

July 2021



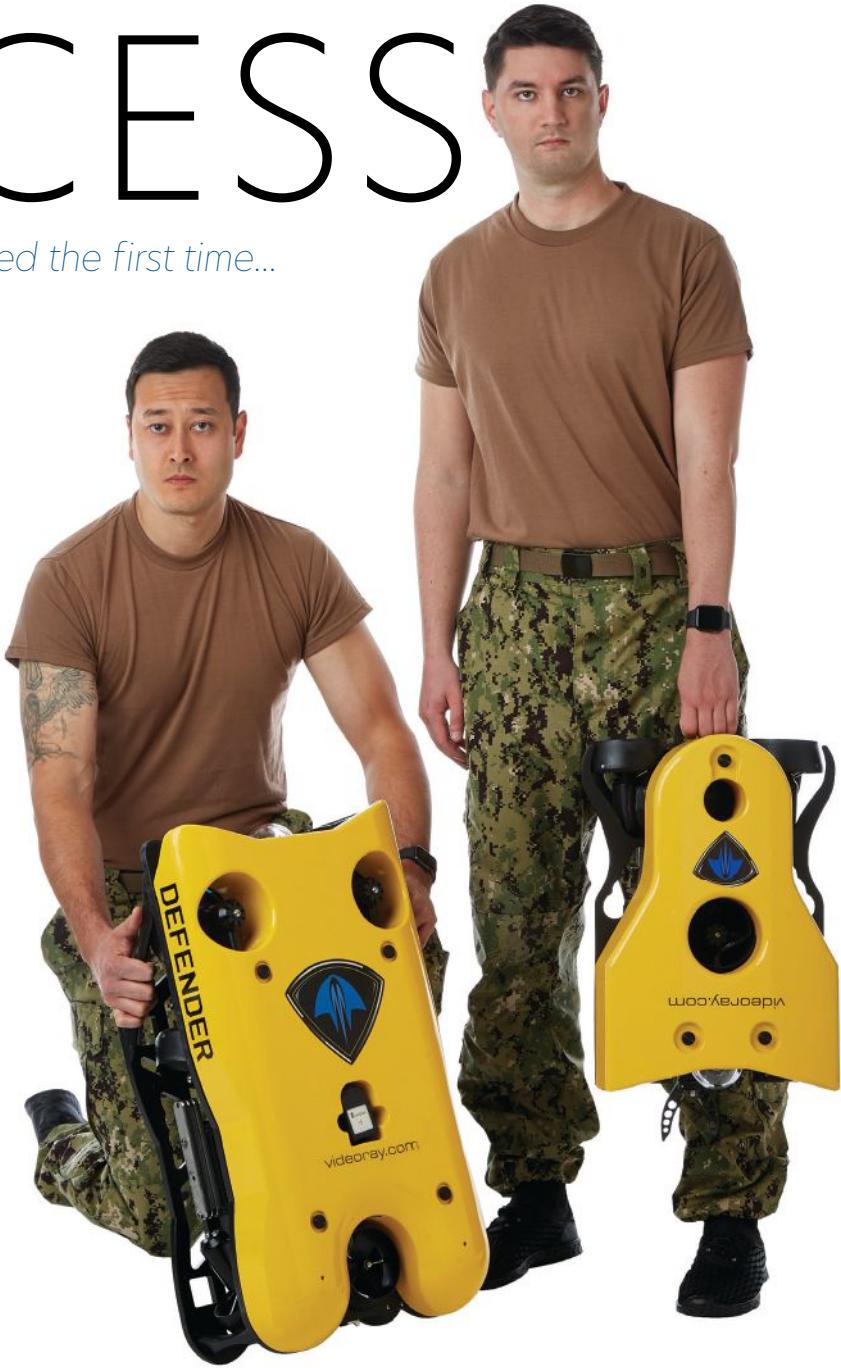
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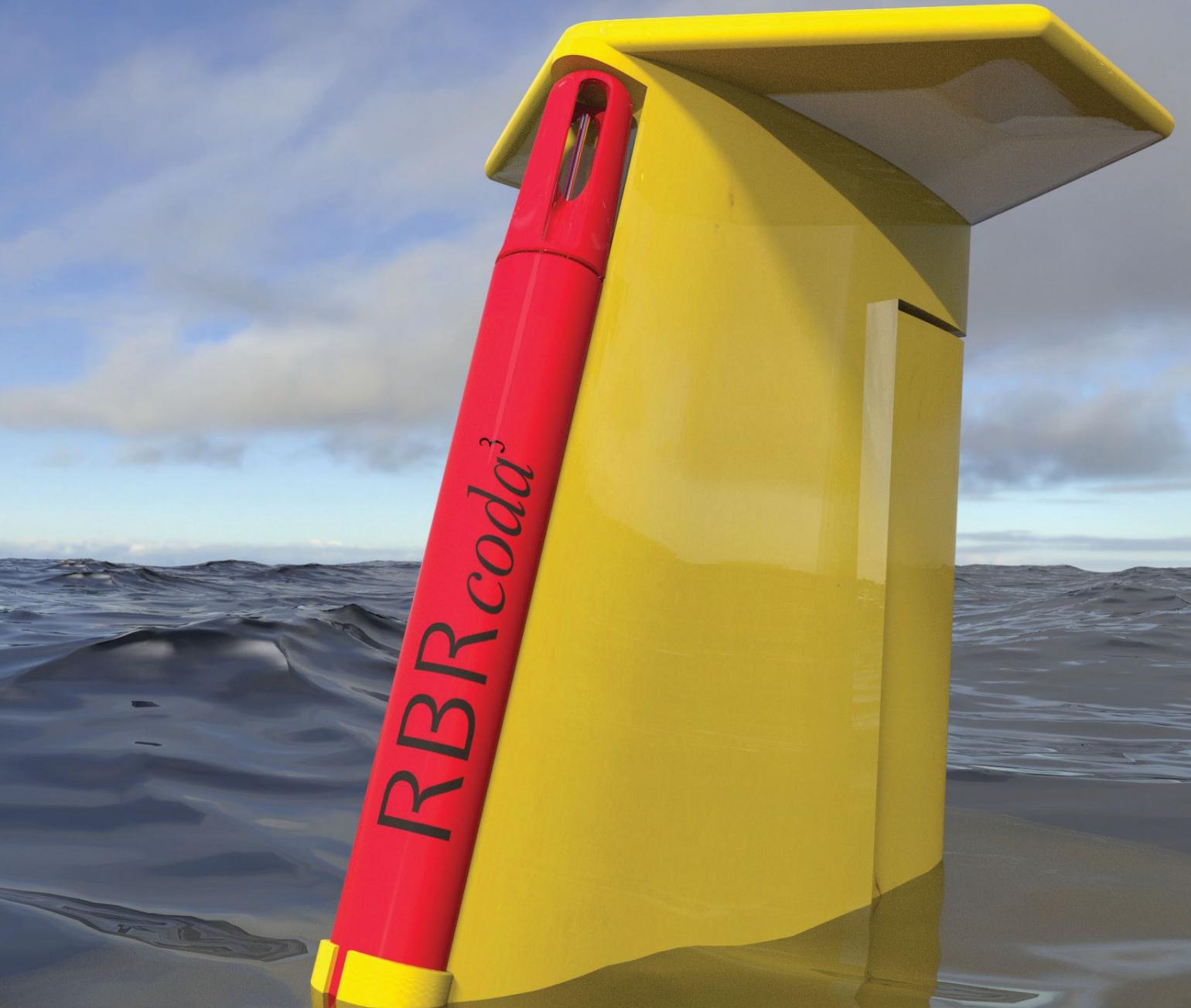
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G. ALLEN BROOKS

INGER PETERSON

RHONDA MONIZ

Art Director

EMILLE RODRIGUEZ

Conferences Manager

WHITNEY SCHWERIN

Subscription Management

subscriptions@tscpublishing.com

Editorial Advisory Board

Bios available at:

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DREW MICHEL

Pierre Part, Louisiana

DR. TOBIAS STAPLETON

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PATRICK C. LAGRANGE, CEO**ADVERTISING SALES**

LISA CHILIK

Tel: 574-261-4215

Lchilik@tscpublishing.com

MIMI KING

Tel: +44 (0) 777 6017 564

mkings@tscpublishing.com

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THE AGE OF CREWLESS COLLABORATION

BY ED FREEMAN

ON&T Editor

The urge to explore the planet's oceans is innately human. History tells of how civilizations, unfazed by the sheer scale of these unfathomable bodies of water, rallied to navigate the seas in order to establish migratory routes and build empires. To this day, marine environments—from surface to seafloor—stir our most innovative impulses.

Perhaps this is best exemplified by modern-day breakthroughs in ocean technology. From sensors to sonars to submersibles, recent advances in marine engineering have taken us further and deeper than our ancestors could ever have envisioned. Be it in the name of environmental monitoring, offshore site development, or defense and security, this is the golden age of ocean exploration.

To this day, though, more than 80% of the seabed—71% of the planet—remains unmapped, unobserved, and unexplored. This is a staggering deficit in understanding given how important we now know the ocean to be in influencing and sustaining life on Earth. Most of the bathymetric data we do have on record pertains to coastal waters, which is unsurprising given the operational complexities and costs associated with surveying further offshore.

However, thanks to the alignment of two critical forces, all this is about to change.

1. CROSS-SECTOR COLLABORATION

Seabed 2030 is a game-changing project between the Nippon Foundation of Japan and the General Bathymetric Chart of the Oceans (GEBCO), with the goal of producing a definitive map of the entire seafloor by 2030. It is an ambitious endeavor, and one reliant on unprecedented industry collaboration, first to systematically gather and organize existing data sets and, second, to identify effective ways to "map the gaps" over the coming decade. This drive to democratize actionable data (publicly available via the International Hydrographic Organization's mesmerizing Data Center for Digital Bathymetry) will transform the collective depth of environmental understanding among ocean industry operators. It is a gleaming example of how cooperation will ultimately shape how future offshore resources are managed sustainably.

2. CREWLESS OPERATIONS

There is nothing new about the deployment of marine robotics—the growing roll call of ROVs, ASVs, USVs, AUVs, and other towed bodies—but we have arrived at an inflection point in terms of how ever smarter control systems will deliver sector-wide efficiencies and previously unimaginable HSSE standards.

Today, the notion of remote marine operations, whether for environmental survey, infrastructural inspection, or search and rescue, is no longer a concept propped up by a flashy infographic—it is a reality. The dawn of crewless operations, powered by a growing ecosystem of AI-enabled vehicles, is set to rewrite the way we work at sea and, to this end, make the coming decade more transformative than any previous.

GUIDANCE GOES A LONG WAY

So, like never before, we have the ways and means to meaningfully accelerate ocean discovery within the context of the 21st century. Now what? This was the question that prompted us to create an intuitive online guide to unmanned vehicles back in 2015.

Readers wanted to know more about the technologies we were showcasing in our regular editions. But they wanted more than just information; they wanted choice. It became clear that there was a need to group and categorize a visionary sector that was expanding at an alarming rate. Little did we know, six years later, that it would evolve into the "Who's Who" of marine engineering excellence. In these pages, you will find comprehensive listings of the most sophisticated crewless vehicles on the market.

Each year outtrumps the last, with a record number of submissions, new requests for subcategories, and growing list of considerations for next time. It is incumbent on me to recognize the teamwork it takes our production staff to compile this catalogue of cutting-edge crafts but also the coordinated effort of all our commercial partners listed within.

Welcome to ON&T's 2021 *Uncrewed Vehicle Buyers' Guide*.

Surface to Seafloor

Our suite of sensors sets the standard
for performance and durability



200WX-IPX7 WeatherStation® Instrument

Proven, reliable weather multisensor for stationary or dynamic platforms.



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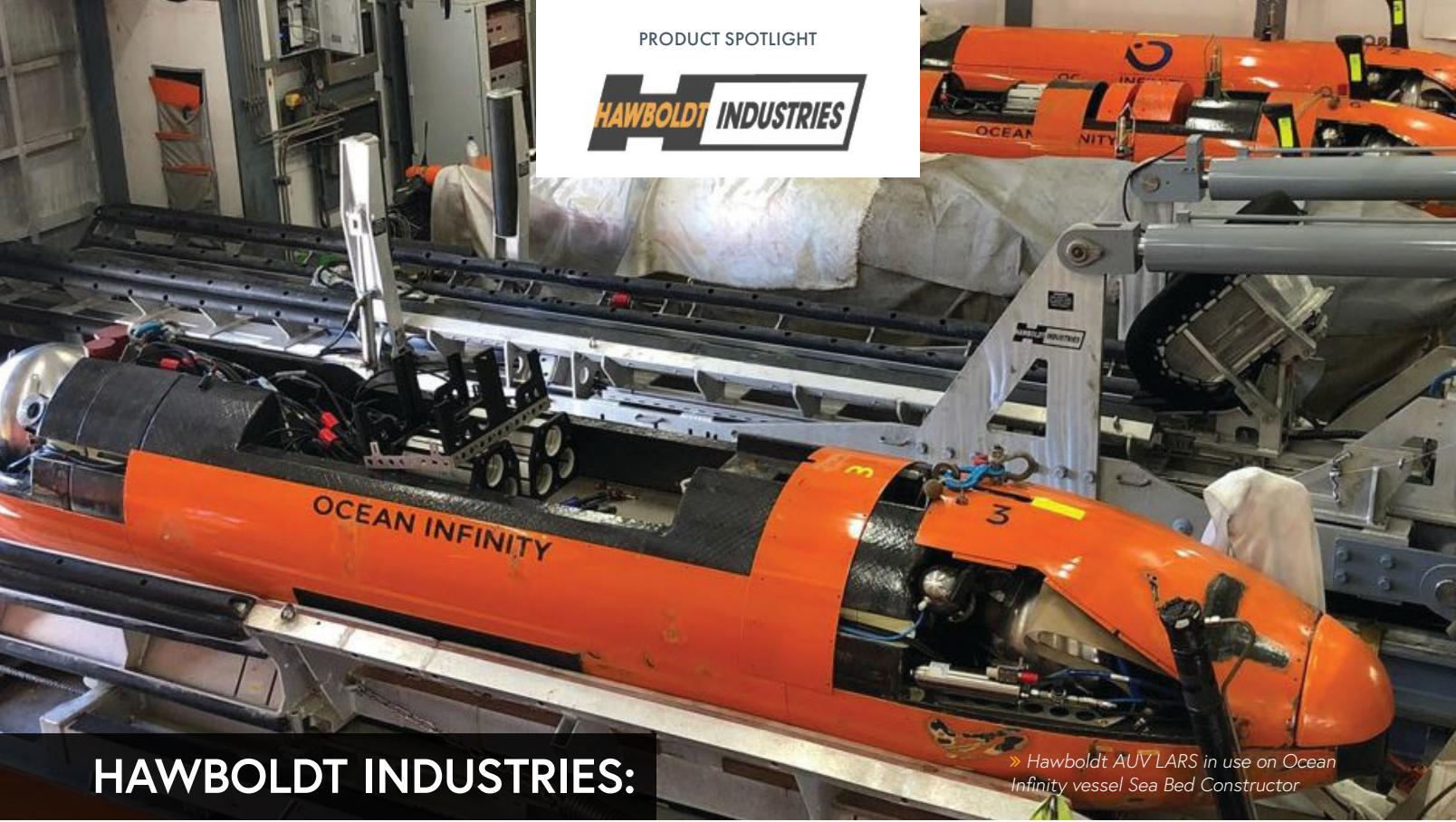
Ultra compact design for UUV's and ROV's.
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» Hawboldt AUV LARS in use on Ocean Infinity vessel Sea Bed Constructor

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MAKING WAVES IN THE WORLD OF OCEAN SCIENCE!

When Foreman Hawboldt founded Hawboldt Industries in 1906 to support the local fishing industry, he could never have known how far his Chester based company would come over the past 115 years!

While Hawboldt has been supporting our Canadian Coast Guard deck equipment requirements for decades, it was in the 1980's when there was a new focus on well-built, robust, Ocean Science winches. It was this shift that has been the foundation for expanding and continually improving our product line for the last 40 years to include Ocean Science winches (from 300-10,000 meters, 300-30,000 lbs pull, hydraulic and electric), CTD LARS, ROV LARS, AUV LARS, and marine cranes (harbor and offshore). Hawboldt excels at offering fully integrated systems to compliment vessel operations and ease the workload for Science Technicians.

From our humble beginnings supplying the Canadian Coast Guard, Hawboldt has become a world leader and trusted advisor in all corners of the globe. Our customer base covers North and South America, Asia, the Middle East, and Europe. Our philosophy of well-designed and well-built deck equipment has been noticed worldwide and we continue to expand our customer base and grow!

A few of our latest projects include: 3 heavy lift mooring winches for the NSF winch pools, a CTD LARS and 10,000-meter CTD winch for the University of Hawaii vessel Kilo Moana, an AUV LARS for the University of Gothenburg being deployed to Antarctica, and a sub bottom profiler winch and HPU for KAUST University in Saudi Arabia. Additionally, Hawboldt has also been supplying full vessel solutions for the new Fisheries and Ocean research vessels for the Canadian Coast Guard, as well as vessels for the USGS, VIMS, and Michigan DNR, to name a few.

Hawboldt has the unique ability to offer mechanical and electrical/controls design, manufacturing, and testing all under one roof, allowing for total control of the process from start to finish. Hawboldt also excels at "cradle to grave" support of all our equipment, giving peace of mind to vessel operators that they have support whether at sea or at the dock. To better serve our customers we have developed a virtual diagnosis system which allows us to log into our equipment anywhere in the world as long as there is internet or satellite coverage. We have proven this approach to be very effective during the COVID-19 pandemic while travel has been severely limited.



» Hawboldt SPRE3464 portable heavy lift winch on Scripps vessel Robert Gordon Sproul.



» Hawboldt 10,000m CTD winch and LARS on University of Hawaii vessel Kilo Moana.

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OBSERVATION ROV

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WWW.ALLOCEANS.CO.UK | Brian Abel | brian@alloceans.co.uk



AC-ROV 100

The AC-ROV is the most capable and portable underwater inspection system on the market. A complete system comes in one rugged waterproof hand carry case with an all up weight of just 18kg. It defines the "HAND CARRY" single operated class in underwater inspection systems. (Customizable)



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AC-ROV 3000

The AC-ROV 3000 is the first ever deep ocean micro ROV. To maximise its capability it comes fully packaged with a Tether Management System (TMS) allowing it to operate as a 3000m depth rated "Fly-Out" from many types and size of host submersible.

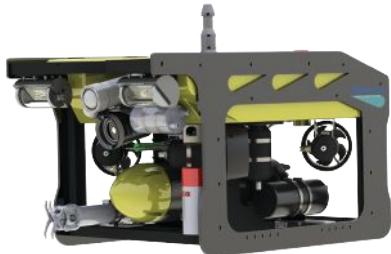


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ARGUS REMOTE SYSTEMS AS

WWW.ARGS-RS.NO

Jan Bryn | jan@args-rs.no



ARGUS MINI

Observation class ROV that can be fitted with an open/close or a 5 function manipulator. (Customizable)



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AQUABOTIX

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ENDURA 100

Endura 100 is one person deployable with a 100 m depth rating. It has 6 degree freedom of motion and is controlled via an intuitive PC or iPad application. Options include sonar and environmental sensors.



ENDURA 300

Endura 300 is one person deployable with a 300 m depth rating. It has 6 degree freedom of motion and is controlled with an intuitive PC or iPad application. Options include sonar and environmental sensors.



BLUEROBOTICS

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Sales | sales@bluerobotics.com



BLUEROV2

Ocean research, exploration, and adventure are all made easily accessible by our flagship product, the BlueROV2. It provides the capabilities of a high-end commercial miniROV at the price of the most basic commercial ROVs, making the BlueROV2 the world's most affordable inspection and research-class subsea vehicle.



DEEP OCEAN ENGINEERING, INC.

WWW.DEPOCEAN.COM | Sales | sales@deeponcean.com



PHANTOM® L6

The Phantom® L6 is the newest in the next generation of proven, reliable underwater robotics pioneered by Deep Ocean Engineering in its manufacture of remotely operated vehicles (ROVs), built in the USA for nearly four decades. The Phantom® L6 is designed with four vectored horizontal and two vertical Tecnadyne® thrusters, which provide significant control and propulsion in current. The dual vertical thrusters provide aggressive lift capability.



PHANTOM® T-SERIES

The Phantom® T-Series ROV provides powerful maneuverability, incorporates an open architecture, integrates with a wide variety of sensors and is hand-built on a rugged, resilient, non-corroding polypropylene chassis that can accommodate heavier payloads. In addition, the Phantom® T5 Defender package is engineered to include navigation software, an Inertial Navigation System (INS), Doppler Velocity Log (DVL), GPS, imaging sonar, a single-function manipulator, and our patented underwater breech for explosive ordinance disposal. (Customizable)



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DTG2

The DTG2 is a commercial grade ROV, designed with the Deep Trekker patented pitching system for unmatched maneuverability. An internal 4K camera, with a 330-degree field of view allows you to inspect below, above, behind or in front of you, and see the live feed directly to your hand held controller. (Customizable)



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DT POD

The DT Pod is designed for drop camera inspections and permanent installations, providing high-resolution video from the surface from underwater. Pan and Tilt functionalities come standard with the DT Pod. Look below, above or in any direction all from the handheld controller. (Customizable)



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DTX2

The DTX2 ROV is the culmination of our customers' desires to have the same capability, portability, and ease of use as our flagship product, the DTG2 – but in a package rated for deeper waters and offshore use. Depth rated to 305 m (1000 ft), the DTX2 boasts 26kg (58lbs) of thrust to perform in tough ocean environments. (Customizable)

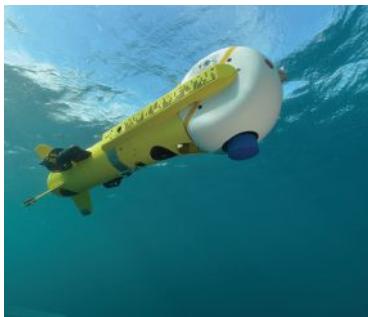


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OBSERVATION ROV

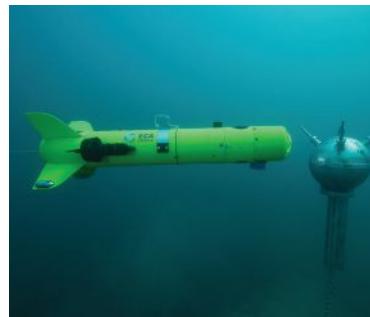
ECA GROUP

WWW.ECAGROUP.COM | Anthony Penn | sales.robots@ecagroup.com



K-STER

The K-STER vehicle is a lightweight expendable mine disposal vehicle dedicated to underwater mine warfare missions. This MIDS solution allows to remotely neutralize a sea mine while keeping crews out of the minefield. The user-friendly command and control software offers auto piloting functions and allows to conduct the operation in a safe way from deployment to the final firing. It is fitted with a shape charge in a tiltable head to aim at the target to dispose of.



