UK-based manufacturer of hydroacoustic systems for shallow-water seafloor mapping, subsurface imaging, and seabed characterization in marine and inland water environments.

Multibeam Echosounder:

- GeoMB is a high-performance multibeam echosounder delivering precise bathymetry. Compact, lightweight, and integrated with a Sound Velocity Sensor and Applanix POS MV GNSS positioning & motion system, it is suited to hull or pole mounting on crewed and uncrewed surface vessels. High-density sounding delivers consistent, survey-grade results across diverse operating environments.

Side Scan Sonar:

- GeoAcoustics offers a range of side scan sonar systems for high-resolution seabed imaging. GeoScan 2491 and 2361 are dual-frequency and offer flexible deployment for infrastructure inspection, object detection, habitat mapping, search and recovery, and archaeological surveys.

Sub-Bottom Profiling:

- The GeoPulse 2 delivers sediment profiling and object detection in complex geology with minimal acoustic footprint. The new GeoPulse LF provides deeper sediment penetration through enhanced low-frequency performance. GeoPulse Compact balances penetration and resolution for nearshore and inland surveys. The range supports geotechnical, archaeological, pipeline, dredging, and environmental surveys.

Cable Molding Services:

- GeoAcoustics provides cable molding services,

producing robust overmolded cable assemblies for subsea and marine use. Supporting customer-specific designs, the service combines precision manufacturing and quality control to deliver dependable connecting solutions for hydrographic, offshore, defense, and oceanographic systems.

The launch of GeoMB at Oceanology International 2026 marked an achievement for GeoAcoustics, introducing the company's first multibeam echosounder in direct response to customer demand. Building on decades of sonar expertise and the GeoSwath legacy, GeoMB extends GeoAcoustics' capabilities into multibeam technology. Its integrated GNSS/IMU and sound velocity sensor, 512 beams, >140° swath and compact design provide a practical, high-resolution solution for vessels and uncrewed platforms.

GeoAcoustics also launched the GeoPulse LF – low frequency sub-bottom profiler at the same event in 2026.

Operating from its purpose-built facility in Great Yarmouth, UK, GeoAcoustics designs, manufactures, and supports its systems in-house. The Great Yarmouth facility includes everything from sonar test tanks and electronics assembly capabilities to calibration setups tailored to hydroacoustic system development. On-site resources support system integration, performance validation, and service. GeoAcoustics has also invested to expand its subsea cable molding facilities in Great Yarmouth. All GeoAcoustics products are supported through a global partner network spanning over 70 countries.



PORT OF THE FUTURE™

ANNUAL CONFERENCE

2 DAYS 50+ PORTS

APRIL 12-14, 2027



South Shore Harbour
Resort & Conference Center
League City, TX • Houston/Galveston Area

The 8th Annual Port of the Future Conference brings together senior leaders from more than 50 ports worldwide to explore the technologies, strategies, and innovations shaping the next generation of global port and maritime infrastructure.



Keynotes, case studies & expert panels



Interactive breakout sessions



In-water demonstrations of emerging technologies



Port infrastructure, decarbonization, cybersecurity & more



Connect with global port and maritime leaders

CONFERENCE TRACKS INCLUDE:

- ▶ Port Infrastructure 4.0
- ▶ Intermodal Connectivity
- ▶ Terminal Operations

- ▶ Decarbonization & Alternative Fuels
- ▶ Port Energy & Sustainability
- ▶ Port Security, Cybersecurity & Emergency Management

- ▶ Drones in Port Operations
- ▶ Developing Ports
- ▶ Advances in Maritime Nuclear Energy

REGISTER TODAY >>

www.portofthefutureconference.com



NEW WAVE MEDIA



DAVID CLARK COMPANY INC.
www.davidclarkcompany.com

David Clark Company designs, engineers, and manufactures communications systems that function in harsh and demanding conditions, including its 9100 series, which is used across myriad maritime applications.

Customers come from industries such as marine, aviation, airport ground support, fire/rescue, and military, as well as suit engineering and manufacturing for high-altitude flight and aerospace.

David Clark has recently been selected to provide their Series 9100 Digital Intercom Systems with wireless interface to the Royal National Lifeboat Institution, the largest volunteer-run maritime rescue and lifeboat charity of its kind in the world. Installations are planned across a wide selection of their fleet of over 450 lifeboats.



Credit: Darrell Martin

DEEP OCEAN ENGINEERING
www.deepocean.com

Deep Ocean Engineering specializes in the design and development of remotely operated vehicles (ROVs), autonomous underwater vehicles (AUVs), and other advanced marine systems. Its technologies support a wide range of applications, from oceanographic research and environmental monitoring to offshore energy, infrastructure inspection, defense, and underwater exploration.

By integrating robotics, electronics, sensors, control systems, and sophisticated underwater engineering, Deep Ocean Engineering helps organizations collect valuable data and perform tasks without putting human operators directly in hazardous environments.

The company's work reflects the growing importance of underwater robotics as industries and researchers seek greater access to the ocean. From inspecting submerged structures to gathering scientific information from difficult-to-reach locations, its systems are designed to deliver reliability and precision where conventional methods can fall short.

www.dwtekmarine.com

Founded in 2008, DWTEK is a subsea connector manufacturer and ROV solution provider. They offer integrated services covering ROV, connectors, components, vessel chartering, and offshore wind farm (OWF) operations.

Last year, DWTEK successfully completed a water dam inspection project using the ROV I90 Plus in collaboration with SKAVA, an underwater inspection company based in South America. The operation utilized the ROV to replace traditional diving methods, overcoming challenges of limited visibility and confined structures near critical infrastructure. Equipped with high-definition cameras, the ROV I90 Plus provided real time video transmission for precise structural examination, marking an entry into the South American market.

DWTEK operates a facility that integrates an R&D center, a machining workshop, and a testing laboratory. Located in Taiwan, the facility supports the entire lifecycle of subsea technology, from conceptual design and raw material formulation to volume production. Our infrastructure complies with ISO standards to ensure a controlled environment for high reliability assembly and quality control.

The facility is equipped with specialized machinery to guarantee subsea reliability, including:

- **Hyperbaric Testing Chambers:** Simulates deep sea pressure to validate sealing and structural integrity.
- **Precision CNC Machining Centers:** For high tolerance manufacturing of marine grade metal components.
- **Testing Pool:** Dedicated basin for ROV ballast tuning, maneuvering calibration, and continuous product life testing.
- **Electrical Testing Instruments:** For high voltage insulation validation.

BIRNS

birns.com

BIRNS is a designer and manufacturer of connectors, penetrators, and cable assemblies for deep ocean use. The company's Quality Management System is certified to AS9100:2016 and ISO 9001:2015 by DNV®, including SUBSAFE. Its Oxnard, CA molding facility is certified by the US Navy's Submarine Maintenance Engineering, Planning and Procurement (SUBMEPP) division to NAVSEA S9320-AM-PRO-020.

The company serves as an independent testing resource for the industry, including precision testing for deep submergence connectors and cable assemblies with an extreme low temperature, extreme depth testing system. The test system successfully allows for more than 48 hours of continuous testing of connectors and cable assemblies at 6km in a controlled 2°C (±1°C) environment and custom designed pressure vessel capable of tests to 20,000 psi (1380 bar).

The company has also recently become known for the design and development of photonics mast connectors, high speed data connectors and cable assemblies, along with 6km open-face-capable RF cable assemblies, 225A power connectors, and 6km-capable DNV Type-certified



crewed submersible products.

BIRNS received the contract to supply DNV type approved high amperage, gigabit Ethernet, and electro-optical cable assemblies and electro-optic penetrator assemblies for power, communication and life support and other key functions on India's National Institute of Technology's new 6km rated crewed Matsya 6000 research submersible.

Due to growth in sales, product demand and expanded market share in the last several years, BIRNS recently added a second factory at its Southern California facility. Both factories include departments for production, engineering, testing and administrative functions.

BLUEPRINT SUBSEA

www.blueprintsubsea.com



Blueprint Subsea designs systems for demanding underwater environments, from subsea surveys and marine science to defense and commercial diving.

Starfish side scan sonars:

- High Image quality
- Single person deployment
- Ideal for survey work and Search and Rescue (SAR)

applications

Oculus multibeam imaging sonars:

- Single and dual-frequency models
- Unparalleled image quality in a small form factor
- Operating ranges up to 200m and depth ratings down

to 4,000m

SeaTrac USBL acoustic positioning systems:

- Real-time ROV, AUV and diver tracking
- High accuracy positioning data
- Fast, simple system set-up

Artemis diver navigation systems:

• Covert navigation, sonar imaging and acoustic communication capabilities

- Extremely compact and robust design
- Ideal for Special Forces and Emergency Service divers

As part of Aion Group, Blueprint Subsea and sister company SUEX are preparing to launch Dark Blue, a dedicated defense division that brings together expertise in underwater acoustic technology and diver propulsion vehicles. Building on the heritage and technical strengths of both companies, Dark Blue will deliver integrated capability for defense, law enforcement and security operators through proven solutions for diver navigation, underwater positioning, asset tracking and tactical observation. Supported by specialist training and a unified sales team, the division is set to officially launch in 2027, providing a single source for mission-ready underwater capability.



Intermoor

Houston, Texas
<https://acteon.com/solutions/business-lines/intermoor>
 President/CEO: David McGuire
 # of employees: 300



Intermoor, part of the **Acteon Group**, delivers tailored mooring solutions focused on the design and installation of both permanent and temporary mooring systems, supporting sectors from oil and gas to floating wind.

For operators and contractors who require rig moves or who need to anchor FPU's, MODU's, TAD's, barges and other floating structures, Intermoor's range of services, and its ability to link up with other capabilities across the Acteon Group, delivers increased efficiencies and reduced costs. Intermoor engineers actively participate in the planning, design, logistics, installation, inspection, maintenance, and recovery operations for its mooring projects.

With experience in both spread and turret systems, Intermoor's teams advise on anchor type, vessel specification, component selection and offshore handling, enabling optimal mooring performance without overdesign or unnecessary interface complexity.

This service is available at any stage of the project: conceptual design, pre-FEED, FEED, early phase engineering, and detailed engineering. Consultancy is delivered as a stand-alone service or integrated into full-scope mooring delivery.

Their mooring engineering consultancy service draws on a global pool of mooring engineers, naval architects, marine analysis engineers, and structural engineers, and inte-

grates decades of experience across FPSO, FLNG, drilling, and floating offshore wind. Their recommendations are technology agnostic and focused solely on lifecycle value.

Intermoor operates from 11 locations worldwide, including five shorebases across Brazil, Norway, the UK and the US. These facilities provide access to offshore assets and support installation, inspection, maintenance and decommissioning. With deepwater quays, storage, spooling and chain-handling capabilities, equipment rental and 24/7 operational support, they deliver the logistical infrastructure needed to execute offshore projects safely and efficiently.

Intermoor's shorebases maintain an inventory of mooring equipment available for rental and sale, including anchors such as the proprietary Suction Embedded Plate Anchors (SEPLAs), chains, steel wire rope, synthetic rope, shackles, connectors, buoys and associated hardware. Although standard components are readily available, anchor selection and customization are tailored to each asset, site con-

ditions and environmental loads to deliver safe, reliable and cost-effective performance.

Over the past year, Intermoor has secured three Petrobras contracts in Brazil. The awards cover stack-up mooring services for intervention and abandonment campaigns, quality assurance and digital traceability of critical mooring assets, and inspection, maintenance and preservation of mooring and anchoring equipment. Together, these contracts span offshore operations, asset integrity, inspection, maintenance and operational readiness, supporting Petrobras' offshore infrastructure across Brazil.

Recent APAC projects include the decommissioning and towing of Chevron Thailand's Pattani FSO and Erawan SPM systems, involving the recovery of mooring chains, risers and subsea infrastructure. Intermoor also completed SPRC's CALM buoy replacement project in the Gulf of Thailand, safely decommissioning ageing infrastructure and installing a new system to support the long-term reliability of a critical energy asset.



PHANTOM[®] L6

The Phantom[®] L6 Applications include:

- Infrastructure Inspections – Pipelines, Dams, Reservoirs, Ships, Tunnels
- Homeland Security – Law Enforcement, Military, Customs
- Exploration – Surveying, Oil and Gas, Search and Recovery

The Phantom[®] L6 Features:

- Easily Reconfigurable and Customizable
- Built-in HD Camera
- Powerful Maneuverability
- 18,000 Lumens High Output Illumination
- Low Maintenance
- Optional Upgrades – Scanning Sonars, Navigational Software, Manipulator, Lights, Umbilical



www.deepocean.com • (408) 436-1102 • sales@deepocean.com



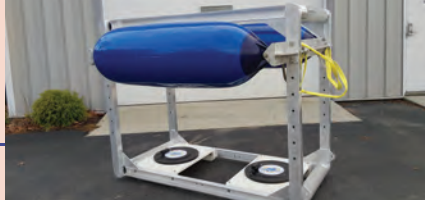
ECOSUB ROBOTICS

www.ecosub.uk

ecoSUB Robotics is the UK's only commercial manufacturer of Autonomous Underwater Vehicles (AUVs). ecoSUB's AUVs are small, portable vehicles, capable of carrying industry standard sensors and payloads, for defense, science and survey. ecoSUB is an operating Division of Planet Ocean Ltd.

They recently released the DXL platform, a wider body, longer vehicle with enhanced power and payload capacity. While developed originally for a UK MOD contract, it is now available commercially.

ecoSUB has its primary R&D unit collocated within the National Oceanography Centre's Marine Robotics Innovation Centre. Production is undertaken in Petersfield, Hampshire, with administrative headquarters in Camberley, Surrey.



FALMOUTH SCIENTIFIC, INC.

www.falmouth.com

Falmouth Scientific, Inc. (FSI) has been a provider in oceanographic instrumentation and marine acoustic technology since 1989, when it was founded based on technology licenses from the Woods Hole Oceanographic Institution.

FSI specializes in a portfolio of marine sensors, acoustic systems, and transducers designed to support a range of oceanographic and geophysical applications. Product offerings include seismic, sub-bottom, and integrated sub-bottom and side-scan sonar imaging systems, such as the HMS-621/622 Chirp Sub-Bottom Profilers, available in single or dual-channel configurations for both towed and hull-mounted deployment. A notable product is the Aquapulse, an acoustic sub-bottom system that has achieved penetration depths of up to 700 meters in water depths of 10 meters.

They also provide dual-frequency side-scan sonar systems with operational capabilities down to 2,000 meters, and the ACM-PLUS series for precision current, wave, and tide measurements in both coastal and deep-sea environments.

In addition, FSI offers acoustic relocation systems for accurate subsea positioning, as well as a selection of piezoelectric and electromechanical-acoustic transducers. Their transducer range includes standard models covering frequencies from 10 kHz to 500 kHz, alongside fully custom-designed transducers tailored to meet specific technical and environmental requirements.

FSI operates out of a purpose-built, 10,000-square-foot facility in Pocasset, Massachusetts, designed to support the full lifecycle of product development, from concept to deployment. The facility features testing infrastructure, including an acoustic test tank, pressure chamber, environmental chamber, and calibration lab.



GENERAL OCEANS

www.generaloceans.com

General Oceans ASA is a group of technology companies delivering advanced underwater solutions for demanding marine environments. The Group develops and supplies sensors, imaging and navigation systems, and autonomous and remotely operated vehicles supported by manipulators and control systems. Its technologies are used across marine technology, defense, offshore energy, and environmental science.

The Group's technologies include ADCP and DVL instruments, imaging sonar, sidescan sonar, hybrid ROV/AUV systems, electric manipulators, ocean observation platforms and more.

In March 2026, General Oceans ASA officially listed on the Oslo Stock Exchange. The admission to trading on Oslo Børs represents an important step in strengthening General Oceans' position as a platform for ocean-focused technology and innovation.

General Oceans also announced that it has entered into a purchase agreement with MRV Systems, LLC. The addition of MRV to General Oceans expands the Company's capabilities in long-duration, autonomous data collection and strengthens its position as a global leader in underwater technology.

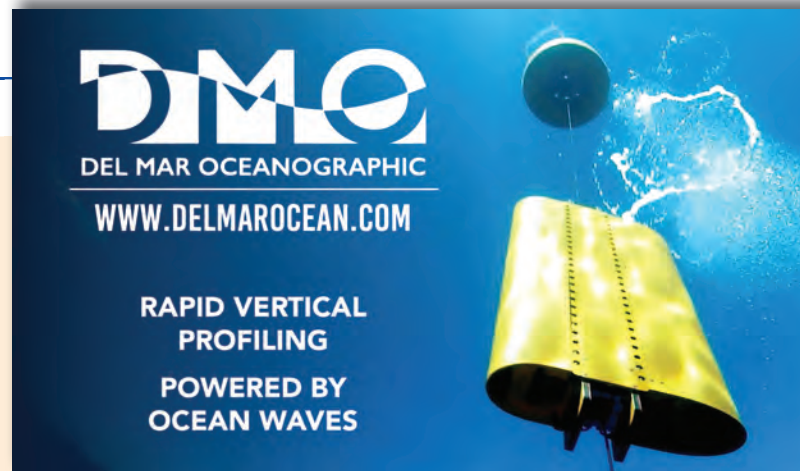
General Oceans is headquartered in Norway, operates 18 locations globally and includes the following brands: Nortek (Norway), Tritech (UK), Klein Marine Systems (USA), Reach Robotics (Australia), Strategic Robotics Systems (USA), RS Aqua (UK) and the most recent acquisition, MRV (USA).

DEL MAR OCEANOGRAPHIC

Del Mar Oceanographic (DMO) was founded in late 2015 to bridge the gap between high-resolution data requirements and the power and logistical constraints of traditional marine sampling. By leveraging renewable energy, DMO enables the economical collection of high-resolution data for fine-scale phenomena over long, climatological time frames.

DMO's flagship solution is the Wirewalker, an autonomous, wave-powered vertical profiling system. Unlike traditional motorized or buoyancy-driven profilers, the Wirewalker utilizes a 100% mechanical drive to harvest energy from sea surface waves. As the surface buoy moves with the waves, an internal cam mechanism ratchets the profiler down a jacketed wire to a pre-set depth (up to 1,000 meters). Once the target depth is reached, the vehicle releases and ascends smoothly under its own positive buoyancy.

By decoupling the sensors from the surface motion during the upcast, the Wirewalker collects a clean, smooth upcast. Because the propulsion is entirely mechanical, all of the onboard battery power is dedicated to the sensor payload. This enables the use of power-intensive instrumentation, such as high-speed CTDs, fluorometers, dis-



solved oxygen sensors, and plankton imagers, for months at a time without maintenance. DMO provides full-service integration, offering turnkey systems that include real-time telemetry and custom-ballasted vehicles designed for specific research objectives. The result is a 2-D image of the water column with temporal and spatial resolution, providing a large-scale context for small-scale variability.

DMO is currently working on two major launches: Livewire and Bonita. Livewire introduces energy harvesting through a micro wave energy converter with a focus on long term deployments enabling persistent ocean observations. The Bonita, the new "mini" Wirewalker, allows ocean observers with simple sensor suites to deploy from smaller boats or remote shorelines without heavy machinery.

JW FISHERS MFG., INC.

www.jwfishers.com



JW Fishers Manufacturing designs and manufactures a range of professional underwater search and inspection equipment for public safety, military, commercial, scientific, and salvage applications. Its product portfolio includes side scan sonar systems, remotely operated vehicles (ROVs), underwater metal detectors, marine magnetometers, scanning sonar, cable and pipeline trackers, underwater video systems, acoustic pingers, and pinger receivers.

Flagship products include the SeaLion-3 ROV, a seven-thruster platform designed for search, inspection, and recovery operations; the Pulse 8X underwater metal detector, used by law enforcement, military, and commercial divers; and JW Fishers' sidescan sonar systems, engineered to search

large areas and produce detailed images of submerged targets.

JW Fishers also provides specialized accessories and integrated search solutions that allow multiple technologies, including sonar, video, and metal detection, to work together. In addition to manufacturing, JW Fishers provides direct technical support, system configuration assistance, troubleshooting, repair services, and customer training.

The JW Fishers SeaLion-3 is a third-generation professional ROV engineered for underwater search, inspection, and recovery missions. Its seven-motor vectored propulsion system provides maneuverability and control. The SeaLion-3 allows operators to locate, inspect, identify, and document underwater targets while reducing diver exposure. Optional payloads like a scanning sonar enable operation in zero visibility, and the RMD-1 metal detector can locate weapons, pipelines, vehicles, UXO, and other metallic targets.

JW Fishers' facility supports mechanical and electronic assembly, system integration, engineering and product development, quality control, pressure testing, troubleshooting, repair, and final system testing. Specialized testing procedures help ensure equipment is ready for the demanding environments encountered by public safety, military, commercial diving, salvage, and marine survey customers.



Ecocoast

www.ecocoast.com

Ecocoast designs and delivers solutions to protect, monitor and regenerate coastlines and waterways. Operating across the environment, safety and security sectors, its technologies address marine pollution, sediment and debris control, coastal and shoreline protection, sustainable mooring, environmental monitoring, safe navigation, waterway safety and critical infrastructure protection.

Its portfolio includes silt curtains, permanent and modular debris barriers, oil booms, coastal protection systems, data and navigation buoys, safety and security barriers, and Advanced Mooring Systems. The latter is led by Ecoreef and Ecomoor. Ecoreef re-engineers the conventional concrete mooring block as functioning marine habitat. Its habitat and settlement surfaces are designed to provide refuge for juvenile fish, improve survivorship and encourage coral recruitment. Ecoreef is designed to support the production of local fish populations by protecting juveniles through vulnerable life stages.

Ecomoor is Ecocoast's neutrally buoyant mooring line, which remains clear of the seabed to prevent the scouring associated with conventional chain.

In August, Ecomoor achieved its first UK deployment at Pwllheli, Wales, as part of the Natur am Byth! Môr program. Two Ecomoor lines were installed for an Advanced Mooring Systems trial evaluating lower-impact alternatives to conventional moorings and their potential to protect sensitive habitats, including seagrass.

Ecocoast also provides WQM Buoys for water quality monitoring and DMS Booms for marine demarcation, access control and protection, supporting safer, better-managed waterways and coastal environments.

EdgeTech

www.edgetech.com

EdgeTech is a provider of underwater technology, including side scan sonar, sub-bottom profilers, bathymetry systems, acoustic releases, and on-demand ("ropeless") fishing systems.