SEASCAN MK2

The SEASCAN MK2 is a light weight self-propelled ROV dedicated to inspection missions. Its unique architecture ensures second to none performances in terms of hovering capability and stability in turbulent water. Easy to deploy from any kind of platform, the user friendly command and control software offers auto piloting functions to improve mission efficiency.



EPRONS ROV LTD.

WWW.EPRONS.EU

Sales | info@eprons.eu



RB 300

Working depth till 200 meters. Tether length 220 meters (up to 600 m). Color camera 700 TVL. 5 Thrusters: 2 Horizontal; 2 Vertical; 1 Lateral. Additional equipment possibility: 2 jaw manipulator with open/close and rotation; Navigation sonar; USBL Positioning system; Rear camera. NEW! Two channel video output at the same time.



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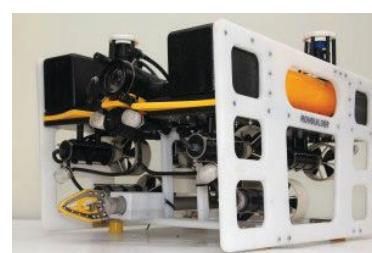
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RB 600

Working depth till 300 meters. Tether length 300 meters (up to 1200 m). Front: Color Full HD and B/W cameras. Rear: additional color/ B/W camera 700 TVL. 7 Thrusters: 4 Horizontal; 2 Vertical; 1 Lateral.



RB MIRAGE

Working depth till 400 meters. Tether length 400 meters (up to 1200 m). Front: Color Full HD and B/W cameras. Rear: additional color/ B W camera 700 TVL. 12 Thrusters: 6 Horizontal; 4 Vertical; 2 Lateral.



FORUM SUBSEA TECHNOLOGIES

WWW.F-E-T.COM

Sales | rov.sales@f-e-t.com



XLe SPIRIT

The XLe Spirit is the first of a new generation of observation class ROVs from Forum Energy Technologies. The vehicle embraces the latest advances in ROV technology that the industry has come to demand and expect from modern ROV design. (Customizable)



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HYDROMEA

WWW.HYDROMEA.COM

Igor Martin | igor.martin@hydromea.com



EXRAY TETHERLESS DRONE

ExRay is the world's first completely wireless underwater drone designed for inspections of complex confined flooded infrastructure. No tether means zero risks of entanglements. Command/control and Full HD video stream in real time possible through high-speed wireless optical link. Patented ultra-thin thrusters provide precise control. 70x40x12cm. Endurance up to 6h. (Customizable)



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L3HARRIS

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Giuseppe Ranieli | Calzoni.Sales@L3Harris.com



AGEOTEC ROV SIRIO

Leveraging more than two decades experience in coastal and offshore surveying and construction characterising the AGEOTEC product line, the ROV Sirio presents itself as the first model of L3Harris' wide range of remotely operated vehicles. Sirio features a modular chassis manufactured in high impact resistant polypropylene, totally maintenance-free and non-corroding. (Customizable)



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JW FISHERS MFG. INC

WWW.JWFISHERS.COM | Brian Fisher | info@jwfishers.com



SEAOTTER-2 ROV

For over 53 years, JW Fishers has specialized in the design and manufacture of underwater search equipment. Their product line includes underwater metal detectors, cable trackers, pipe trackers, video systems, lights, magnetometers, sonars, ROVs, and pingers. Fishers ROVs are in use by commercial diving companies, universities, police & military worldwide.



SEALION-2 ROV

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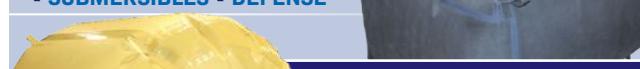
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WWW.PALANQUEE.FR/BLUEROV2BYMDC
Andreas Pinsker | ap@marine-distribution-consulting.com



BLUEROV2

MDC Bluerov2 operational set: Vehicle BlueROV2 with 4 1500lumens LEDs, 150m tether, Topside elements: Rugged Laptop with Gamecontroller, Surface connection box for tether and Laptop, Battery charger and Pelicase Transport box, Weight Bluerov2 package Bluerov2 11,5 kg , 150m Fathom Teather 7 kg , Li-po Battery 0,9 kg. (Customizable)



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MARINE IMAGING TECHNOLOGIES

WWW.MARINEIMAGINGTECH.COM
David Ullman | david@marineimagingtech.com



PIXEL

The original Cinema class ROV, Pixel boasts live stream imaging and control of forward facing 4k and HD video and 45mp stills along with 4k video downward facing. Conceived by a cinematographer, Pixel's original purpose was to be the ideal system for subsea documentaries. She has since expanded into research and exploration, adding photogrammetry to her list of skills. (Customizable)



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MARISCOPE MEERESTECHNIK

WWW.MARISCOPE.DE
Niklas Becker | n.becker@mariscope.de



MS2

Evolved, depth rated to 500 meters. 35 kg and 4 thrusters. Hydro dynamic shape in a stainless steel frame (AISI 316L) manually TIG-welded, equipped with high end components (Full HD Cam with laser pointers and others) and customizable accessories, offers maximum operating stability, high maneuverability and easy maintenance. Lifetime warranty. (Customizable)



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MARISCOPE MEERESTECHNIK

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Niklas Becker | n.becker@mariscope.de



PEEWEE 100

The world's first hybrid of its type, combination between a ROV and a towed vehicle. Robust stainless steel TIG hand welded frame but easy to carry by hand, incorporates a Full HD camera and with a pair of high output LED spotlights, both installed on a tilting system. Lifetime warranty. (Customizable)



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OUTLAND TECHNOLOGY

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Jeffrey Mayfield | jeff@outlandtech.com



ROV 1000

Brushless DC, Magnetically Coupled Thrusters. Easy deployment and operation. All digital control of camera, lights, thrusters and grabber.



PLANT ENERGY SYSTEMS

WWW.PLIANTENERGY.COM
Pietro Filardo | filardo@pliantenergy.com



C-RAY ROV

Pliant Energy Systems anticipates the release of its C-Ray class vehicle for sale in 2022/3. The C-Ray ROV utilizes the company's unique, proprietary undulating drive instead of propellers. The fins undulating drive give the vehicle superior maneuverability and the ability to pass through debris-filled water or mud. C-Ray has the ability to move across solid surfaces and can make the transition from water to land and it can glide over solid ice using the same fins it uses for swimming and crawling. (Customizable)



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Water Quality Remote Monitoring
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STEELHEAD ROV

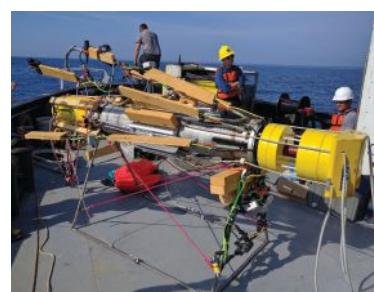
The STEELHEAD inspection-class ROV is a portable, lightweight and stable underwater system that is easily operated through intuitive flight controls. A small profile allows this vehicle to inspect confined spaces and be easily stowed. The compact STEELHEAD is easily deployed and recovered from small vessels and docks—no need for hoists or cranes.
(Customizable)



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SEAVIEW SYSTEMS, INC.

WWW.SEAVIEWSYSTEMS.COM
Matthew Cook | mcook@seaviewsystems.com



TITAN

Titan is a water-propelled, battery-powered ROV capable of providing full video and profiling sonar coverage of a tunnel perimeter for lengths up to 32,000ft (10km) or more. Cameras are mounted on eight umbrella-like booms distributed around tunnel perimeter.



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Subsea Battery Storage

Halo: Scalable Lithium-ion battery storage for reliable and uninterrupted power to subsea assets.

- + Power from anywhere: modular battery storage with flexible in-situ recharging
- + The gateway for renewable power generation for subsea assets
- + Restore power quickly to subsea wells with electrical supply issues
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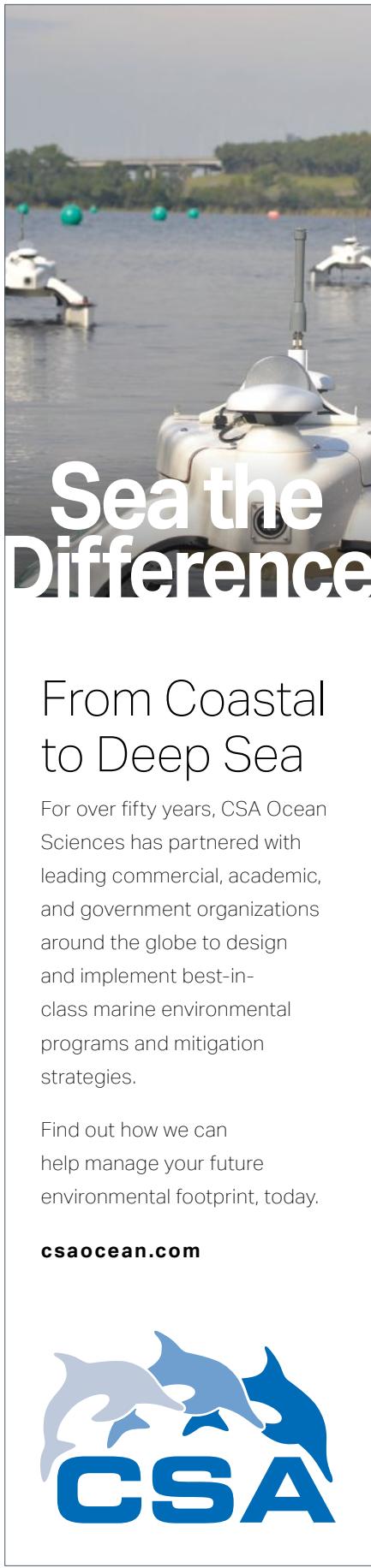
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STRATEGIC ROBOTIC SYSTEMS, INC.

WWW.SRSFUSION.COM | Nick Devine | nick@srsfusion.com

FUSION

The Next Generation UUV - FUSION is an expeditionary ROV with a bespoke suite of high-end sensors delivering a highly capable and intelligent system. A self-contained (no generator required) system augmented by clever automation and supervisory control through an unparalleled, intuitive user interface establishes a new benchmark in UUVs.



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SUBSEA TECH

WWW.SUBSEA-TECH.COM | Gregory Maurin | gregory.maurin@subsea-tech.com



GUARDIAN MINI-ROV

The Guardian Mini-ROV is a 150m depth rated ultra-portable underwater inspection robot equipped with 4 horizontal and 1 vertical thrusters. Fitted with 2 high resolution colour video cameras, one on pan&tilt, and LED lighting, it has been especially designed for long range missions (> 400m). Thanks to an ancillary plug, various accessories such as sonars, gauges and manipulator can easily be mounted on the Guardian. (Customizable)

OBSERVER MINI-ROV

Observer is fitted with 2 high resolution colour video cameras, one on pan&tilt, and LED lighting. Embedded batteries allow 4h autonomy and operation in the most remote areas down to 150m depth. Thanks to an ancillary plug, various accessories such as sonars, gauges and manipulator can easily be mounted on the Observer.



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UNDERWATER ROBOTICS, LLC

WWW.GNOMROV.COM | info@gnom-rov.com



GNOM BABY

The ROV GNOM Baby is a micro sized vehicle that has all the main features inherited from larger underwater systems. The vehicle combines low cost with the full set of GNOM capabilities.



GNOM STANDARD

The GNOM Standard is a basic model of compact ROVs GNOM. It has small size, thin umbilical cable and very high maneuvering capability which allows operating in hard-to-reach places including inside sunken wrecks.



SUPERGNOM

The most advanced model Super Gnom can be equipped with the manipulator (grabber), scan sector sonar (Micron Tritech or analogue) and USBL positioning system. More powerful thrusters & additional illumination are installed on this ROV. It can be modified for operation at depths up to 200m.



VIDEORAY LLC

WWW.VIDEORAY.COM | marketing@videoray.com



VIDEORAY PRO 4 STANDARD BASE ROV

The VideoRay Pro 4 Standard BASE ROV system can quickly and effectively perform a variety of basic underwater tasks. A portable and cost-effective solution, the Pro 4 can be deployed in minutes and operated by one person if necessary. The Standard BASE configuration is ready to accept the majority of VideoRay accessories and can be upgraded to accept sonars.



VIDEORAY PRO 4 ULTRA BASE ROV

The Pro 4 Ultra BASE offers a lighter, more portable solution for operators who only need basic functionality. 40% lighter than the Standard, the Ultra requires only 48 V DC and features a 15.6" PC screen with wired USB Logitech controller (wireless controller optional). The Ultra BASE can accept most basic VideoRay accessories.



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ENHANCING TRUST UNDERWATER

» SonaDive enhances diver navigation and underwater object detection. (Photo credit: RTsys)

Founded in 2010, RTsys is a French company that specializes in the design and manufacture of passive and active underwater acoustics and AUVs. Part of the "Neotek" group, the highly experienced 40-strong RTsys team is based in Caudan, Brittany, at a state-of-the-art research, development and testing facility.

RTsys passive and active underwater acoustics and AUVs serve a range of markets, including the defense sector (MCM and ASW), the marine scientific community (IFREMER, KIOSK, SHOM, DSO), and the offshore industries (offshore windfarms, O&G, aquaculture and more).

Every RTsys product comes equipped with an electronic board reference SDA® (Synchronous Data Acquisition), a proprietary technology that enables the company to provide genuine turnkey solutions without the need for third-party suppliers.

Today, the company's portfolio comprises four business lines:

Passive Acoustic Monitoring (PAM)

RTSYS is a world leader in the design and manufacture of **acoustic recorders, buoys and software** for both post-processing analysis and real-time assessment. These recording devices, which are supported by multiparameter sensor logs, are ideal for acoustic monitoring during Marine Renewable Energy during installation (vessel traffic noise), pile driving (noise and environmental impact monitoring), and for the scientific measurement of ambient noise and water quality.

Autonomous Underwater Vehicles (AUV)

RTsys' range of AUVs includes two-men-portable units as well as ultra-compact **micro AUVs**. These powerful, long-endurance vehicles support a wide range of interchangeable payloads—including SSS (both 2D and 3D image data), CTD and any other water quality sensors—while the INS and DVL enhance navigation to an accuracy of less than 5 meters. These are just some of the features that have made the **COMET-300** and **NemoSens** AUVs popular among scientific, commercial and military operators for seabed mapping, cable and pipeline tracking, coastal water quality monitoring, windfarm inspection, marine UXO detection, and MCM operations.



» RTsys Comet300. (Photo credit: RTsys)

Mine Countermeasures (MCM)

RTsys provides EOD Divers and Special Forces with a range of AUVs and diver-held navigation and sonar systems to optimize operational efficiency and safety during MCM missions. **SonaDive** is designed to aid diver navigation and underwater object detection. The embedded navigation system

relies on several sensors: INS, DVL, pressure sensor, and a deployable floating GPS. The native acoustic communication, thanks to the Sparse-LBL technology, ensures constant navigational accuracy (less than 5 meters, like the AUV range). Divers can communicate amongst themselves and with the surface in real-time via the acoustic modem, with a range of more than 2 km (up to 5 km using RTsys relay beacons).

Sonar and navigation data are recorded, allowing for mission replay, data analysis and export. With 6 hours of battery life, endurance can be extended by swapping batteries during a mission.

Anti Submarine Warfare (ASW)

RTsys also produces specialist acoustic systems for at-sea testing and training, torpedo firing exercises and acoustic signature measurements. The **SIERA** system offers the most reliable solution for the characterization and calibration of underwater acoustic systems (hull-mounted sonars, dipping sonars, variable depth sonars, buoys), while **SEMA** is capable of acting as an autonomous and recoverable acoustic target for ASW training. Easy to deploy from both a RHIB or a frigate, the navigation route is plotted with either waypoints or segments. Different types of training modes such as passive, active and combined acoustics can be programmed. SEMA is easy to operate and recover and is reconfigurable in one hour with a spare battery.

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ARGUS REMOTE SYSTEMS AS

WWW.ARGUS-RS.NO | Jan Bryn | jan@argus-rs.no

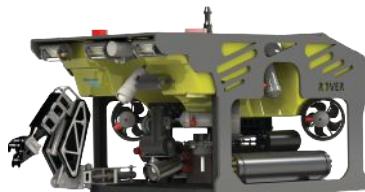


ARGUS MINI

Observation class ROV that can be fitted with an open/close manipulator.
(Customizable)



VC&L | NDT | A&T



ARGUS ROVER

Observation class ROV that can do light work. Can be fitted with 1 or two manipulators for light work.
(Customizable)



VC&L | NDT | A&T

BOXFISH RESEARCH LTD.

WWW.BOXFISH.NZ

Vera Bronza | vera@boxfish.nz



BOXFISH ROV

The Boxfish ROV is a category-busting observation class ROV designed for demanding workloads. It delivers 4K live video from depths of up to 1000 meters. Our patented active stabilisation system enables position-hold at any angle in currents from any direction. It can be quickly and easily custom configured with multi-beam imaging sonar, manipulator/grabber, altimeter, cinematography camera, various lenses, USBL, 3D mapping, laser scalers and much more. (Customizable)



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COPENHAGEN SUBSEA A/S

WWW.COPENHAGENSUBSEA.COM

Allan Nygård Bertelsen
sales@copenhagensubsea.com



GORILLA ROV

The Gorilla from Copenhagen Subsea is particularly robust and reliable in challenging subsea environments in the offshore industry. It is equipped with an intelligent state-of-the-art Dynamic Positioning (DP) system and is based on Copenhagen Subsea's successful rim-driven thruster technology and standard electronic components from OMRON, making it easy to maintain. (Customizable)



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DEEP OCEAN ENGINEERING

WWW.DEEPOCEAN.COM | Mika Takeda | sales@deepeccean.com



PHANTOM® FIREFLY

Sized to penetrate through and below the top guide and core plate. Normally used for steam dryer visual exam during BWR scheduled outages. All materials are suitable for use in nuclear support. Torque balanced thrusters provide a high degree of control and maneuverability in the confined environments.
(Customizable)



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PHANTOM® P-150

Designed for nuclear industry with stable materials / FME concerns as a priority, Two Horizontal and Two "Vertrans" thrusters, with additional Thrusters/ configurations available, No electronics in the sub unit ensures reliability in areas of high radiation, Access through 20" dia. manholes and into PWR Recirc Piping. (Customizable)



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DEEP OCEAN ENGINEERING

WWW.DEEPOCEAN.COM | Mika Takeda | sales@deepecan.com



PHANTOM® S-SERIES

The Phantom® S-Series is a portable high performance ROV that combines superior power, telemetry, and payload with ease of use, ruggedness and reliability. This provides a powerful overall performance envelope and versatility compared to other vehicles of its class. The S-Series can be configured with either 6 or 8 thrusters that enable aggressive lift capabilities and significant control in harsh conditions while reaching depths up to 1,000 meters. (Customizable)



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PHANTOM® L6

The advanced technology of the Phantom® L6 ROV platform introduces a high-performance, inspection-class ROV that offers powerful maneuverability and lift, incorporates an open architecture to integrate a wide variety of sensors, and is hand-built on a rugged, resilient, non-corroding polypropylene chassis that can accommodate heavier payloads. (Customizable)



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DOER MARINE

WWW.DOERMARINE.COM

Elizabeth R Taylor | liz@doermarine.com



H2000

H2000 is a robust yet compact science class observation ROV. It has payload capacity for geological and biological sampling. One or two five function manipulators can be supported along with the normal array of lights, sonar, cameras, lasers and pan/tilt. These systems are typically designed for 2000m depth but options for 1000m and 3000m are available. (Customizable)



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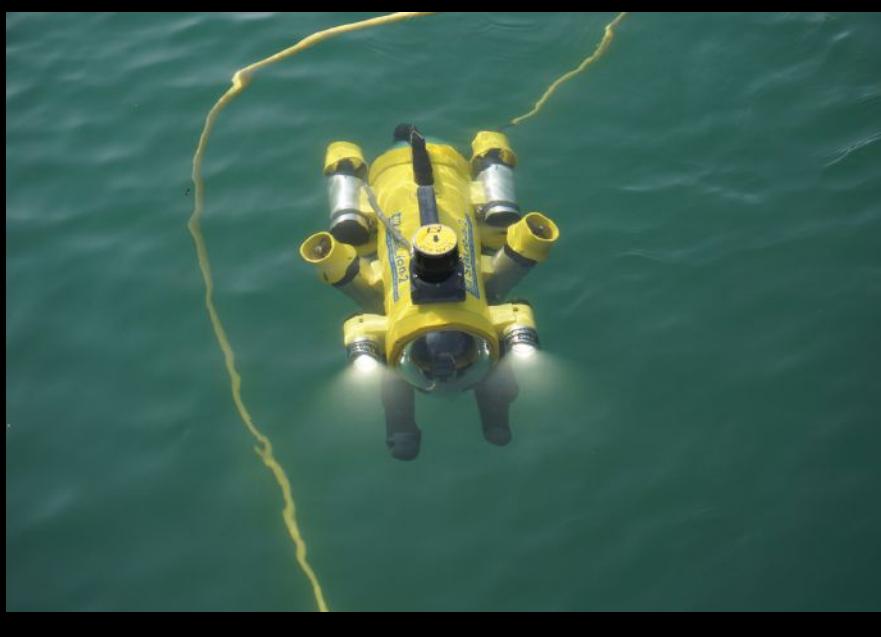
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FORSSEA ROBOTICS

WWW.FORSSEA-ROBOTICS.FR | Gautier Dreyfus | gdreyfus@forssea-robotics.fr



ARGOS

ARGOS ROV embraces the latest advances in ROV technology that the industry has come to demand and expect from modern ROV design. ARGOS is compact in design and is primarily suited to inspection and light intervention tasks. The vehicle is powerful enough to perform maintenance and repair duties with use of the optional electric five function manipulator arm and tooling skid interfaces. (Customizable)



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ECA GROUP

WWW.ECAGROUP.COM | Anthony Penn | sales.robots@ecagroup.com



H300V

Observation Class ROV with 4 horizontal vectored thrusters for inspection missions in very harsh environments, up to 300 m depth. Modular design and easy configuration thanks to a wide range of cameras, sonars, manipulator arms, tools, and any type of sensors.



H800

Observation Class ROV and light duty work system for subsea observation, inspection and surveillance in strong currents, up to 1000 m depth. Modular design and easy configuration thanks to a wide range of cameras, sonars, manipulator arms, tools, and any type of sensors.



ATOLL

ATOLL (patented system) is an observation class-ROV deployable from a light vessel. The system can perform a fully autonomous approach and docking based on embedded control algorithms. Once the link is obtained to the seabed target, ATOLL can either transfer power & data, or mechanically engage the target for recovery back to surface and valve manipulation. (Customizable)



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3 LEVELS OF DVR SPECIFICATION



Digital Edge Subsea is a world leader in offshore digital video recording (DVR) and inspection systems.

Digital Edge Subsea develops and manufactures DVR products for use throughout the offshore oil and gas industry including diving, remote operated vehicle (ROV) and topside operations.

Our EdgeDVR is currently used worldwide by most of the major ROV and diving contractors.

The EdgeDVR is an essential part of any ROV system and can be integrated into both work-class and eyeball ROV systems, it's simple to use and full of very useful features. There are currently over 500 units in the field with a truly established proven history of reliability.

DIGITAL EDGE SUBSEA

www.digitaledgesubsea.com

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L3HARRIS

WWW.L3HARRIS.COM | Giuseppe Ranieli | Calzoni.Sales@L3Harris.com



AGEOTEC ROV ANTARES

L3Harris' AGEOTEC ROV Antares features as many as two HD cameras. It is equipped with as many as four 4K lumen LED lights and supports up to 14 Kg payload. The vehicle can reach 400 msw depth and it's operated using a portable control unit, contained in a trolley suitcase. (Customizable)



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AGEOTEC ROV LYRA

The ROV Lyra features an exceptional payload capacity and an amazing weight-to-power ratio for an observer class remotely operated vehicle. Reaching up to 300 msw depth, Lyra features a modular chassis manufactured in non-corroding high impact resistant polypropylene. (Customizable)



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AGEOTEC ROV PEGASO

Representing the ideal light-work class solution, the Pegaso reaches 2000 msw depth and is capable of 150kg payload. Its dedicated skid - suitable for any kind of survey equipment - can be accessorized with a 7 function manipulator. Pegaso it's perfect for inspecting, monitoring, surveying, target detecting and construction supporting. (Customizable)



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AGEOTEC ROV PERSEO

Perseo represents the perfect multitasking solution. With as many as 25 kg payload and as many as three real-time cameras, the vehicle is equipped with an inertial measurement unit providing high accuracy heading position. It can reach a 600msw depth and can be customized using a wide range of accessories. (Customizable)



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AGEOTEC ROV PERSEO GTV

The Perseo GTV it's a multi-purpose class ROV capable of amazing performances. Reaching a 1500 msw depth, the Vehicle supports up to 40 kg payload and is equipped with multiple HD real-time cameras. Perseo GTV can be customized using many accessories, including sonar and multi-beam echosounder. (Customizable)



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CHAMELEON

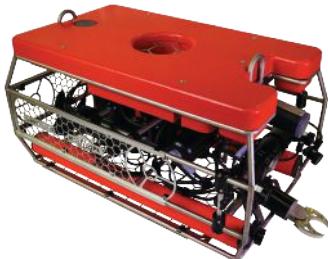
The Chameleon is a pure scientific ROV specially developed taking into account the applications and needs of the scientific community. Completely modular in structure and equipment, the Chameleon is configured with the client according to the tasks and scientific research missions that need to be carried out. Lifetime warranty. (Customizable)



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MARISCOPE MEERSTECHNIK

WWW.MARISCOPE.DE | Niklas Becker | n.becker@mariscope.de



DIAVOLO III

The next evolution of the FO III adding a lateral thruster to improve the side-wards movement, with the same 24/7 work capabilities. Its open frame construction allows an easy adaptation of accessories and allows an easy maintenance. Diavolo III can be adapted following the customer's requirements. Lifetime warranty. (Customizable)



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FO III

Manufactured in stainless steel, manually TIG-welded, equipped with powerful thrusters, designed to 24/7 use, easy to maintain, robust and stable. Full HD/4K cameras and high output LED-lights. With its open frame, can be equipped with additional accessories like electric manipulators, lasers, sonars and tracking devices. Wireless steering console. Lifetime warranty. (Customizable)



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NOTILO PLUS

WWW.SEASAM.NOTILOPLUS.COM

Solène Guéré | contact@notiloplus.com



SEASAM

SEASAM is a very stable and compact ROV and AUV with real-time AI capabilities. It is a one-person operated ROV weighting less than 10kgs. Multiple options are available for each industry. Hardware accessories: external 10000Lm lights, integration with multibeam sonar, underwater GPS Software add-ons for semi-autonomous inspection, image recognition, post-inspection, easy video analysis. (Customizable)



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OCEANBOTICS SRV-8 ROV

The SRV-8 is designed for superior performance, equipped with RJE's exclusive 8 thruster DVCTM (Dynamic Vector Control) for the most advanced maneuverability on the market today. Operating the vehicle is easy with a simple set up, one-person portable system and the ability to deploy in 3 minutes or less. (Customizable)



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OUTLAND TECHNOLOGY

WWW.OUTLANDTECH.COM

Jeffrey Mayfield | jeff@outlandtech.com



ROV 2000

Brushless DC, Magnetically Coupled Thrusters. Easy deployment and operation. All digital control of camera, lights, thrusters and grabber.



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POSEIDON ROBOTICS, LLC

WWW.POSEIDONROV.COM

Peter Schubert | Peter@poseidonrov.com



LANAI

Designed by ROV operators for complicated operations. The Lanai offers more uptime and more payload. Ready to use in a capable and affordable package. (Customizable)



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SAAB SEA-EYE

WWW.SaabSeaeye.com | James Douglas | solutions@sabseaeye.com



SEA-EYE FALCON

The Falcon is the most successful underwater electric robotic system of its class and is proven in numerous intricate and demanding missions across many commercial, security and scientific sectors. The Falcon is lightweight, sized just one metre long and is rated to a depth of 300m or 1000m. (Customizable)



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SEA-EYE LYNX

The Lynx is a leading observation and inspection vehicle for missions in water depths of up to 1,500m. It is fitted with two vertical and four horizontal thrusters making it a very stable platform with exceptional manoeuvrability. A wide range of tools and sensors are available as well as interchangeable tooling skids. (Customizable)



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SEA-EYE TIGER

Widely regarded as the leading observation and inspection vehicle within the oil and gas industry, the Tiger is also increasingly chosen by defence and marine science seeking increased capability in deep water. The Tiger is a very stable platform, with excellent manoeuvrability and performance in strong currents. (Customizable)

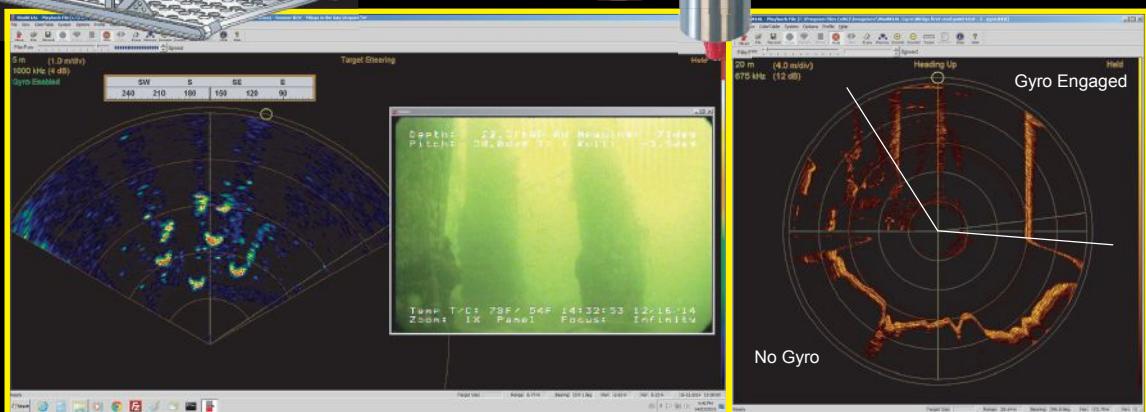
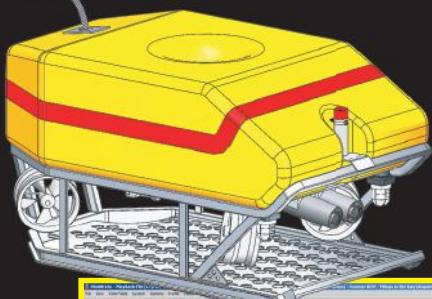


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SEAMOR MARINE LTD.

WWW.SEAMOR.COM

Simon Douthwaite | sdouthwaite@seamor.com



SEAMOR CHINOOK ROV

The Chinook is an industrial grade inspection ROV with a wide range of capabilities. The Chinook offers a stable platform yet remains compact and can be rapidly deployed with ease by two people. (Customizable)



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SEATRONICS

WWW.SEATRONICS-GROUP.COM

Jamie Neilson | jamie.neilson@seatronics-group.com



VALOR

The VALOR is one of the lightest yet most powerful Observation ROVs available. 300m depth rated, however the unique design allows the vehicle to be extended up to 1000m. The VALOR versatility is limitless given the significant payload, unrivalled power capability and available bandwidth allowing the ROV to manage complex tooling and sensor packages. (Customizable)



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SEAVIEW SYSTEMS

WWW.SEAVIEWSYSTEMS.COM

Geoff Cook | info@seaviewsystems.com



SVS-BR2-4K

SeaView's SVS-BR2-4K powers the Blue Robotics BlueROV2 with enhanced capability including UHD 4K 3X optical zoom uncompressed video, GB Ethernet, auxiliary battery, in a 400m-rated enclosure and tether lengths up to 5km. Fiber capability enables high bandwidth and additional ports for sonar, geo-location or other equipment. Additional upgrades and accessories are available. (Customizable)



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SHARK MARINE TECHNOLOGIES INC.

WWW.SHARKMARINE.COM

sales@sharkmarine.com



SEA-WOLF 5

The SeaWolf-5 is a ROV unlike any other. A true light/medium work class ROV, the SeaWolf-5 packs a lot of power and modularity into a small frame. Customers can choose from a 4 or 6 thruster model or upgrade at any time. The SeaWolf-5 operates autonomously or semi-autonomously using Shark Marine's "DiveLog".



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SUBMERSIBLE SYSTEMS INC.

WWW.SSIROVS.COM | Wolfgang Burnside | wolfgang@ssiroids.com



TRV-005

The Ultimate ROV for serious Offshore Platform Inspections and Pipeline Survey Work, no other ROV comes close to the rugged, reliable and incredibly maneuverable TRV-005.



TRV-M

A versatile vehicle often undertaking Workclass tasks in areas that prohibit access to larger Vehicles. The moderate payload also allows the secure attachment of additional Equipment/Sensors to the T6061 Aluminum frame. The TRV-M high mass / Thrust ensures easy transitions from the Surface to the Seabed to either its standard depth rating of 1000m or to the optional 3000m depth rating.



SUBSEA TECH

WWW.SUBSEA-TECH.COM

Grégory Maurin | gregory.maurin@subsea-tech.com



TORTUGA

Tortuga has 4 horizontal thrusters (4x20kgf) fitted with a unique azimuthal control system allowing operations in currents up to 4 knots, regardless of the direction. With an unrivalled 1,8 thrust to weight ratio and a fully integrated acoustic imaging solution, Tortuga is the ultimate vehicle for underwater inspections in harsh operational conditions. (Customizable)



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TETIS PRO

WWW.TETIS-PRO.RU

Dmitry Voytov | rov@tetis-pro.ru



ROV MARLIN-350

Marlin-350 unmanned remotely operated vehicle (ROV) is a light vehicle designed to monitor the protected area, search and detect intruders in the area under control and carry out other tasks related to prevention of unnoticeable penetration into the protected facility.



TELEDYNE SEABOTIX

WWW.TELEDYNEMARINE.COM | Jamie Carrig | SeaBotix_Inquiries@teledyne.com



vLBV300

The SeaBotix vLBV® represents an evolution in small, capable, vectored MiniROV systems. Four powerful 100 mm (4 in) horizontal thrusters, arranged in a vectored format, offer nearly equal horizontal thrust in all 360-degrees of flight. (Customizable)



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vLBV950

The SeaBotix vLBV® represents an evolution in small, capable, vectored MiniROV systems. Four powerful 100 mm (4 in) horizontal thrusters, arranged in a vectored format, offer nearly equal horizontal thrust in all 360-degrees of flight. Standard features include a high-resolution color camera, powerful LED lighting, depth, heading and temperature sensors, auto-depth, auto-heading and thruster trim, low-drag neutrally buoyant tether, and fully ICC with daylight-readable monitor. (Customizable)



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VIDEORAY

WWW.VIDEORAY.COM | James Mitchell | sales@videoray.com



MISSION SPECIALIST PRO 5

The VideoRay Mission Specialist Pro 5 configuration is designed for speed and efficiency, weighing in at 10kg (22lb). The three-thruster system has forward speed of over 4.4 knots, and utilizes a system of interchangeable, modular components residing on a single, intelligent network. The Pro 5 is designed to handle missions with size, space, weight, and deployment speed constraints, such as infrastructure inspections beyond the reach of divers, search & recovery, exploring the ocean floor up to 305m, and various others. The Pro 5 builds on the strengths of the Pro 4, with more thrust, longer tether lengths, higher resolution video, and the advantages of the MSS modular systems.



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MISSION SPECIALIST DEFENDER

The Mission Specialist Defender configuration is designed for more precise control of the vehicle position and orientation, heavier payloads, and demanding intervention, such as rendering unexploded ordnance safe or cleaning nets for offshore fish farms. With seven thrusters, the Defender is able to move in any direction, and maintain active pitch to face the vehicle in an upward or downward orientation. The addition of third party control and navigation software from Greensea Systems or Seabyte makes the Defender a popular configuration for dangerous or heavy-duty missions. (Customizable)



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WORK TOOLS



» The Isurus ROV is based on Oceaneering's field-proven Magnum™ Work Class ROV system, combining optimized hydraulic propulsion packages and a hydrodynamic design for challenging offshore environments. (Photo credit: Oceaneering)

ENGINEERING UNDERWATER VEHICLES FOR A SUSTAINABLE FUTURE

Oceaneering continues to advance its next-generation underwater vehicle fleet to help mitigate greenhouse gas emissions for customers and its own operations. The advancement of communication networks both on- and offshore have made it easier to remotely pilot underwater robots such as ROVs and AUVs from anywhere at any time.

Resident ROVs and Autonomous Vehicles

Oceaneering's Liberty E-ROV is an all-in-one deployable and recoverable system with a cage-mounted battery pack. Liberty is a work-class vehicle that can carry out inspection, maintenance, and repair (IMR), commissioning, and underwater intervention activities without need of a support vessel to stay on-site during operations. Typical IMR campaigns in the North Sea could see estimated savings of up to 33 MT of CO₂ per day.

Oceaneering's Freedom AUV operates in two modes: remotely piloted via short range, high bandwidth communication link to provide real-time control – or operated in autonomous mode. Freedom boasts a working range of 200km, a working depth rating of 6,000m, a speed of 4 knots, and subsea deployments of up to six months.

In January 2020, Freedom arrived in Norway for in-water testing. In June 2020, we began testing the vehicle untethered. In September 2020, Freedom completed the industry's first fully autonomous subsea docking operation using a third-party developed underwater docking station. Offshore trials began at a nearby sheltered pipeline in late February 2021. Freedom is currently at API Technology Readiness Level (TRL) 5 and is expected to enter TRL 6 later this year (2021).

ROVs for Offshore Wind

Harsh weather conditions and high current seas have been a consistent issue for offshore energy industry. Project delays due to weather can be costly not just in time and vessel day rates, but also in carbon emissions from extended work campaigns.

Oceaneering's Isurus ROV was contracted for a major offshore wind developer in 2019 who sought a method to increase operational windows for ROV operations across their European offshore wind farm projects. The developer required an alternative to the traditional ROV systems that either slowed or stopped operations completely during rough sea conditions. By adapting the Isurus

body shape to a more hydrodynamic design and equipping the ROV with highly powerful thrusters, the operational capabilities were greatly increased.

After operations started in October 2019, the Isurus system increased the developer's operating window by up to six hours a day. The scopes of work included cable touchdown monitoring, cable installation, monopile pull-ins, and left/built surveys.



» Oceaneering's Freedom vehicle undergoing qualification testing at Oceaneering's testing facility in Norway. (Photo credit: Oceaneering)

WWW.OCEANEERING.COM

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Gary McConnell | gary@aleron-group.com



MULTIROV

The MultiROV was designed to offer the operator a flexible solution to subsea remote operations and can be configured to meet changing and demanding operational requirements. MultiROV is simple to operate with an advanced control system and 4k video wall display together with class-leading performance, reliability and ease of maintenance. (Customizable)



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ARGUS REMOTE SYSTEMS AS

WWW.ARGUS-RS.NO
Jan Bryn | jan@argus-rs.no



ARGUS WORKER

Heavy Work class ROV for deepwater. Can be fitted with 2 x 7 function manipulators and has a separate HPU for Manipulator and tooling. (Customizable)



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ARGUS REMOTE SYSTEMS AS

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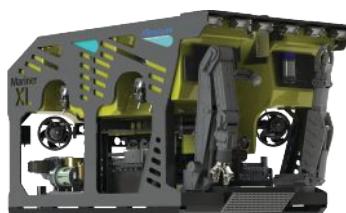


ARGUS MARINER MKII

Medium class ROV that can be fitted with auxiliary HPU for tooling. Can be fitted with 1 or two manipulators for light work. (Customizable)



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ARGUS MARINER XL

Medium Work class ROV that can be fitted with 2 x 7 function manipulators and has a separate HPU for manipulator and tooling. (Customizable)



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DOER MARINE

WWW.DOERMARINE.COM | Liz Taylor | Liz@doermarine.com



H3000

Compact work class ROVs ranging from 10-100 hp and depths from 2000m to 6500m. TMS typically used with deeper system. DOER also offers five function manipulators, hydraulic pan/tilt, valve packs, thrusters and a wide variety of sampling, cleaning and custom tools. These systems have a great degree of flexibility in design and can be customized to suit client needs.



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H6500

Compact work class ROVs ranging from 10-100 hp and depths from 2000m to 6500m. TMS typically used with deeper system. DOER also offers five function manipulators, hydraulic pan/tilt, valve packs, thrusters and a wide variety of sampling, cleaning and custom tools. These systems have a great degree of flexibility in design and can be customized to suit client needs.



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ECA GROUP

WWW.ECAGROUP.COM | Anthony Penn | sales.robots@ecagroup.com



H1000

Electric Work Class ROV for subsea observation, inspection and light works up to 1000 m depth. Equipped with high performance viewing system, sonars, and two manipulator arms (electric or hydraulic).



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H2000

Work Class ROV dedicated to missions up to 2000 m depth: offshore survey and underwater works, search and rescue, object recovery, wrecks inspection. Equipped with high performance viewing system, sonars, and 2 manipulator arms.



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PERRY XLX EVO - 200 HP

The Forum Energy Technologies Perry XLX Evo ROV represents the latest evolution in the highly successful Perry XL series. The XLX Evo features significantly enhanced performance across the full range of demanding intervention and survey tasks without compromise to the outstanding reliability for which the XL series of vehicles is renowned throughout the world.



PERRY XLX-C

The Perry® XLX-C is a compact heavy-duty work-class hydraulic ROV, complementing the Perry® XLX 150-250 series of larger heavy-duty work-class ROVs.



SUB-ATLANTIC COMANCHE

Customers include DOF Subsea, Bibby Offshore, Oceanteam 2000, Bluestream, Oceaneering, IKM, Neptune.



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SUB-ATLANTIC MOHICAN

Customers include MMT, DOF Subsea, Seatrepid, IKM, Innova, ASI, Innova/Abyss Mostrello.



SUB-ATLANTIC MOJAVE

Customers include Oceaneering, Cummings, Broadsea ROV, FPSS, Marine Innotech, Blue Water.