EdgeTech's side scan sonar and sub-bottom profiler portfolio supports missions from shallow-water surveys to deep offshore work. Systems like the 4125i and 4205 are for side scan imagery, while the 2050 is a combined sidescan sonar/sub-bottom profiler system. For sub-bottom imaging, the 3400 product line delivers stratigraphy across oceans, lakes, and rivers. For shallow water projects needing both side scan and bathymetry, the pole-mount 6205s2 provides integrated wide-swath bathymetry and dual-frequency side scan to generate imagery and 3D seafloor maps.

For buried-object detection and characterization, Buried Object Sonar System (eBOSS) was designed for buried UXO and MCM surveys, Critical Underwater Infrastructure (CUI) assessments, and pipeline/cable tracking. eBOSS is a low-frequency sub-bottom acoustic imaging system designed to penetrate the seabed and detect, locate, classify, and identify buried and partially proud objects. eBOSS is now with an available 2km depth rating.

EdgeTech's on demand ("ropeless") fishing systems are an all-in-one caged system including an acoustic release, floats and recovery line. A cloud-based Trap Tracker app allows operators the ability to command, control, track and categorize the underwater systems. Enhancements this year include Proximity Alarming and Man Overboard features.

Focusing on the AUV, ROV, ROTV, and USV manufacturers, EdgeTech offers OEM solutions that enable integration of side scan, sub-bottom, bathymetry, and combined payloads. The 2205 OEM-based solution supports manufacturers seeking EdgeTech performance in integrated vehicle architectures. Expanding the OEM offering, EdgeTech designed the new Trace OEM side scan sonar specifically with micro-UUV and small ROVs in mind.



SENSOR TECHNOLOGY LTD

Sensor Technology Ltd. (SensorTech) helps customers detect, monitor, and understand activity beneath the surface. Core products include piezoelectric ceramics, hydrophones, transducers, thin-line towed arrays, and custom acoustic sensing systems. The company delivers solutions for defense, offshore energy, oceanography, hydrography, aquaculture, and offshore wind applications.

SensorTech is advancing Guardian, an AI-enabled digital thin-line towed array for autonomous and uncrewed maritime platforms. Guardian builds on SensorTech's thin-line array heritage by combining hydrophone technology, array manufacturing, and embedded acoustic intelligence to support underwater monitoring, detection, and classification. The company is also developing WhisperLoop, an edge-deployable AI processing layer that converts underwater acoustic data into actionable onboard information.

Through its STAMP project, SensorTech is investing in capital equipment to increase production capacity,



improve throughput, and strengthen quality across its vertically integrated manufacturing processes. The investments support scaling from raw material processing through ceramics production, sensor manufacturing, testing, calibration, and system integration. SensorTech has doubled powder production capacity while expanding testing and manufacturing.

SensorTech operates a multi-site Canadian footprint. Its headquarters in Ontario houses design, manufacturing, and administration. The facility in Dartmouth, Nova Scotia supports marine R&D and customer programs, while COVE provides laydown space for in-water testing.

TRANSFORM YOUR CAPABILITY

USBL POSITION TRACKING FOR ALL ENVIRONMENTS

SeaTrac Acoustic Positioning Beacons

Accurate, reliable USBL positioning even in the most challenging underwater environments. Real-time ROV, AUV and diver tracking over a 1000m range. Depth rated to 300m or 2000m.

seatrac



www.blueprintsubsea.com
enquiries@blueprintsubsea.com

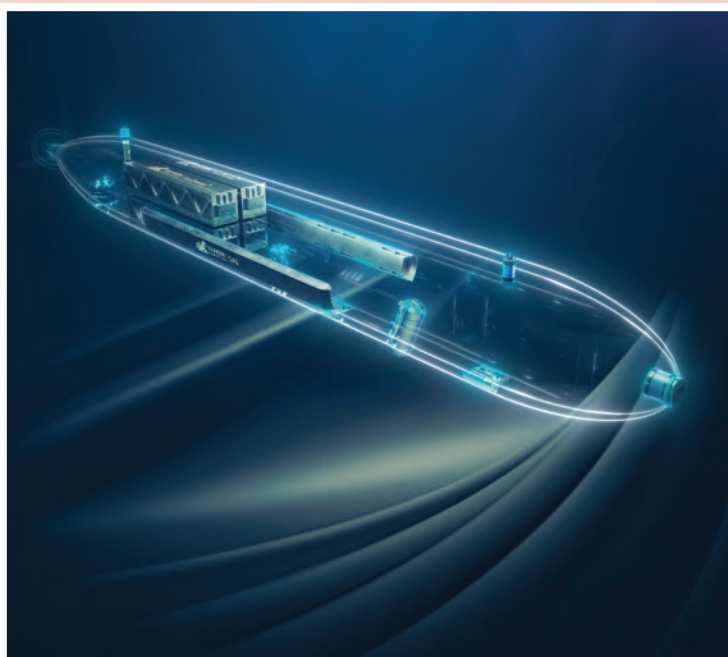


Kraken Robotics

Mount Pearl, Newfoundland

www.krakenrobotics.com

President/CEO: Greg Reid, CEO; Bernard Mills, President
of employees: 1200



Kraken Robotics is a marine technology company specializing in sensors, software, and integrated systems. Serving defense, offshore energy, and ocean science markets, the company delivers insights in challenging underwater environments. Kraken's integrated subsea solutions span sonar, navigation, positioning, imaging, power, communications, monitoring, and data analytics.

On July 2, 2026, Kraken Robotics acquired the Covelya Group, bringing together Sonardyne, EIVA, Forcys, Voyis, and Chelsea Technologies.

Kraken Robotics delivers sonar technologies for mine countermeasures, seabed mapping, infrastructure inspection, and security applications. The portfolio includes Kraken Synthetic Aperture Sonar, Solstice Multi-Aperture Sonar, Vigilant Forward Looking Sonar, and Sentinel Intruder Detection Sonar, providing clear resolution, real-time situational awareness, and persistent underwater surveillance.

Kraken's navigation portfolio through Sonardyne combines SPRINT-Nav inertial navigation systems with Ranger acoustic positioning solutions to deliver precise underwater positioning where GPS is unavailable. Designed for AUVs, ROVs, USVs, and towed systems, these technologies provide accurate navigation, tracking, and vehicle control in demanding subsea environments.

Kraken's robotic platforms include the KATFISH, ScanFish and ViperFish remotely operated towed vehicles.

These systems enable rapid, high-resolution seabed mapping, mine hunting, environmental surveys, and offshore inspections while covering larger areas than traditional survey methods.

SeaPower pressure-tolerant batteries provide reliable, high density energy storage for uncrewed underwater vehicles and permanent subsea installations. They are trusted worldwide for defense, offshore energy, and scientific applications where endurance and performance are critical.

Through EIVA's NaviSuite, Kraken provides a software platform for subsea survey and inspection planning, navigation, acquisition, processing, modelling, visualization, and reporting. NaviSuite supports hydrographic surveying, offshore construction, cable and pipeline inspection, autonomous vehicle operations, and other applications within a single integrated workflow.

Kraken's optical imaging portfolio combines Voyis underwater cameras and laser scanners with Kraken Subsea LiDAR technology to produce accurate digital representations of underwater assets and environments. These solutions deliver high-resolution imagery and three-dimensional measurements for infrastructure inspection, archaeological surveys, offshore energy, and scientific research.

Kraken's communications technologies include BlueComm optical wireless communication systems and AvTrak subsea tracking solutions. BlueComm enables high-speed underwater data transfer between vehicles,



sensors, and infrastructure without physical connections, while AvTrak provides reliable tracking and localization for underwater operations. Together, these technologies improve vehicle coordination, increase mission efficiency, and enable more capable autonomous subsea operations.

Through Chelsea Technologies, Kraken provides advanced environmental monitoring solutions, including water quality sensors for measuring chlorophyll, algae, dissolved organic matter, oil-in-water, turbidity, and other critical ocean parameters.

Kraken has several facilities:

- Newfoundland, Canada – Global headquarters, engineering, corporate operations, and development of Synthetic Aperture Sonar (SAS) technologies.
- Nova Scotia, Canada – SeaPower subsea battery manufacturing, and KATFISH autonomous launch and recovery systems.
- Fareham, UK – Navigation, positioning, underwater communications, and subsea technology development.
- Rostock, Germany – SeaPower subsea battery manufacturing.
- Aalborg, Denmark – Offshore survey software development and hydrographic solutions.

Additional facilities across the United Kingdom, Germany, Brazil, Australia, Singapore, Indonesia, and the United States provide engineering, manufacturing, testing, sales, services, and customer support.



R.M. Young Company

www.youngusa.com

R.M. Young Company manufactures precision meteorological sensors and integrated weather stations for harsh-environment deployment. Their core lines include mechanical and ultrasonic wind sensors for marine, offshore, and industrial wind measurement.

R.M. Young Company recently launched a dedicated marine and offshore campaign for ResponseONE-Pro, their all-in-one weather station built for vessels, platforms, and coastal installations where data continuity is mission-critical. Its field-serviceable sensor modules let operators swap a failed component in minutes rather than waiting on a full unit replacement or losing weeks of data. In parallel, R.M. Young Company is relaunching SNOdar, a LIDAR-based snow depth sensor, expanding the company's measurement capabilities beyond wind and into snow monitoring.

Every sensor ships with a calibration certificate, and NIST-traceable calibration is available on request.

R.M. Young Company operates a vertically integrated manufacturing and testing facility in Traverse City, Michigan. All design, manufacturing, assembly, and quality control are performed in-house. In-house capabilities include CNC machining, injection molding, a calibrated wind tunnel for sensor verification, and environmental test chambers for validating performance across temperature, pressure, and humidity extremes. This equipment supports full production and QC without reliance on outside vendors.



JAIA ROBOTICS

www.jaia.tech

Jaia Robotics designs and develops micro-sized autonomous aquatic systems. Its flagship platform, the JaiaBot, is a compact autonomous vehicle engineered to operate individually or in synchronized multi-drone fleets, enabling rapid, wide-area environmental data collection and efficient small-payload delivery.

The JaiaBot's modular hardware architecture allows quick configuration changes, easy maintenance, and integration of specialized sensors, instruments, and mission-specific payloads. Its open-source software framework supports collaborative development, enabling government, academic, and industry partners to adapt the system, create custom behaviors, and integrate new capabilities without proprietary constraints.

Most recently, Jaia Robotics has been awarded a \$6.1 million contract to build JaiaBot HYDROs for the US Marine Corp.

Jaia Robotics' facilities are located in Bristol, RI in the Herreshoff Maritime Innovation Campus. The space includes an office, areas for mechanical and electrical assembly, prototype fabrication, and software development.



www.klein.com

Klein Marine Systems designs and manufactures sidescan sonar and underwater imaging systems for defense, hydrographic survey, search and recovery, offshore, scientific, and autonomous marine applications. Their solutions include high-resolution towed, vessel-mounted, and UUV/AUV sonar systems engineered to deliver seafloor imagery, target detection, and mission-ready data in demanding underwater environments.

The MANTIS 600 is Klein Marine Systems' 600 kHz towed sidescan sonar, combining multichannel architecture, dynamic focusing, dynamic aperture, and high-bandwidth processing to deliver clear, high-resolution imagery in demanding conditions. Designed for mine countermeasures, survey, search and recovery, and other mission-critical applications, it brings MANTIS imaging performance to a towfish platform.

As part of General Oceans, Klein is connected to marine technology companies spanning sensing, navigation, robotics, environmental monitoring, and ocean science.



MASSA PRODUCTS CORPORATION

www.massa.com

Massa specializes in sonar and electroacoustic design and manufacture for the US and allied navies, including sonar transducers, hydrophones, accelerometers, arrays and systems. Massa also develops and produces ultrasonic air transducers and sensor systems for industrial applications.

Currently, Massa provides about 60% of the SONAR technologies for the US naval submarines, in addition to a full line of commercial oceanographic and industrial ultrasonic sensing technologies. Massa's portfolio includes solutions such as low-frequency/high-power SONAR, mid-frequency SONAR, passive and active arrays, navigational sensors, AUV/UUV sensing, acoustic communications, level-sensing, proximity detection, and more.

Massa's facilities are ISO 9001:2015 certified and include an engineering laboratory, an engineering model shop, growing rubber vulcanizing and plastic molding facilities, a growing model and production machine shop, a clean/humidity-controlled area, hydrostatic pressure testing facilities, and an underwater acoustic test facility.

HYDROSURV UNMANNED SURVEY LTD

www.hydro-surv.com/

HydroSurv is a UK-based developer of Uncrewed Surface Vessel (USV) technology for commercial marine operations, specializing in solutions for hydrographic and geophysical survey, oceanographic and environmental monitoring, and subsea inspection.

HydroSurv's Rapid Environmental Assessment Vessel (REAV) platform series spans 2.5 - 6.0m, from compact battery-electric systems for inland, port and nearshore operations to long-endurance battery-hybrid vessels for complex coastal and offshore missions. The entry-level REAV-25/28 provide day-work capabilities for survey operations in ports, harbors and sheltered nearshore zones, with the latest REAV-35 extending zero-emission operations into open water.

Hybridization, introduced on REAV-45/47 coastal platforms, offers multi-day endurance and coastal and offshore seakeeping, while HydroSurv's flagship REAV-60 tops the range with commercial-duty power systems capable of supporting ROVs and complex payloads.

Starting in 2026, all HydroSurv USVs share the same Virtual Watchkeeper Vessel Control System (VCS) devel-



oped for human-supervised remote operations. Capabilities are field-proven for inspection-class ROV systems with Launch & Recovery Systems, towed sidescan sonar and magnetometry payloads, hydrographic and geophysical survey payloads combining multibeam and sub-bottom profiling, and oceanographic and environmental monitoring including deepwater profiling to 1,500m, hydroacoustic seagrass monitoring and water quality monitoring.

Designed to reduce the cost, carbon intensity and operational footprint of marine data acquisition, REAV USVs provide scalable alternatives to conventional crewed operations. Flexible commercial models including vessel sales, co-ownership, leasing and technology licensing agreements enable survey contractors, marine service operators and regional partners to access uncrewed capability according to their operational and commercial requirements, while supporting the wider adoption of USV technology across international markets.

LINDEN PHOTONICS

www.lindenphotonics.com



Linden Photonics manufactures lightweight fiber optic, copper and hybrid cables engineered for harsh environments. Based in Westford, Massachusetts, Linden serves subsea, defense, aerospace, autonomous systems and industrial markets worldwide.

Its STFOC (Strong Tetherable Fiber Optic Cable) technology combines small diameter, low weight and high tensile strength for ROV, AUV, UUV, USV and tactical applications. Linden also manufactures buoyant and neutrally buoyant cables, drone and aerial tethers, phase-stabilized fiber optic cables, aerospace fiber ribbons and custom hybrid designs. A key specialty is precision-wound fiber optic spools for underwater vehicles, fiber-guided drones and other land deployable systems, providing reli-

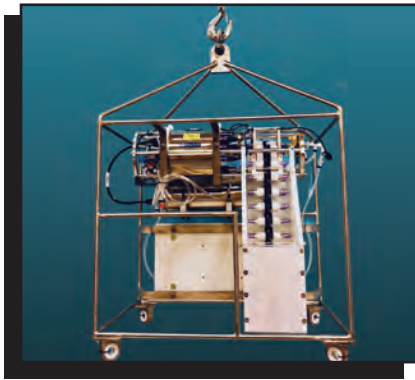
able, smooth, high-speed fiber payout. Linden's in-house capabilities include cable extrusion, braiding, precision winding, termination and pressure testing, enabling customized solutions for mission-critical applications.

Recently, Linden supplied specialty fiber optic cable used by NASA JPL and Caltech's GLASS project at Union Glacier, Antarctica. The fiber was deployed for Distributed Acoustic Sensing purposes.

In March–April 2026, the Cornell Planetary Habitability and Technology Lab deployed the Icefin ROV/AUV in Wolstenholme Fjord, Greenland. The team was using Icefin that is physically supported and communicates through our high strength, fiber optic cable.

Additionally, Linden Photonics supplied the continuous fiber-optic tether used with a Saab Sabertooth AUV/ROV to complete a record-breaking 15.9 km (9.9-mile) underwater tunnel inspection.

Linden's manufacturing capabilities include cable extrusion, braiding, precision winding, fiber optic termination and custom cable assembly. They also maintain dedicated production and testing laboratories with optical test equipment and a pressure chamber for evaluating cables for demanding subsea environments.



McLane Research Laboratories

mclanelabs.com

McLane Research Laboratories is a manufacturer of long-duration, in-situ oceanographic instrumentation for biogeochemical and physical oceanography, supporting oceanographic research, harmful algal bloom (HAB) detection, environmental monitoring.

McLane also produces environmental DNA (eDNA) systems. The company offers four families of deep-rated eDNA samplers, each with integrated preservation and varying sample capacities to meet a range of research objectives, including the collection of genetic material, fine particulates, and samples for biosecurity applications. These eDNA, particle, and multi-sample instruments span a range of volumes and are rated for depths between 5,000 and 6,000 meters.

McLane recently introduced the Moored RoCSI, an expanded version of its advanced eDNA sampler, the Robotic Cartridge Sampling Instrument (RoCSI). The Moored RoCSI secures the instrument to a 316SS frame and incorporating a Fixative box for the stabilizer and a Hopper to contain and protect the sample belt. The Moored RoCSI configuration facilitates casting from a ship, or deploying from a pier, or platform using a cable, line, or winch.

McLane also supports a portfolio of sampling technologies, including the Imaging FlowCytobot (IFCB), alongside its flagship Sediment Trap product line.

All McLane instruments are engineered for the demands of long-term, time-series deployments in both open ocean and freshwater environments. They play a role in global research programs and expeditions, including initiatives such as the Ocean Observatories Initiative, GEOTRACES, and the RAPID array.

Noise Control Engineering LLC

www.noise-control.com

Noise Control Engineering, LLC (NCE) is an acoustical engineering consultancy, specializing in noise and vibration design, control, and measurement for marine, industrial, and commercial applications.

NCE specializes in designing and evaluating quiet vessels across a range of types, including research vessels, high-speed craft, tugboats, offshore support vessels, military ships, dredges, icebreakers, submersibles, offshore structures, and both conventional and unconventional marine platforms.

NCE's client base includes naval architects, shipyards, government agencies, equipment manufacturers, private vessel owners, and commercial operators.

To facilitate rapid assessments of underwater noise from ships and other anthropogenic sources, NCE developed the Buoy Acoustic Measurement System (BAMS), a floating buoy capable of underwater measurements to ANSI, ISO, and regulatory body standards, and characterizing the acoustic output of vessels, airguns, pile driving, and all other human activities at close and long ranges. The system can be used not only to quantify sound levels but also to diagnose noise problems, such as excesses to criteria, degraded sonar performance, and more.

NCE also has developed two specialized software tools, Designer-NOISE and Sound-Guard, used to monitor, predict, and control noise in shipbuilding and marine operations. Designer-NOISE is recommended for use by the US Navy (MIL-STD-1474E).

NCE participated in a Maritime Administration (MARAD) initiative to evaluate underwater radiated noise generated by commercial tugboats operating in San Diego Harbor.

NCE is also helping lead the development of emerging ISO standards for measuring underwater noise, and similar studies are anticipated for ferries, as well.



EDGE LAB

www.edgelab.eu

EdgeLab S.p.A., an SME headquartered in La Spezia, specializes in the design and development of autonomous underwater vehicles (AUVs) and marine technologies, with a focus on scientific research, underwater archaeology, defense, and security.

Recent development includes a new range of lightweight AUVs, including the U-Tracker Pro, L and IV models.

EdgeLab's facilities include laboratories, R&D areas, operational offices and testing environments dedicated to autonomous underwater technologies.



NORTEK

www.nortekgroup.com

Nortek designs, develops and produces acoustic underwater sensors that are used to measure motion in the marine environment. This includes Acoustic Doppler Current Profilers (ADCPs),

instruments used to measure currents, waves, and other oceanographic processes. Nortek also provides Doppler Velocity Logs (DVLs), sensors used in subsea vehicle navigation systems to provide velocity information.

Nortek's Signature series ADCPs provide oceanographers with abilities to measure multiple oceanographic parameters simultaneously from one instrument. Users can measure currents, waves, biomass, and turbulence all within a single second. Nortek's DVLs also provide survey-grade accuracy, water-track in case the bottom goes out of range, and current profiling capabilities.

Nortek recently released deep water versions of select Signature series ADCPs as well as the Vector velocimeter.

Nortek is based in Norway and has 10 subsidiary offices around the world. All of Nortek's products are handmade, calibrated, and tested at our headquarters in Rud, Norway, which has equipment such as a pressure tank, test pools, and the ability to field test from a vessel in the Oslo fjord.

OCEANSIGHT

www.oceanfloorgeophysics.com

OceanSight was launched in 2026, bringing together Ocean Floor Geophysics, Neptune Sonar and Sound Metrics.

Ocean Floor Geophysics delivers magnetic and electric-field sensing for marine survey, inspection and subsea asset integrity. Its patented self-compensating technology provides the industry's only tow-free magnetic and electric-field sensing capability for unmanned platforms. This gives operators new flexibility across unexploded ordnance detection, buried infrastructure, subsurface characterization and non-contact cathodic-protection assessment.

Neptune Sonar designs and manufactures acoustic transducers and arrays for sonar, positioning, navigation and communications. Its vertically integrated capabilities, from piezoelectric ceramic development through fully engineered acoustic solutions, give customers greater

control over performance, quality and reliability.

Sound Metrics develops ultra-high-resolution acoustic imaging sonars that deliver near-video-quality imagery in turbid water, low light and complete darkness. Its ARIS systems help operators inspect infrastructure, identify targets and interpret complex underwater environments in real time when optical cameras cannot perform.

Behind the scenes, OceanSight is expanding facilities and capacity, strengthening customer service, advancing health and safety programs, and building stronger quality systems.





OCEANBOTICS

oceanbotics.com

Oceanbotics Inc. is a manufacturer of maneuverable and reliable remotely operated vehicles (ROVs), ideal for defense, search and rescue, offshore energy, marine research, and other markets.