SUB-ATLANTIC SUPER MOHAWK

Customers include PDVSA, Seatrax, NOAA/NMSF



INTERNATIONAL SUBMARINE ENGINEERING LTD. (ISE)

WWW.ISE.BC.CA | Sales | info@ise.bc.ca



ISE HYSUB

The ISE HYSUB Remotely Operated Vehicle (ROV) is a fully customizable work class ROV which is optimized for your operational profile. Select your payloads, depth, power, and frame size to receive your customized HYSUB in as little as 6 months! Every HYSUB is designed to last for decades in harsh conditions and is easy to modify and upgrade when new technology becomes available. The HYSUB is available from 25-250 hp in depth ratings to 6000m. (Customizable)



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KYSTDESIGN AS

WWW.KYSTDESIGN.NO | Åge Holsbrekken | post@kystdesign.no



CONSTRUCTOR

This is a general purpose hydraulic work class ROV. The system is characterized by a compact and integrated mechanical architecture, powerful and accessible hydraulic functions and a user friendly real time control system. The CONSTRUCTOR can be delivered with depth rating down to 6000m. It is uniquely designed for carrying and operating large tools and modules. (Customizable)



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SUPPORTER

SUPPORTER is a general purpose hydraulic work class ROV. The system is characterized by a compact and integrated mechanical architecture, powerful and accessible hydraulic functions and a user friendly real time control system. The system can be delivered with depth rating down to 6000m. (Customizable)



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MARINER UNDERWATER ELECTRONICS

WWW.MARINER.GR

Marinos Pittas | marghe@otenet.gr



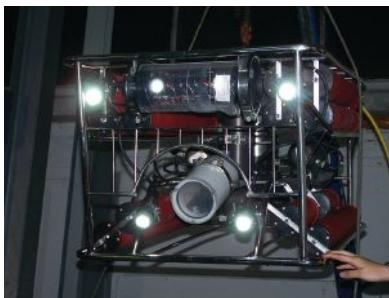
IPPODAMUS

Our ROVs can be customized and be equipped with a great variety of accessories and tools, according to buyer's needs. (Customizable)



MARISCOPE MEERESTECHNIK

WWW.MARISCOPE.DE | Niklas Becker | n.becker@mariscope.de



COMMANDER MK II

The smallest of these vehicles equipped with 5 thrusters of 300/600 Watt of power each. Depth rated to 500m it can be equipped with a variety of oceanographic sensors, cameras, lights, manipulators and others in order to customize the vehicle according to the individual task and use. Lifetime warranty. (Customizable)



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COMMANDER MK III OFF-SHORE

A completely symmetrical ROV with six vectorized thrusters, UTM & CP probes mounted in the front, and a MNH cavitation unit on the backside. Front and back Full HD camera and lighting with all of accessories on tilting frames controlled from surface, allowing to work in every direction. Lifetime warranty. (Customizable)



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MARISCOPE MEERESTECHNIK

WWW.MARISCOPE.DE | Niklas Becker | n.becker@mariscope.de



COMMANDER MK III

With six thrusters of 300/600 Watt each, disposed in a vectorized manner. 1000 meters operational depth. Its newly developed hydrodynamic design and completely enhanced construction increases the ROVs efficiency. Can carry out all kind of tasks, with special emphasis on searches, rescues, scientific studies and inspections. Lifetime warranty. (Customizable)



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COMMANDER MK III RESCUE

A functional and reliable rescue support vehicle with 1000 meters working depth. Six 800 W vectorized thrusters. Front and rear Full HD cameras and forward-looking sonar. USBL tracking system. 2 multifunction manipulators. Customized deployment and storage system with full systems integration with vessel. (Customizable)



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FLUNDER

With six thrusters of 400 Watt each, disposed in a vectorized manner. 500/1000 meters operational depth. Hydrodynamic design and completely enhanced construction with power, speed and maneuverability. Can carry out all kind of tasks under the most adverse situations. Lifetime warranty. (Customizable)



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OCEANEERING INTERNATIONAL, INC.

WWW.OCEANEERING.COM/ROV-SERVICES/ROV-SYSTEMS

Sales | rov-services@oceaneering.com



LIBERTY E-ROV

The Liberty E-ROV is a 100 kW battery-powered work class resident system that will go subsea with a surface buoy. It is an electric vehicle with hydraulic power to support its manipulator functions. It is well-suited for inspection, maintenance, and repair (IMR), commissioning, and underwater intervention activities. (Customizable)



MAGNUM® PLUS ROV

The powerful Magnum Plus ROV delivers enhanced flight control in a smaller package. Reliable and easily maintained, it provides a 170-hp, high-thrust, tophat- or cage-deployed system designed for subsea intervention and deepwater tooling. (Customizable)



OCEANERING INTERNATIONAL, INC.

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MILLENNIUM® PLUS ROV

This powerful ROV features a dual-manipulator, 220-hp work class system with an enhanced thruster configuration that increases lift capacity by more than 50% compared with the standard Millennium ROV system. (Customizable)



NEXXUS ROV

Our high-power, heavy work class ROV system meets the API Standard 53 requirements for BOP intervention. With heavily increased tooling capabilities, the NEXXUS ROV is designed to meet next-generation intervention requirements. (Customizable)



Work-Class ROV Parts, Connectors, Filters, Tools Equipment & Supplies = We Ship Worldwide

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sales@rovsco.com, www.rovsco.com



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ROVOTICS

WWW.ROVOTICS.AE

Tamer EL Essawy | sales@rovotics.ae



SHARK G2R ROV

The Shark G2R ROV features a high-power-to size ratio, with over 80kg of bollard pull while fielding a 35kg payload. With a strong aluminium and polypropylene construction, it is rated for operation at up to 500m, with an optional upgrade extending this to 1000m. The ROV is powered by six high-reliability SPE-75 thrusters. (Customizable)



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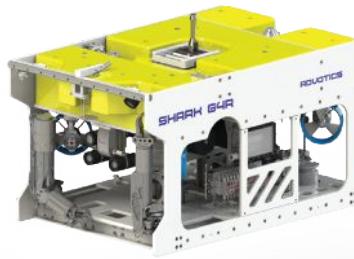


SHARK G3R ROV

The Shark G3R ROV features a high-power-to-size ratio, with 130kg of bollard pull while fielding a 100kg payload. With a strong aluminium and polypropylene construction, it is rated for operation at up to 500m, with a series of optional upgrades extending this to 1000m, 2000m or 3000m. The ROV is powered by six high-reliability SPE-250 thrusters. (Customizable)



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SHARK G4R ROV

The Shark G4R is Rovotics' largest and most versatile ROV, providing 244kg of bollard pull while fielding a 280kg payload. This light-work-class ROV is rated for operation at up to 500m, with a series of optional upgrades extending this to 1000m, 2000m or 3000m. The Shark G4R can be equipped with a 7-function and a 5-function manipulator. (Customizable)



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SAAB SEA EYE

WWW.Saabseaeye.com | James Douglas | solutions@sabseaye.com



SEA EYE COUGAR-XT

The Cougar XT is a flexible, small, yet extremely powerful work vehicle depth rated to 2000m. Six thrusters provide precise handling and control in strong currents. Designed to accommodate heavy duty tooling via a system of quick-change tool skids, the Cougar XT is ideal for inspection, survey work, IRM & light construction projects. (Customizable)



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SAAB SEA EYE

WWW.Saabseaeye.com | James Douglas | solutions@sabseaye.com



SEA EYE COUGAR-XT COMPACT

The Cougar XT Compact, is the shallow water version of the Cougar XT. An extremely powerful vehicle, it is ideal for inspection applications where strong tidal currents are experienced. The smaller chassis significantly reduces drag which, in combination with a high-performance thruster arrangement and a small diameter tether, offers unrivalled performance for its size. (Customizable)



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SEA EYE COUGAR-XTI

The Cougar XTi is 3000m rated and features Saab Seaeye's iCON™ intelligence control system. The proven capabilities of the Cougar XT combined with the use of iCON™ and a high frequency, high voltage, power supply system make the Cougar XTi a formidable 3000m observation vehicle with significant work capabilities. (Customizable)



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SEA EYE LEOPARD

The Leopard is an exceptionally powerful compact electric work class vehicle with a minimal 20ft x 8ft LARS footprint. It is fitted with up to 11 thrusters to provide a forward thrust of over 500kgf, has a 200kg payload and is controlled by Saab Seaeye's iCON™ intelligent control system. (Customizable)



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SAAB SEA EYE

WWW.SAABSEA EYE.COM
James Douglas | solutions@saabseaeye.com



SEAEYE PANTHER-XT PLUS

The high current shallow water survey and light work vehicle, the Panther XT Plus is a 1000m depth rated vehicle fitted with ten 500 Volt DC thrusters, providing it with exceptional handling and speeds of up to four knots. It is ideal for tasks that include drill support, pipeline survey, IRM and salvage. (Customizable)



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SILVERCREST SUBMARINES

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Mr. Whitfield | sales@silvercrestsubmarines.com



WROVS

New and used WROVs for sale.
Submersible motors, HPU's, and pumps for use on ROVs, subsea trenchers, subsea ploughs, dredgers and water lift pump systems. (Customizable)



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Mr. Whitfield | sales@silvercrestsubmarines.com



SUBMERSIBLE ELECTRIC MOTORS

Bespoke manufacturing of submersible motors, HPU's, and pumps for ROVs, subsea trenchers, subsea ploughs, dredgers and water lift pump systems. Electric motors 5hp to 1500hp, voltages from 380vac to 6600vac. for subsea depths to 6000msw. SS316, Duplex, Super Duplex, or Hard Anodized Aluminium finish. (Customizable)



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SMD

WWW.SMD.CO.UK
Graeme Jaques | graeme.jaques@smd.co.uk



ATOM WROV

Atom is an ultra-compact work class ROV comparable in size to a large electric ROV. The vehicle is suitable for renewable applications, drill support, survey and light construction duties and can be mobilised on vessels and rigs with limited deck space. Atom's high power to size ratio makes it an effective performer in high currents. (Customizable)



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WWW.SMD.CO.UK | Graeme Jaques | graeme.jaques@smd.co.uk



QUANTUM WROV

Quantum has class leading payload, thrust and tooling power figures. It is designed primarily for heavy construction and salvage work but can also be used as an effective survey platform. Space within Quantum's frame for mounting tools and instruments is exceptional. This flexibility means better in-water performance and current holding capabilities when measured against rivals that need to use a skid. (Customizable)



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QUASAR

The Quasar is the medium size vehicle in SMD's Q Series work class ROV range. Utilising the latest multi-platform Curvetech™ components, the vehicle offers class-leading in-current performance, tooling and instrument space and access for maintenance. Quasar is an excellent all round performer capable of survey, construction and drill support operations. (Customizable)



SPERRE AS

WWW.SPERRE-AS.COM

Wench Haugerud | wh@sperre-as.com



ROV SF10K

ROV designed for tough conditions. Reliable and well proven design. Quick and easy mobilization. Very good stability. Plenty of power. Interface for std. tools. Quality at an affordable price. Require a min. of maintenance. Made in Norway. Can build after customer specification.



SPERRE AS

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ROV SF15K

ROV designed for tough conditions. Reliable and well proven design. Quick and easy mobilization. Very good stability. Plenty of power. Interface for std. tools. Quality at an affordable price. Require a min. of maintenance. Made in Norway. Can build after customer specification.



SUBMERSIBLE SYSTEMS INC.

WWW.SSIROVS.COM

Wolfgang Burnside | wolfgang@ssirovs.com



TRV-HD

The TRV-HD Extreme is a serious, compact Workclass vehicle with a very small footprint. When offshore real estate is at a premium the TRV-HD is the only logical choice. Most Manipulator options are available.



ROV SF4500

ROV designed for tough conditions. Reliable and well proven design. Quick and easy mobilization. Very good stability. Plenty of power. Interface for std. tools. Quality at an affordable price. Require a min. of maintenance. Made in Norway. Can build after customer spec.



TECHNIPFMC SCHILLING ROBOTICS

WWW.TECHNIPFMC.COM | Hamish Stewart | hamish.stewart@technipfmc.com



SCHILLING ROBOTICS HD ROV

The 150hp HD ROV is an advanced modular design with a 60-minute maintenance philosophy, tooling integration and high-integrity hydraulic system. Standard features include flight automation systems including StationKeep, Auto Track and Auto Displacement, in addition HD Ethernet Video, Auto follow manipulator camera, rapid repair systems and onboard diagnostics are features to aid productivity of the vehicle, pilot and overall operation. (Customizable)



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SCHILLING ROBOTICS GEMINI® ROV

The GEMINI® ROV System is an advanced WROV providing unprecedented productivity and reliability for the most complex deepwater intervention tasks. GEMINI® is equipped with dual next-generation manipulators enabling the ROV to exchange tools subsea and a fluid pumping and storage system enabling the ROV to remain at depth to complete numerous tasks without the need to recover the ROV to surface. Equipped with digital video suite and the latest StationKeep™ V2 the ROV can perform high-precision intervention tasks without the need to anchor and stabilize the ROV to a subsea asset. (Customizable)



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SCHILLING ROBOTICS UHD-III ROV

The 250hp UHD-III ROV features a software controlled auxiliary pump capable of delivering dual fluids/types at various pressures/outputs. Modular design enables the UHD-III to carry 100 US Gals inboard negating the requirement for fluid intervention skids to support construction and drill support activities. Standard features include flight automation, HD Ethernet Video, rapid repair systems and onboard diagnostic to aid productivity of the vehicle, pilot and overall operation. (Customizable)



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FORTY YEARS OF TECHNOLOGY INNOVATION FROM SURFACE TO SEAFLOOR

Airmar Technology is approaching our fortieth year in business. That's four decades of driving marine product innovation to become the foremost designer and manufacturer of ultrasonic transducers and marine products. From humble beginnings and one man's design for a transom mounted multisensor transducer to a global company with a complete suite of products utilized from surface to seafloor, Airmar offers a growing diversity of capabilities. Below are just a handful of our most popular products:

Weather on the Go

WeatherStation® Multisensors offer a suite of data-generating sensors in a compact, rugged housing that is proven tough enough for extended missions on today's USV platforms. The unique all-in-one design delivers a comprehensive data stream, complete with theoretical wind and GPS, while underway. A three-axis compass and gyro

deliver dynamic heading, rate of turn and pitch and roll, eliminating the need for duplicate sensors elsewhere on the vessel. Today's leading USV platforms are counting on Airmar's WeatherStation Multisensors to deliver mission critical data on every deployment.

A Smart Way to Survey

A hallmark of Airmar products is our Smart™ sensor technology which delivers processed depth and water temperature data. EchoRange™ and EchoRange+™ transfer data real-time via the RS422 standard. A secondary, transmit-only interface with a proprietary protocol using RS485 is also available on EchoRange+. Users can obtain detailed echo envelope data which may be displayed as an analog waveform. The echo envelope is a 900-point time-series of the echo amplitude. By analyzing the shape of the echo envelope, information indicative of the seafloor type is revealed. EchoRange™ is perfect for

portable or fixed use on vessels for hydrographic survey and bottom characterization.

New to the Airmar Line...

Airmar's newly released 200m Mini Altimeter Kit Smart Sensor is an ultra-compact altimeter designed for measuring height off the sea floor and underwater structures with a maximum detection range of 200m and a transducer rated to 1000m. The 200m Mini Altimeter Kit delivers excellent performance from a small, lightweight configuration optimized for use on USVs and AUVs. The kit is available with operating frequencies of 170kHz or 200kHz, and provides NMEA 0183 output over either RS422 or RS232.

Broadening the Airmar Family With MSI

In late 2016, Airmar acquired Massachusetts-based **MSI Transducers**, formerly Materials Systems Inc., and broadened the capabilities and products for commercial and defense companies. MSI's

piezocomposite materials and design expertise expands our capabilities with products such as low-cost arrays, long-range high bit rate ACOMM transmitters, and multi-element customizable receivers.

As Airmar approaches our fortieth anniversary, we harden our resolve to deliver the innovation and product quality that has driven our continued success. We have a commitment to be your valued development and manufacturing partner who shares your company's growth goals.



» Fixed or Portable Survey Solutions with EchoRange™

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WWW.ALLOCEANS.CO.UK | Brian Abel | brian@alloceans.co.uk



AC-CELL 100

Developed as a standalone Remote Visual Inspection (RVI) tool, this small, wet or dry environment crawler is fully compatible with the industry proven AC-ROV 100 Underwater Inspection system, and uses the same topside hardware.



VC&L



MAC-ROV

A second generation 6000m Fly-Out ideally suited to subsea mining and cinematography applications. Can be surface deployment on its own, with its TMS, or as part of a Shuttle system to deliver work class ROV capability at a fraction of the cost. A Blue Economy development game changer. (Customizable)



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Charles Cousin | charlescousin@bellamareus.com



STINGRAY

Bellamare designs and manufactures underwater towed sleds to your requirements. We have proven designs to choose from and we specialize in custom orders. We provide quick turn-around and field set-up and training. (Customizable)



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CHELSEA TECHNOLOGIES GROUP LTD.

WWW.CHELSEA.CO.UK | Ellen Keegan | ekeegan@chelsea.co.uk



NUSHUTTLE TOWED

OCEANOGRAPHIC PLATFORM

NuShuttle is a proven, low cost and robust towed undulating vehicle in use on ships of opportunity and research vessels. It can be fitted with a wide variety of sensors to provide data on CTD, chlorophyll, hydrocarbon & Gelbstoff fluorescence, turbidity, optical transmittance, bioluminescence, nutrient, redox & dissolved oxygen. (Customizable)



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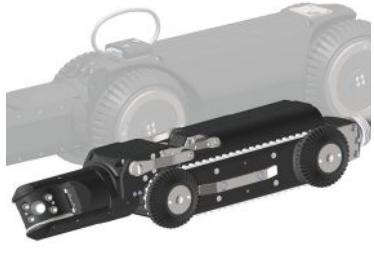
SEASOAR II

SeaSoar is a versatile towed undulating vehicle used to deploy a wide range of oceanographic monitoring equipment. Developed by CTG from an original design by the National Oceanography Centre, Southampton, UK it has a proven record of reliability over many thousands of miles of operation. (Customizable)



DEEP TREKKER INC.

WWW.DEPTREKKER.COM | Sales | sales@deeptrekker.com



DT320 MINI PIPE CRAWLER

Meet the battery powered mini pipe crawler inspection system. This mini CCTV sewer inspection camera is capable of inspecting 6-inch lined pipes (152 mm) and even undersized 6-inch diameters. It is constructed with the same design as the larger DT340; rugged stainless steel aluminum body, durable sapphire glass lens cover and clear HD pan/tilt camera. (Customizable)



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DT340 PIPE CRAWLER

The world's only truly portable, battery-operated pipe crawler system. Equipped with a lightweight handheld control console, a strong but thin tether, a pivoting tether connection, wheel and track options and plug-and-play integrations – all designed to make your pipe inspections easier. (Customizable)



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DT640 UTILITY CRAWLER

The DT640 Utility Crawler is the most versatile inspection vehicle of its kind. The sleek, three-wheel submersible comes with a magnetic option, creating the ideal vehicle for an array of underwater work. Compact for transportation and extremely portable. (Customizable)



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ECA GROUP

WWW.ECAGROUP.COM | Anthony Penn | sales@ecagroup.com



CEP75

Multidirectional remotely operated electric crawler for operations inside pipes or pools. Watertight up to 20 m, it can transport a 75 kg payload. Its modular design allows embarking up to 3 TV cameras, and a mini electric manipulator arm.



PIPE CRUISER

Designed for inspection in any type of pipes (diameter 150 to 2000 mm, up to 500 m length), this multidirectional modular system avoids obstacles, turns in curves, swivels and moves back to deliver real-time exceptional quality videos and measurements. Watertight up to 10 m.



ROVING BAT

Hybrid ROV and crawler, Roving Bat can swim as a ROV and, thanks to 4 vertical thrusters, it tilts, rolls and sticks well onto vertical surfaces, such as ship hulls. Then it crawls along to perform inspection, cleaning operations and NDT measurements. Roving Bat is the optimal solution for UWILD applications.



TOWED & BOTTOM CRAWLING VEHICLES

ECA GROUP

WWW.ECAGROUP.COM | Anthony Penn | sales.roboitcs@ecagroup.com



T18-M

T18-M is a self-powered towed interferometric synthetic aperture sonar (SAS) for Real Time Detection, Classification and Mapping (SCM) of seabed and moored mines. It is equipped with a thinner umbilical cable and a lighter equipment for easier deployment from a USV or another platform. The T18-M is specifically designed to meet all recommendations related to mine warfare operations (particularly the detection or classification phases).



TOWSCA

With a 30 year-long experience in towed sonars (DUBM 41 & 42, MJ 2000, ...), ECA Group proposes a range of towed sonars (Side Scan Sonars & Synthetic Aperture Sonars) designed to be automatically deployed and retrieved by USVs. Towsca is one of them.



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EDGEYTECH 2300

EDGEYTECH 2300 COMBINED SIDE SCAN SONAR & SUB-BOTTOM PROFILER- This deep-water system integrates the highly successful line of side scan sonars, sub-bottom profilers and (optional) MPES bathymetry into one fully integrated 2,000 meter rated system.



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EDGEYTECH 2400

EdgeTech's 2400 Series is a fully integrated combined side scan sonar (with optional wide swath MPES bathymetry) & sub-bottom profiling system designed for deep water operation in depths up to 6,000m. The 2400 can be completely configured by the user to best suit the applications at hand. The system comes with a dual simultaneous frequency side scan sonar with a choice of 75 kHz, 120 kHz or 410 kHz frequencies; any of which can be paired together. The 2400 also comes with the choice of a wideband sub-bottom profiler. Frequency options for the sub-bottom profiler are 1-10 kHz, 2-16 kHz or 4-24 kHz.



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EDGEYTECH 3400

EdgeTech 3400 provides users many enhancements to current sub-bottom profiler systems. The 3400 is a wideband Frequency Modulated (FM) sub-bottom profiler utilizing EdgeTech's proprietary Full Spectrum CHIRP technology. The system generates high resolution images of the sub-bottom stratigraphy in oceans, lakes, and rivers and provides excellent penetration in various bottom types. The EdgeTech 3400 comes in a dual 2-16 kHz transducer configuration. The EdgeTech 3400 Sub-bottom Profiling System comes as a complete package and includes a towfish, cable and a topside processor running EdgeTech's DISCOVER sub-bottom acquisition & processing software.



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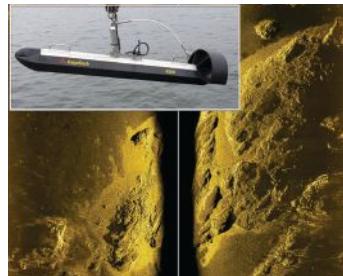


EDGEYTECH 4125

EdgeTech's 4125 Side Scan Sonar System was designed with both the Search & Recovery (SAR) and shallow water survey communities in mind. The 4125 utilizes EdgeTech's Full Spectrum® CHIRP technology, which provides higher resolution imagery at longer ranges. This translates into more accurate results and faster surveys, thus cutting down on costs.



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EDGEYTECH 4205

The new EdgeTech 4205 Side Scan Sonar is available in either a tri-frequency configuration or motion tolerant and multi-pulse configuration. The tri-frequency version allows surveyors the option to operate any two frequencies simultaneously from the tri-frequency system. The 4205 motion tolerant configuration with multi-pulse provides surveyors the ability to operate either at faster survey speeds or in more adverse weather conditions while still obtaining high quality underwater imagery.



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EDGEYTECH 6205

The 6205, a Multi Phase Echo Sounder (MPES) produces real-time, high resolution, three dimensional (3D) maps of the seafloor while providing co-registered simultaneous dual frequency side scan imagery. Utilizing EdgeTech's Full Spectrum® technology, the 6205 exceeds IHO SP-44, NOAA and USACE specifications for feature detection and bathymetric point data uncertainty.



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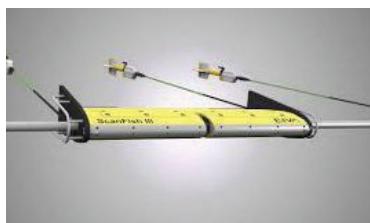
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SCANFISH KATRIA

The ScanFish Katria is an intelligent wide-sweep Remotely Operated Towed Vehicle (ROTV) solution for time-efficient magnetometer surveys. As it comes with high-sensitivity magnetometers for maximum target detection efficiency, it is an effective tool for detection of sub-bottom magnetic anomalies. (Customizable)



SCANFISH KONIA

The ScanFish Konia is a unique ROTV solution with an integrated, high-quality SVP sensor, enabling continuous data acquisition that will streamline your MBE survey operations both in terms of costs and data quality. (Customizable)



SCANFISH ROCIO

The ScanFish Rocio is a multi-purpose ROTV solution covering a wide variety of oceanographic survey disciplines. Its high payload allows you to fit several different pieces of equipment. This versatile platform will meet your specific needs and streamline your survey operations by combining all survey tasks in one flexible solution. (Customizable)



SCANFISH TROPHEUS

The ScanFish Tropheus is an ROTV especially designed for UXO detection that eliminates data uncertainty with high-quality seabed imaging. It functions as depressor of any side-scan sonar and is the optimum solution in terms of quality, efficiency and safety. (Customizable)



FORUM SUBSEA TECHNOLOGIES

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PERRY XT300



PERRY XT600



XT1200/1500

The Perry XT range of trencher vehicles are designed to meet the demanding trenching requirements of both strong soils and deep flow-line burial protection over long stretches. Capable of operating in free-fly, skid-based trenching and survey modes, these vehicles represent extremely capable, high-performance product burial solutions. (Customizable)



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INTERNATIONAL SUBMARINE ENGINEERING LTD. (ISE)

WWW.ISE.BC.CA | Sales | info@ise.bc.ca



ISE AURORA SONAR TOWFISH

The Aurora Towfish is actively stabilized using 4 independently actuating aft planes and actuated main wing capable of generating up to 50kN of downforce. It collects high resolution data at up to 12 knots, with faired or unfaired cables, down to depths of 200m while navigating in either depth or terrain follow mode. The Aurora Towfish can carry full size AUV payloads including SSS, SAS, MBES, etc., shown here with Klein 5900 and R2Sonic 2024. (Customizable)



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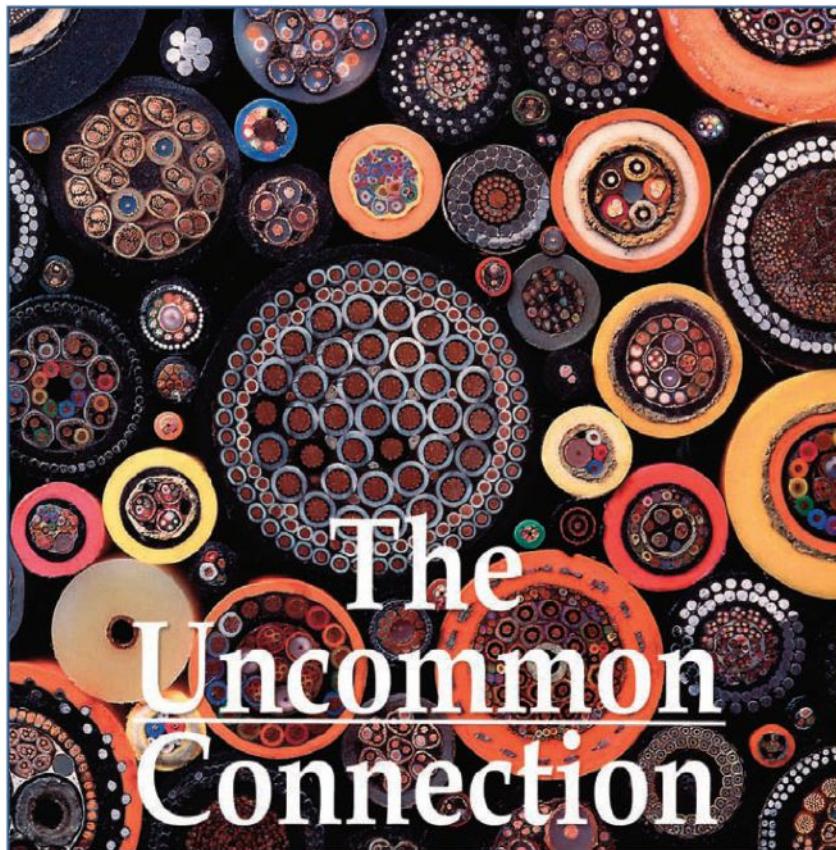
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JW FISHERS MFG.

WWW.JWFISHERS.COM

Brian Fisher | info@jwfishers.com



SBP-1 SUB BOTTOM PROFILER

Fishers SBP-1 is an economical sub bottomprofiler that shows the strata layers beneath the ocean floor as well as objects buried in the bottom.



KRAKEN SONAR SYSTEMS INC.

WWW.KRAKENROBOTICS.COM

Shauna Cofie | scofie@krakenrobotics.com



KATFISH™

KATFISH™ is an intelligent towed SAS system. This product acquires over 3 billion pixels per 3km² per hour of area coverage rate. That's 30 times more detail than conventional side scan sonar. Advanced algorithms perform thousands of adjustments per second to ensure every pixel displays data with incredible clarity. (Customizable)



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MACARTNEY

WWW.MACARTNEY.COM

Lars Jørgensen | l@macartney.com



FOCUS 2

Based on the original and successful FOCUS, the FOCUS 2 system operates in depths of up to 400m at speeds of up to 10kn with fully pre-programmable horizontal and vertical movement. The high speed, capacity and stability of FOCUS 2 enable operators to increase productivity while decreasing total project costs. (Customizable)



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MACARTNEY

WWW.MACARTNEY.COM

Lars Jørgensen | l@macartney.com



FOCUS 3

FOCUS 3 represents the third generation FOCUS vehicles in the family of ROTV systems by MacArtney. The FOCUS 3 vehicle is constructed using carbon fibre technology for the wing sections, whereas the instrumentation pods are made from anodised aluminium, allowing for operations at depths of up to 1000m. (Customizable)



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TRIAXUS

TRIAXUS is developed for highly efficient oceanographic data acquisition. TRIAXUS is able to operate at 1-350m operational envelope, speeds of up to 10kn and at vertical velocities of up to 1m/s. TRIAXUS features a strong, light-weight hydrodynamic carbon fibre hull boasting a powerful control system and a high payload capacity. (Customizable)



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MARISCOPE MEERESTECHNIK

WWW.MARISCOPE.DE

Niklas Becker | n.becker@mariscope.de



MINI OBSERVER/OBSERVER III

Able to be equipped with a vast variety of sensors and instruments. 500 mts depth rated (or more on request), Full HD cameras, extreme output LED lights, complete stainless steel frame (TIG hand welded and crystal blasted), variable payload. We specialized in one-off its kind development. Lifetime warranty. (Customizable)



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QINETIQ NORTH AMERICA

WWW.QINETIQ-NA.COM | Ken Heller | Ken.heller@qinetiq-na.com



C-TALON

Underwater derivative of the US Military fielded TALON platform. This platform is geared towards research and exploration users who are looking for an Underwater Crawler to operate in the Surf Zone, Riverine Environments or Limited-Access Harbor Areas. The platform is designed specifically for customization and tuned to customer specific needs.



SABRETOOTH (SMALL HULL CRAWLER)

Small ferro-magnetic hull crawler with semi-autonomous capabilities including obstacle avoidance and vehicle positioning. Crawling speeds from 0.3-3.0 m/min. Capable of hull inspection, surveillance or non-destructive testing.



SEAROBOTICS CORPORATION

WWW.SEAROBOTICS.COM

Don Darling | ddarling@searobotics.com



HULLBUG

Semi-autonomous hull grooming system that deploys a series of integrated sensors and magnetic drive wheels to navigate a ship's hull and disrupt the early presence of biofouling. Light brushes gently detach accumulated biofouling while a submersible suction pump removes and captures it altogether, resulting in fuel efficiency gains and cleaner waters.



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SEAROBOTICS CORPORATION

WWW.SEAROBOTICS.COM

Don Darling | ddarling@searobotics.com



TANKBUG

Underwater tank cleaning system that removes divers from dangerous situations by inspecting, cleaning, and removing heavy or dense sediment from water tanks. This detailed inspection also identifies any hidden corrosion or structural compromise, helping operators to safeguard against individual risk and costly maintenance or repairs.



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SEAVIEW SYSTEMS, INC

WWW.SEAVIEWSYSTEMS.COM

Info | info@seaviewsystems.com



SURFROVER

A battery-powered crawler for specialized applications such as route surveys, UXO surveys, deployment of a cable/pipeline tracker as well as applications in otherwise impossible surf such as active bathymetric surveys. SurfRover can be fitted with HD video, sonar and acoustic measurement systems. (Customizable)



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SMD

WWW.SMD.CO.UK

Graeme Jaques | graeme.jaques@smd.co.uk



BACKFILL PLOUGH (BP)

Sets the standard globally for pipeline stabilization and protection through backfill. Comes with a number of features to simplify and de-risk operations such as remotely variable mouldboard depth control and trench following front skids and steering. Also available with air tank buoyancy for minimum ground pressure.



TOWED & BOTTOM CRAWLING VEHICLES

SMD

WWW.SMD.CO.UK | Graeme Jaques | graeme.jaques@smd.co.uk



MULTIPASS PIPELINE V PLOUGH

Introduces further advances on the next generation AMP pipe plough by offering remotely variable multipass capability. Allows the operator to remotely adjust the depth during trenching. This, along with the advances introduced earlier on the AMP, Hi-Tow points and the active share track, make the MP the most advanced pipe trenching technology in the world. As per the AMP, 500Te trenching capability is available from only 350Te vessel pull.



CBT1100

Provides a soft to hard ground burial solution in one neat package. Fully amphibious 800kW vehicle. Equipped with a powerful chain cutter, dredge pump and jet legs. A well proven chain cutter deployment system allows post lay burial of cable up to 300mm and 4.0m MBR. (Customizable)



CBT2100

Draws on SMD's experience of track driven vehicles, trenching and cable handling subsea to provide a soft to hard ground burial solution. A fully amphibious vehicle equipped with interchangeable tooling cassettes including powerful chain cutter, dredge pump and jet legs. (Customizable)



CBT3200

Provides a soft or hard ground burial solution in one neat package. Also available as a burial tractor configured for pipeline burial. Equipped with a selection of powerful chain cutter trenching tools, dredge pumps and jet legs. Well proven chain cutter deployment systems allow pre or post-lay burial of cables up to 300mm diameter and 5.0m MBR, and pipelines up to 1.5m diameter. (Customizable)



MD3 - 160

A high-performance trenching solution for large diameter flexible umbilicals. Using patented technology the plough is designed to minimise pull force requirements and provide effective trenching capability up to 3.0m depth. Coupled with a tow winch, umbilical and LARS system, SMD are able to supply a turnkey flexible solution.



HD - 200

A high-performance trenching solution for large diameter flexible umbilicals. Using patented technology the plough is designed to minimise pull force requirements and provide effective trenching capability up to 3.0m depth. The diverless loading system allows post lay burial in deep-water. Coupled with a tow winch, umbilical and LARS SMD are able to supply a turnkey flexible solution.



HD - 300

Provides a high-performance trenching solution for large diameter flexible umbilicals. Using patented technology, the plough is designed to minimize pull force requirements and provide effective trenching capability up to 3.0m depth. The diverless loading system allows post lay burial in deepwater. Coupled with a tow winch, umbilical and LARS system, SMD are able to supply a turnkey flexible burial solution.



**QTRENCHER 400**

Uses high voltage supply to provide effective cable maintenance and other specialised tasks. Purpose designed to provide maximum jetting and thrust performance. Has reputation for reliability and ease of maintenance & has become an essential part of any cable installation vehicle suite. Turnkey cable maintenance solution including LARS and umbilical. (Customizable)

**QTRENCHER 600**

Uses high voltage supply to provide effective cable maintenance with other specialised tasks. Purpose designed for maximum jetting and thrust performance. Optimised with a single 4.1kV hydraulic power unit to achieve 600hp in a compact package. Turnkey solution including SMD designed high sea state LARS and umbilical. (Customizable)

**QTRENCHER 1000**

Provides high power trenching capability for the burial of cables, umbilical and small diameter pipes up to 3m deep. Uses variable high flow or high-pressure jetting to optimize the trenching to suit the conditions. Can also deploy a rear eductor to enhance burial of large diameter product. With its high thrust, the ROV can perform rapid post lay survey. Can also be fitted with a suite of tools for maintenance operations. (Customizable)

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**QTRENCHER 1400**

High powered free-swimming jet trencher. Optional track drive for enhanced burial capability. Optional tracked skids for bespoke tool deployment. More than 1.0 megawatt of total power. Delivers 0.75 megawatts of variable high pressure jetting power for trenching and up to 200kW of low pressure water jetting for trench backwash, eduction or trench collapse. (Customizable)

**QTRENCHER 1600**

The Q-Trencher 1600 is a high powered free-swimming jet trencher, with optional track drive for enhanced burial capability and optional tracked skids for bespoke tool deployment. With 1.2MW of total power, the trencher delivers 800kW of variable high pressure jetting power for trenching and up to 300kW of LP water jetting for trench backwash, eduction or trench collapse. (Customizable)

**QTRENCHER 2800**

The 60Te QTrencher (QT) 2800 remotely operated vehicle (ROV) is the world's most powerful free-swimming jet trencher. With more than 2 megawatts of total power, the trencher delivers 1.5 megawatts of jetting power. The complete system spread sets a new standard in severe weather deployment and operation. (Customizable)



TOWED & BOTTOM CRAWLING VEHICLES

TELEDYNE BENTHOS

WWW.TELEDYNEMARINE.COM | Dan Shropshire | benthos@teledyne.com



TTV-190 DEEP TOW

The TTV-190 is a rugged, 6000m rated platform for deep water search, survey, and other data collection operations. The Deep Tow vehicle is configurable to accommodate customer specified sensors including side scan sonars, multi-beam sonars, and sub bottom profilers. Sensor systems can also be recommended by Teledyne Benthos. (Customizable)



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WWW.TELEDYNEMARINE.COM/SEABOTIX | Jamie Carrig | jamie.carrig@teledyne.com



VLBC - VECTORED LITTLE BENTHIC CRAWLER

Unmatched in versatility, the SeaBotix VLBC is a revolutionary approach to ship hull and infrastructure inspection for a wide range of military and commercial applications. With no magnets or thrusters (churning the water, impeding visibility), SeaBotix Crawlers employ the patented Vortex Generator to attach to any relatively flat, hard surface with up to 22+ kgf (48 lbf) of attraction force. With no relative motion between the inspection surface and the sensors, output data is the highest quality possible and operator fatigue is greatly reduced. (Customizable)



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Whatever the mission...

Okeanus designs and manufactures mission-critical ocean equipment for commercial and government agencies throughout the world. We harness breakthrough Science and Technology to equip clients with the tools and trusted support they need for the rigors of ocean exploration.

Our comprehensive product portfolio—from customized deck equipment, including winches, LARS and A-Frames, to our extensive range of underwater survey and sampling equipment—is available for purchase or rent, and rapid deployment.

Whatever your mission, Okeanus has turn-key solutions to make it a success.

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» BAE Systems Riptide 9" Class UUV during at sea testing.
(Photo credit: BAE Systems)



MAKING "SENSE" IN THE MARITIME DOMAIN

Amid today's geo-political climate, timely and accurate Intelligence, Surveillance and Reconnaissance (ISR) information is paramount, but vast distances, dispersed activities and limited high-bandwidth communications make gathering marine ISR a challenge. Uncrewed platforms are widely regarded as the most effective solution, but there is little consensus on the optimal Concepts of Operation (CONOPS).

BAE Systems' R&D program has set out to validate physical attributes like *Persistence, Endurance, Reliability*, alongside operational attributes like *Sensing, Processing and Communications* from a platform and mission systems perspective, with a focus on "sense making" from gathered information.

ESSENTIAL INFORMATION

"Essential Elements of Information" (EEI) refers to info needed to prioritize intelligence requirements. Access to information in contested areas is achievable via UUVs. Due to the distances involved and the limited number of units, a mix of multi-modal sensors is most effective means of covering the acoustic, RF and optical environments. EEI's change over time and the UUV platform requires both short-term mission level sensor planning and autonomy as well as long term platform sensor and geographic (spatial) placement planning. Making sense of observations and communicating that to a Mission Operation Center (MOC) drives the requirements for *processing* and *communications* subsystems. Efficient onboard processing is critical given the limited high-bandwidth communications, as are sensors for geo-positioning, timing and some means of Automated Target Recognition (ATR).

A LAYERED NETWORK OF UUVs

Multiple UUV platforms with overlapping sensor fields are necessary to cover a target area, with forward-based sensing elements acting as nodes in a graph or input layer of a neural network. The tasks of these sensing elements may be altered (identifying *who, where, when*) by the MOC or autonomously using a middle layer of UUV platforms. This middle layer becomes important as its platforms are physically distant from the forward-based sensor nodes but have the time advantage to maneuver to add additional observations and data to the network. Operational priorities depend on the layer (UUV) and so payloads are configured accordingly.

ACTIVITY BASED INTELLIGENCE

As data is collected, Pattern of Life (PoL) analysis is performed at the MOC, translating single-vehicle detections and activities into escalating threat behaviors and postures. For example, drug manufacturing, weapons smuggling, troop movements, and oil smuggling all have different associated precursor activities. A self-annealing autonomous UUV network (and PoL) can identify activity and adjust the network to confirm the behavior. The use of artificial intelligence/machine learning to discover patterns of behavior through widely dispersed (temporally and spatially) activities is essential to future development.

This framework of Activity Based Intelligence—and autonomous response—will significantly reduce the operational workload at the MOC.

ENABLING TRUE UUV AUTONOMY

The end state is to deploy a network of UUV platforms that autonomously adapt their behavior to satisfy a mission role with minimal human intervention. True autonomy will require forward-based platforms to survive (maintain situational awareness and ability to react to perceived threats) and operate reliably through an effective means of energy regeneration. Communications may be conducted asynchronously or within a window of availability, however all nodes in the system need the most recent copy of tasking for operations to run automatically.

BAE Systems is currently conducting research in Maritime System of Systems architectures. In addition to being a platform manufacturer we are a mission payload provider with ongoing research in wideband apertures, acoustic, optical and RF sensing, UMAA compliant autonomy systems, tracking and fusion, and AI/ML algorithm development for maritime applications. BAE Systems' layered sensing networks help achieve persistent, reliable, and intelligent situational awareness in contested environments.

For more information, visit WWW.BAESYSTEMS.COM

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AQUABOTIX

WWW.AQUABOTIX.COM

Dawn Doraz | dawn@aquabotix.com



INTEGRA

The Aquabotix Integra™ Hybrid AUV/ROV revolutionizes underwater vehicle missions. Integra searches wide areas using AUV mode and conducts detailed inspections using ROV mode. Switching to ROV mode is simple; attach the tether to remotely control the vehicle's five degrees freedom of motion. When running the vehicle in autonomous operation, all mission planning is completed in an intuitive web-based application.



ATLAS ELEKTRONIK

WWW.UK.ATLAS-ELEKTRONIK.COM

Tommy Kaltoven | tommy.kaltoven@atlas-elektronik.com



SEACAT

SeaCat is a hybrid AUV/Rov System with a FOC Link of 1000m. It can be supplemented by a multitude of sensors, located in a flooded bow section. The SwapHead - is exchangeable in the field within minutes and allows a wide range of high demanding missions that otherwise would require different types of vehicles.



BAE SYSTEMS

WWW.BAESYSTEMS.COM/RIPTIDE | Paco Santana | riptide@baesystems.com



MICRO-UUV

BAE Systems' Riptide family of autonomous undersea vehicles provide a sustainable and scalable platform to advance technology development and undersea operations. Our mission agnostic and modular system design enables easy modification, while multiple energy source options allow for maximum flexibility for endurance, safety, shipping, and mission optimization.



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BOSTON ENGINEERING

WWW.BOSTON-ENGINEERING.COM

Alex Wallace | info@boston-engineering.com



BIOSWIMMER UUV

The BIOSwimmer UUV applies the dynamics of biological fish to advance underwater search, inspection, and to operate in constricted areas inaccessible by other vehicles. The BIOSwimmer addresses maritime capability gaps in littoral waters by increasing data collection in confined areas and using multi-payload support to perform a breadth of missions. (Customizable)



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ECA GROUP

WWW.ECAGROUP.COM | Anthony Penn | sales.robots@ecagroup.com



A9 (A9-M / A9-E)

A man portable AUV for environmental monitoring and survey as well as surveillance for Defense and Security applications. This AUV is easy to deploy and operate from shore or any other platform. Dedicated data management software for civil and military missions are available.



CELLULA ROBOTICS LTD.