Technologies include:

- **Portable ROV Fleet Systems:** The full dynamic SRV-8 lineup, including the flagship SRV-8, the heavy-duty SRV-8X, and the ultra-portable single-case SRV-8C.
- **Modular Payload Integration:** High-resolution multi-beam imaging sonars, DVL, NavPod autonomous navigation, USBL positioning systems, UT/CP inspection probes, grabbers, and built-in 4K visuals.
- **SRV-8C Compact ROV:** The newest, most portable addition to the SRV-8 lineup. Packs full 6-DOF maneuverability, intuitive SubNav OS controls, and up to four hours of battery life into a single transport case for cost-effective, rapid deployment.
- **Autonomous NadPod Navigation Suite:** Upgraded software capabilities featuring automated grid search for total subsea coverage, real-time Point of Interest (POI) coordinate tagging, and automated Return-to-Home functionality.
- **Standard Built-In 4K Camera:** High-definition 4K optical camera technology now comes standard across all Oceanbotics ROV platforms, capturing crystal-clear, broadcast-grade video underwater.

Oceanbotics operates out of an engineering and manufacturing facility in Irvine, California. Their headquarters house dedicated mechanical and electrical assembly stations, a software development team, and quality assurance testing setups. The facility features specialized in-house testing tanks for real-time testing, sensor calibration, and dynamic vector control validation of our vehicles.



RS AQUA

rsaqua.co.uk

RS Aqua supplies and develops ocean technologies across multiple sectors. In aquaculture, they provide water quality systems and smart load sensors. Their services include installation, rental, and project support. For the defense sector, RS Aqua supplies AUVs, USVs and ROVs for naval ASW applications. For the fish tracking industry, solutions include acoustic telemetry equipment and ARC (Acoustic Release Canister) for reliable sensor recovery.

In 2026, RS Aqua launched Marlin, a commercial platform for real-time ocean intelligence. Marlin transforms passive acoustic monitoring by combining field hardware, secure cloud processing and intelligent software to deliver near-real-time acoustic data, automated detections and alerts.

RS Aqua's workshop features testing facilities for WaveRadar sensors, passive acoustic recorders, buoys and more. They also have a water tank and a laboratory for research and development.

RS Aqua features the only certified Datawell buoy calibration facility outside of their headquarters in the Netherlands.





subctech.com

and energy storage solutions for underwater vehicles and offshore infrastructure. Founded in 2010, the company develops and manufactures advanced lithium-ion battery systems, subsea UPS solutions, integrated energy storage systems for demanding underwater applications and monitoring systems. Today, SubCtech serves customers worldwide in the offshore energy, scientific, defense and marine technology sectors. The company's products are designed for long-term operation in harsh environments and are deployed in water depths of up to 6,000 meters.

SubCtech operates dedicated facilities for lithium-ion battery assembly, electronics manufacturing, system integration, pressure and leak testing, battery testing and validation, environmental testing, and subsea system commissioning. The company also maintains specialized equipment for qualification testing, charger integration,

SubCtech GmbH is a marine technology company headquartered in Kiel, specializing in subsea power

and acceptance testing of complete subsea power systems and underwater energy storage solutions.

SubCtech has recently expanded its activities in the growing market for autonomous underwater systems by delivering lithium-ion battery solutions for large and extra-large AUV platforms. In parallel, the company has advanced its subsea Energy Storage System (ESS) technology and integrated subsea backup and docking solutions that enable long-duration autonomous underwater operations with minimal vessel support.

In 2026, SubCtech moved into its new headquarters at the Kiel Science Park. The new facility consolidates all company activities into one location and provides approximately four times the combined production and office space of the previous sites. The site includes engineering offices, manufacturing and assembly areas, testing facilities, logistics infrastructure, and training and collaboration spaces.

All systems are developed and manufactured in Germany and can be customized and qualified to meet customer requirements, including API, DNV, MIL and UN standards.



Serious detection for serious salvage operations using a Fishers' Proton 5 Magnetometer

- Easy operation
- Detects all iron or steel objects
- Locates pipes, chains and anchors
- Locates buried objects NOT found on sonar
- Separates into two parts for easy transportation

Starting at \$16,995



NORBIT SUBSEA

norbit.com

NORBIT Subsea develops sonar solutions for hydrographic surveying, offshore energy, marine construction and scientific research. Designed and manufactured in-house, their multibeam sonar and integrated survey systems combine engineering, flexible configuration and intuitive software to deliver high-resolution data and reliable performance across crewed and uncrewed platforms.

NORBIT's sonar portfolio includes wideband multibeam echosounders with optional integrated SBG or Applanix GNSS/INS, forward-looking sonar systems and the Integrated Sub-Bottom Profiler (iSBP). These solutions are designed for deployment from compact survey boats and USVs to professional hydrographic survey vessels and offshore platforms.

NORBIT's WINGHEAD X and WBMS X are configurable wideband multibeam sonar systems that combine high-resolution bathymetric and water column data with optional integrated SBG or Applanix GNSS/INS. Users can further tailor each system with software features including Dual Swath, Yaw Stabilisation and STX Scanning.

NORBIT iSBP is the newly launched Integrated Sub-Bottom Profiler for the WINGHEAD X and WBMS X platforms. It enables the simultaneous collection of high-resolution bathymetric and sub-seafloor data from a single compact system, eliminating the need for separate profiling equipment. Using the same Sonar Interface Unit as the multibeam sonar, NORBIT iSBP offers fast installation and integration while simplifying survey operations, reducing mobilization costs, and expanding the capabilities of hydrographic, offshore, and geophysical surveys.

NORBIT continues to invest in innovation through strategic acquisitions and new technologies that advance underwater surveying, including the recent acquisition of Water Linked and the introduction of Layered Media Detection (LMD).

While headquartered in Trondheim, Norway, NORBIT has manufacturing and R&D sites across Europe and North America and a worldwide sales and distribution platform.



NORWEGIAN SUBSEA

norwegian-subsea.no



Norwegian Subsea is a provider of Motion Reference Units (MRUs) engineered for operation in marine, offshore and subsea applications. Their technology is used globally in motion compensation and monitoring solutions for applications

including hydrography, active heave compensation, dynamic positioning and vessel performance optimization.

Norwegian Subsea's MRUs deliver roll, pitch, and heave measurements for use in challenging marine environments, scaled for use in everything from basic motion monitoring to survey-grade multibeam sonar compensation. These systems are engineered to eliminate data drift, resist environmental interference, and maintain precision over long-term deployments.

The MRUs are calibration-free, maintenance-free, and compact. Built on proprietary algorithms and MEMS sensor integration, they require no external correction signals, making them ideal for offshore use where external corrections like RTK or GNSS signals may be unavailable. The MRUs perform with up to 0.01° accuracy

in pitch and roll, even in irregular sea states, but they also offer solutions for applications that require less precision.

Among with many OEM clients, Norwegian Subsea MRUs are fully integrated into Miros and Radac wave radars, WASSP multibeam sonar systems, and Shore-Connection's Helideck Monitoring Systems (HMS).

Norwegian Subsea plans to introduce built-in aiding capabilities across its MRU technology in the fall of 2026. The development is expected to further enhance the performance and versatility of its high-precision motion reference platform for sonar and hydrographic applications, while retaining the compact, calibration-free design and strong standalone performance of the existing MRU range.

Norwegian Subsea's facilities encompass R&D, sensor testing, and systems integration capabilities. The facility includes calibration and environmental simulation labs to ensure MRU performance under real-world maritime conditions.

In addition to in-house facilities, Norwegian Subsea has access to use third party test facilities, like the Norwegian Motion Laboratory at the University of Agder. Equipped with a Bosch Rexroth eMotion-8000 hexapod Motion reference platform with laser position measurements providing an exact truth, this allows the testing of MRUs in real sea conditions while having access to the exact reference measurements.

Ocean Power Technologies

www.oceanpowertechologies.com

Ocean Power Technologies (OPT) provides maritime solutions that deliver offshore power, autonomous mobility, sensing, communications, and actionable data. Its core offerings include PowerBuoy platforms, WAM-V unmanned surface vehicles, and the Merrows maritime domain awareness solution.

PowerBuoy platforms provide renewable offshore power and real-time data communications for remote maritime operations. They can support radar, cameras, acoustic sensors, environmental monitoring instruments, communications equipment, and other payloads above and below the waterline, enabling long-duration surveillance and monitoring with reduced reliance on crewed vessels.

WAM-V vehicles are modular, maneuverable autonomous platforms designed for hydrographic survey, maritime security, environmental monitoring, offshore inspection, and other missions.

Merrows integrates data from PowerBuoys, WAM-Vs, and third-party systems into a common operating picture, using edge processing and intelligent analytics to help customers detect, classify, and respond to maritime activity.

OPT also sells and leases its systems and provides Robotics as a Service, including deployment, operations, maintenance, and data support.

OPT recently secured an approximately \$6.5 million U.S. Department of Homeland Security contract to deliver and operate four MERROWS-equipped PowerBuoy systems supporting a U.S. Coast Guard maritime domain awareness mission off San Di-



ego. Integrated with Anduril's Lattice command-and-control platform and shore-based surveillance towers, the systems provide persistent offshore sensing, renewable power, communications, and real-time operational intelligence.

OPT operates a facility in Monroe Township, New Jersey, supporting administration, engineering, research

and development, manufacturing, assembly, systems integration, testing, and quality assurance. Its two Richmond, California facilities support prototyping, on-water testing, final integration, mission readiness, Pacific deployments, and additional manufacturing capacity for PowerBuoy, WAM-V, and Merrows systems.

detyens.com
drydock@detyens.com

f in t g



 **Detyens**
Shipyards, Inc.
Charleston, South Carolina

"We
Fix
Ships"

Ship Repair | Conversions | Drydocking

Commercial operators deploy Saildrone Voyager Unmanned Surface Vessels (USVs) out to sea in the initial steps of U.S. 4th Fleet's Operation Windward Stack during a launch from Naval Air Station Key West's Mole Pier and Truman Harbor, Sept. 13, 2023.

FOLLOW THE MONEY



U.S. Navy photo by Danette Baso/Silvers/Released

By Philip Lewis, Research Director at Intelatus Global Partners

"Follow the money" is a phrase popularly but incorrectly attributed to Deep Throat/Watergate. Broadening the coverage of the phrase to include the hot unmanned and autonomous surface and underwater vehicle segments allows us to understand what's really going on in the market and the sums of money involved are significant.

THE ANATOMY OF UNMANNED SYSTEMS

Firstly, let's start by understanding the anatomy of an unmanned surface vehicle (USV) and an autonomous underwater vehicle (AUV). Autonomy has several levels, effectively split into manual teleoperation, remote supervised control (generally over the horizon/out of sight), and full autonomy. USVs and AUVs generally feature nine key elements. USV and AUV companies operate with varying degrees of vertical integration, although in the following sections, we will touch on some regional trends.

THE U.S. APPROACH: PRIMES, COMMERCIAL YARDS AND VCS

Four major private shipbuilders act as Navy primes: HII (leads in unmanned systems via ROMULUS USV and REMUS AUV programs under Odyssey autonomy software); General Dynamics (builds AUVs through Bluefin Robotics and develops USV C2 technology); Austal USA (builds Saildrone's Voyager USV); and Fincantieri Marine Group (will build Saildrone's Spectre USV). Boeing, a broader defense prime, builds the Orca XLUUV in California, with HII assisting hull assembly in Virginia.

Partnering with HII and Raytheon Technologies, major commercial shipbuilder Bollinger has supplied nine 12-meter semi-autonomous aluminum MCM USVs to the U.S. Navy and has a further 18 MCM USVs under contract, out of a total planned final inventory of 48 MCM USVs.

Several commercial shipyards have partnered with the grow-

ANATOMY OF AN UNMANNED VEHICLE

Element	Details
Hull	USVs use monohull, catamaran, trimaran, or SWATH designs (aluminum, carbon fiber, composites); AUVs use cylindrical/torpedo pressure hulls (aluminum, titanium, composites) with hydrodynamic shells, ballast/trim systems, and flooded sections.
Propulsion	Combustion engines, electric motors, sails, solar, or buoyancy engines (gliders) with battery storage for energy conversion. Propellers, water jets, or thrusters for propulsion. Rudders, fins and thrusters (plus elevators for AUVs) for vectoring.
Navigation & guidance	USVs use GPS/GNSS, IMU, and DVL. AUVs lack underwater GPS, so rely on INS, DVL, depth sensors, acoustic positioning (USBL/LBL), and terrain-relative navigation.
Sensors & perception	Radar, electro-optical and infrared cameras, LiDAR, sonar, and environmental sensors support obstacle detection, mapping, and monitoring.
Command, control, & communication	Onboard autopilot computers, RF/satellite/cellular wireless links, and shore-based control stations. AUVs add acoustic modems for underwater comms.
Autonomy software	Follows a sense-plan-act loop: perception (sensor fusion, object detection), localization (GNSS+IMU+DVL fusion), planning (path planning, COLREGs-compliant obstacle avoidance), control (actuator commands), and mission supervision (fault handling). Digital twins are commonly used for pre-deployment testing.
Compute stack	GPU-class edge AI modules for perception, a CPU for mission/control logic, optional FPGAs for real-time signal processing, all packaged in rugged, low-power, redundant hardware.
Payload systems	Mission-specific gear (sonar variants, cameras, environmental sensors, magnetometers, sub-bottom profilers, etc.) or defense payloads (surveillance, mine countermeasures, strike, etc.).
Safety	Lights/AIS, fail-safe return-to-home logic, recovery hardware. AUVs add leak detection, watchdog-triggered surfacing, and emergency ballast release.

Source: Intelatus Global Partners

ing number of venture-backed start-ups emerging in the U.S. While these companies ostensibly target both defense and commercial applications, many are scaling on the back of U.S. Navy programs, signaling a potential shift in naval procurement toward a “build first, buy later” model. Although procurement programs are now materializing, questions remain over the long-term financial sustainability of a sector requiring substantial capital investment ahead of revenues. We do not expect all start-ups to sustain this model. Some are likely to consolidate through M&A, while others may fail to progress beyond development. The investment approach of leading venture capital firms, often spreading capital across multiple companies in the sector, may reinforce this expectation.

OTHER NATO AND AUKUS MARKETS: NATIONAL CHAMPIONS, M&A AND SOME VC ACTIVITY

Kongsberg Gruppen (Oslo-listed, 50.1% Norwegian government-owned) is a key Nordic defense player with a broad maritime tech portfolio spanning navigation, sea-floor mapping, sonar, and autonomous systems, including the Sounder USV and HUGIN AUV family for the defense and commercial segments. Kongsberg has developed much of its defense related technology with partners in the Norwegian defense and industrial space, and the acquisition of Hydroid, the U.S. manufacturer of shallow-to-medium depth REMUS AUVs (sold to HII in 2020).

July 2026 saw three major acquisitions consolidating un-

manned maritime systems players:

- Canada’s Kraken Robotics (\$615 million) acquired the UK’s Covelya Group, including Sonardyne, EIVA, Forcys, Wavefront Systems, Voyis, and Chelsea Technologies, with technology offerings spanning underwater acoustics, sonar, navigation, imaging, and autonomous systems, significantly broadening Kraken’s subsea portfolio.
- France’s Thales agreed to acquire the Gorgé family’s 35.5% stake in compatriot Exail Technologies and launch a tender offer for remaining shares, valuing Exail at about €3.9 billion (\$4.6 billion). The deal aims to create a global leader in autonomous maritime systems, underwater warfare, and inertial navigation, combining autonomous surface/underwater drones, mine countermeasures, ASW, sonars, photonics, and quantum sensing, strengthening GPS-independent navigation capabilities.
- Building on its acquisitions of WASS (2025) and Remazel (2024), Italy’s Fincantieri announced four acquisitions (Next Geosolutions, WSense, Graal Tech, Defcomm) for about €600 million (\$687 million), building on earlier WASS (2025) and Remazel (2024) deals. This creates a vertically integrated underwater business across marine surveys, offshore services, autonomous drones, underwater communications, and the Internet of

Underwater Things (IoUT), comprising eight specialized companies across Europe and the UAE, reinforcing Fincantieri's position in dual-use underwater technology and maritime infrastructure.

The UK's Kraken Technology grew in under six years from a three-person startup to around 200 employees, delivering NATO USVs led by its 8.4m K3 Scout (200+ sold) and the USSOCOM-backed K4 Manta. Growth stems from an open, agnostic architecture (30+ modular payloads), NATO/UK government backing, and an automotive-style "boat-in-a-box" model producing a K3 daily from around 400 components, targeting four-country manufacturing through partnerships with U.S. Anduril, Canada's Davie Defense, and Germany's Rheinmetall. In July 2026, Kraken closed a \$175 million Series B funding round at a \$1 billion valuation to fund capability development and manufacturing expansion. UK facilities can scale to 1,000 units/year, with Germany matching that capacity.

THE EUROPEAN COMMERCIAL MARKET

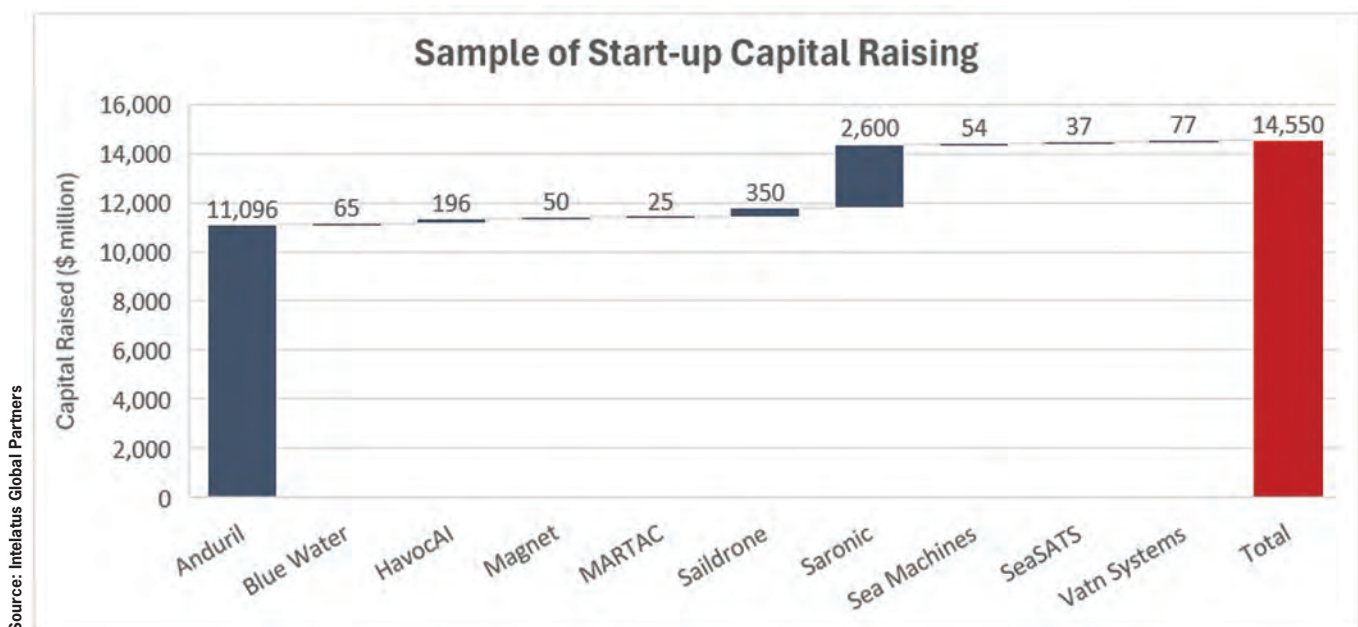
In oil & gas and offshore wind, USVs and AUVs increasingly conduct site surveys, construction surveys, and infrastructure inspection. Successful firms integrate vessels, sensors, C2 software, and data analytics, positioning themselves as data-as-a-service (DaaS) providers, since data delivery, not vessel supply, is the core offering. In this section, we discuss three successful DaaS players.

Netherlands-based listed company Fugro is a global leader in on/offshore mapping, modeling, and monitoring, generating around 30% of 2025 revenue from marine asset integrity

supported by a USV fleet and remote operation centers. It partnered with SEA-KIT in 2020 (acquired 2023) for USV design/build, and currently operates one Blue Shadow, five Blue Essence (two more in construction), one Blue Eclipse, and one Blue Prism USV, targeting 5-10 geophysical and 5-10 inspection/monitoring USVs by 2027. Fugro's strategy emphasizes remote operations and USV differentiation to cut costs/emissions toward net zero by 2050. It also runs multiple Kongsberg HUGIN AUVs (3000, 4500, 6000, Edge, Superior) plus Echo Surveyor VII and Echo Mapper AUVs.

Founded in 2008, Reach Subsea offers IMR, construction support, and survey solutions. Its unmanned business, Reach Remote, provides DaaS and is now transitioning toward becoming a standalone listed company as it scales. Reach Remote operates two Exail Drix H-8 survey USVs (Orca 1 and Orca 2), and two Kongsberg 24-meter USVs (Reach Remote 1 & Reach Remote 2), with two more under construction for 2027 delivery, plus 14 tethered ROVs. The USVs run at IMO Degree 3 autonomy (uncrewed, ROC-controlled) for pipeline/subsea inspection, survey, seabed mapping, and light repair across oil & gas, offshore wind, cables, fish farming, mining, and environmental sectors, using hull-mounted sensors, an ROV survey system, and deployable UASs.

Founded 2017, XOCEAN is a privately-owned Irish marine tech company with more than €160 million (\$185 million) raised, valued at about \$270 million. It's a vertically integrated DaaS provider, designing/building USVs in-house, operating via its Irish ROC and CyberDeck C2 stack, and delivering multibeam echosounder, side-scan sonar, sub-bottom profiler, and magnetometer data across offshore wind,



geophysical, environmental, asset integrity, bathymetry, and fisheries markets. XOCEAN operates around 30 XO-450 USVs (4.5m, solar/battery-powered, container-transportable) and several larger X-580 USVs (5.8m, MCA-compliant), with more X-580s under construction.

A PIONEERING GLOBAL PLAYER

Founded in 2017 (HQ: Texas, USA and Southampton, UK), Ocean Infinity is a marine robotics company founded by Anthony Clake (majority shareholder/backer) and CEO Oliver Plunkett. Whilst developing into an ideal candidate for listing or M&A, Ocean Infinity remains privately held. It's a leading example of commercial global Maritime Autonomous Surface Ships (MASS), USV, and AUV DaaS company. Ocean Infinity provides seabed surveys, offshore monitoring, infrastructure support, search operations, and uncrewed vessel operations. It combines AI-driven data processing, satellite comms, and remote operation centers (ROCs) to shift the industry from crewed vessels to lean/unmanned fleets across offshore energy, defense, environmental monitoring, and deep-sea exploration.