WWW.CELLULA.COM/ALL-AUV-PRODUCTS | Adrian Woodroffe | info@cellula.com



IMOTUS

Imotus is a hovering autonomous underwater vehicle (HAUV) with six degrees of freedom for inspection & data acquisition missions in confined and open water environments. Imotus uses scanning sonars and proprietary SLAM algorithms to provide navigational control and spatially referenced survey data. (Customizable)



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SOLUS-LR AUV

The Solus-LR Autonomous Underwater Vehicle (AUV) is a long range, hydrogen fuel-cell powered autonomous underwater vehicle, capable of port to port missions and 2000km ranges. Its suction anchor and payload capacity enables applications including surface and subsurface surveillance (acoustic or magnetic), traditional geophysical surveys, and search and survey. (Customizable)



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A27 (A27-E / A27-M)

Long endurance modular and flexible platform for high resolution 3D survey. A27-M with reduced acoustic signature for Mine Countermeasures (MCM) missions, A27-E for civil applications.



A18 (A18D / A18-E)

Deep water modular and flexible mid-size autonomous underwater vehicle (AUV) for high resolution 3D survey. Thanks to its accurate navigation system and its SAS sonar, this AUV brings you the highest quality data. A dedicated Launch & Recovery System is available as well as a dedicated software suite for data management. ECA Group provides AUV Services based on A18D.



EDGELAB SRL

WWW.EDGE LAB.EU | Lavinio Gualdesi | edgelab@edgelab.eu

**U-MAPPER**

Smart, low-cost, heavy-duty, cooperative swarm navigation, modular approach for easy integration of AUV size payloads, customized, high quality maps from better image reconstruction methods and improved location accuracy of AUVs, fast and low cost horizontal surveys of large areas with multimodal sensing, monitor changes via back-to-the-site missions, hybrid usage ROV/AUV.

**U-TRACKER**

Designed with modularity common criteria to make simple and immediate testing of new sets of sensors. Connections between various models realized with a simple, interchangeable mechanical interface system. Payload is customizable as with Webcam, CTD, Side Scan Sonar, other AUV-class sensors. High maneuverability with 2 azimuthal + 2 lateral ducted propellers.

**GENERAL DYNAMICS MISSION SYSTEMS - BLUEFIN ROBOTICS PRODUCTS**

WWW.GDMISSIONSYSTEMS.COM

Jonathan Lesser | Jonathan.Lesser@gd-ms.com

**BLUEFIN-12 UNMANNED UNDERWATER VEHICLE (UUV)**

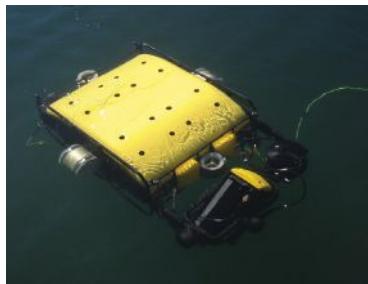
Advanced, Mission-Ready and Modular. The Bluefin™-12 is a lightweight medium-class UUV designed to deliver mission critical data and complete high-consequence and changing missions. Built with robust core capabilities, increased modularity, embedded intelligence, data processing, and extended operational range, the Bluefin-12 is ready for today's mission and prepared for tomorrow's threats. (Customizable)



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GENERAL DYNAMICS MISSION SYSTEMS - BLUEFIN ROBOTICS PRODUCTS

WWW.GDMISSIONSYSTEMS.COM | Jonathan Lesser | Jonathan.Lesser@gd-ms.com

**BLUEFIN-HAUV**

Bluefin Robotics' Hovering Autonomous Underwater Vehicle (HAUV) is a two-man-portable hovering AUV designed for the inspection of submerged structures and ship hulls. Equipped with high-resolution imaging sonar and integrated sensors and thrusters to maintain stability and distance, HAUV can survey ship hulls and other structures with minimal prior knowledge. (Customizable)



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**BLUEFIN™-21**

The Bluefin-21 is a highly modular autonomous underwater vehicle able to carry multiple sensors and payloads at once. It boasts a high energy capacity that enables extended operations even at the greatest depths. The Bluefin-21 has immense capability but is also flexible enough to operate from various ships of opportunity worldwide. (Customizable)



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**BLUEFIN™-9**

The General Dynamics Mission Systems Bluefin™-9 autonomous unmanned underwater vehicle provides unmatched high-resolution data, leading navigation, data processing and mission turnaround time in a two-man portable UUV. Featuring a full carbon fiber body, a carefully selected and smartly integrated suite of sensors, latest generation communications and navigational components, and new onboard processing capabilities.



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GRAAL TECH S.R.L

WWW.GRAALTECH.IT

Andrea Caffaz | andrea.caffaz@graaltech.it



FOLAGA

Folaga is characterized by a very high maneuverability even at low speed, including hovering capabilities, that may be exploited in several inspection and patrolling tasks. The main feature of the eFolaga is the possibility of mounting in the easiest possible way different kinds of mission payloads.



HUNTINGTON INGALLS INDUSTRIES

WWW.HYDROID.COM | Tom Reynolds | sales@hydroid.com



REMUS 100

The REMUS 100 is one of the most prolific small class AUVs with over 400 sold worldwide. This two-man portable, low logistics AUV is outfitted with various sensors and payloads to collect data and imagery in the ocean. (Customizable)



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REMUS 300

The new REMUS 300 is a small class, modular AUV that provides maximum payload flexibility while remaining two-man portable. This 300 meter depth rated, open architecture AUV offers field-swappable energy options allowing up to 29 hour mission duration. (Customizable)



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Optical AUV Payloads that enable confident decisions and deeper understanding.

Expand your underwater vehicle's capability with our powerful underwater laser scanners and imaging payloads. High-resolution 3D laser data and true-colour stills images allow you to see the depths like we see the surface.

VOYIS

Formerly 2G Robotics

www.voyis.com

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REMUS 600

The REMUS 600 is a medium class, modular AUV that can carry advanced sensors and payloads. This 600 meter depth rated AUV supports the growing need for operations requiring endurance, increased payload capacity and greater operating depth. (Customizable)



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**REMUS 6000**

The New Generation REMUS 6000 AUV boasts the same proven software and electronic subsystems found in our highly successful REMUS 100 AUV, with a depth rating, endurance and payload that allows for autonomous operations in up to 6000 meters of water. (Customizable)



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HYDROMEA

WWW.HYDROMEA.COM

Alexander Bahr | alexander.bahr@hydromea.com

**VERTEX**

The Hydromea VERTEX AUV System is a fleet of small, portable and highly integrated autonomous underwater vehicles for water quality measurements, specifically designed to operate in groups of 10 or more vehicles. (Customizable)

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INDEPENDENT ROBOTICS

WWW.INDEPENDENTROBOTICS.COM

info@independentrobotics.com

**AQUA 2**

The Aqua2 is an amphibious hexapod robot capable of propelling itself on land or through the water. The use of six independently controlled thrusting surfaces makes the unit very maneuverable and produces minimal disturbance to the surrounding environment. The Aqua2 is programmable and configurable, can be deployed for tethered or untethered use, and is an ideal platform for submersible robotics projects, environmental monitoring, and propulsion research. (Customizable)

**INTERNATIONAL SUBMARINE ENGINEERING LTD. (ISE)**

WWW.ISE.BC.CA | info@ise.bc.ca

**ISE EXPLORER AUV**

The ISE EXPLORER Autonomous Underwater Vehicle (AUV) collects IHO compliant data at a rate of 750 to 1100 km per week of ship time with all sensors operating and is the most modular and maneuverable AUV in the world today. The modular design of the EXPLORER enables it to carry multiple payloads in its spacious, swappable, and customisable payload section. The Explorer is available in 3000m, 6000m and other custom depth ratings. (Customizable)



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IQUA ROBOTICS

WWW.IQUAROBOTICS.COM

Joseta Roca | joseta.roca@iquarobotics.com

**GIRONA 500 AUV**

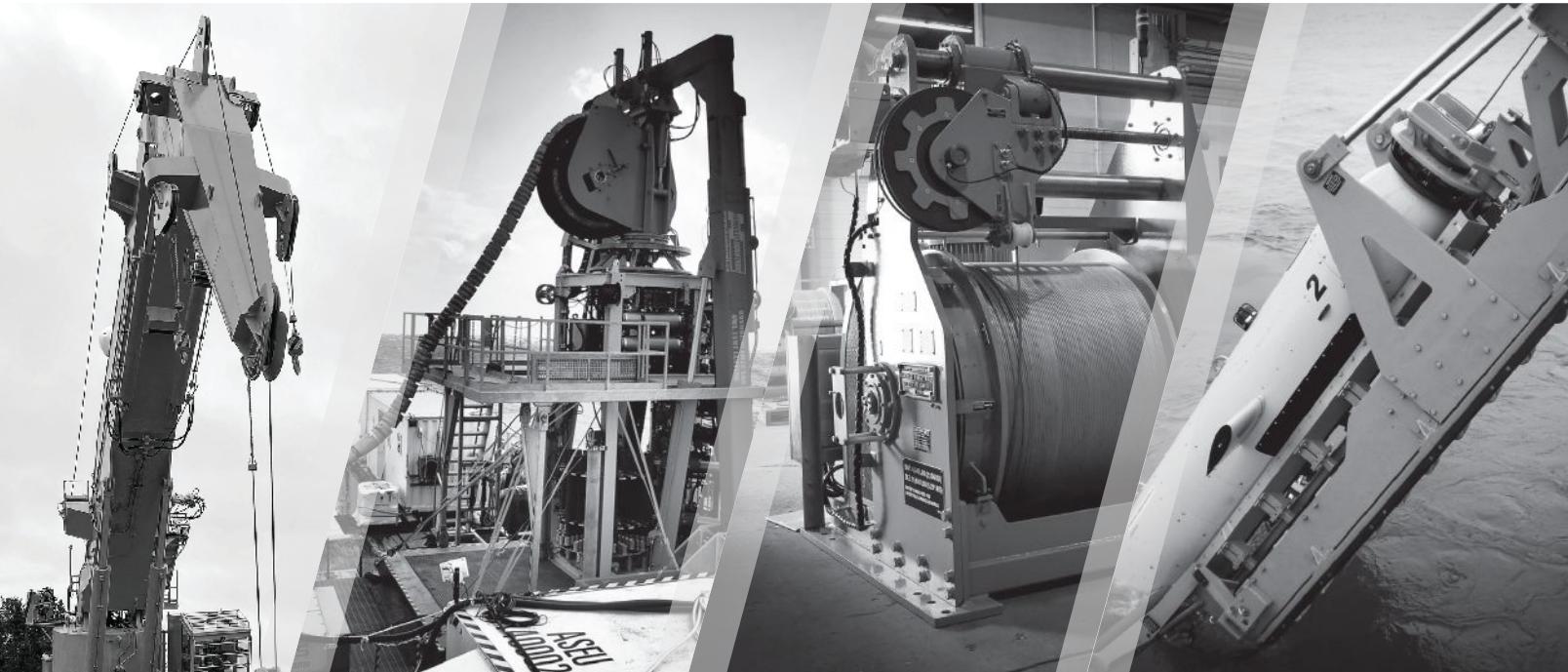
The Girona 500 is a reconfigurable autonomous underwater vehicle (AUV) designed for a maximum operating depth of up to 500 m. The vehicle is composed of an aluminium frame which supports three torpedo-shaped hulls of 0.3 m in diameter and 1.5 m in length as well as other elements like the thrusters. This design offers a good hydrodynamic performance and a large space for housing the equipments while maintaining a compact size which allows to operate the vehicle from small boats. The most remarkable characteristic of the Girona 500 is its capacity to reconfigure for different tasks. (Customizable)



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IQUA ROBOTICS

WWW.IQUAROBOTICS.COM | Joseta Roca | joseta.roca@iquarobotics.com

**SPARUS II AUV**

SPARUS II AUV is a lightweight hovering vehicle with mission-specific payload area and efficient hydrodynamics for long autonomy in shallow water (200 meters). It combines torpedo-shape performance with hovering capability. It is easy to deploy and to operate. The payload area can be customized by the end user and it uses an open software architecture, based on ROS, for mission programming. Its flexibility, easy operation and openness makes the SPARUS II AUV a multipurpose platform that can adapt to industrial, scientific and academic applications. (Customizable)



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KRAKEN ROBOTIC SYSTEMS INC.

WWW.KRAKENROBOTICS.COM
Shauna Cotie | scotie@krakenrobotics.com

**THUNDERFISH®**

The Kraken ThunderFish® is a highly advanced, 6000 meter rated, Hovering Autonomous Underwater Vehicle (H-AUV). ThunderFish® Alpha is Kraken's Mid-Sized Autonomous Underwater Vehicle and the first platform in the Thunderfish series of vehicles. Versatile payload options and a modular battery system allows the ThunderFish® Alpha to be adaptable to many different AUV missions of varying depths, duration, and applications. (Customizable)



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KONGSBERG MARITIME

WWW.KM.KONGSBERG.COM | Richard Mills | richard.mills@kongsberg.com

**HUGIN**

HUGIN is the most commercially successful AUV in the world, having completed over 600,000 line kilometres of paid survey. Proven by operations in harsh environments. Proven by operations in harsh open ocean conditions from Africa to South America. HUGIN is the most robust AUV platform providing IHO standard data quality. (Customizable)

**MUNIN 600**

MUNIN retains all of the processing capability from HUGIN, packaged in a low-logistics vehicle. Easy to ship, mobilize and operate, MUNIN is capable of more than any other mid-size AUV. (Customizable)

**L3HARRIS**

WWW.L3HARRIS.COM
Jim Kirk | IVER.sales@L3Harris.com

**IVER3**

IVER3 is the first commercially developed family of low-cost AUVs. IVER3 is single man-portable and is ideal for coastal applications such as sensor development, general survey work, sub-surface security, research and environmental monitoring. IVER3 benefits from 15 years of experience in building reliable systems with well over 300 AUVs shipped. (Customizable)



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L3HARRIS

WWW.L3HARRIS.COM | Jim Kirk | IVER.sales@L3Harris.com



IVER3 EP

Iver3 EP open system AUVs incorporate all standard Iver3 features along with options for added forward payload sections and an intuitive API for remote helm applications. Iver3 EP is an open system where the users can install their hardware and make software extensions to the vehicle without a custom design. (Customizable)



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IVER4 580

The Iver4 580 offers users a 200-meter depth survey system featuring hot-swappable battery sections that can be changed in the field without any special tools. The Iver4 580 offers users a 200-meter depth survey system featuring hot-swappable battery sections that can be changed in the field without any special tools. (Customizable)



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L3HARRIS

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WWW.L3HARRIS.COM
Jim Kirk | IVER.sales@L3Harris.com



IVER4 900

The Iver4 900 UUV offers users a 300-meter workhorse system featuring extended duration capability of 20+ hour run times for long ingress/egress missions. The Iver4 900 carries the highest performing navigation and imaging sensors available, while using swappable battery chemistries that meet flexible mission needs. (Customizable)



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OCEAN AERO

WWW.OCEANAERO.COM/VEHICLES
Neil Trenaman | ntrenaman@oceanaero.us



SURFACE AND SUBSURFACE OCEAN DRONES--SCOUT, DISCOVERY, NAVIGATOR

Ocean Aero is the creator, manufacturer, and seller of the world's first autonomous, surface and subsurface ocean drones. Wind and solar powered, they are a perfect platform for extended ocean observation and data collection, such as intelligence and surveillance, marine mammal tracking, and Met-Ocean data gathering. (Customizable)



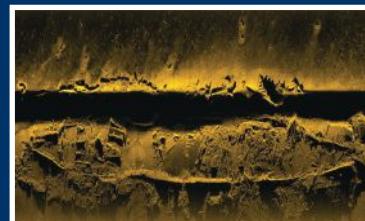
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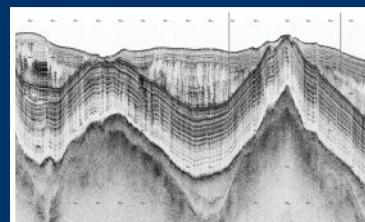
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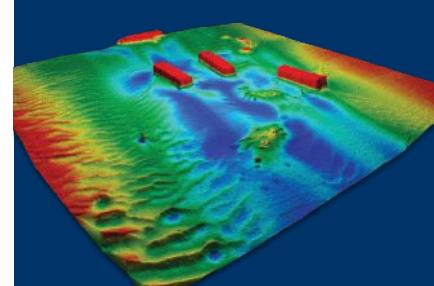
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OCEANSCAN-MST LDA

WWW.OCEANSCAN-MST.COM

info@oceanscan-mst.com



LAUV

Lightweight AUV targeted at innovative applications. The LAUV is a rugged, cost-effective, Lightweight Autonomous Underwater Vehicle, designed to be simple to deploy, operate, and recover by one person. The open source software, makes easy the integration of new payload and algorithms. The LAUV is used worldwide by Navies and R&D institutions. (Customizable)



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QINETIQ NORTH AMERICA

WWW.QINETIQ-NA.COM

Knut Streilien | knut.streilien@qinetiq-na.com



SEA SCOUT

Sea Scout™ is a general purpose UUV that can be deployed with a standard A-size sonobuoy launch container. It can have up to two optional payload sensors.



RTSYS

WWW.RTSYS.EU | Sales | enquiries@rtsys.fr



COMET 300

COMET 300 is a cost-effective operational AUV with real-time positioning and acoustic communication system, designed to meet the current needs of marine research and industry. It can be used in swarm mode to communicate with others drones to position themselves and realize joint missions. Furthermore, RTsys has developed a module that allows drones to dock into a station. (Customizable)



NEMOSENS

NemoSens is a micro-AUV with an open Linux architecture which can embark various payloads such as CTD probe, echosounder or side-scan sonar. Light and portable, it is less than one meter long and can last up to 8 hours at 4 knots during mission time. It can also navigate in swarm and reposition itself thanks to acoustic communications. (Customizable)



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SAAB SEA EYE

WWW.SaabSeaye.com

James Douglas | solutions@saabseaye.com



SEA EYE SABERTOOTH

The Sabertooth is a hybrid AUV / ROV capable of working in deep water either as an autonomous vehicle or via a tether. Its power, tether-free operation and 360° hovering manoeuvrability make the Sabertooth an ideal option for autonomous inspection or maintenance and repair tasks as well as offshore survey work. (Customizable)



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STRATEGIC ROBOTIC SYSTEMS

WWW.SRSFUSION.COM

Jesse Rodocker | jesse@srsfusion.com



FUSION-HYBRID

FUSION The FUSION is a multipurpose UUV with both AUV and ROV functionality. Complete with a full suite of sensors including side scan, forward looking multi-beam, HD video, DVL and USBL. The highly intuitive control system coupled with the compact footprint and ability to conduct tethered or untethered missions make the FUSION a versatile system. (Customizable)



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TELEDYNE GAVIA

WWW.TELEDYNEMARINE.COM

Arnar Steingrimsson | gavia_sales@teledyne.com



GAVIA AUV

THE GAVIA AUTONOMOUS UNDERWATER VEHICLE (AUV) is a self-contained, low logistics, modular survey platform capable of delivering high quality data while operating from vessels of opportunity or from the shore. (Customizable)



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TELEDYNE GAVIA

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Arnar Steingrimsson | gavia_sales@teledyne.com



SEARAPTOR AUV

The SEARAPTOR™ is a survey grade deep water autonomous underwater vehicle (AUV) designed to operate at abyssal depths. A wide range of sensors allow the SeaRaptor™ to complete several types of missions including: broad area search with side-scan sonar, hydrographic survey with multibeam and sub bottom profiler, and high resolution inspection survey with camera and acoustic sonar. (Customizable)



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THE BOEING COMPANY

WWW.BOEING.COM



ECHO RANGER AUTONOMOUS UNMANNED UNDERWATER VEHICLE

New sensor and system payloads are rapidly being introduced to UUVs. The Boeing Solution to testing these proposed systems requires a vehicle with ample payload capacity and energy. The Echo Ranger is uniquely suited to this task with proven autonomy, generous external payload volume, and available energy capacity.



YSI INTEGRATED

WWW.YSI.COM

ysi.systems@xyleminc.com



13XO ECOMAPPER AUV

The Iver3-580 options include Side Scan, Bathymetric, Environmental Sensors, User 2nd CPU, Camera, Iridium, Modem and Handheld Remote.



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RBR ENABLES INNOVATION THROUGH RESPONSIVE OEM PARTNERSHIPS

RBR creates oceanographic instruments to measure the blue planet. From the ocean abyss to the polar ice cap, RBR sensors track key water parameters such as temperature, depth, salinity, dissolved gases, turbidity, fluorescence, pH, and many others. As a globally recognized developer of sensors, loggers, integrated systems, and customized OEM products, RBR has collaborated with a large number of unmanned vehicle developers to enable new measurement opportunities and applications. The dedicated OEM technical team at RBR develops responsive partnerships with vehicle manufacturers and system integrators by listening carefully to the challenges and bringing electronics, mechanical, and scientific expertise to the solution.

The RBR sensors, loggers, and systems are known for providing the highest accuracy measurements and using very little power. The high accuracy measurements are a requirement for operational integrity, military decision making, global ocean research studies, atmospheric and climate modelling, and

long-term monitoring programs. The low power operation enables much longer and more cost-effective missions on the modern fleet of low-power floats, gliders, ASVs and AUVs. RBR loggers act as a 'sensor hub' to control, communicate, and synchronize a large suite of sensors to improve operational efficiency and reduce redundant integration efforts.

The Argo-approved RBRargo³ CTD has been integrated with nearly every autonomous float manufacturer. The low-power measurement reduces the cost-per-profile while allowing the floats to profile more rapidly for high-resolution operations or measure longer for long-term monitoring programs. The RBRargo³ platform has enabled biogeochemical researchers to easily order floats with other integrated sensors, such as the RBRcoda T. ODO (temperature and dissolved oxygen sensor).

The RBRbrevio³ CTD and RBR/legato³ CTD have been designed specifically to meet the needs of small ocean gliders and AUVs to measure sound velocity,

density, and salinity. The RBR CTD uses a rugged inductive conductivity cell that is not affected by surface contaminants or freezing conditions. The CFD-optimized, low aspect ratio conductivity cell is self-flushing and does not require a pump. The completely silent operation is ideal for low-power, stealth missions, and passive acoustic listening.