Ocean Infinity's fleet consists of multiple lean-crewed and unmanned platforms, controlled from ROCs in Southampton and Sweden, with further sites planned in Tasmania, Singapore, and Texas:

- USS Accession (3.5m-5m variants), acquired via Unmanned Survey Solutions (Jan 2026).
- L3Harris C-Worker 8USV for coastal/shallow-water surveys and inspections.
- Armada 21 (4 x 21m battery-hybrid USVs, built by Grovfjord in Norway,

DNV-classed) for windfarm/cable surveys, delivered 2024–2025.

- Armada 36 (3 x 36m battery-hybrid USVs, built at Gdansk Shipyard/fitted in Southampton) under construction, part of a 5-vessel plan. UK MCA advancing uncrewed operation approval.
- Armada 78 (8 x 78m battery-hybrid dual-fuel MASS, built by VARD, Singapore-flagged) delivered 2022–2024, for geophysical/geotechnical work.
- Armada 86 (6 x 86m battery-hybrid MASS, VARD-built, moonpool-equipped for AUV/ROV/seabed tool deployment) delivered 2024–2025.
- NeedleFish (14m USVs) delivered to Kuwait Coast Guard with SRT Marine Systems.
- Kongsberg HUGIN AUVs, operating solo or in swarms via mother ships.

HUNDREDS OF COMPANIES AND CONCEPTS

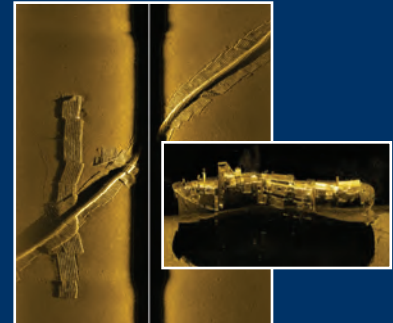
In this article, we have reviewed some of the leading players in a fast-moving sector. Our proprietary database contains several hundred companies, from start-ups to established global players, who have collectively developed more than 900 individual MASS, USV and AUV models, many of which are in commercial production. Not all of these companies will succeed, but many will and many will require capital to sustain growth.

And as the MASS, USV, and AUV segments grow, so do the equipment and payload requirements, benefiting the wider maritime ecosystem.

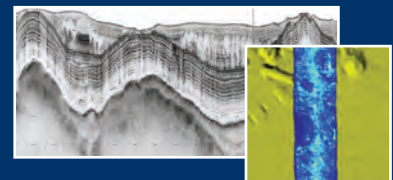
For any queries, please contact
Philip Lewis at:
philiplewis@intelatus.com

www.marinetechologynews.com

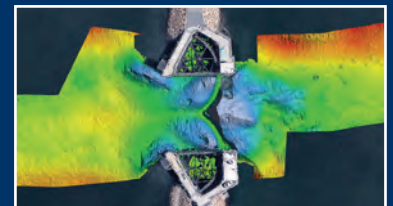
Side Scan Sonars



Sub-Bottom Profilers and eBOSS



Bathymetry Systems



Acoustic Releases & On-Demand Fishing



EdgeTech.COM

info@edgetech.com
USA 1.508.291.0057





Left to right: Jonathan Simpson, Senior Technical Advisor; Bertie Sorensen-Pound, Maritime Digitalisation Lead; Dr Kassie Cigliana, Maritime Digitalisation Lead; Lucy Corcoran, Customer Engagement Lead; Yildiz Williams, Senior Technical Advisor; Susie Smith, Head of Marketing and Communications.

Credit: Maritime and Coastguard Agency



Come In, the Water's Just Fine:

**How the UK
Maritime
Innovation
Hub Embraces
Innovation, Not
Just Regulation**

By Celia Konowe

Marine technology advances driven by rapid innovation represent commercial and scientific opportunities, but also an evolving oversight challenge for regulators that must find a balance between progress, safety and international guideline compliance. For the United Kingdom, this responsibility falls to the Maritime and Coastguard Agency (MCA), which has created the UK Maritime Innovation Hub (UKMIH), a function designed to bring innovators and regulators together early in the development process.

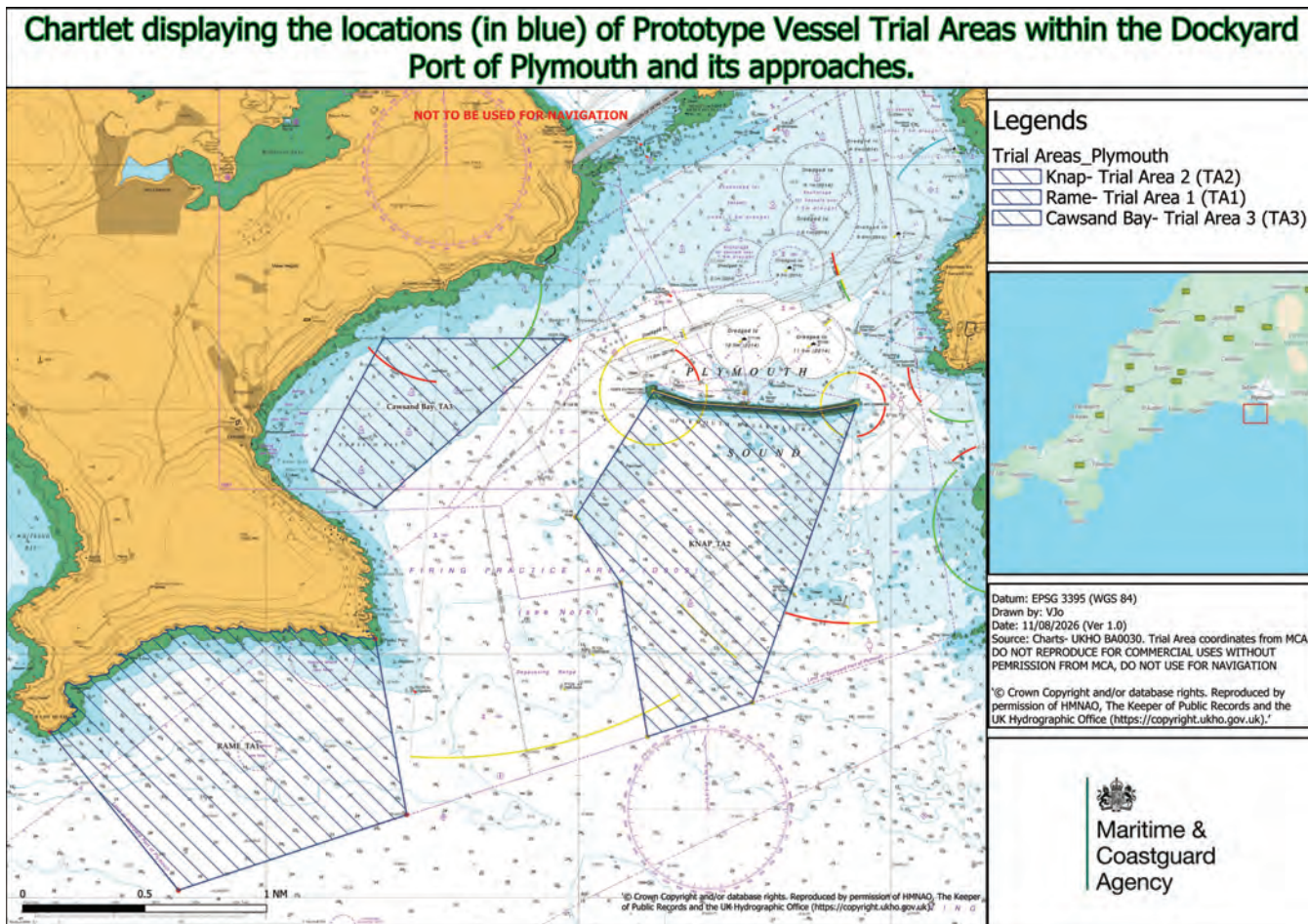
The UKMIH covers four areas, including decarbonization, Maritime Autonomous Surface Ships (MASS), digitization and digital systems, as well as nuclear propulsion. Near the top sits Jonty Slater, assistant director at the UKMIH, who started his role 10 months ago alongside the program itself, with the goal of improving regulatory accessibility and collaboration.

"I think the key part is how can we move the perception

of the MCA in the past as an organization that may have been known to say, "no," to yes. If you can give us the safety information, if you can give us an understanding of why you believe that you're going to be safe, we will look at it in a proper and clear way. That was the bigger thing that we took into this," he explained. This change in mindset is supported by the teams that make up the UKMIH, which bring together industry, civil service and consultancy experience to provide increased engagement and accessibility.

Early engagement

Regulatory accessibility for innovators isn't new to the MCA, Slater emphasized, but how the organization engages with industry has changed. "Previously, the MCA would have waited for industry to come to it with a design at a later stage and say, 'OK, now regulate me.' Instead, we have gone out and said, 'We are here to engage early.'"



Additionally, most of the work would have been chargeable, according to the MCA's statutory duty. Now, Slater and his team work on a nonchargeable basis, providing advice and guidance as a non-statutory function, allowing for even earlier engagement when vessels or systems are still on the drawing board and can incorporate regulatory feedback.

Despite being a newly established function, UKMIH is already tracking performance indicators and seeing positive results. Success was once measured in the number of inquiries received on a weekly basis. Now, the MCA is moving into tracking how many projects are successful in their outcome. "Either we can say to the innovator, 'We're not going to regulate you,' or 'This is your regulatory path,' and hand them off to another part of the MCA. Or we need to hold their hand through the regulatory pathway so that they can understand and they have a single touch point where they can come back to it all times," he explained.

These indicators also represent a positive understanding of the industry and its needs. "Especially in the MASS space," Slater added. "In terms of mapping the ecosystem and engaging with our international partners, it's been really valuable among our colleagues to actually be able to support their work. They can come to us and say, 'We've been hearing about this; what's actually happening?' And they can know that we are a voice that can help support the wider work and make sure the MCA understands what the industry actually needs."

Charting the course

The UK maritime industry plays a unique regulatory role, he noted, setting the standard for vessels with specific, well-defined guidance and leadership stance. "We know that there are a number of countries around the world that look at those regulations and say, 'How can we incorporate some or all of those regulations in our country?' Others have looked at it and asked, 'Do we need to have that level of regulation?'"

The UK's dedication to maritime regulation stems from its busy waters; a high number of vessels requires safety standards for all on the water. "The MCA's role," Slater clarified, "is to regulate the vessels, not the waters. We regulate the vessels to make sure they are safe for other water users." The MCA also only regulates surface vessels, as opposed to subsurface ones.

The UK's waters are home to a variety of vessels, from



Credit: Jonty Slater/Maritime and Coastguard Agency

"I think the key part is how can we move the perception of the MCA in the past as an organization that may have been known to say, "no," to yes. If you can give us the safety information, if you can give us an understanding of why you believe that you're going to be safe, we will look at it in a proper and clear way."

– Jonty Slater, assistant director at the UKMIH

small ones measuring under two meters to 36 meters and beyond, all with varying levels of autonomy. "The majority of are remote control...But we're seeing a number of players now wanting to have conversations about higher levels of autonomy and what does that mean?"

IMO MASS Code

Regulation looks a bit different, however, for MASS, where it's crucial to understand the entire system and not just the vessel, explained Slater. "We've had to go to that second stage where we have to understand the whole system, even in terms of how the remote operations centers (ROCs) are being managed and developed." The MCA is also one of the key authors of the International Maritime Organization's (IMO) MASS Code, adopted in May 2026.

While the Code is currently non-mandatory, Slater sees the MCA's involvement, including current involvement, as crucial. "We need to look at our existing regulations and how we would implement the MASS Code...The only way it works is if there's data collected to support the work—how our vessels are going to abide by it, what

are the concerns around it, and how well it works." The industry will need to convert the MASS Code's current goal-based structure into regulations that can support the transition, balancing safety and innovation.

"I think how we deal with people and how we make sure that these vessels are appropriate for mixing with manned vessels is something that we, and everybody, are still learning," he added. "There will be vessels that are two meters and there will be huge tanker vessels, at some point, that will be under remote control or some level of autonomy beyond what they're doing at the moment. And how can all that still sit within the MASS Code?"

With size comes the desire for autonomous dual and multipurpose vessels, posing new challenges for MASS regulation. Ship operators are looking away from limited fuel supplies and towards remote-controlled options, stretching the time possible at sea. "That can be done with the level of technology we have," Slater acknowledged.

Demystifying digitization

Beyond MASS, the MCA and UKMIH are also at the forefront of industry-wide trends like decarbonization



NEW WAVE MEDIA

THE INDUSTRY'S ULTIMATE ADVERTISING PLATFORM

- MarineLink.com
- OEDigital.com
- MarineTechnologyNews.com
- MaritimeProfessional.com
- MarineElectronics.com
- AOGDigital.com
- MaritimePropulsion.com
- MaritimeJobs.com

Drive audience and build brand awareness with New Wave Media's family of websites. Reach diverse audiences around the world with curated multiplatform marketing initiatives.

WWW.NEWWAVEMEDIA.COM



and artificial intelligence (AI). "In terms of decarbonization, there are a lot of shore-based projects that are coming through for the electrification of ports and vessels, but also looking at alternative fuels—how those will be used and how they can be more efficient—and energy efficiency technologies like carbon capture or wind assist. Those are at a volume that we didn't expect," Slater said. A surprising new angle is the rapid increase in discussions around nuclear power.

"We've had more inquiries around AI in the last few months than we expected. That's why the UKMIH's four of the areas are really, really important...We need to understand what is being done around software assurance and digitization. Is it actually AI actually on board, or are we just talking very, very intelligent pieces of software? What does that actually mean? And what's beyond the marketing? Sometimes you look under the hood and you're like, 'We're okay with this because actually it's an automated control system with a little bit of some brains attached to it.'"

"That makes it less scary," he admitted. "That is something that we're all learning from a regulatory point of view. Where is the point that we regulate? How do we regulate it? That is something that's coming up time and time again. We're very, very lucky in that our parent ministry, the Department of Transport, wants us to engage... Those are very clear conversations that are ongoing."

Innovators welcome

Getting involved with UKMIH is simple, Slater encouraged. Innovators can expect a nine-step process, from initial contact to triage and engagement. "We bring it all together so that at the end, they come out with a successful project or a certification, and they feel like they've actually been listened to."

"The value that the MCA has worldwide is we've been known to be part of the UK flag, but also beyond, in terms of our regulations. If somebody wants to engage with the UK market or wants to have a UK level of certification for their project or vessel, having a conversation with us will allow just that."

"The UK has been supporting innovation for hundreds of years," Slater added. "That isn't changing. It's something that the UK is open to, from an MCA point of view—especially being open to innovators to have conversations about bringing their business and vessels to UK waters."

www.marinetechologynews.com

Reduce Post-Processing
Time by **50% or More**



 SubC
Imaging

**DROP & TOW
CAMERA SYSTEMS**

Save Time. Start Surveying.



**THE MARITIME
NETWORK**

*The maritime industry's
largest group*

**JOIN →
TODAY!**



*Connect with more than
255,000 members*



LANDER LAB SALUTES OCEAN LANDER SUPPLIERS

By Kevin Hardy, MTR Columnist, President, Global Ocean Design LLC

Designing and building ocean landers is simplified by close collaboration with a stratum of key suppliers whose products meet the challenges of the deep sea.

Herewith we highlight some of our favorites.

Releases

EdgeTech <edgetech.com>: Among their many release systems is the circular BART board (Burnwire Acoustic Release Transponder). (See Figure 1). The roughly 6" diameter board fits perfectly into a 10" sphere (Glass: Nautilus Marine Service; GPA: Global Ocean Design). The low frequency transmission sends complex command codes reliably up to 16km distant. End users can request an extended command suite that will provide up

to 5 total unique burnwire commands. **Burnwires:** Global Ocean Design <globaloceandesign.com>. Two sizes: rated 125-lbs or 250-lbs. Mounts hold burnwires rigid in all axes except one; a single lever mount design supports 1,250-lbs, and a double-lever mount design holds 5,000-lbs. Ping on Rob Morris <Rob.Morris@edgetech.com> for more info.

SubSeaSonics <subseasonics.com>: Low cost, shallow water, single release, acoustic and countdown timers. Not heavy duty, but good for floats and light coastal work.

Housings

Nautilus Marine Service <vitrovex.com/en>: Famous for Vitrovex Glass housings used for both buoyancy and housings, some rated for up to 12km. (See Figure

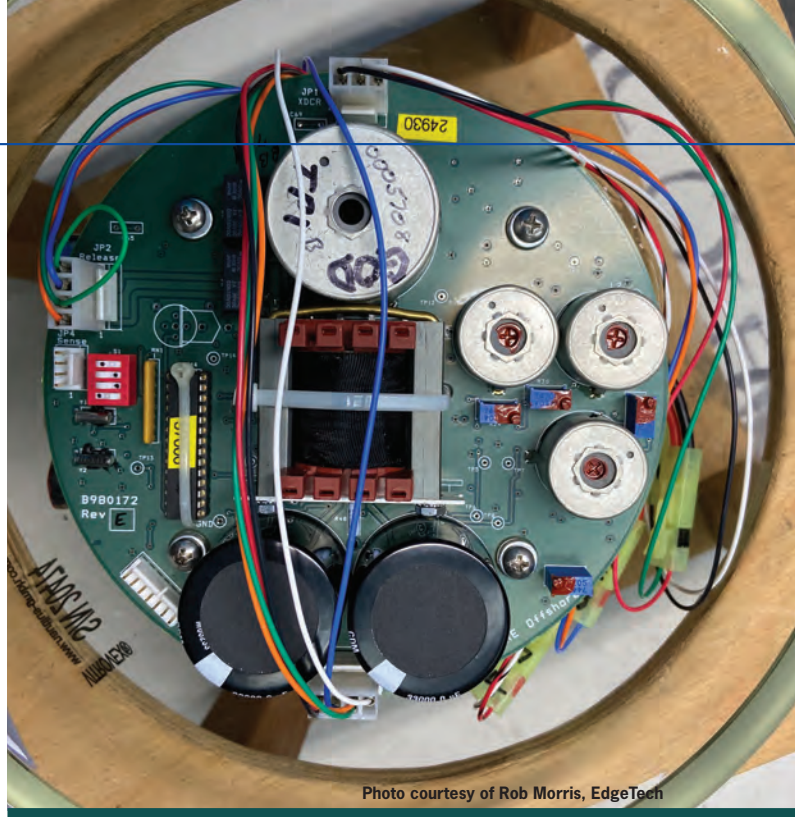


Photo courtesy of Rob Morris, EdgeTech

Figure 1 (above)

The Edgetech Burnwire Acoustic Release Transponder (BART) board provides up to 5 burnwire release commands, or 4 burnwire release commands plus a command-on and command-off to a single pin. The board has reliably received commands at the bottom of the Mariana Trench/Challenger Deep.

2). (U.S. rep: Brock Rosenthal, **Ocean Innovations**, <brock@o-vations.com>).

Prevco <prevco.com>: Provides a broad selection of subsea housings, both custom and standard off-the-shelf designs. They also offer comprehensive pressure testing services.

Blue Robotics <bluerobotics.com>: Low-cost, shallow water housings for experimentalists and hobbyists. They have earned a place in the mix.

Global Ocean Design <globaloceandesign.com>: Glass reinforced polyamide spheres with purge port and 3 connectors fittings, plus interior mounting ring and plate, rated 1km and 2km. **Deck Purge Box** moisture removal system with vacuum leak test lowers interior relative humidity to prevent condensation with no HazMat.

Galvanic Time Releases

Best for releasing a tethered float on a seafloor package as the target release time and actual release time may vary by several hours, plus or minus. Advantages are they are cheap, small, and always work.

Neptune Marine Products <neptunemarineproducts.com/galvanic-timed-releases.php>



Photo courtesy of Nautilus Marine Service

Figure 2

A Nautilus Marine Service 10" Vitrovex sphere is shown with multiple penetrators and a self-sealing purge port. A circular frame can be bonded to the interior of one of the hemispheres as a mount for electronics.



Photo courtesy of Atlantic Floats

Figure 3

Trawlworks/Atlantic Floats offers injection molded plastic spheres for low-cost buoyancy to depths as great as 2km.

International Fishing Devices <underseareleases.com>

Flotation

Trawlworks <trawlworks.com>: Distributors of **Atlantic Floats** <atlanticfloats.com/en/floats/> polyamide deep sea fishing floats. Available in various diameters, some with lugs, others with center holes for mounting. (See Figure 3). The 15% glass-filled polyamide 10-2100-NG provides 11.8-lbs of buoyancy to 2,100m. Rugged, impact resistant. Chat with Steve Taber <trawl@trawlworks.com>.

Deepwater Buoyancy <deepwaterbuoyancy.com>: Manufacturers of syntactic foam in standard or custom shapes.

Connectors and Cables

SubConn <https://www.macartney.com/connectivity/subconn/>: They got very popular when Impulse and SeaCon stopped selling to small customers, which made for some unexpected delivery problems. They have worked hard to correct those. Great quality. Drop a note to Beto Campos <BCA@macartney.com>.

Dragonfish Manufacturing <https://dragonfishmfg.com>: Rubber molded connectors, and custom cable assemblies, low minimums, "high quality and expediency are our top priorities." Contact Stan Logan <Stan.Logan@dragonfishmfg.com>.

Blue Trail Engineering <bluetrailengineering.com/>: Cobalt underwater connectors, thrusters and other technology for experimentalists and hobbyists. They built and deployed a solar powered ASV that traveled west from California 13,322km across the Pacific to Papua. Awesome.

South Bay Cable <southbaycable.com>: Full-on custom cable shop with testing equipment including an Optical Time-Domain Reflectometer, Impedance Analyzer, High Voltage Test Facility, Environmental Ovens, and Hydrostatic Pressure Test facilities. Small cable runs are possible. Many standard cable designs are in stock.

Anekonnnect <anekonnnect.io>: Cool subscription-based application for designing and diagramming underwater cables. The company maintains a parts library of over 10,000 pieces from pretty much everybody.

Sensors and Electronics

RBR <rbr-global.com>: small, compact, rugged, reliable, with options for shallow to very deep, that fit in hand-deployable landers. Instruments measure tem-

perature, depth, salinity, dissolved gases, pH, and other parameters. (See Figure 4). Access and manipulate data through a single piece of software: Ruskin. Compatible with PCs and Macs, it is easy to install, simple to use, and handles deployment, download, and data display in one place.

Star-Oddi <https://www.star-oddi.com/>: Small, high performing loggers for aquatic environments. Sensors measure temperature, depth (pressure), salinity (conductivity), tilt, and magnetic field strength. Some of the sensors are rated for hadal depths.