Responsive partnership collaborations with some of the top unmanned vehicle developers in the world have led to optimally integrated CTDs optical dissolved oxygen, fluorometers, transmissometers to enable long-term, high-accuracy, and low-drift measurements for long-term observations. These unmanned vehicles fitted with the RBR sensor suite have been in use by oceanographic research teams around the world.

For more information visit
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» RBRlegato³ CTD mounted flush on glider hull.



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**THE DATAMARAN**

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**ARCIMS**

ARCIMS provides a toolbox of capabilities for multi-influence minesweeping, mine hunting and other operations. It enables manned or fully autonomous mission module operation including launch and recovery of off-board systems. Using "in-theatre" proven technology, ARCIMS enables the operator to counter a wide range of threats in a flexible and affordable package.



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PHANTOM® H-3000

The Phantom® H-3000 USV is a powerful, 3.0m, remotely controlled, battery-powered, catamaran-style unmanned surface vehicle designed and manufactured by Deep Ocean Engineering to conduct measurements of currents, bathymetry, discharge and surveys in a variety of environments. (Customizable)



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PHANTOM® I-1650 USV

The Phantom® I-1650 USV is a powerful, 1.65m, remotely controlled, battery-powered unmanned surface vessel designed and manufactured by Deep Ocean Engineering to conduct measurements of currents, bathymetry and discharge with ADCPs. (Customizable)



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PHANTOM® H-1750

The Phantom® H-1750 USV is a powerful, 1.75m, remotely controlled, battery-powered, catamaran-style unmanned surface vehicle designed and manufactured by Deep Ocean Engineering to conduct measurements of currents, bathymetry, discharge and surveys in a variety of environments. The advanced technology of the Phantom® H-1750 USV can be equipped with GPS, depth sounder, sonar and a variety of sensors. (Customizable)



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CALYPSO

The Unmanned Survey Platform (USP) Calypso is an inflatable, full autonomous surface vehicle that can carry a wide range of sensors for hydrographic and environmental surveys.



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DSTL

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Ian Campbell | ISCCAMPBELL@mail.dstl.gov.uk



MAST-13

MAST-13 is a USV system within the Maritime Autonomy Surface Testbed (MAST) project. Based on a 13m long platform, it serves as a test platform supporting the development, test & evaluation of new algorithms, sensors, payloads and novel concepts operation for the Royal Navy. Dstl welcomes collaboration with other organisations. (Customizable)



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ECA GROUP

WWW. ECAGROUP.COM | Anthony Penn | sales. robotics@ecagroup.com

**INSPECTOR 90**

The USV Inspector 90 is a multipurpose drone platform based on hydrojet propulsion, able to be operated in autonomous mode, remote control or onboard steering. Its performances and its accuracy make it efficient in protection missions, recurrent operations, mine warfare activities and Rapid Environment Assessment. Its open design permits to deploy a large range of payloads.

**INSPECTOR 120**

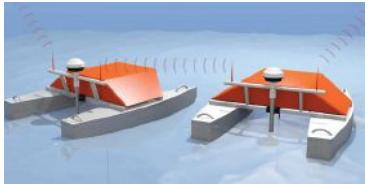
The USV INSPECTOR 120 is a high reliable multipurpose naval platform. Based on a sea proven hull shape it is designed for very demanding operations in various sea state conditions. The performances of its electronics and its navigation accuracy make it compliant with manned, remote controlled and fully autonomous coastal and open sea maritime missions such as infrastructure protection, mine warfare or rapid environmental assessment.

**INSPECTOR 125**

The INSPECTOR 125 is a "carrier USV" capable of transporting and deploying payloads formerly reserved for larger manned vessels. It is capable of launching and recovering the A18 AUV, the T18 towed sonar and the SEASCAN identification and K-STER neutralization robots as well as towing a minesweeping system. The INSPECTOR 125 is also equipped with a mine and obstacle avoidance sonar (MOAS) with a mine detection and classification performance never before achieved.

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SONOBOT USV offers a usable platform for planning and executing a hydrographic survey, delivering accurate geo-referenced bathymetric measurements and high-quality imagery with minimum transport, launch and recovery efforts.



FUGRO

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Hugh Parker | h.parker@fugro.com



FUGRO AUTONOMOUS SURVEYOR 900 (FAS900)

The Autonomous Surveyor 900 class are next generation autonomous survey vessels jointly developed by Fugro and L3 Technologies Unmanned Maritime Systems. These fit-for-purpose Unmanned Surface Vessels (USVs) are designed for medium-to-large-scale hydrographic survey applications. (Customizable)



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HR WALLINGFORD

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Peter Watchorn | P.Watchorn@hrwallingford.com



ARCBOAT

The ARCboat is a remote controlled boat used to collect river and estuarine data including flow, depth and suspended sediment concentrations. It was developed in partnership with end users to meet their exact needs. The boat can carry a variety of Acoustic Doppler Current Profilers (ADCP) and other instruments. (Customizable)



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GPA SEABOTS

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Jaume Viñola | j.vinola@gpaseabots.com



SB 100 PRO

The SB 100 PRO is an Unmanned Surface Vehicle (USV) designed to operate in environments such as harbours, marinas, reservoirs, mining lakes, rivers, coastal strip, ponds... in short, calm waters. Its special design makes it the most versatile USV on the market, capable of integrating almost any type of marine instrumentation thanks to its customised Blackbox, Ground Station and tripod, modern remote controller, frontal camera with live image among others. (Customizable)



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H2O ROBOTICS

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H2OMNI-X

H2Omni-X is autonomous unmanned surface platform specialized for seafloor and surface surveying, mapping and inspection. Due to its modular and clever design it can easily be operated by a single person. This means logistics and deployment are simpler than with any other similar vehicle! By using different sensors on board or configuration options, the platform can be modified for a new mission in under an hour!



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**ARCBOAT LITE**

The ARCboat Lite is optimised to carry out bathymetric and river current surveys in lower flow environments. With a robust, lightweight hull, it has been designed for use by a single person. It can reach more of a survey site than previously possible, thanks to high manoeuvrability and shallow draft. (Customizable)



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HYDRONALIXWWW.HYDRONALIX.COM | Sales | info@hydronalix.com**NIX**

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IN NATURE ROBOTICS LTD.WWW.INNATUREROBOTICS.COMMurray Lowery-Simpson
murray@innaturerobotics.com**AMOS**

AMOS (Aquatic Mini Observation System) is an autonomous, solar-powered airboat used for water quality monitoring and surveying applications. It is intended for long-term deployments in inland or coastal regions, potentially in shallow water with significant amounts of vegetation. (Customizable)



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INTERNATIONAL SUBMARINE ENGINEERING LTD (ISE)WWW.ISE.BC.CA | info@ise.bc.ca**DORADO AND DOLPHIN USV**

The Dorado USV, and its smaller predecessor Dolphin, are actively stabilized semi-submersible USVs for MCM, route survey, and AUV supervision operations. This platform is highly stable even in extreme sea states and is capable of operating in both piloted and fully autonomous modes with long standoff. The Dorado is equipped with a keel winch and tow cable up to 400m, and a dock for a towfish such as the ISE Aurora. Dorado can survey and tow at up to 12 knots due to its powerful diesel engine. (Customizable)



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IXBLUE

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Guillaume Eudeline | guillaume.eudeline@ixblue.com



DRIX

DriX has been operating with major Energy and Survey companies (operators and contractors) for over a year. DriX can conduct operations with a reduced crew. Fitted with an iXblue autopilot, a Collision Avoidance System and HSE compliant, it can operate on windfarms or within rigs 500 yards exclusion zones. Its endurance ranges from 24 hours at 14 knots (top speed), to 10 days at 4 knots. Its highly hydrodynamic shape allows DriX to conduct surveys up to sea state 5. Its Launch&Recovery System (DDS), fully automatic, allows for swift and safe deployments. (Customizable)



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L3HARRIS

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James Cowles | James.Cowles@L3Harris.com



C-CAT 3

The C-Cat 3 is a robust and easy to use ASV ideally suited to shallow water operations in inshore and coastal environments. The vehicle has a manually deployable keel and is capable of housing multiple standard sensors such as a USBL and MBES. (Customizable)



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C-WORKER 4

The C-Worker 4 is a robust and capable ASV ideally suited to inshore and coastal survey. C-Worker 4 is a stable platform with a large payload capacity. Its 48 hour endurance and efficient fuel consumption of less than 2.5 litres of diesel an hour make it an ideal replacement for traditional survey vessels. (Customizable)



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C-WORKER 5

The C-Worker 5 is the ideal solution to increasing survey coverage in limited timeframes. A proven offshore survey "force-multiplier", the vehicle can operate for up to 7 days at survey speeds up to 7 knots. (Customizable)



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C-WORKER 7

The C-Worker 7 is a robust, offshore work-class ASV. Ideally suited for inspection and positioning applications, C-Worker 7 can negate the need for ships on station or seabed anchoring. Its 2.5m x 1m moon pool allows for easy integration of standard or custom payloads via an interchangeable frame. (Customizable)



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C-TARGET 6

C-Targets are a range of lightweight, easily deployed, highly manoeuvrable marine targets used for naval gunnery training, weapons testing and ship command and control assessments. C-Target 6 is a high-speed vehicle capable of acting as a direct fire target or as a tow boat for inflatable targets. (Customizable)



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**C-TARGET 9**

C-Targets are a range of lightweight, easily deployed, highly manoeuvrable marine targets used for naval gunnery training, weapons testing and ship command and control assessments. C-Target 9 is a high-speed vehicle capable of acting as a direct fire target or as a tow boat for inflatable targets. (Customizable)



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**C-TARGET 13**

C-Targets are a range of lightweight, easily deployed, highly manoeuvrable marine targets used for naval gunnery training, weapons testing and ship command and control assessments. C-Target 13 is a high-speed vehicle capable of acting as a direct fire target or as a tow boat for inflatable targets. (Customizable)



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Sarah Zweng | sarah.zweng@liquid-robotics.com

**WAVE GLIDER**

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**RSV**

The RSV is a reliable solution able to carry out remote missions, with up to 48h endurance. It can be equipped with multiple sensors and ROV for: SURVEY - detection, geophysical survey, subsea works monitoring. SURVEILLANCE/SECURITY - inspection, data acquisition in hostile environment. Main specifications: Long range control, real time data transfer up to 20km, obstacle avoidance. Models: from 2,50m to 5,20m length. (Customizable)



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MARINE TECH SAS

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RSV DOLPHIN

The RSV Dolphin is a compact USV, dedicated to marine survey and site surveillance. Composed of 3 modules of 30 kg each (control command and electronic, hull, engines), the RSV Dolphin is easy to transport and deploy, with 6 hours endurance and up to 10 knots speed. (Customizable)



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RSV SEA OBSERVER

The RSV Sea Observer is the first USV capable of deploying inspection and work class ROV for offshore operations, such as subsea monitoring, inspection, etc. It can be equipped with MBES, SSS, SBES, etc. for marine survey. A compact version of the RSV Sea Observer is also made available. (Customizable)



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RSV ORCA

The RSV Orca is designed for open sea marine survey and surveillance missions. Its rugged design and stability allow the RSV to achieve missions in up to 1.5m swell and 35 knots wind. Data recorded by sensors onboard are transmitted in real time to the operator to a control command base and positioning is provided by high precision GPS, gyrocompass and motion sensor. (Customizable)



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Phone: (401) 884-8801

Email: sales@Subsalve.com

MARITIME ROBOTICSWWW.MARITIMEROBOTICS.COM**MARINER**

The Mariner USV is a multipurpose unmanned vehicle with hull and superstructure made of polyethylene. The vehicle will fit into a standard 20 feet container for easy cargo shipping. The Mariner is equipped with a large payload room of more than one cubic meter and can be equipped with a variety of surface and sub-surface sensors/payload types.



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Stephen Ferretti | ferrettis@martacsystems.com

**MANTAS USV**

Unique class of next generation unmanned vessels. The MANTAS unmanned surface and hybrid vessels are accompanied with a robust Command and Control (C2) system known as TASKER. The MANTAS USV enables the coverage of open ocean and littoral waterways with extended on-station persistence capability. (Customizable)



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Stuart Lochner | sales@navocean.com

**NAV2 SAIL AND SOLAR ASV FOR DATA COLLECTION**

Made for ocean data collection, the Nav2 Self-Navigating Sailboat provides average speeds of 2 knots, continuous communications, and is built for open ocean, coastal and freshwater surveys. At only 2 meters and 85 pounds, the Nav2 is easy to launch and land from shorelines, docks or boats. (Customizable)



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Neil Trenaman | ntrenaman@oceanaero.us

**SCOUT, DISCOVER, AND NAVIGATOR AUV/SURFACE AND SUBSURFACE OCEAN DRONES**

Ocean Aero is the creator, manufacturer, and seller of the world's first autonomous, surface and subsurface ocean drones. Wind and solar powered, they are a perfect platform for extended ocean observation and data collection, such as intelligence and surveillance, marine mammal tracking, and Met-Ocean data gathering. (Customizable)



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OCEANALPHAWWW.OCEANALPHA.COM

Chris Yan | chris.yan@ocealpha.com

**ESM30 WATER SAMPLING & MONITORING USV**

ESM30 is an autonomous water sampling & monitoring unmanned surface vessel that can collect 4 bottles of 1.8L water samples from different spots. The sampling and monitoring data can be transmitted to the base station in real-time and generate water quality parameter charts automatically. The USV can integrate third-party probes, such as YSI, hydrolab and eureka.



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WWW.OCEANALPHA.COM | Chris Yan | chris.yan@oceanalpha.com



M40 CATAMARAN OCEANOGRAPHIC SURVEY USV

TM40 is a medium size autonomous survey unmanned platform designed for hydrographic surveys in coastal areas and oceans. With a modular catamaran design and flexible payload for instruments, the M40 can carry out high performance surveys with ADCP, MBES, side scan sonar, SBP and water sonde.



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M80B

The M80B is a big size autonomous survey platform which designed for oceanographic survey, M80B was developed to provide high performance survey, it can carry a variety of equipment to perform more tasks in many fields, such as bathymetry, surveying waterways, maritime search and rescue etc., The boat has fast speed, nice stability, excellent seakeeping, and good maneuverability. It is also customized to perfect carry Teledyne T50P and T20P multi-beam echo sounder. (Customizable)



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ME40

The ME40 is a hydrographic survey vessel constructed with a trimaran hull design for stable sailing and a shallow draft that allows it to survey reefs and areas close to shore with its single-beam sonar. The in-built inertial navigation system allows it to provide accurate real-time survey data. This product avoids potential man safety hazard and greatly improve the flexibility and efficiency of bathymetry survey. It is widely used in reservoir, lake and tailing pond. (Customizable)



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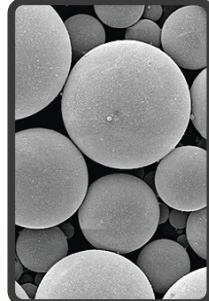
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OCEANALPHA

WWW.OCEANALPHA.COM | Chris Yan | chris.yan@oceanaalpha.com

**ME120 DETACHABLE HYDROGRAPHIC USV**

ME120 utilizes a detachable catamaran design, making it easy for van transportation and for two people to assemble and disassemble. The 2.5m USV is dedicated for MBES, SBES and other relatively smaller-size instruments. The Kongsberg M3 MBES is a highly recommended payload which has gone through series of testing and proved to be a highly mature and reliable solution. The payload cabin is replaceable so user can freely change and install different instruments according to mission requirements.



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SL20 AUTONOMOUS HYDROGRAPHIC SURVEY USV

SL20 is a compact and portable unmanned surface vessel (USV) for hydrographic and bathymetric surveys. Its moon pool supports flexible deployment of different instruments, including ADCP and echo-sounders. Made from carbon fibre, the 1m SL20 weighs 17 kg, and can be easily operated and transported by one person. Its powerful battery and low power consumption ensures 6 hours of endurance while sailing in 3 knots.



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SL40 AUTONOMOUS HYDROGRAPHIC SURVEY USV

SL40 is a waterjet-propelled unmanned surface vessel (USV) dedicated for hydrographic and bathymetric surveys. The 1.6m USV weighs 35kg and can carry 15kg of survey instrumentations including ADCP, water sonde, SBES, MBES or side scan sonar. The USV comes with obstacle avoidance system and RTK, and can be controlled by either a base station or a remote control. In March 2020, the Port of Hamburg introduced an SL40 USV to its Hydrographic Department for routine bathymetric survey. (Customizable)



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OCIUS

WWW.OCIUS.COM.AU | contact@ocius.com.au

**BLUEBOTTLE USV**

Bluebottle USVs have greater power, payload and performance compared to known competitors and are able to navigate freely and indefinitely across the world's oceans. Already Ocius is working with two major private-sector partners to develop USVs capable of undertaking specific high value applications in hydrography and defence.



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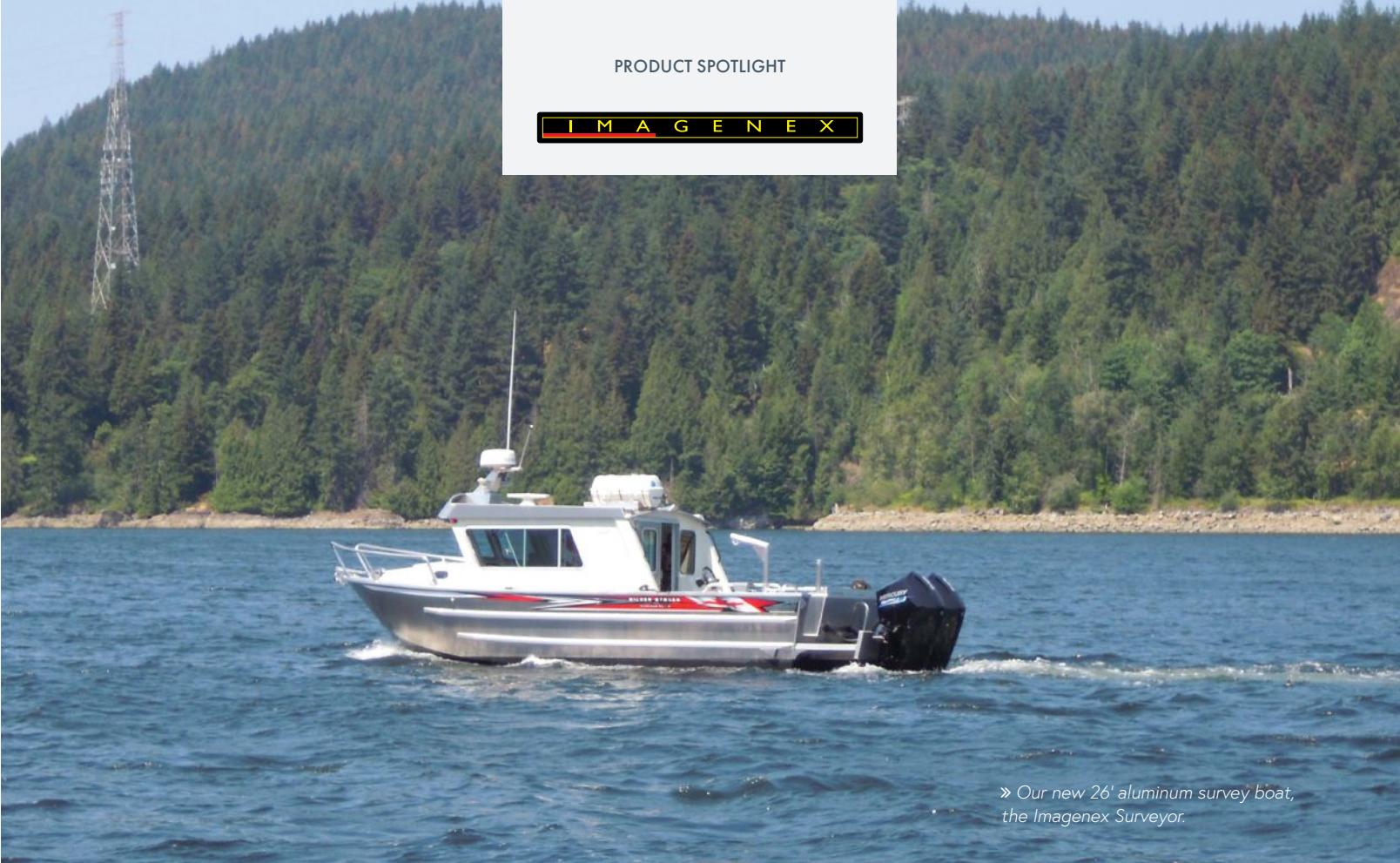
WWW.SAILBUOY.NO | David Peddie | info@sailbuoy.no

**THE SAILBUOY**

The Sailbuoy is a field proven, long endurance ocean USV. Wind and solar powered Sailbuoys perform a variety of missions, from fish and algae detection to wind and wave observations. At 2 metres long it is easily handled by two people and the satellite communication provides real-time ocean data. (Customizable)



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» Our new 26' aluminum survey boat, the Imagenex Surveyor.

IMAGENEX: SONARS LOOKING OUT FOR YOU

Need a sonar for your unmanned vehicle? We have a solution for you, whether you're working on the surface, at full ocean depth, or anywhere in between.

Already have an ROV with sonar on board? Getting tired of your sonar image smearing due to vehicle drift? Get in touch with us to find out about our gyro stabilized sonars – you'll be amazed at what a difference it makes!

At Imagenex Technology Corp., we take pride in our unique and innovative company. Each of our sonars and echo sounders are carefully crafted, individually burned in and ocean tested before being shipped to our customers worldwide. We strive to provide quality products at cost effective prices. Each product comes with a

standard one year warranty and technical support by phone or e-mail is available for the life of the sonar.