Jasco <https://www.jasco.com>: Autonomous Multi-channel Acoustic Recorder Generation 4 is a customizable, fully autonomous underwater sound and data recorder. The system comes with removable memory and replaceable battery packs, making it easy to refurbish and redeploy to depths up to 6700m as payload on an ocean lander. Waveform Audio File Format (WAV) and Comma-separated values (CSV) files are saved to Secure Digital (SD) cards, directly readable by a computer.

Sea-Bird Scientific <https://www.seabird.com/>: An old-hand at oceanographic data collection, Sea-Bird Scientific delivers accurate and reliable CTDs, sensors, and software that empower scientists to collect precise data in the harshest environments.

Unisense Scientific <unisense.com/products/field-data-logger-mini-system/>: **The Field DataLogger Mini System** is a self-recording in situ sensor package with deep sea rating to 6,000 m and long battery life measure H2S, O2, pH, Redox, H2, and NO. The Field DataLogger Mini enables studies of unique analytes, including studies utilizing fast responding sensors (seconds), giving the opportunity to monitor and obtain unique data in a cost-effective way.

Mission Robotics <missionrobotics.us>: Custom electronic and software solutions for unique marine applications. Mission Robotics leverages their marine EE expertise to offer reliable, rigorously-tested software and hardware products that work across a wide range of undersea vehicles. We understand the pain points of product development and have created solutions that will allow companies to focus on the big picture of growing and running their business.

Samplers

General Oceanics <https://www.generaloceanics.com/>: Niskin bottles for water sampling and animal

collection. Held open by a burnwire (Global Ocean Design), and triggered by a timer or acoustic signal.

Cameras and Lights

WASSOC <wassoc.com>: WASSOC offers the **Autonomous Recording Camera (ARC)**, a 6000m -rated, stand-alone subsea HD imaging system featuring Wi-Fi connectivity and long-term deep sleep capability. For deepwater or night imaging, the ARC connects to the Subsea LED Light (SLL). A programmable intervalometer controls the time lapse series. (See Figure 5).

Deep Water Exploration <dwe.ai>: synchronized multi-camera self-recording system provides 360° panorama of the seafloor around a lander. Their 7-element sapphire lens is meticulously designed to eliminate distortion and chromatic aberrations caused by water diffraction. Cameras are about as large as an egg. Stereo imaging system are also available. Housings rated from 400m to 11km.

Recovery Beacons

Xeos <xeostech.com>: Iridium GPS beacons, VHF Beacons, Argos beacon, flashers, and hand-held locators.

MetOcean Telematics/Novatech <metocean.com/environment/novatech-tracking-and-monitoring/>: NOVATECH beacons are designed to last in the harshest of ocean environments, and come in the form of flashers, radio beacons and satellite beacons.

Supplies

3M <3m.com>: With its 33 black-tape, Scotchcast 2131 casting compound, and acrylic structural adhesives, 3M has been a quiet but powerful member of the marine industry.

Lander Systems

Devollogic <https://develologic.com/product/modular-seafloor-lander/>: Produces a compact, modular seabed observatory enabling long-term, autonomous environmental monitoring with flexible sensor integration, hybrid communication, and deployment without ROVs or divers.

Global Ocean Design <globaloceandesign.com>: Multiple vehicle sizes including Picolander (2 x10" spheres), Nanolander (3x10" spheres), Nanolander-13 (3x13" spheres), and Omega Lander (2x17" spheres). Many options and accessories. (See Figure 6).

KC-Denmark <www.kc-denmark.dk>: Lander frames,



Photo courtesy of RBR

Figure 4

RBR duet4 and solo4 offer exchangeable sensors to measure Temperature (T), Pressure (D), Optical Dissolved Oxygen (ODO), Photosynthetically Active Radiation (PAR), Radiometer (rad), Turbidity (Tu), and Chlorophyll-a (chl-a). The compact date logger provides flexible measurement schedules, USB-C download, standard sampling up to 2Hz, and optionally up to 32Hz, options to 10,000m, long deployments, in a compact and lightweight housing.



Photo courtesy of Wassoc

Figure 5

The ARC (Autonomous Recording Camera) is Wassoc's full ocean rated, stand-alone, subsea imaging system. Powered by an internal rechargeable Li-ion battery, the ARC can be programmed for a wide variety of subsea imaging missions. Paired with Wassoc's Subsea LED Light, the ARC can autonomously illuminate and capture HD footage and imagery in ocean depths up to 6,000m.

sensors, cameras and lights, samplers, and biological incubation systems.

Unisense Scientific <unisense.com>: Manufactures the **MiniChamber Lander System**, designed for water chamber measurements with multiple microsensors (O₂, H₂, N₂O, pH, H₂S) mounted in the chamber lid. 300m and 6000m platforms are available. The MiniChamber Lander does not have flotation or an anchor release system, but there is provision to add them. Their DeepSea Lander System is a fully functional free fall lander system, built in collaboration with KC-Denmark (above).

“Lander Lab” is a hands-on column of Ocean Lander technologies and strategies, a unique class of unmanned undersea vehicles, and the people who make them. It is meant to serve the global ocean lander community in the manner of Make Magazine and other DIY communities.

Comments on this article, or suggestions for other stories of interest are welcome. Ocean lander groups are encouraged to write in about their work. Please feel free to contact Kevin Hardy <khardy@marinelink.com>.

Thanks for reading.

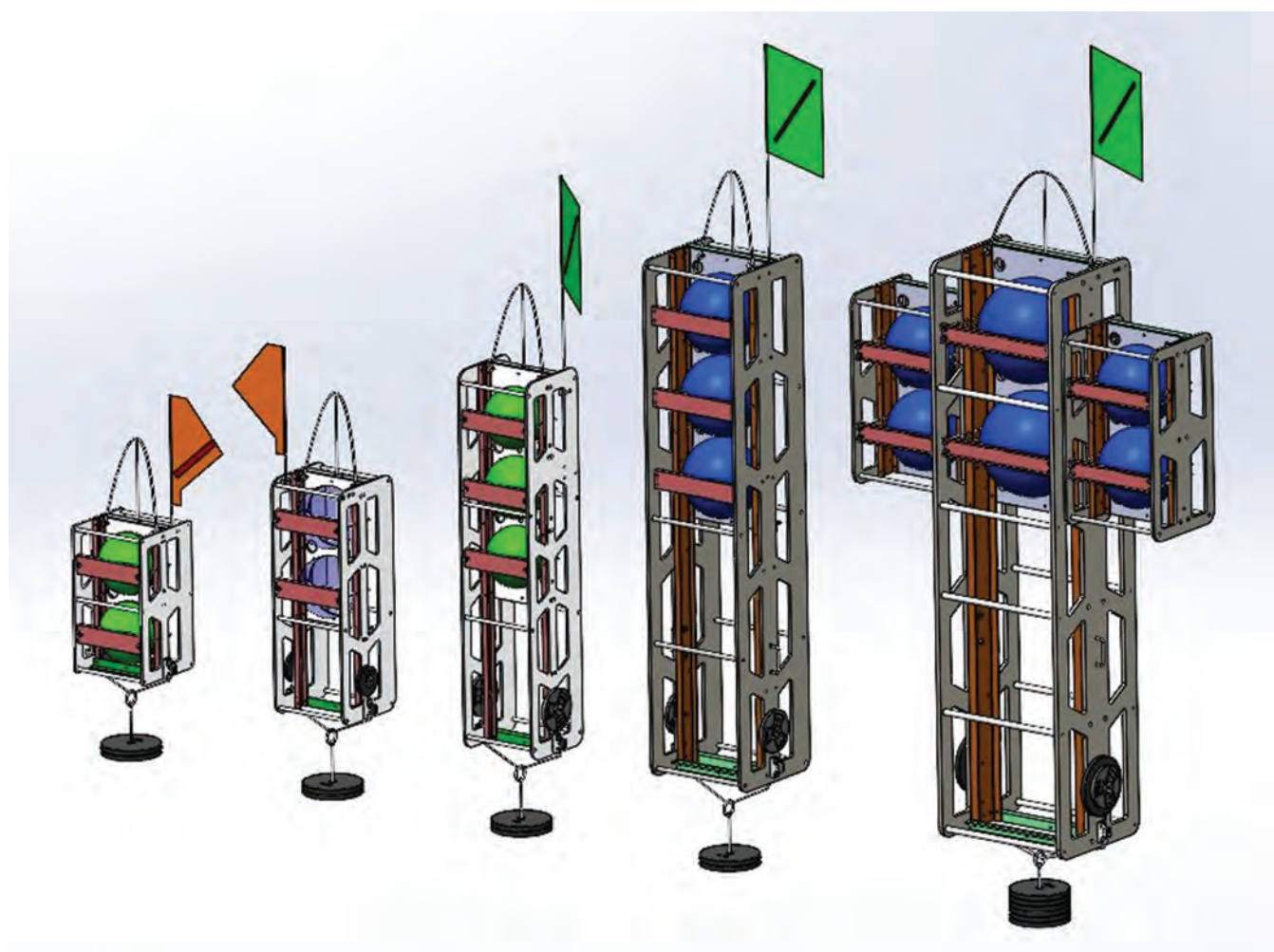


Photo courtesy of Global Ocean Design

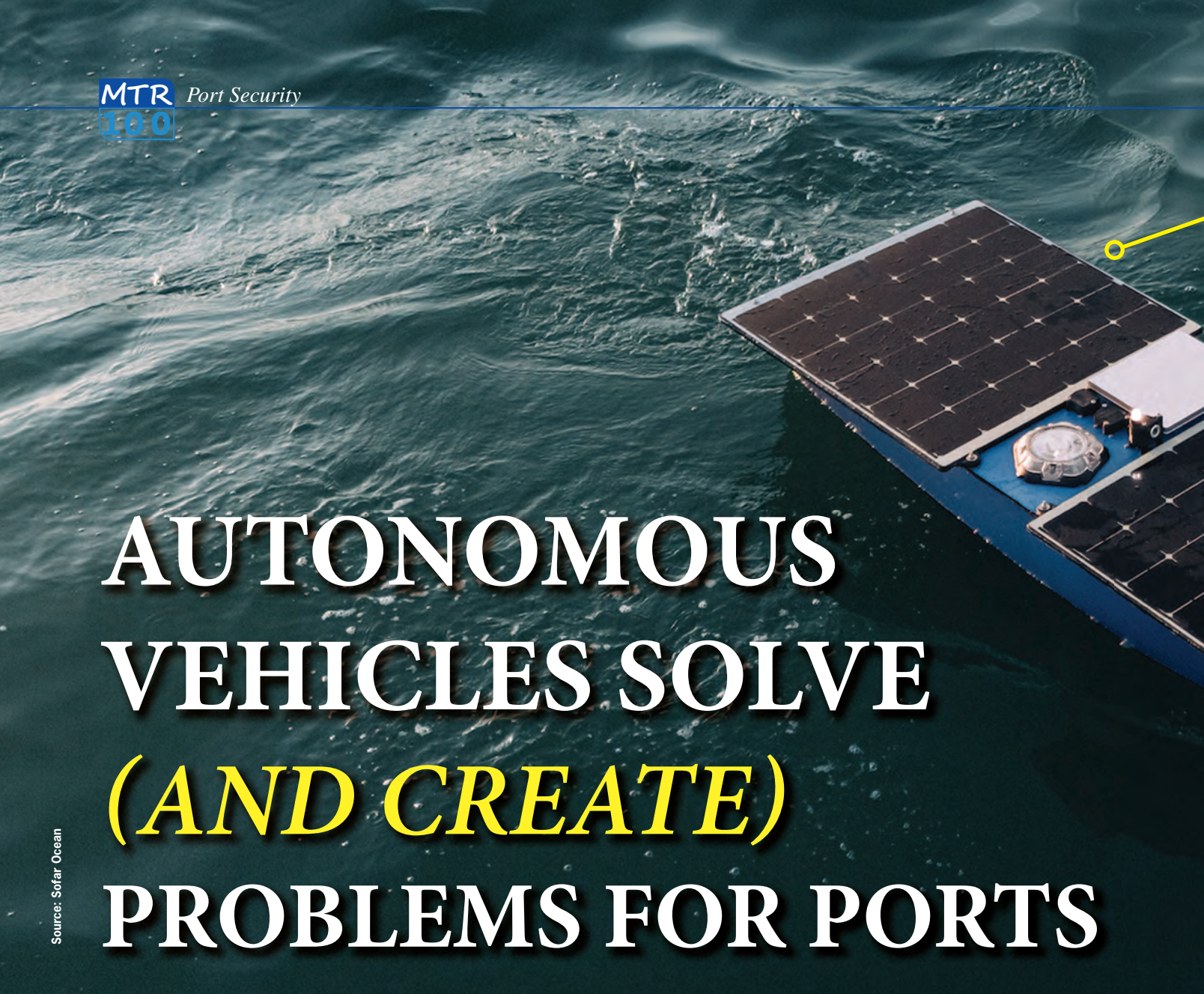
Figure 6

Global Ocean Design's ocean lander family, left-to-right, Picolander, Picolander-XL, Nanolander, Nanolander-13, and the Omega Lander. Landers are depth rated for 1-km to 12km, depending on spheres, and have payload capacity to suit multiple mission requirements.

MAXIMIZE YOUR POTENTIAL.



Find your new career at:
MaritimeJobs.com

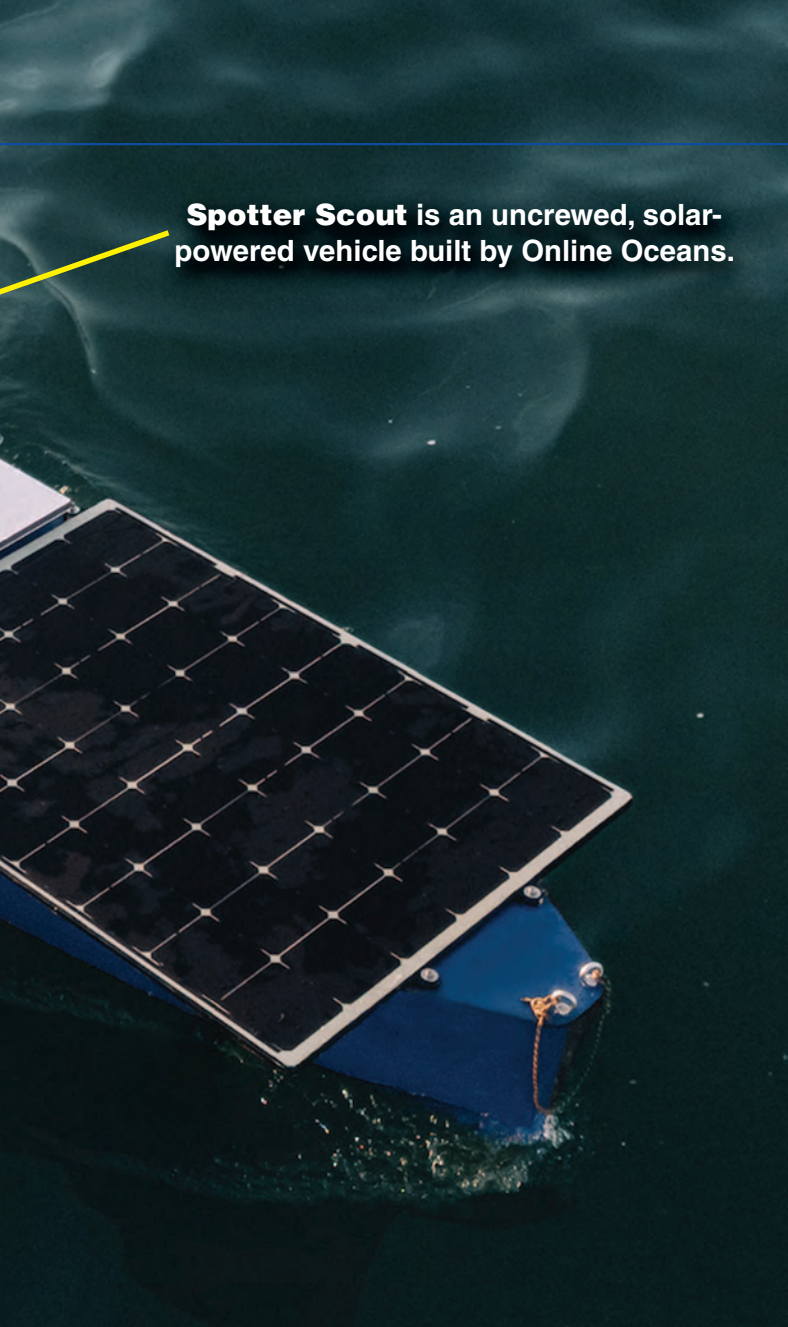
An aerial photograph of a solar-powered autonomous surface vehicle (ASV) floating on the ocean. The vehicle is a flat, rectangular platform with a grid of solar panels. A yellow line points to a small circular feature on the right side of the platform. The water is dark blue with whitecaps.

AUTONOMOUS VEHICLES SOLVE (AND CREATE) PROBLEMS FOR PORTS

Source: Sofar Ocean

Autonomous vehicles are increasingly sophisticated defensive tools for ports wanting to protect against maritime threats - including attacks from other autonomous vehicles.

By Wendy Laursen



Spotter Scout is an uncrewed, solar-powered vehicle built by Online Oceans.

On December 15 last year, the Security Service of Ukraine reported that its underwater drone had struck a Russian submarine in Novorossiysk. The incident highlighted just how sophisticated potential threats have become. Harbor cameras were likely hacked, providing real-time visual evidence of the attack, with associated AI possibly identifying and guiding the autonomous underwater vehicle (AUV) to its target.

The value of AI is evidenced by the many technology partnerships that are forming between platform, software and sensor creators. Late last year, **Ocean Power Technologies (OPT)** announced a partnership with **Mythos AI** to integrate AI-driven autonomy software across OPT's fleet of

WAM-V autonomous surface vehicles (ASVs). These vehicles leverage real-time edge processing, multi-sensor fusion and adaptive learning for enhanced situational awareness, obstacle avoidance and multi-vehicle coordination.

Dr. Fritz Stahr, chief technology officer at **Open Ocean Robotics**, says the integration of AI to analyze data streams from autonomous vehicles is transforming the field. Enhanced Horizon, Open Ocean Robotics' AI-driven analytics tool kit, delivers real-time object detection, classification, and tracking using optical and thermal cameras, giving operators immediate situational awareness above the surface. For underwater intelligence, Underwater Listener is an AI-enabled acoustic monitoring system that detects and visualizes underwater sounds in real time. It captures acoustic activity from sources such as ship engines, marine mammals, and underwater machinery, streaming insights directly to XplorerView.

As Shane Swiderek, Product Marketing Manager of **So-far Ocean**, points out: "Detection only matters if it's fast enough to act on. Real-time processing at the sensor closes the gap between identifying a threat and responding to it."

One of the most pressing challenges is having a clear, real-time understanding of what's happening in and around a port, says Rob Lehman, Co-Founder and Chief Commercial Officer at **Saronic**. Today, many ports still rely on legacy approaches — manpower-intensive patrols on costly manned platforms — which deliver only episodic coverage and leave persistent blind spots that adversaries can exploit, he says. "To counter these threats, we're seeing a shift in priorities toward solutions that are scalable, autonomous and data-driven, built on distributed, attributable systems capable of operating 24/7 with minimal human oversight." Corsair, Saronic's 24-foot ASV, supports a wide range of applications including maritime domain awareness, port, harbor, and offshore facility security monitoring, logistics shuttle operations and environmental monitoring.

Philip Lewis, Director of Research at **Intelatus**, has undertaken a comprehensive review of AUV and ASV technology. "Just think of them as a blank canvas," he says. A flexible variety of payloads means they can undertake a range of tasks including detecting unwanted intruders, people trafficking and illegal migration. They are also being used for firefighting, bathymetry, environmental surveys and trash and algal bloom removal.



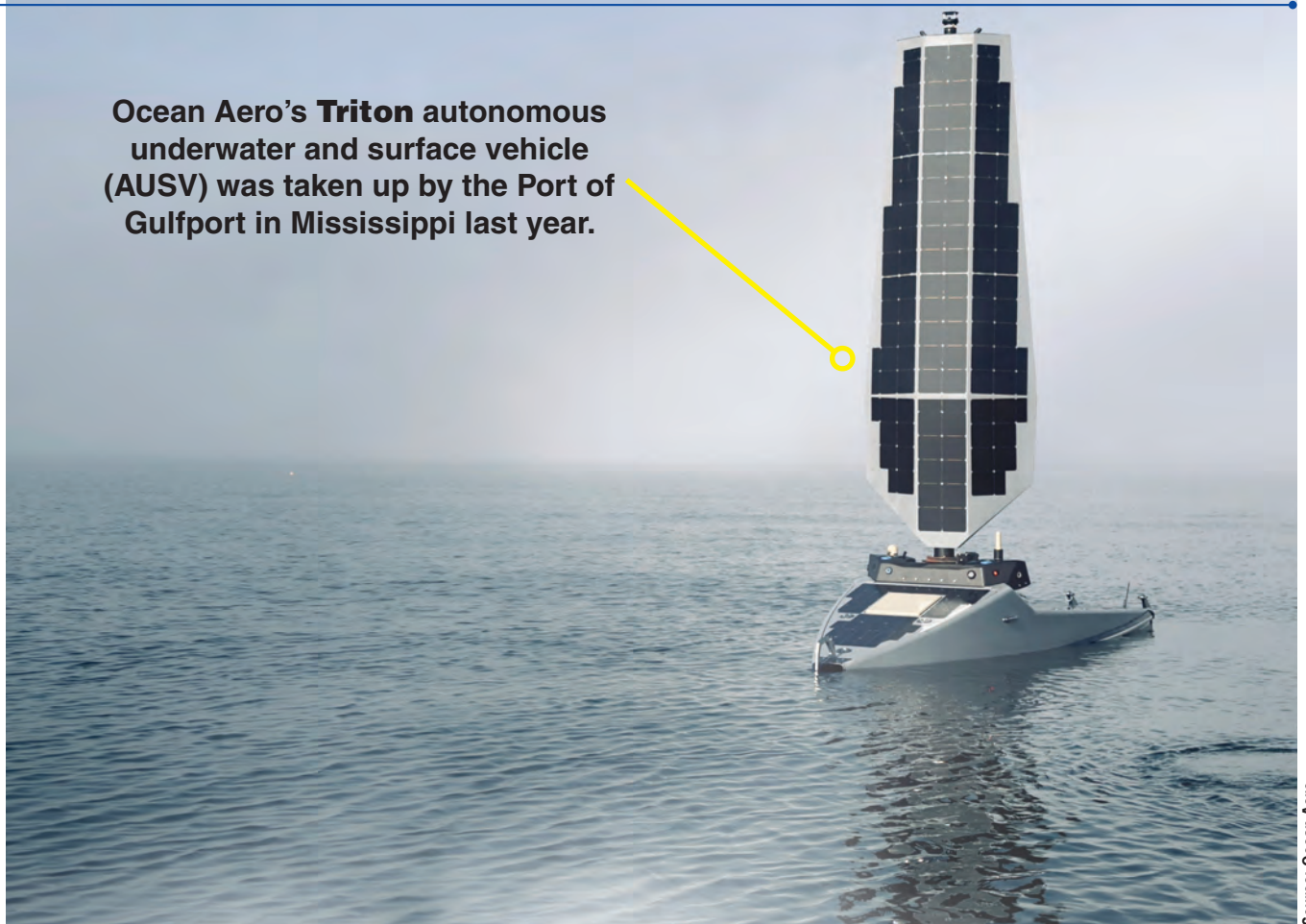
Source: Saronic

Corsair, Saronic's 24-foot ASV, supports a wide range of applications including maritime domain awareness, port, harbor, and offshore facility security monitoring, logistics shuttle operations and environmental monitoring.



Source: Saronic

Ocean Aero's Triton autonomous underwater and surface vehicle (AUSV) was taken up by the Port of Gulfport in Mississippi last year.



Source: Ocean Aero

USVs offer a low-cost immediate force multiplier for port security, he says. “They’re generally quick to take from concept to production, and new solutions are coming out in under a year. They’re unmanned, so they are a lot less complex to build than manned platforms. Take-up has been fastest in big European ports, such as Rotterdam and Hamburg, and in Asian ports such as Singapore, but the U.S. is increasingly focused on the force multiplier effects.”

U.S. government agencies have tested **Ocean Aero’s** 4-meter Navigator and Discovery models. **Saildrone** is supplying at least 20 of its Voyagers to the U.S. Navy to monitor illegal activity along the U.S. southern maritime approaches, and the Navy and Coast Guard have deployed **MARTAC** USVs for demonstrations at Californian ports.

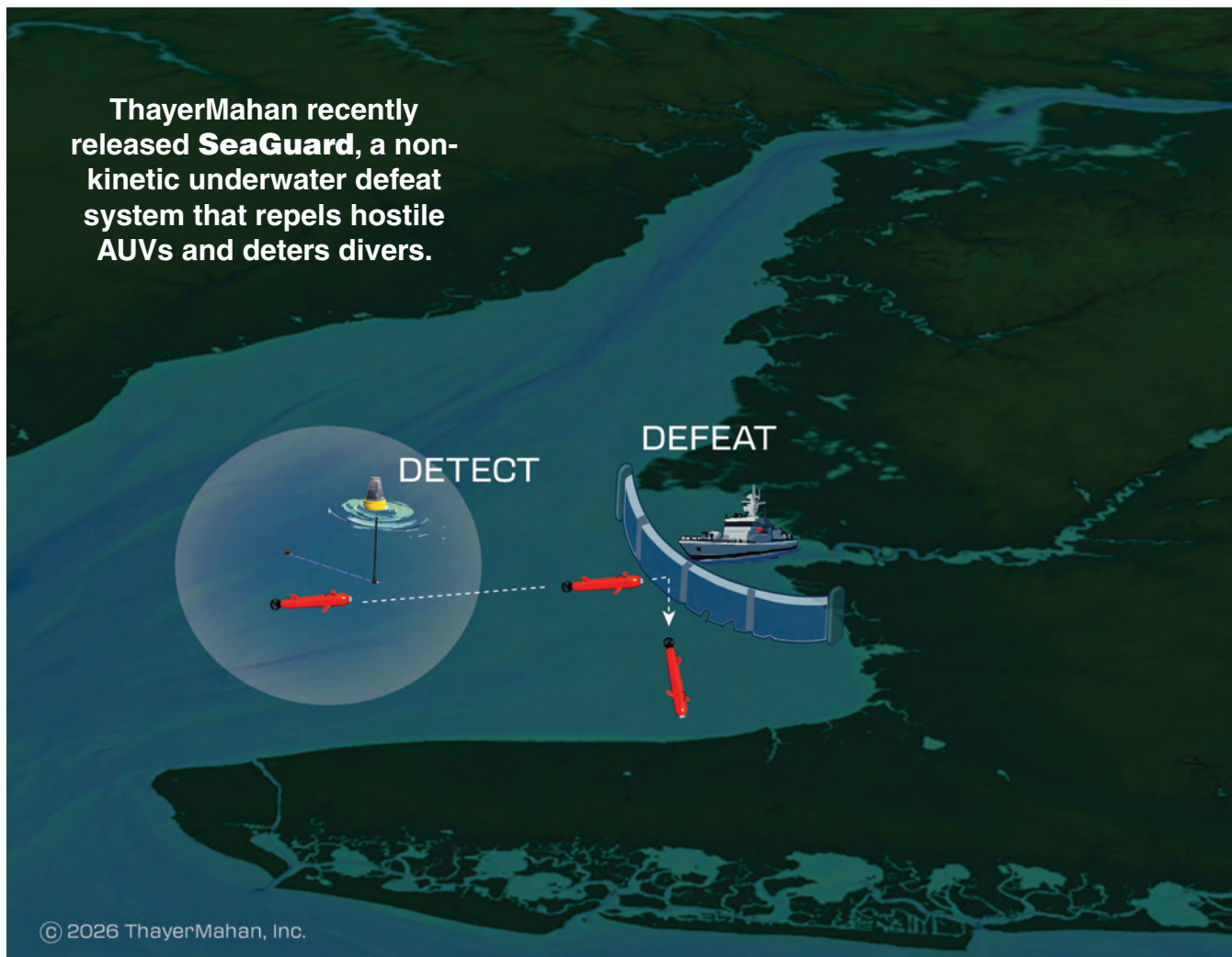
Ocean Aero’s Triton autonomous underwater and surface vehicle (AUSV) was taken up by the Port of Gulfport in Mississippi last year. The vehicle does a full scan of the port twice a week using a variety of subsea payloads including bathymetry, side-scan sonar and magnetometers to produce high-resolution comparative datasets for real-time

change detection.

From his satellite office in Houston, Ocean Aero CEO Kevin Decker says: “I can say with certainty that there is not espionage or sabotage placed at the bottom of the Port of Gulfport because I checked this morning and I’ve checked twice a week for the past nine months. I can’t say the same thing for the ports of New York City, Los Angeles, Houston or Seattle. In an era of conflict and sea mining, that needs to change.”

Forcys and its partners demonstrated their combined underwater and multi-domain security systems at Portland Port, UK, last year. Observers were able to watch the threat scenario unfold in real time as the company’s Sentinel Intruder Detection Sonar (IDS) and **MARSS Group’s** NiDAR command and control platform worked in tandem to detect, track, classify and respond to a range of hostile events from underwater and the air.

NiDAR is a sensor-agnostic, multi-domain surveillance and security platform that integrates data from a wide ar-



ray of sensors including sonar, radar, radio frequency and electro-optical/infrared. The demonstration showed the power of integrating both passive and active sonar data when tracking low target strength drones or very slow-moving targets in the highly cluttered seabed conditions typical of some harbors.

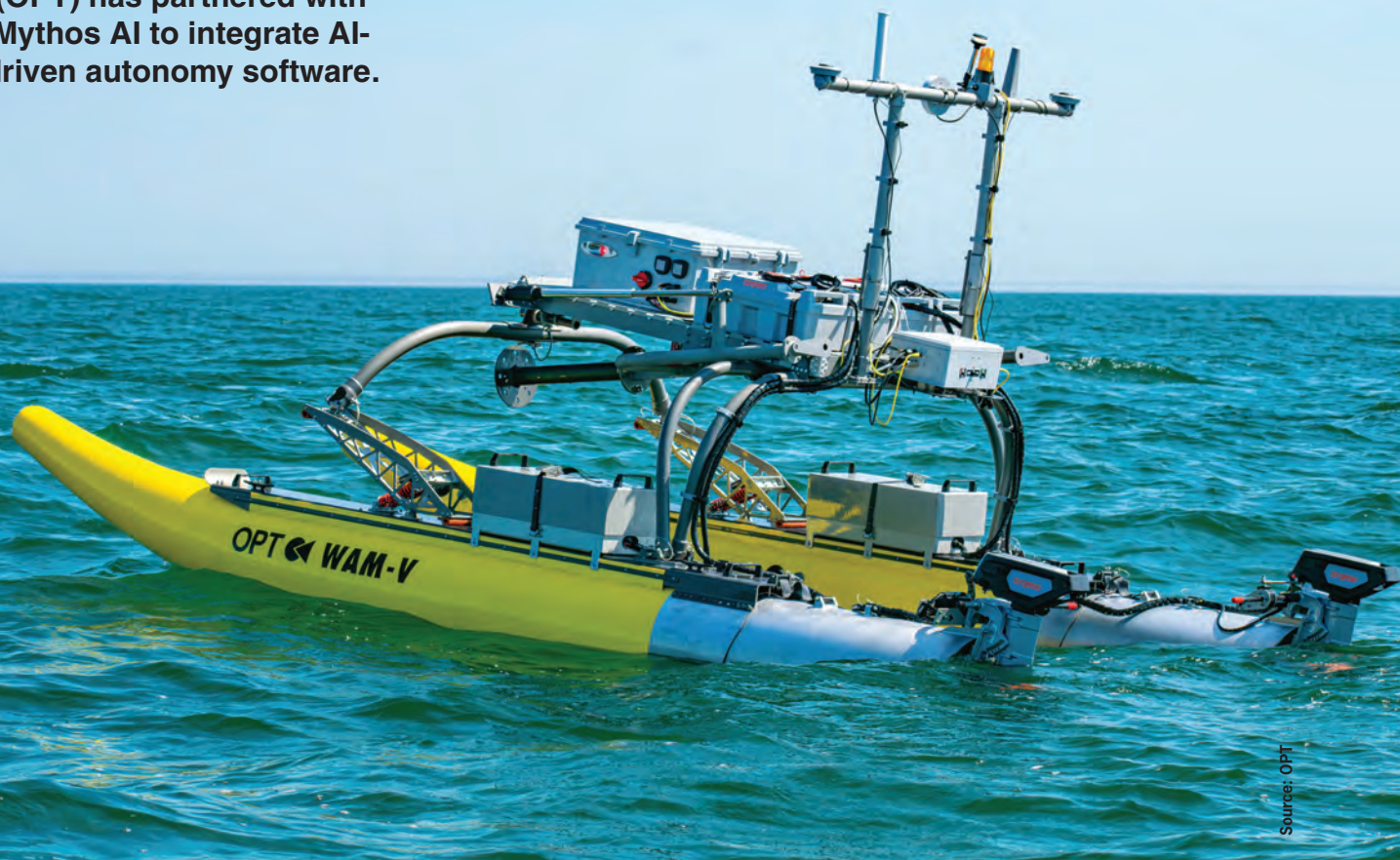
Payloads need not be bespoke. Commercial off-the-shelf (COTS) hardware and software is reliable, cost-effective and fast to implement – something that Forcys, soon to be part of the Kraken group, takes advantage of. Technical Sales Manager, Benn Pickering, says: “With COTS, you benefit from tried-and-tested technology that has already been proven in real-world conditions.”

Another key advantage is that COTS solutions evolve to keep pace with emerging technologies. “At Forcys, we go beyond simply offering COTS products. Our technology

partners are creating an ecosystem of compatible technologies that work seamlessly together, providing end-to-end solutions without compatibility issues,” says Pickering. He cites the example of **Sonardyne’s** SPRINT-Nav, an all-in-one subsea navigation instrument that integrates an inertial navigation system, a Doppler velocity log and a depth sensor.

Like the Ukrainian drone, the sophisticated technologies now available support attack operations as well as defense. In response, **ThayerMahan** recently released SeaGuard, a non-kinetic underwater defeat system that repels hostile AUVs and deters divers. When coupled with ThayerMahan’s TransparenSea, Outpost, and SeaPicket acoustic intelligence solutions, it offers a comprehensive detect-to-defeat chain. “From my time in uniform to my role today, one truth has remained constant: the underwater domain evolves rapidly, and the threats evolve even faster,” said CEO Vice Admiral Mike Connor, U.S. Navy (Ret.).

Ocean Power Technologies (OPT) has partnered with Mythos AI to integrate AI-driven autonomy software.



Source: OPT

MARITIME PROPULSION

Powering the Maritime Industry

Maritime Propulsion is the largest online database for marine power & propulsion equipment - the fastest way to find engine reports, specs, suppliers, and exclusive articles on industry developments.



<https://www.maritimepropulsion.com/>

“ALL IN,
ALL GOOD,
ALL FOR
ONE”



“Holding Fast in Heavy Seas: Leadership For Turbulent Times” by Tim Gallaudet, PhD, Rear Admiral, US Navy (ret) is much more than a standard leadership tome, far less than a tell-all political expose, rather a common sense approach on leadership and life as told by the man who lives and works with empathy, humility and servant leadership. RAdm Gallaudet recounts his long and storied career, as well as the tumult serving as a presidential appointee under the first Trump Administration as the leader of NOAA. RAdm Gallaudet is an open book on the many mentors, colleagues and family personalities and events that helped to shape his views on leadership and life.

By Greg Trauthwein

TIM GALLAUDET ON SCIENCE, LEADERSHIP AND THE PEOPLE BEHIND THE MISSION

Rear Admiral Tim Gallaudet, PhD, U.S. Navy (Ret.), has spent much of his professional life at the intersection of ocean science, technology and public service. His 32-year Navy career included command at sea, scientific research, leadership of Navy Meteorology and Oceanography Command and responsibility for what he described as the world's largest fleet of oceanographic underwater vehicles. Then, in 2017, he moved into an entirely different environment when he was appointed to help lead the National Oceanic and Atmospheric Administration (NOAA).

His new book, *Holding Fast in Heavy Seas: Leadership for Turbulent Times*, draws on all of it. But while the book is built around leadership, Gallaudet is quick to point out that the lessons are not exclusively his.

"I wrote the book really because I was asked when I led this civilian agency, NOAA, every day about what I thought on different leadership topics," said Gallaudet. Unlike the Navy, he said, scientists and civilians in federal agencies are not routinely immersed in formal leadership training. His NOAA colleagues wanted to hear what he had learned.

"So, it's a memoir, but it's really focused on my thoughts on leadership," he said, particularly what he learned "from really great people, not just senior officers and command-

ing officers, but junior sailors and civilians who'd really taught me a lot about how to be as a person with character and integrity."

For the marine science and technology community, however, *Holding Fast* carries another thread. Gallaudet's career is a story of a scientist who became a senior leader without losing his connection to science, technology or the people doing the work.

Science as the Common Ground

Gallaudet arrived at NOAA during the first Trump administration, a period he described as one of considerable uncertainty for federal science agencies. One of his challenges was reconciling proposed White House budget reductions with programs that he believed were important to public safety and research. "We found creative ways," he said, and one of the clearest examples was uncrewed technology.

Gallaudet helped establish NOAA's first drone program, initially funded at about \$14 million annually. The program used aerial, surface and underwater vehicles to monitor the ocean and fisheries, map shorelines and coral reefs, study the atmosphere and improve hurricane track predictions.

"We were dealing with some heavy seas in terms of the



“When you remember someone and you show you appreciate and value them so much to remember their name, especially if you’re really high up on the ladder, it just changes things overnight.”

**– Rear Admiral Tim Gallaudet,
PhD, U.S. Navy (Ret.)**

White House wanting to throttle us back,” he said, “but we found ways to succeed by really appealing to the technology goals they had.”

For Gallaudet, this was familiar territory.

As Oceanographer of the Navy and Commander, Naval Meteorology and Oceanography Command, he oversaw a large fleet of oceanographic underwater vehicles. In 2016, China seized a U.S. Navy ocean glider, an event that, in his view, demonstrated the growing strategic value of understanding ocean temperature, salinity and currents for undersea warfare.

The incident also offered a leadership lesson. Gallaudet had already briefed senior Navy leadership extensively on the technology and the mission. When the glider suddenly became international news, there was no scramble to explain what his command had been doing.

Communication before the crisis mattered.

Connecting with the Scientists

Perhaps the strongest connection between Gallaudet’s Navy career and his NOAA tenure was his ability to understand the people behind the science.

He did not arrive at NOAA simply as another political appointee. His professional background overlapped with much of the agency’s mission, and he made a conscious effort to use that common ground.

“I wasn’t trying to sell myself,” he said. “I was just being the type of leader I was in the Navy, approachable, authentic, and with total humility.”

That meant getting out of the office.

“I just kind of embarked on a whole effort to get to know people, visit them at their sites, communicate with them nonstop by email, social media, or however in person, and in a way that just showed appreciation for their work.”

He read scientists’ research and reports. He dove with NOAA scientists in the Great Lakes, Florida Keys and Hawaii. He went aboard NOAA ships and boats. A Navy weather forecaster himself, he sat down with NOAA forecasters and swapped stories about difficult predictions.

“We’re weather nerds,” Gallaudet said, “but we took a badge of honor in helping the public stay safe.”

The point was not simply to be visible. It was to understand the work.

"There was just connecting them on their work and showing that I really cared about their work and knew what it was about."

That connection continues today. Gallaudet recounted recently reading about NOAA fisheries scientists conducting dives beyond 100 meters and personally reaching out to recognize their achievement.

"I just reached out to a couple dozen of them today to recognize that," he said. "Just because I appreciate their work."

From Ballard to NOAA

Gallaudet's connection to ocean exploration reaches back to the beginning of his career.

As a midshipman at the U.S. Naval Academy, he attended a lecture by Dr. Robert Ballard less than a year after Ballard discovered Titanic.

"I said, 'I'm becoming a Naval oceanographer.' And that's what I did."

The relationship eventually came full circle. As Gallaudet rose through the Navy, he began working with Ballard. Later at NOAA, the agency was providing approximately \$6 million in support for Ballard's exploration vessel, *Nautilus*.

"He was my hero when I was a midshipman," Gallaudet said, "but then when I became the NOAA administrator, I became his \$6 million man."

It is a small anecdote, but one that captures the arc of Gallaudet's career: inspiration from ocean exploration led to naval oceanography, which eventually led to a position where he could help enable the next generation of marine science and exploration.

That commitment sometimes carried professional risk. Gallaudet said some political appointees discouraged him from communicating so directly with NOAA employees, fearing that engagement with the workforce could create political problems. He disagreed.

"As a leader, I thought that was garbage," he said. "Let me please engage our workforce."

He continued doing so.



Know Your People

For all the technology discussed in Gallaudet's career, one of the simplest lessons in *Holding Fast* is decidedly low tech: know your people.

As a senior executive, Gallaudet made a habit of researching people he met, learning their background, education and work. He sometimes spent hours each week doing it. Months after a meeting, he might encounter an employee again and address that person by name.

"When you remember someone and you show you appreciate and value them so much to remember their name, especially if you're really high up on the ladder, it just changes things overnight," he said.

That philosophy grew from experiences in the Navy, but it became particularly important at NOAA, where scientists and technical professionals were navigating uncertainty surrounding budgets, programs and the future direction of federal science.

The book's title captures how Gallaudet ultimately views that experience. Holding fast does not mean resisting change or remaining in a position regardless of circumstance. It means maintaining integrity while finding a path forward.

There were multiple occasions when he considered leaving NOAA. He stayed, he said, because there was still work to finish and because the scientists and employees doing that work mattered.

That may be the most relevant message in *Holding Fast in Heavy Seas* for the marine technology community. Autonomous vehicles, artificial intelligence, advanced sensors and increasingly sophisticated ocean observation systems are changing how humans explore and understand the sea. But Gallaudet's experience suggests that the technology only carries the mission so far.

The people behind it still matter most.

ATLANTIC

AN EAST COAST HUB FOR



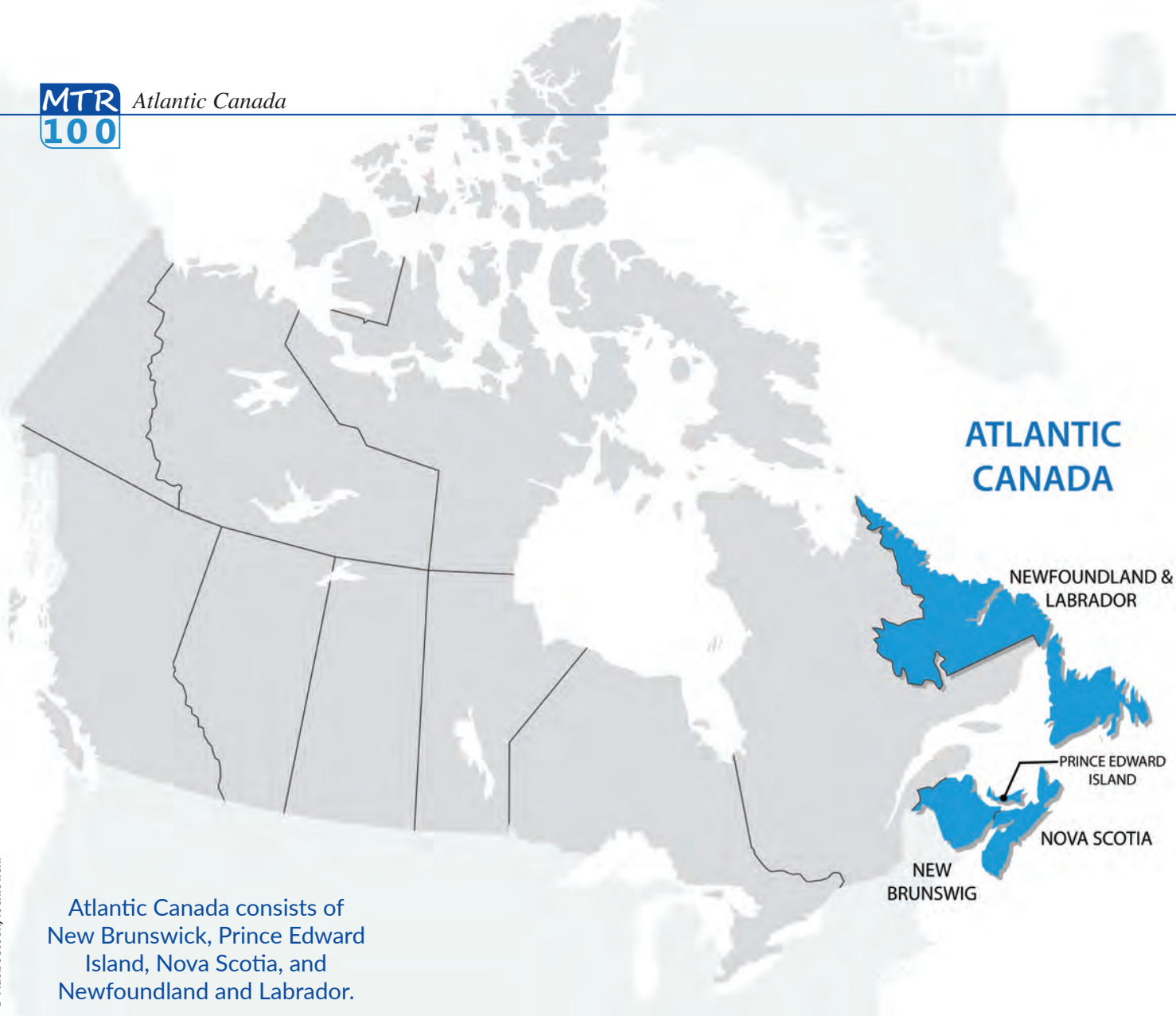
The Halifax Harbour, with Halifax on the right and Dartmouth, home to COVE, on the left.

Adobe Stock/Dronescares By Faubs/Wirestock Creators

CANADA: FOR OCEAN INNOVATION

By Celia Konowe





Canada has long been an established leader in the maritime industry, complete with the longest coastline in the world (125,567 miles) and in proximity to some of the harshest marine environments in the Arctic and North Atlantic Oceans. Leading maritime companies and organizations are scattered across the country, reaching from coast to coast to coast. Atlantic Canada, made up of New Brunswick (NB), Prince Edward Island (PEI), Nova Scotia (NS), and Newfoundland and Labrador (NL), has a long history rooted in marine activity, guiding livelihoods and economies. The region remains a hub for maritime activity, innovating and growing across defense, autonomous solutions, academia, and ocean science.

Autonomy & Defense

Earlier this year, the University of New Brunswick (UNB) signed a memorandum of understanding (MoU) with South Korean shipbuilder Hanwha Ocean Co., Ltd. to advance marine and defense technology research. Hanwha Ocean is one of two qualified suppliers identified by the Government of Canada for the Canadian Patrol Submarine Project, with the goal of providing up to 12 new submarines deployable in the Arctic. UNB is a fitting choice, as it's home to the Canadian Institute for Cybersecurity, as well as the Marine Additive Manufacturing Centre of Excellence. The province is also home to Base Gagetown, one of the largest military bases in the nation. The MoU calls for collaborative research and innovation in AI, underwater acoustics and stealth so-



The Launch innovation hub in Newfoundland.

© Adobe Stock/Dolores Harvey

lutions, Arctic-capable technologies, and intelligent and automated solutions for reduced crew.

The inaugural Canadian Autonomy Trials Series—Maritime (CATS-M) were held this spring at The Launch, an ocean innovation hub run by the Marine Institute at Memorial University of Newfoundland (MUN). With a focus on underwater domain awareness, the CATS-M trial series are part of an ongoing collaboration between COVE, an ocean technology partner based in Dartmouth, NS, and Defence Research and Development Canada to support maritime testing and validation of technologies with industry partners. COVE and The Launch also previously signed an MoU to further collaboration on testing, applied research, and commercialization of Canadian-developed technologies.

Cellula Robotics Ltd. and Industrias FERRI, S.A. have formed Nautical Reach Systems Ltd., an Atlantic Canadian joint venture that will design and manufacture marine motion, lift and handling systems for autonomous maritime operations. With Cellula Robotics headquartered in British Columbia and FERRI in Europe, Atlantic Canada strikes a happy medium, while also maintaining proximity to defense, academia, and industry communities that understand the operational demands of remote and harsh environments.

"Nautical Reach Systems will bring the vehicle and its handling equipment together at the design stage. Our longer-term goal is to enable surface and underwater vehicles to work together more effectively, including the deployment, recovery, refueling and handling of autonomous



Scientists at MUN installed reef balls to provide habitats for marine organisms.



Photos on this page: Fisheries and Marine Institute, Memorial University

systems and payloads at sea," explained Neil Manning, CEO of Cellula Robotics. "This will help naval, coast guard and offshore operators use autonomous assets more reliably and with lower risk of damage or loss." Nautical Reach Systems will engineer its solutions around the mission, host vessel and operating environment, including remote, harsh and Arctic conditions.

Ocean Research

MUN's Marine Institute is also home to range of ocean research. In the summer of 2025, 285 concrete reef balls were installed in the Fox Harbour area of Placentia Bay to restore and enhance marine ecosystems affected by local vessel activity. Reef balls are concrete structures that create spaces for marine organisms to live, shelter and feed. This year, an underwater camera was installed so that researchers can track which species move in, observe habitat changes, and assess how marine life adapts to new surroundings. The camera and its light activate for two minutes every hour. The first 30 seconds of each recording are transmitted to MUN's Centre of Analytics, Informatics and Research.

One province over in NS, pHathom is testing a method to capture carbon and store it back in the ocean by converting it into bicarbonate. The company's system revolves around rain—as drops fall, they absorb carbon dioxide from the atmosphere and become slightly acidic. When the water falls onto an alkaline rock (like limestone), a tiny part of the rock dissolves, reducing the rain's acidity and converting the carbon dioxide into bicarbonate. pHathom aims to mimic this process by exposing seawater to the exhaust of a biomass power plant, increasing the water's acidity. This is mixed in a tank with small limestone particles, initiating the bicarbonate conversion. The pilot phase, which will be tested at the Huntsman Marine Science Centre in St. Andrews, NB, aims to capture 0.1 tons of carbon dioxide daily.

In PEI, a brief skip to the north, Canada's Ocean Supercluster (OSC) announced \$1.1 million for the Accelerating the Development of MSX-Resistant Oyster Seed Project led by Atlantic Aqua Farms. Multinucleate Sphere Unknown (MSX) disease is a threat to shellfish aquaculture, reaching mortality rates exceeding 95% in parts of western PEI, a province where the oyster industry is valued at about \$60 million annually. The project will develop MSX-resistant oysters, establish a disease model and identify key biological markers associated

with oyster immune responses. Almost half of the funding is coming from OSC, with the rest contributed by a group of partners.

Regional Investment

With new technologies and solutions, the region is also witnessing increased investment in the maritime industry and innovation. AtlantiCan Growth Partners (AGP) launched earlier this year, an investment platform dedicated to scaling high-potential business across Atlantic Canada. While not ultimately exclusive to the maritime industry, AGP's first investment focus is in the blue economy, expanding the region's existing credibility and expertise in aquaculture, marine technology, fisheries, and ocean innovation.

Over the past five years, Atlantic Canada has attracted only 2-3% of national venture capital, despite being a region heavily connected to the ocean. AGP aims to fill this gap by helping Canadian companies scale in the region.

"Access to capital is a significant challenge for companies...we really need to see more capital, more access to customers, more access to markets. AGP is trying to tackle that capital piece, but also help with some of the broader scaling," explained Kendra Macdonald, CEO of OSC and a member of AGP's Board of Directors. "It's not just about the money. It's also about the strength of governance and broader investment support for these companies to be able to grow."

"We have one of the highest concentrations of researchers in ocean PhDs in ocean here," Macdonald added. "There's a really high concentration of researchers, talent, and capacity. It's also what we hear from our entrepreneurs—it's a very collaborative environment. You've got lots of support in the ecosystem that is really focused on helping these companies succeed. It is very unique in terms of the ecosystem that is built and the strength and connection to ocean opportunities."

AGP maintains a long-term vision of launching three dedicated funds, beginning with a \$100-\$150 million investment into the blue economy.

With constant innovation, a continued connection to the ocean, and new investment sources, Atlantic Canada is poised for meaningful growth in the blue economy. The four provinces are ones to keep an eye on, leveraging their coastal access, collaborative research, and long-standing maritime history.

DEEP MTR Explores Su

MTR Deep Dive explores the frontier of underwater technology. Each episode surfaces candid stories, hard-won insights, and big ideas on autonomy, power, and survey. Whether you build, buy, or operate, you'll gain insights and big



Podcast Sponsorship Options:

Primary Distribution

Your brand featured prominently on a dedicated podcast episode. Includes production and distribution across all podcast platforms.

Expanded Distribution

Boost your podcast's reach with prominent inclusion in our highly-subscribed e-Newsletters, driving listeners directly to your content.

Full Podcast Package

The ultimate package: podcast, e-Newsletter promotion, and a dedicated online feature article with audio embed on MarineTechnologyNews.com for maximum impact and SEO benefits.

DIVE: Subsea Technology

Join with Marine Technology Reporter editors and subsea experts for lessons, and what's next in AUVs/ROVs, sensors & imaging, research subsea systems, this is your channel for practical big-picture trends.

Podcast Distribution Network

Our podcasts are distributed across major platforms, ensuring maximum reach and accessibility for MTR professionals worldwide.



Apple Podcasts

Available on Apple Podcasts for iOS users worldwide

15% of listeners



Spotify

Streaming on Spotify for global accessibility

22% of listeners



Google Podcasts

Discoverable through Google Podcast platform

63% of listeners



Audio Quality

Professional studio recording and production



Mobile Optimized

Accessible on all mobile devices and platforms



Analytics Tracking

Detailed listener metrics and engagement data



RTsys Underwater Technologies

<https://rtsys.eu/>

RTsys Underwater Technologies specializes in underwater acoustics and autonomous vehicles, designing and manufacturing solutions for civil, scientific and defense applications. Their offerings are divided into four sectors:

- PAM: acoustic recorders and acoustic buoys for Passive Acoustic Monitoring
- AUV: compact Autonomous Underwater Vehicles for inspection, offshore survey and oceanology
- ASW: Anti-Submarine Warfare recoverable training solutions and sonar calibration
- MCM: Manned-Unmanned Teaming ecosystem for Mine Countermeasures

The RUBHY AI buoy enhances underwater noise monitoring by autonomously detecting sounds from various sources (human activity, marine species) without requiring 24/7 analysis by a PAM operator. Features include up to 4 hydrophone inputs, broadband frequency range (3 Hz to over 500 kHz), AI-powered PAM analysis of whale, dolphin, and other species, multiparameter sensors (temperature, pressure, conductivity, O₂, pH, turbidity, salinity), and connectivity options (UHF, Wi-Fi, Iridium, 4G).

Key facility equipment includes a balancing tank, wiring stations, assembly lines, pressure testing equipment, resin room, and a functional test bench. Outside their facility, they have a calibration gantry, deviation table, and three boats for testing, demonstrations, and R&D.

SubC Imaging

www.subcimaging.com

SubC Imaging provides integrated subsea imaging technology designed to capture, manage, and deliver high-quality underwater data in demanding environments.

The subsea Rayfin cameras range from compact observation-class systems to deep-ocean cameras rated to 11,000 m, delivering video and digital stills for ROVs, AUVs, observatories, and other platforms.

SubC Imaging's subsea lights and lasers provide software-controlled illumination and measurement capabilities for imaging, inspection, and scientific applications. Their complete imaging systems combine cameras, lighting, lasers, recording, and other components into complete, application-specific solutions. These include Drop Camera, Tow Camera, Observatory, and Autonomous Timelapse Systems, as well as customized systems for unique mission requirements.

SubC Imaging also offers DVR+ and software solutions to simplify video recording, event tagging, data management, overlays, and reporting. DVR+ enables multi-camera recording and streamlined post-dive workflows, while remote operations and streaming solutions enable real-time access to subsea video and audio from anywhere.

They provide system integration, customization, technical support, and after-sales service, helping customers select, configure, deploy, and get the most from their imaging technology.

SubC Imaging's technology has also supported high-profile projects, including Discovery's Shark Week 2026 documentary "Great White Highway," deep-sea research expeditions, offshore inspections, and marine habitat discoveries.

SubC Imaging's facility includes an in-house test tank, an ocean observatory at our local marina, electronics and mechatronics workstations, production and assembly equipment, and inventory of cameras, lights, lasers, and system components.



THE FUTURE; UNDERWAY.

REGISTER
WITH CODE
MRFREE



with
**UNDERWATER
INTERVENTION**
by WORKBOAT

DEC 2-4, 2026 / NEW ORLEANS

Morial Convention Center, Halls B, C, D, E & F

Produced by **diversified** Presented by **WORKBOAT**



**MARITIME
REPORTER
TV**

The Maritime Industry's Most Popular News and Insights Channel



Maritime Reporter TV
Over 660,000 Views

SUBSCRIBE TODAY!





SUNFISH, INC.

www.sunfish.ai

Sunfish, Inc. specializes in autonomous underwater vehicles (AUVs) designed for exploration, scientific data collection, and infrastructure inspection in cluttered, 3D, and overhead terrain. Their robotic systems are engineered to safely navigate and map hard-to-access environments, such as karst aquifers, deep marine caves, and municipal aqueducts, where traditional human diving operations are prohibitively risky or impossible.

Their flagship product is the SUNFISH AUV, a lightweight (50–60 kg), person-portable, six-degree-of-freedom hovering vehicle rated to a depth of 200 meters. SUNFISH operates in three modes: remotely piloted via fiber optic cable, supervised autonomy, and fully autonomous without a tether. Equipped with proprietary Simultaneous Localization and Mapping (SLAM) technology, it performs autonomous path planning, obstacle avoidance, and precision docking to create high-resolution 3D sonar and visual maps. For infrastructure clients, deploying SUNFISH has reduced traditional inspection costs by 60% and service outage times by 96%.

The SUNFISH AUV recently mapped and monitored water quality in Florida's Lafayette Blue Springs. By integrating a Seabird SUNA nitrate sensor, RTK GNSS, and Cave Radiolocation (CRL), they produced georeferenced 3D conduit maps and continuous water quality datasets.

Sunfish also developed SunBeam, a sensor-fusion software capable of generating high-fidelity, 100 km² virtual simulation environments from raw vehicle data.



TOTAL MARINE TECHNOLOGY

www.tmtrov.com

Total Marine Technology (TMT) is a subsea engineering and technology company specializing in solutions, tooling and remotely operated systems for harsh marine, offshore and industrial environments. The company is recognized as Australia's only designer and builder of Work Class Remotely Operated Vehicles (ROVs), supported by multidisciplinary engineering, manufacturing, operations and maintenance capability.

TMT's offerings span ROVs, subsea tooling, well services, subsea equipment and industrial equipment, serving markets including offshore oil and gas, oceanographic operations, mining and resources, defense, subsea engineering, ROV operations, light well intervention and decommissioning.

TMT has introduced DiveTrack Vision, a digital video recording and visual logging system for ROV inspection campaigns. Built for subsea operations where traceability, reporting confidence and data integrity are critical, it combines multi-channel video capture, metadata, real-time overlays and event logging in one platform.

With automatic "black box" recording from the start of each dive, operators can capture critical footage, record survey video, take snapshots, and generate PDF dive reports and Excel data logs with linked video and imagery. DiveTrack Vision helps streamline inspection workflows and deliver defensible, client-ready subsea data.

TMT maintains in-house control of the project lifecycle, from engineering design and manufacture through to field support and maintenance. This integrated approach allows the company to combine workshop-based technical knowledge with offshore operational experience, helping customers reduce project risk and improve field performance.

SAAB UK

<https://www.saab.com/markets/united-kingdom>

Saab UK Ltd, part of Saab AB, is a provider of defense and security technologies. Key technologies include the Seaeye SR20 and the eM1-7 Electric Manipulator, delivering precision and reliability for underwater missions.

Saab UK's Seaeye SR20 is an all-electric work-class ROV designed to deliver precision, reliability and efficiency in demanding subsea environments. Supporting inspection, maintenance, repair, survey, construction, drill support and decommissioning activities, the SR20 combines high thrust and tooling capability within a compact, versatile platform.

In August 2026, Saab UK celebrated the successful completion of inland water trials as part of the vehicle's verification and validation program. The trials assessed performance against specification requirements and tested the SR20 as a fully integrated system.

The SR20's fully electric design eliminates hydraulic complexity. Its modular architecture supports a wide range of tooling while simplifying mobilization and maintenance requirements.

With a depth rating of 3,000 meters and a compact footprint suitable for deployment from a variety of vessels, the SR20 helps operators reduce vessel days, crew



requirements and associated emissions.

This year, Saab UK is celebrating 40 years of Seaeeye. Since its founding in 1986, Seaeeye has led electric ROV technology, introducing systems such as the Seaeeye Falcon and Seaeeye Leopard that have helped transform underwater operations worldwide. Today, Saab has more than 1,100 systems operating in 74 countries.

Saab operates eight major facilities across the UK, including training and simulation in Wiltshire, Seaeeye underwater robotics and sensor systems in Fareham, Public Safety Solutions in Hull, the Software Technology Centre in Farnborough, and its headquarters in London.

Opened in 2025, the Fareham Campus provides modern manufacturing halls, dedicated assembly and testing areas, and collaborative engineering spaces tailored to the production of advanced electric ROVs. Purpose-built for scale and efficiency, the site enhances Saab UK's ability to design, build, and integrate its Seaeeye subsea vehicles in one.

TELEDYNE MARINE

www.teledynemarine.com



Teledyne Marine is a group of subsea technology companies that are part of Teledyne Technologies Incorporated. Teledyne Marine's suite of products provides solutions for marine projects, including autonomous underwater surveys, critical undersea infrastructure, energy mapping and monitoring, hydrographic surveys, marine construction and dredging, object detection, pipeline tracking and inspection, and seismic surveys.

Teledyne Marine provides oceanographic and hydrographic instruments, including multibeam and single beam sonars, ADCPs, acoustic modems, underwater cameras and lights, AUVs, gliders, and seismic systems. Their products are used for object detection, pipeline inspection,

marine construction and environmental monitoring. They also offer interconnect solutions and software platforms for data acquisition and analysis.

Teledyne Marine recently launched a new deep-water sonar, the SeaBat D100, and the SeaBat T51-IDH for shallow water surveys.

Teledyne Marine continues to advance autonomous maritime technology through strategic investments in defense programs and ocean science initiatives. Recent highlights include a UK Ministry of Defence contract for Slocum and Sentinel gliders, a follow-on FMV order for additional GA-VIA AUV systems, and the expansion of Teledyne's presence in Fareham and Plymouth, to serve Royal Navy programs.

In the geophysical area, their new ultra-high resolution eXtremer won 2026 Spotlight on New Technology Award at the Offshore Technology Conference in Houston.

Teledyne Marine operates 15 global manufacturing and service centers, strategically located to support customers worldwide. Facilities include R&D labs, production lines, testing tanks, and integration centers. Their facilities house sonar calibration systems, pressure testing chambers, acoustic labs, CNC machining, and testing pools for AUV as well as sensors to ensure product reliability and performance.



SeaView Systems, Inc

www.seaviewsystems.com

SeaView Systems, Inc. is a provider of underwater technologies and services, specializing in custom electronics for ROV communications, metrology, and a range of oceanographic industrial and research applications worldwide.

Their flagship product, the SVS-603HR wave sensor, is designed for wave buoys and ASVs/USVs. The SVS-603HR wave sensor has been deployed on buoy hulls ranging in size from about 0.3 to over 6 meters, as well as autonomous surface and submersible vehicles. The SVS-603HR includes onboard algorithmic support for capabilities including offsets and non-ideal platform motion correction, platform motion diagnostics (including ship-strike and mooring constraint alerts), and 3D Response Amplitude Operator (RAO) support.

SeaView Systems' SVS-708 and SVS-709 surface and subsea power supplies enable intelligent power management, doubling the umbilical power transmission capabilities for Observation and Inspection Class ROVs.

Beyond the core products, SeaView Systems' focus extends to custom ROV development and specialized services. They also provide services such as ROV tunnel or structural inspections, using high-precision techniques like HD video and 3D sonar mapping.

SeaView Systems' facility includes a pressure tank for testing electronic housings, a 10,000-gallon tank for ROV and subsea equipment testing and a mechanical wave motion simulator for the qualification of every wave sensor. They also have capabilities for electronic design and prototyping, mechanical fabrication, 3D printing, and CNC routing.

Numurus, Inc.

www.nepi.com

Numurus, Inc. focuses on making edge AI accessible to teams that build hardware systems.

The company develops NEPI (Numurus Edge Platform Interface), an open-source software platform that handles roughly 90% of what smart systems need out of the box, from hardware drivers and AI model management to automation engines and browser-based monitoring. NEPI is purpose-built for marine technology, including sensors, cameras, sonar, GPS/IMU, and autonomous vehicles at the edge. NEPI is already powering real maritime applications including 360-degree threat detection on autonomous surface vessels, AI-driven subsea inspection on ROVs, and smart sonar products.

Numurus serves customers across scientific research, education, commercial industry, and defense sectors, and holds USPTO patent US 12/222,307B2 covering core Smart Edge Platform technology. Numurus works with organizations including DARPA, NVIDIA, VideoRay, Ocean Aero, and WESMAR, and they are working to establish NEPI as the standard software platform for edge AI systems worldwide.

Numurus' primary facilities include engineering workstations, edge-compute hardware test benches supporting NVIDIA Jetson and x86 platforms, and lab environments for hardware integration testing and system validation.

Numurus recently launched NEPI Docker Container, a fully containerized version of NEPI, enabling deployment on any Linux machine with a single Docker pull command. The container ships with all drivers, AI frameworks, automation tools, and browser-based UI pre-built and configured. This makes NEPI accessible to any team with a Linux system, expanding the platform's reach beyond dedicated edge hardware to laptops, servers, and cloud environments.



MARITIME TECHNOLOGY



Maritime Technology is the newest and best way for maritime industry manufacturers and service providers to reach the global marketplace.

Powered by the Maritime Network – the industry's largest and comprehensive news and information source, Maritime Technology is the cutting-edge way to connect buyers and sellers.

Setup your company profile today!

www.maritimetechnology.com

SONOTRONICS, INC.

www.sonotronics.com

Sonotronics is a manufacturer of acoustic transmitters and acoustic receivers designed for use in oceans, lakes, reservoirs and rivers.

New technologies include the UDR25 and DH-ROV Hydrophone.

The UDR25 Underwater Diver Receiver allows a diver to locate and approach any object in a marine environment previously marked with a Sonotronics transmitter (fisheries or equipment marker transmitters), as well as other manufacturers' compatible transmitters.

The DH-ROV Directional Hydrophone can be mounted to any ROV or AUV marked with a Sonotronics equipment marker transmitter (EMT), as well as other manufacturers' compatible transmitters.



southbaycable.com

South Bay Cable (SBC) specializes in custom cable engineering and manufacturing.

Advances in material chemistry have increased SBC's ability to build cables that are lighter and stronger than ever before, which in turn allows for exploration at greater ocean depths. New technologies in fiber optics have allowed SBC to build cables that are sensors themselves.

SBC has new equipment currently coming online, including two new Davis-Standard extruders. Additional improvements and increased capacity are on the horizon.



SeaTrac Systems

<https://www.seatrac.com/>

Founded in 2017 by naval architecture veterans from MIT, **SeaTrac Systems, Inc.** was established to make continuous, high-fidelity marine data collection radically more accessible, cost-effective, and safe. Headquartered in Marblehead, Massachusetts, the company designs, manufactures, and deploys Uncrewed Surface Vehicles (USVs). SeaTrac serves a global client base across scientific and environmental, commercial and energy, and government and defense sectors.

SeaTrac's SP-48 USV platform includes integrated solar generation and battery storage, an electric propulsion system, onboard cameras, Iridium Certus and Starlink antennas for global connectivity, and a single-point lift for simplified launch and recovery. A modular payload architecture supports sensor mounting on, in, and beneath the hull, along with options such as an integrated winch for vertical profiling and a forward tow hook for high-speed towing applications. The same core platform can be quickly reconfigured between nearshore and offshore packages, enabling mission flexibility without redesigning the vessel. It can be deployed from a trailer for shore-based operations or lifted from a single-point crane for ship-based deployment and retrieval. A remote control provides direct line-of-sight control for precise maneuvering during these critical phases.

SeaTrac USVs have been deployed in multiple projects, including with the University of Southern Mississippi, NOAA, the Cal State University Shark Lab, and TerraDepth.

SeaTrac's Marblehead-based headquarters hosts an office with attached workshop, designed to support the manufacturing and customization of SP-48 USVs for unique missions and customers. The facility is adjacent to the harbor, allowing for on-water testing whenever required.

ZF

<https://www.zf.com/products/en/marine/home/marine.html>

As part of the global **ZF Group**, the company's marine division is a developer and manufacturer of marine propulsion systems, steering systems, and driveline components. ZF engineers technology solutions tailored for commercial shipping, defense craft, fast ferries, workboats, and luxury pleasure yachts.

ZF's marine division offers a portfolio of hardware and digital solutions spanning power ranges from 10 to 12,000 kW. The product lineup centers on marine transmissions, including light-duty high-speed craft models and heavy-duty units for tugs and dredges, alongside hybrid-ready transmissions equipped with Power Take-In (PTI) modules for electric or diesel-electric operation. The propulsor range features 360-degree steerable azimuth and tunnel thrusters, advanced pod propulsion systems, and fixed or controllable pitch propellers designed for optimal maneuverability and station-keeping.

Complementing its mechanical hardware, the division provides electronic control platforms, such as TotalCommand and Micro Command, that feature rapid clutch responsiveness, joystick maneuvering, and dynamic positioning integration.

On the software and service side, ZF delivers digital solutions like a predictive maintenance system, which monitors equipment health to prevent costly downtime.

ZF most recently expanded its high-power marine portfolio with the ZF 9200 A/V PTI hybrid transmission and ZF AT 110 azimuth thruster. The ZF 9200 A/V PTI handles main drive power up to 3,903 kW, integrating a ~700 kW Power Take-In module for low-noise, emission-free electric boosting and harbor maneuvering. Its aluminum housing supports flexible V or down-angle (A) installations and a wide ratio spread. The ZF AT 110 is ZF's largest thruster, built for high-output vessels like tugs up to 2,944 kW. It delivers around 100 tons of bollard pull while featuring a space-saving footprint, a tilted nozzle for enhanced efficiency, and an optimized lubrication concept that cuts oil volume and operating costs.



SUBSEA EUROPE SERVICES GMBH

<https://www.subsea-europe.com/>

Subsea Europe Services (SES) is a technology sales and rental specialist based in Hamburg and Rostock, Germany. SES is focused on delivering autonomous platforms, hydroacoustics and positioning systems to commercial and scientific clients across Europe, and through its sister company, FLANQ, to defense organizations globally.

SES' offerings include hydroacoustics and positioning, autonomous platforms, engineering and integration, and technical support.

At the center of SES' offerings is the R3Vox Voxometer, using MA3 Multi-Aspect technology to capture each survey cell from multiple angles in a single pass, delivering richer hydrospatial data with reduced acquisition and processing complexity.

Launched in September 2025, the C-RECON family is SES' new in-house developed range of electric USVs, designed to simplify marine data acquisition across in-shore, coastal and offshore applications. The range comprises the C-RECON 8 for simple deployment and efficient marine operations, the C-RECON 13 ES, de-

signed around flexible sensor integration and autonomous data acquisition, and the C-RECON 24, providing extended endurance for demanding offshore operations. Built around a modular, integration-led philosophy, C-RECON enables survey and inspection payloads to be configured around the mission, reducing mobilization complexity, personnel exposure and the cost of acquiring high-quality marine data.

SES operates from Rostock and Hamburg. At its Rostock base within the Ocean Technology Campus, SES benefits from direct access to the Digital Ocean Lab's large-scale sea test area, advanced R&D resources, and collaboration with Fraunhofer, University of Rostock, and IOW.

SES maintains dedicated integration and testing facilities, including workshop and laboratory space for subsea sensor, vehicle, and system configuration, and access to the Digital Ocean Lab.



SUBSEA TECH

<https://www.subsea-tech.com/>



SUBSEA TECH designs, manufactures, and operates underwater and surface robotic systems for inspection, surveillance, and intervention in aquatic environments.

The product line spans Micro-ROVs (Observer, Guardian), observation and inspection ROVs (Mini

TORTUGA and TORTUGA, standard or XP4 versions), remotely operated catamarans and unmanned surface vehicles (Catarob, AirCAT, CAT-Surveyor, SeaCAT), and underwater video systems (UVSIP, TUVSIP).

Beyond equipment, SUBSEA TECH's operators use the company's in-house designed ROVs and USVs to deliver visual and instrumented inspection services (sonar, bathymetry, photogrammetry, UT and CP probes, video inspection) on critical infrastructure such as engineering structures, port and naval facilities, and underwater industrial installations. Its markets include coastal civil engineering, port security, water network monitoring, marine renewable energy, offshore oil & gas, aqua-

culture, and defense.

SUBSEA TECH and its European partners are completing the six-year SeaClear project, which is aimed at developing an automated solution for detecting, classifying, collecting and disposing of marine litter from the surface and seabed. The system uses an USV supporting an ROV, a motorized grab, and a tethered drone, with a second USV for waste transfer. Successful trials took place in 2025 and 2026 in Hamburg, Marseille, Venice, and Dubrovnik, with a final demonstration this autumn in Tarragona. Additionally, SUBSEA TECH launched a compact multibeam bathymetry solution based on its 2.7 m long AirCAT inflatable USV. Designed for inland and coastal operations up to sea state 3, it can be transported by air as checked baggage.

Alongside standard equipment for designing and manufacturing ROVs, USVs, and underwater cameras, SUBSEA TECH's facilities include a hyperbaric chamber, freshwater and seawater tanks, and lifting capabilities up to two tons. SUBSEA TECH also operates a fleet of USVs and ROVs. They also integrate USBL, DVL and INS/GNSS for advanced auto navigation.

Facilities are located in the Bay of Marseille with direct sea access. SUBSEA TECH is accredited as a "research organization" by the French Ministry of Higher Education and Research.



<https://wilcoxon.com/industries-and-applications/marine/>

Wilcoxon Sensing Technologies, an Amphenol company, engineers and manufactures underwater acoustic transducers and sensing technologies for defense and scientific sonar applications.

Its acoustic products include hydrophones, projectors, underwater accelerometers and vector sensors for applications including submarines, torpedoes, sonobuoys, towed arrays, unmanned underwater and surface vehicles, mine hunting, side-scan sonar, acoustic communications and passive acoustic surveillance. Wilcoxon also manufactures Tonpilz, segmented-ring, compression- and shear-mode stacked transducers for specialized sonar applications.

Wilcoxon is capable of engineering and manufacturing both piezoelectric ceramics and finished transducer assemblies. Capabilities range from custom-shaped piezoelectric ceramics to build-to-print and build-to-spec transducers, next-higher-level assemblies and plug-and-play acoustic components.

Wilcoxon supports a range of naval sonar programs with the development and manufacture of custom piezoelectric ceramics engineered for specific acoustic and mechanical requirements. Current applications span submarine platforms, torpedoes, sonobuoys, towed arrays and UUV systems.

Products can be engineered for demanding underwater requirements including deep submergence, low-noise measurement, directionality, high shock survivability and military specifications. Development and testing capabilities support underwater sensitivity, phase and directionality as well as pressure, temperature and shock performance.

In-house capabilities include hermetic welding, helium leak detection, automated sensor testing and NIST-traceable calibration. Development and qualification equipment includes vibration and shock shakers, temperature chambers, spectrum analyzers, oscilloscopes and EMC test equipment. Rigorous testing and calibration support product quality, measurement accuracy and long-term reliability.

www.marinetechologynews.com

Celebrating 15 years!



Remove Moisture and Perform a Vacuum Leak Test

Deck Purge Box



- Nitrogen-free
- Compact, fully integrated
- Universal power supply
- Patented designs

Used with:

Global Ocean Design Self-sealing Purge Ports



Interface hose for EdgeTech release purge ports also available.

- globaloceandesign.com
- info@globaloceandesign.com
- 858.560.1799



Statement of Ownership, Management, and Circulation (Requester Publications Only)

1. Publication Title Marine Technology Reporter	2. Publication Number 0 2 3 - 2 7 6	3. Filing Date 9/18/2026
4. Issue Frequency Nine issues per year	5. Number of Issues Published Annually 9	6. Annual Subscription Price (If any) None
7. Complete Mailing Address of Known Office of Publication (Not printer) (Street, city, county, state, and ZIP+4®) New Wave Media, International, 118 East 25th Street, 2nd Fl, New York, NY 10010		8. Contact Person Kathleen Hickey Telephone (include area code) 516-441-7253
9. Complete Mailing Address of Headquarters or General Business Office of Publisher (Not printer) New Wave Media, International 118 East 25th Street, 2nd Fl, New York, NY 10010		
10. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor (Do not leave blank) Publisher (Name and complete mailing address) John C. O'Malley, New Wave Media, International, 118 East 25th Street, 2nd Fl, New York, NY 10010 Editor (Name and complete mailing address) Gregory Trauthwein, New Wave Media, International, 118 East 25th Street, 2nd Fl, New York, NY 10010 Managing Editor (Name and complete mailing address)		
11. Owner (Do not leave blank. If the publication is owned by a corporation, give the name and address of the corporation immediately followed by the names and addresses of all stockholders owning or holding 1 percent or more of the total amount of stock. If not owned by a corporation, give the names and addresses of the individual owners. If owned by a partnership or other unincorporated firm, give its name and address as well as those of each individual owner. If the publication is published by a nonprofit organization, give its name and address.) Full Name: John C. O'Malley Complete Mailing Address: New Wave Media, International 118 East 25th Street, 2nd Fl New York, NY 10010		
12. Tax Status (For completion by nonprofit organizations authorized to mail at nonprofit rates) (Check one) The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes: ☒ Has Not Changed During Preceding 12 Months ☐ Has Changed During Preceding 12 Months (Publisher must submit explanation of change with this statement.)		

PS Form 3526-R, July 2014 (Page 1 of 4) (See instructions page 4) PSH: 7520-09-030-8855 PRIVACY NOTICE: See our privacy policy on www.usps.com

13. Publication Title Marine Technology Reporter	14. Issue Date for Circulation Data Below July/August 2026	
15. Extent and Nature of Circulation Requester	Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a. Total Number of Copies (Net press run)	6253	6310
(1) Outside County Paid/Requested Mail Subscriptions stated on PS Form 3541 (include direct written request from recipient, telemarketing, and Internet requests from recipient, paid subscriptions including nominal rate subscriptions, employer requests, advertiser's proof copies, and exchange copies.)	5589	5679
b. Legitimate Paid and/or Requested Distribution (By mail and outside the mail)		
(2) In-County Paid/Requested Mail Subscriptions stated on PS Form 3541 (include direct written request from recipient, telemarketing, and Internet requests from recipient, paid subscriptions including nominal rate subscriptions, employer requests, advertiser's proof copies, and exchange copies.)	0	0
(3) Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid or Requested Distribution Outside USPS®	0	0
(4) Requested Copies Distributed by Other Mail Classes Through the USPS (e.g., First-Class Mail®)	380	280
c. Total Paid and/or Requested Circulation (Sum of 15b (1), (2), (3), and (4))	5969	2959
(1) Outside County Nonrequested Copies Stated on PS Form 3541 (include sample copies, requests over 3 years old, requests induced by a premium, bulk sales and requests including association requests, names obtained from business directories, lists, and other sources)	0	0
d. Non-requested Distribution (By mail and outside the mail)		
(2) In-County Nonrequested Copies Stated on PS Form 3541 (include sample copies, requests over 3 years old, requests induced by a premium, bulk sales and requests including association requests, names obtained from business directories, lists, and other sources)	0	0
(3) Nonrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g., First-Class Mail, nonrequestor copies mailed in excess of 10% limit mailed at Standard Mail® or Package Services rates)	18	15
(4) Nonrequested Copies Distributed Outside the Mail (include pickup stands, trade shows, showrooms, and other sources)	159	250
e. Total Nonrequested Distribution (Sum of 15d (1), (2), (3) and (4))	177	265
f. Total Distribution (Sum of 15c and e)	6146	6224
g. Copies not Distributed (See Instructions to Publishers #4, (page #3))	107	86
h. Total (Sum of 15f and g)	6253	6310
i. Percent Paid and/or Requested Circulation (15c divided by 15f times 100)	97.1%	95.7%

* If you are claiming electronic copies, go to line 16 on page 3. If you are not claiming electronic copies, skip to line 17 on page 3.

PS Form 3526-R, July 2014 (Page 2 of 4)

Maritime Today E-News Service

In business, time is of the essence.



Stay up to date with the latest
NEWS & INFORMATION...

...from the industry's leading source;
providing you with daily updates on the
subjects that pertain to your business.

www.marinelink.com



Statement of Ownership, Management, and Circulation (Requester Publications Only)

16. Electronic Copy Circulation Marine Technology Reporter	Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a. Requested and Paid Electronic Copies	5936	5932
b. Total Requested and Paid Print Copies (Line 15c) + Requested/Paid Electronic Copies (Line 16a)	11905	11891
c. Total Requested Copy Distribution (Line 15f) + Requested/Paid Electronic Copies (Line 16a)	12082	12156
d. Percent Paid and/or Requested Circulation (Both Print & Electronic Copies) (16b divided by 16c x 100)	98.5%	97.8%
I certify that 50% of all my distributed copies (electronic and print) are legitimate requests or paid copies.		
17. Publication of Statement of Ownership for a Requester Publication is required and will be printed in the Issue of this publication: September/October 2026		
18. Signature and Title of Editor, Publisher, Business Manager, or Owner Kathleen Hickey		Date: 9/18/2026
I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including civil penalties).		

PS Form 3526-R, July 2014 (Page 3 of 4)

PRIVACY NOTICE: See our privacy policy on www.usps.com

SONOTRONICS
"... working together to make a difference in the world we share."



UDR-Kit

Sonotronics' UDR-Kit includes most of what you need for your underwater tracking purposes.

Please remember, each piece of equipment is part of our integrated tracking system.

What's Included:

- UDR - Underwater Diver Receiver
- UDR-BNC - Adapter for Hydrophone
- DH-4 - Directional Hydrophone
- Headphones and other accessories
- EMT Transmitter

www.sonotronics.com • (520)746-3322

**INNOVATIVE.
UNIQUE.
PROVEN.**

**ALL AMERICAN
MARINE**



ALLAMERICANMARINE.com
360.647.7602 | sales@allamericanmarine.com
Bellingham, WA USA

Pictured: RV Shackleford, a 2023 Workboat Significant Boat Nominee and a critical tool for Offshore Wind Farm development on the East Coast

MARINE TECHNOLOGY REPORTER

THE APP FOR NEWS

Marine TechNews is designed to bring you all the industry news and marine you need, right when you need it. Marine TechNews is available on Google Play and iTunes.





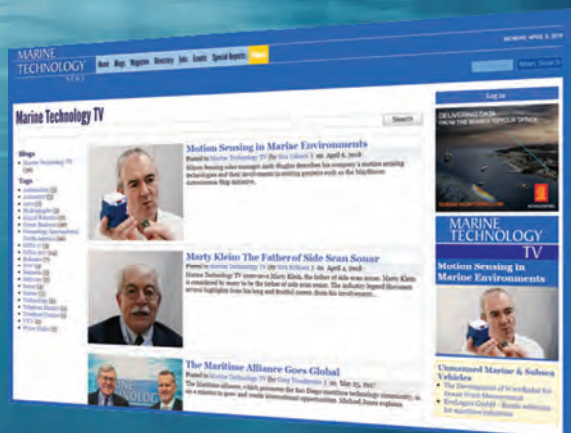

Advertiser Index

Page	Company	Website	Phone#
23	Blueprint Subsea	www.blueprintsubsea.com	+44 (0) 1539 531536
19	Deep Ocean Engineering, Inc.	www.deepocean.com	(408) 436-1102
33	Detyens Shipyards Inc.	www.detyens.com	Please visit us online
37	EdgeTech	www.EdgeTech.com	(508) 291-0057
77	Global Ocean Design	www.globaloceandesign.com	(858) 560-1799
9	HyPack - A Xylem Brand	www.hypack.com	(860) 635-1500
69	International Workboat Show 2026	www.xpressreg.net/register/IWBS1226/landing.php?sc=MRFREE	Please visit us online
31	JW Fishers Mfg Inc.	www.jwfishers.com	(508) 822-7330
5	OceanSight Corp.	www.oceansight.com	(858) 208-8134
15	Port of the Future '27	www.portofthefutureconference.com	Please visit us online
1	RTsys Underwater Technologies	www.rtsys.eu	+33 (0) 2 97 89 85 80
3	SAAB Sea Eye, Ltd.	www.saabseaeye.com	Please visit us online
C4	Saildrone	www.saildrone.com	(215) 850-5602
C3	SBG Systems	www.sbg-systems.com/systems-surveyors/navsight-marine/	Please visit us online
11	South Bay Cable	www.southbaycable.com	(951) 659-2183
43	SubC Imaging	www.Subcimaging.com	(709) 702-0395
7	SubCtech GmbH	www.subctech.com	+ (49) 431-22039-880
C2	VideoRay, LLC.	www.videoray.com	(610) 458-9667
8	Wilcoxon Sensing Technologies	www.wilcoxon.com/marine	(301) 330-8811
13	YellowScan	www.yellowscan.com	+33 (4) 11 93 14 00

BOOK YOUR COMPANY'S SPOT

**MARINE
TECHNOLOGY
TV**

Marine Technology TV provides insightful interviews with the industry's top executives. Now is your opportunity to promote a truly unique message about your company with a Marine Technology TV promotion package. Contact Michael Kozlowski to learn more: kozlowski@marinelink.com



The listings above are an editorial service provided for the convenience of our readers.

If you are an advertiser and would like to update or modify any of the above information, please contact: productionmanager@marinelink.com

Navigating the Future of Maritime Operations with Greater Confidence

SBG Systems' Product Manager discusses how advanced navigation technologies are helping maritime professionals improve positioning reliability, collect higher-quality data, and operate with confidence in increasingly challenging environments.



The future of maritime navigation lies in combining real-time reliability with intelligent data processing to deliver accurate and reliable results in every mission.

Mathieu Peyrega
Product Manager
SBG Systems



Qinertia

Advanced GNSS/INS
Post-Processing
Software

Navsight

High-Performance
Navigation & Surveying
Solutions



SBG SYSTEMS

Motion & Navigation
you can trust



www.sbg-systems.com

Q1

Why is maintaining positioning accuracy still a challenge in modern marine operations?

Achieving high accuracy when GNSS is available isn't the challenge; modern receivers do that very well. The real challenge is maintaining that accuracy when GNSS signals become unreliable due to obstructions, multipath reflections, jamming, spoofing, or harsh operating conditions. A standalone GNSS receiver can quickly lose its positioning capability when satellite signals deteriorate.

Q2

How do modern navigation systems maintain reliable navigation when satellite signals degrade?

This is where an Inertial Navigation System (INS) comes in. It bridges the gaps between GNSS updates by providing continuous, high-frequency navigation data, even during temporary GNSS outages. Modern GNSS/INS systems also detect and mitigate jamming and spoofing by validating GNSS measurements against inertial data rejecting unreliable or inconsistent GNSS signals.

Q3

Is the biggest navigation challenge today achieving accuracy or maintaining it?

Maintaining accuracy. Delivering consistent positioning throughout an entire mission, despite changing conditions, is what truly defines a high-performance navigation system.

Q4

What trends will shape maritime navigation in the coming years?

Autonomy, digitalization, and resilient positioning will continue to transform the maritime operations. We are seeing greater use of sensor fusion where GNSS, INS, LiDAR, radar, vision systems, and emerging LEO PNT technologies work together to provide continuous and reliable positioning. As GNSS interference becomes more common, robust GNSS/INS integration will be increasingly important for safe and autonomous navigation.

Q5

How are technologies evolving to support applications like hydrographic surveying & autonomous vessels?

The industry is moving toward smarter, more integrated solutions. High-performance inertial navigation and advanced processing capabilities allow operators to collect better-quality data and make faster decisions about their application, without the need to come back to the position and attitude question, because it is already solved.

Q6

What role does post-processing play in improving marine survey results?

Post-processing adds another layer of accuracy and reliability by optimizing recorded data. It allows survey teams to maximize the value of their missions and deliver higher-quality results. It's also a valuable tool in development phases as it helps provide unmatched accuracy data post-mission that can be used as a ground truth for benchmarks.



[Spectre Silent Endurance]

Long-range Autonomous Capability for the Undersea Fight



>8,000 NM

Range at 12 knots

27 KNOTS

Max speed

70+ TONNES

Max payload

BUILT ON 2.5 MILLION NAUTICAL MILES AND 65,000 DAYS AT SEA.