Our ever-growing product line is full of options for all sorts of unmanned vehicles. We have become a leader in the industry for providing echo sounder or multibeam solutions for

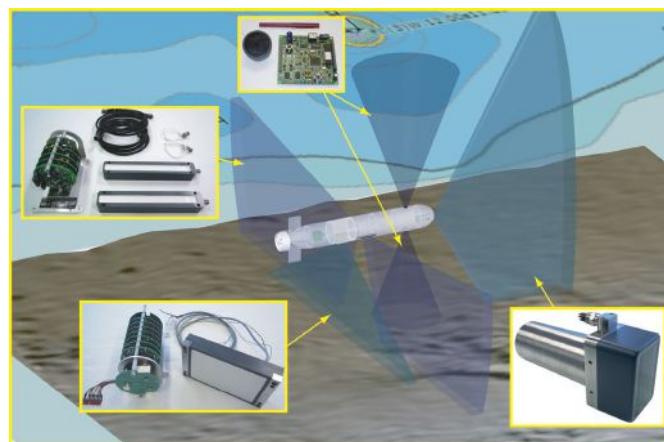
obstacle avoidance on AUVs. We also designed a scientific echo sounder with a data logger, particularly for glider use, but it has made its way onto some other vehicles as well. All of our sidescan kits have been popular amongst the AUVs, USVs, and ROVs of the world. The last category

I would like to mention is our internal pipe and tunnel profiling sonars. They have proven to be indispensable when tasked with mapping out long sections of pipeline and tunnel projects.

Imagenex was founded in 1988 by some of the pioneers in the development of high resolution sonar. Located in beautiful Port Coquitlam, BC, Canada, we design and manufacture our sonars in house and test them in our test tank and floating test lab. We recently purchased a new survey boat which will be used for research and development, testing, and demonstrations.

For more information on any of our unmanned vehicle sensor solutions please contact us.

www.imagenex.com



» Typical AUV representation showcasing Imagenex AUV Sensors

POWERSIGHTWWW.POWERSIGHT.ME**POWERDOLPHIN**

Equipped with a unique dual-joint rotating camera whose shooting angle is as wide as 132°, PowerDolphin can rotate to meet the above-water and underwater shooting demands, with the field of view ranging from -150° to +70° (the horizontal position is 0°, and when the camera rotates towards the underwater areas, the angle becomes negative), offering you a brand-new 220° shooting angle and visual experience.

**SEA-KIT INTERNATIONAL**WWW.SEA-KIT.COMNeil Tinmouth | n.tinmouth@sea-kit.com**SEA-KIT X CLASS USV**

SEA-KIT's remotely-controlled Uncrewed Surface Vessels (USVs) are designed with an adaptable payload area for multiple mission configurations. These vessels can work standalone or as part of a fleet to complete a wide range of tasks faster, cheaper and with less risk to personnel and significantly reduced carbon emissions than traditional, crewed vessels. (Customizable)



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ROBOTICS INDUSTRY (R&DRONE)WWW.ROBOTICS-INDUSTRY.COM**DRONEO**

This unmanned surface vehicle (USV) is designed to realize inspection missions and take environmental samples. Droneo is able to carry several types of bathymetric, physico-chemical and hydro-sedimentary monitoring sensors. With 10 hours of autonomy, Droneo can operate over a very wide area. This data acquisition tool is easy to operate and very accessible. It allows the making of more frequent measurements and to improve the quality and accuracy of analyses.



SUR | OBS

SAILDRONEWWW.SAILDRONE.COM**SAILDRONE**

Saildrone combines wind-powered propulsion technology and solar-powered meteorological and oceanographic sensors to perform autonomous long-range data collection missions in the harshest ocean environments. Saildrone missions are executed as a fully managed service from start to finish: We handle the transport of the saildrone to the area of operations, launch and retrieve the USV, and deliver high-resolution data in real-time and raw data post-mission.



SUR | OBS

SEAFLOOR SYSTEMS, INC.WWW.SEAFLOORSYSTEMS.COMJosh Grava | info@seafloorsystems.com**SEAFLOOR UNMANNED & AUTONOMOUS VESSELS**

Seafloor has been building Unmanned Surface Vessels (USVs) for over a decade. We lead the market with dynamic platforms that extend the capabilities of traditional survey equipment, enabling surveyors to remotely analyze otherwise challenging environments. Applications include inspection and survey of mines, sewage treatment plants, contaminated lakes, and rivers. Both remotely controlled and autonomous navigation suites available. Check out our turn-key USV platforms to efficiently conduct missions on water, reduce time spent in the field, and save on labor costs. (Customizable)



OBS | SUR | VC&L | A&T

SEAROBOTICS CORPORATION

WWW.SEAROBOTICS.COM | Don Darling | ddarling@searobotics.com



SR-SURVEYOR M1.8

The integrated MBES allows surveyors to cover large swath width hydrographic survey data more efficiently and capture a 360-degree view of all data points. Central to the design is a Velodyne Puck LiDAR for terrestrial mapping, a distinct advantage when inspecting coastal infrastructure, such as near-shore pipelines or surveying bridges, offshore rigs. (Customizable)



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SEAROBOTICS CORPORATION

WWW.SEAROBOTICS.COM | Don Darling | ddarling@searobotics.com



HYCAT

Integrated series of customizable plug-and-play sensors, making it one of the most versatile tools for water quality survey on the market. The HYCAT is SUV-portable and easy to launch, with no ramp or dock access required. Ideal for water quality studies, bathymetry, water velocity, remote data acquisition, and depth measurement. (Customizable)



OBS | SUR | INS | NDT | A&T

SR-ENDURANCE 7.0

Manned/unmanned capacity and suited to any offshore operation. The interface works seamlessly with HYPACK and QINSy, allowing for real-time survey planning, execution, visualization and post processing of datasets. Comes with a custom-fit launch and recovery system to assist with the deployment of additional ride-on assets, such as towed sonars, magnetometers, or ROVs. (Customizable)



OBS | SUR | INS | NDT | A&T

SR-UTILITY 3.0

Carries a suite of customizable sensors, including bathy/side scan sonar, sub bottom profilers, and water quality sonde. The large payload deck supports interchangeable multibeam sonar systems and an integrated cast winch, whilst SeaRobotics' ASV driver for HYPACK and QINSy guarantees a streamlined interface, making the vehicle intuitive, safe and efficient to operate. (Customizable)



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SOFAR OCEAN TECHNOLOGIESWWW.SOFAROCEAN.COM

sales@sofarocean.com

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SURVEY**INS**
INSPECTION**CON**
CONSTRUCTION**INT**
INTERVENTION**B&T**
BURIAL &
TRENCHING**STRIDER**

Sofar Strider represents a new generation of autonomous surface vehicles making data collection simple and more accessible than ever before. By combining compact designs with the latest Internet technologies, Strider is an affordable way to run missions to collect water quality parameters, perform bathymetric surveys, or monitor underwater acoustics.



SUR | OBS

TOOLS**VC&L**
VIDEO CAMERA
& LIGHTING**NDT**
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TESTING**A&T**
ACOUSTIC
& TRACKING**CD**
CLEANING
DEVICES**VSK**
VEHICLE STATION
KEEPING**WT**
WORK TOOLS**SUBSEA TECH**WWW.SUBSEA-TECH.COM | Grégory Maurin | gregory.maurin@subsea-tech.com**CAT-SURVEYOR**

CAT-Surveyor is a teleoperated or autonomous USV allowing acquisition of hydrographic data or surveillance for inland waters, harbour and coastal areas. High payload capacity (80kg) allows embedding multiple sensors for scientific, defense and civil missions. CAT-Surveyor was the first USV able to launch a mini-ROV. (Customizable)



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SEATRAC SYSTEMS, INC.WWW.SEATRAC.COM | Ping Tuck Chai | pchai@seatrac.com**SEATRAC SP-48**

The SP-48 is a persistent solar powered USV used to perform real-time data collection and communications in all marine environments for scientific, commercial and defense applications. With its large power and payload capacity, the SP-48 can be customized with best-in-class combinations of payloads including high-powered sensors during any one mission. (Customizable)



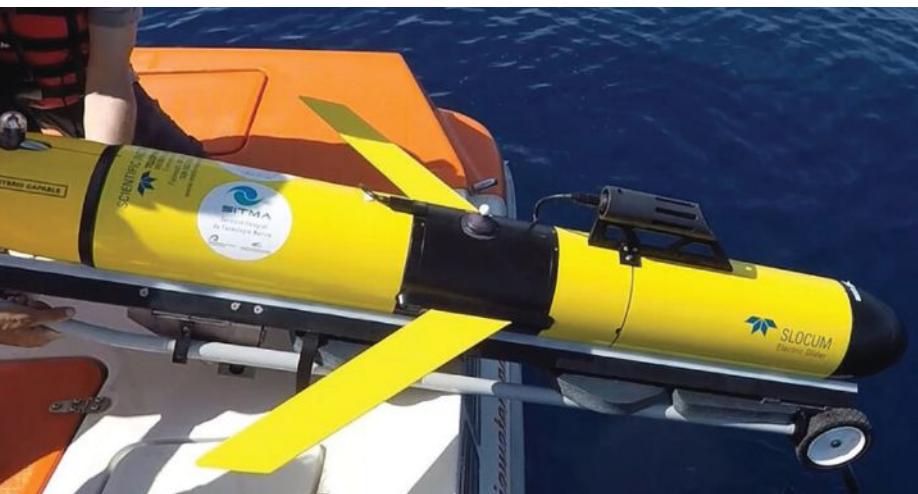
SUR | OBS | VC&L | A&T

**CATAROB**

Catarob has been especially designed to carry out tele-operated or autonomous inspection, survey and modelling missions in shallow inland waters and harbour areas. Lightweight and compact (50kg, L180 cm), Catarob is easily transported and deployed by a single operator. Open architecture and high speed PC to PC communication allow integrating multiple sensors. (Customizable)



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» Teledyne Slocum glider with Jasco sensor ready for deployment.



» Remote Survey with Teledyne Oceanscience Z-Boat 1800.

TELEDYNE MARINE: INNOVATING FOR THE FUTURE

Teledyne Marine is a world class Marine Systems business that is part of Teledyne Technologies Incorporated. Teledyne Marine has become the market leader in Imaging, Instruments, Interconnect, Seismic, and Vehicle technologies by providing innovative and highly reliable total solutions to our customers. Teledyne Marine is committed to providing premium products backed by a dedicated service and support team.

Teledyne Marine's highly competent and creative staff of engineers are continuously advancing our vehicle technology. Our unmanned vehicle platforms are designed, built, and supported by our factory of specialists, giving our customers the confidence to challenge the most difficult underwater applications.

Over the past year, the Marine Vehicles group has continued to innovate. Our recent and upcoming product introductions include:

Teledyne Webb Research

The newest G3s version of the Slocum Glider replaces the obsolete Persistor Board in the Science and Flight Bays with a STM32 Processor. The G3s STM32 Processor mitigates the obsolescence of the Persistor Board used in previous Slocum Gliders while providing improved performance, integration capabilities, and data compression.

Additional sensor availability and increased interest in passive acoustic monitoring have also driven the addition of a second hydrophone option for the glider. The JASCO OceanObserver integrated on the Slocum Glider provides long-term, widespread acoustic monitoring that has applications across mammal monitoring, military, construction, and renewable energy fields, providing an intelligent, affordable, and reliable solution.

Teledyne Gavia

The Osprey class system is the newest member of the Teledyne Gavia AUV portfolio bridging the gap between the low logistics Gavia class systems and the large deep water SeaRaptor systems. The Osprey AUV is built on the same proven Gavia dry modular design with a larger diameter to accommodate additional energy and sensor options. The Osprey is a 324mm diameter vehicle and will be available in 2022 for delivery.

In addition, Teledyne Gavia has introduced numerous advances in Gavia and SeaRaptor class AUVs including new sensor options, launch and recovery solutions, and Autonomy and on-board processing enhancements for greater vehicle capability.

Teledyne Oceanscience

The new Teledyne Oceanscience Z-boat 1800 with streamlined T20-ASV integration from Teledyne RESON combines Oceanscience's best in class unmanned surface vehicle technology with RESON's new T20-ASV sonar to create a special purpose-built vehicle with a "sensor first" design. The new vehicle design with the T20-ASV variant sonar delivers high quality data and provides an acoustically clean environment for the T20-ASV operation. The new design also provides a more protected silhouette to prevent potential damage to the sensor. This high resolution, powerful, and agile mapping system will be available for order later in 2021.

While many things in the world have been paused for the past year, Teledyne Marine's vehicle group have continued to manufacture, support, and innovate our products. We can't wait to show you what we've been developing! Be sure to check our website for upcoming events that will showcase our latest developments. For more information, visit www.teledynemarine.com or contact us at info@teledynemarine.com.



» Teledyne's newest AUV, the Osprey.

TELEDYNE OCEANSCIENCE

WWW.TELEDYNEMARINE.COM | Shannon Searing | Oceanscience.Sales@Teledyne.com

**Q-BOAT 1250**

Teledyne Oceanscience Q-Boats® are the number one choice for reliable remotely-controlled data collection in streams, rivers, lakes and coastal waters. The new Q-Boat 1250 has been designed specifically for shallow water flow and discharge measurements. This one-man portable remote vehicle is easy to set up, easy to operate, and accepts most industry standard ADCPs. (Customizable)



SUR | A&T

**Z-BOAT 1800RP**

The Teledyne Oceanscience Z-Boat® 1800RP with new ruggedized design and interchangeable sensor well, offers an entirely new option for high-resolution shallow-water hydrographic surveying. Get multibeam bathymetry data where conventional methods are not feasible or safe. All data is accessible in real time, giving the operator total control over the survey process. (Customizable)



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**Z-BOAT 1250**

The Z-Boat 1250 is easy to operate. The integrated echosounder and lightweight, resilient ABS hulls make the Z-Boat 1250 convenient for a single operator. At under 50 pounds fully outfitted with instrumentation, the unit is easily single person portable. (Customizable)



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UNMANNED SURVEY SOLUTIONS

WWW.UNMANNEDSURVEYSOLUTIONS.COM | James Williams | James@unmannedsurveysolutions.com

**ACCESSION USV**

The Unmanned Survey Solutions (USS) Accession Class Unmanned Surface Vessel (USV) is designed by surveyors, for surveyors. The modular design allows for base boat length of 3.50m to extend to 4.25m or 5.00m by adding additional hull sections. Payload agnostic and fully customer configurable the Accession USV offers unrivalled versatility for coastal and offshore deployments. (Customizable)



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**INCEPTION MKI USV**

The Unmanned Survey Solutions (USS) Inception Class MK 1 Unmanned Survey Vessel (USV) has been developed to meet the demanding requirements of the shallow water sector. This hydrographic survey vessel is composed of tough aluminium hulls, weed cutting propellers and equipment to provide bathymetric surveys in areas using single beam sonars where access for a traditional survey vessel is restricted. (Customizable)



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UNMANNED SURVEY SOLUTIONS

WWW.UNMANNEDSURVEYSOLUTIONS.COM

James Williams | James@unmannedsurveysolutions.com



INCEPTION MKII USV

The Unmanned Survey Solutions (USS) Inception Class MK II Unmanned Surface Vessel (USV) is designed by surveyors, for surveyors. This modular, versatile and robust USV is composed of tough aluminium hulls, weed cutting propellers and a modular payload pod for housing various sonar and environmental sensors. The design concept of the Inception MK II is modular from the internal electronics to the main vessel components. (Customizable)



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YSI INTEGRATED SYSTEMS & SERVICES

WWW.YSI.COM/HYCAT

YSI Systems | ysi.systems@xyleminc.com



HYCAT - AUTONOMOUS SURFACE VEHICLE

The HYCAT Autonomous Surface Vehicle (ASV) is the newest element in the Xylem brand Autonomous and Remote Vehicle Monitoring Solutions. This unique ASV combines products from multiple brands to provide a total solution for your site. Sensors have plug-and-play capabilities, allowing the HYCAT to be customized to your specific site needs. (Customizable)



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XOCEAN

WWW.XOCEAN.COM

Sales | sales@xocean.com



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MARINE SONIC TECHNOLOGY

A BRAND OF ATLAS NORTH AMERICA

www.marinesonic.com

Data	Marine Sonic Sea Scan®ARC Scout MK II		
Footprint	Length 12.8 cm	Width 5.9 cm	Height 2.5 cm
Weight	0.195 kg		
Voltage	11.5 to 30.5VDC		
Operating Power Consumption	20W Peak / ≤ 14W Dual Freq / ≤ 8W Single Freq		
Idle Power Consumption (Dual Freq)	Idle ≤ 7.1W / Wake on LAN ≤ 5.4W / Wake on Sync ≤ 3.1W		
Across Track Resolution	0.4 cm to 1.5 cm		
Horizontal Beam Angle	0.20° - 0.8° (one way) 0.17° - 0.6° (two-way)		
Vertical Beam Angle	24° (two way)		
Pulse Technology	Marine Sonic Technology Adaptive CHIRP		
Depth Rating/Max	600M / 10,000M		
Range/Resolution	Frequency 150 kHz 300 kHz 600 kHz 900 kHz 1200 kHz 1800 kHz	Range 500 m 300 m 140 m 80 m 45 m 25 m	Resolution 60.8 cm 30.4 cm 15.2 cm 10 cm 7.5 cm 5 cm





SEATRAC SYSTEMS: COST EFFECTIVE, MULTI-PURPOSE & LONG ENDURANCE USVs

Looking for the sweet spot of affordability, versatility, persistence & payload power?

That's what SeaTrac Systems co-founders Buddy Duncan & Jigger Herman decided mattered most when they surveyed the market for uncrewed surface vehicles (USVs). You want a vehicle that can go the distance, operating near shore or far over the horizon. You want it to support power-hungry sensors without running out of juice, even on cloudy days. You want it to go upwind, downwind, loiter & avoid obstacles. You want it to be easy to deploy & recover, from a crane, ramp or ship. You want it to perform every high-tech application imaginable, but with a low-logistic, straightforward design with no extraneous appendages & moving parts, because anyone who works in water knows that things break. As MIT naval architects & sailors, Buddy & Jigger set out to design a superior solution & SeaTrac Systems' SP-48 checks all those boxes.

The solar-powered, 4.8m SP-48 is a low-logistic, sensor-agnostic persistent USV with Automatic Identification System (AIS) collision avoidance, speed of 5knts, 500W payload power & 70Kg payload capacity. Built to operate in all marine environments, the SP-48 has a self-righting hull & efficient electric motor that frees it from reliance on wind or waves for propulsion. Communications are achieved by line-of-sight Radio Frequency (RF), cellular, high-bandwidth satellite or custom networks.

The SP-48 is designed for commercial, scientific & military users who require a flexible data gathering & communications platform. Early customers range from marine biologists at WHOI & NOAA measuring HAB in real time, to researchers from Mississippi State University and The University of Southern Mississippi performing water quality monitoring & threat assessment for the Army Corps of Engineers. SeaTrac is presently gearing up to trial offshore wind and oil & gas applications, such as loop current monitoring,

hydrographic surveys & mammal/fisheries monitoring.

"Increasingly customers' missions have grown in complexity requiring a range of sensors & they're looking for less costly, less resource-intensive & more flexible solutions to carry out a variety of tasks simultaneously in the challenging marine environment," said Co-founder Buddy Duncan. "SeaTrac's customizable USVs offer a simple, cost-effective & open platform to perform the dangerous, dull & dirty work with greater efficiency over current methods."

About SeaTrac Systems, Inc.

SeaTrac Systems, Inc. manufactures, sells & rents cost-effective, multi-purpose long endurance solar-powered Uncrewed Surface Vehicles for commercial, scientific & military applications. The SeaTrac USV is perfect for research, monitoring or surveillance tasks where autonomy, cost & ease of deployment matter. For more information, visit www.seatrac.com.



» SP-48 operates in all marine environments.

GLIDERS & PROFILERS

UNMANNED
VEHICLES
BUYERS' GUIDE



ENVIRONMENTAL



DEFENSE



OFFSHORE OIL & GAS



SCIENCE



SEABED MINING



OCEAN RENEWABLES



SPEC SHEET

GLIDERS & PROFILERS

ALSEAMAR

WWW.ALSEAMAR-ALCEN.COM
Romain Tricarico | tricarico@alseamar-alcen.com



SEAEXPLORER

The SeaExplorer is the ultimate low-logistics and user-friendly glider designed for Oceanographic, Defence and Oil&Gas applications. Its rechargeable battery and its fully interchangeable payloads greatly simplify its maintenance, allowing huge savings in terms of time and money, making it the glider with the lowest cost of ownership on the market. (Customizable)



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WWW.DELMAROCEAN.COM
Chris Kontoes | chris@delmarocean.com



WIREWALKER

The Wirewalker is a vertically profiling instrumentation-platform, powered by ocean waves. Through the Wirewalker's rapid profiling and ability to integrate a wide variety of sensor payloads, it brings new life to typical one-dimensional sensor time-series as a 2-D depth-time image where an enormous increase in information and intuition is achieved. (Customizable)



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EXOCETUS AUTONOMOUS SYSTEMS

WWW.EXOCETUSSYSTEMS.COM
Joe Turner | turner@exocetussystems.com



MOD2 GLIDER

The MOD2 Glider™ is the next step forward in long duration subsea monitoring. Designed for the user, the glider can be easily configured, features a large sensor bay, and runs open software that can support both off-the-shelf and custom sensors. The powerful engine autonomously transitions through fresh and salt water. (Customizable)



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HUNTINGTON INGALLS INDUSTRIES

WWW.HYDROID.COM | Tom Reynolds | sales@hydroid.com



SEAGLIDER C2

The Seaglider C2 is a 200 meter depth rated glider that uses changes in buoyancy to move through the water column in a sawtooth pattern while collecting data. This glider can easily transition from fresh to sea water without the need for reballasting, and has endurance up to three months. (Customizable)



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SEAGLIDER M1

The Seaglider M1 is a 1000 meter depth rated glider that uses changes in buoyancy to move through the water column in a sawtooth pattern while collecting data. This mature technology has revolutionized the way ocean data is collected, allowing extremely long duration monitoring up to 10+ months. (Customizable)



OBS | SUR | A&T

TELEDYNE WEBB RESEARCH

WWW.TELEDYNEMARINE.COM
Chris DeCollibus | webbresearch@teledyne.com



SLOCUM G3 GLIDER

The Slocum glider is buoyancy driven to enable long range and duration remote water column observation for academic, military, and commercial applications. The Slocum Glider can be deployed and recovered from any size vessel with minimal time on station. Once the Slocum glider is deployed, it can easily be controlled from anywhere in the world through the use of web based piloting tools. This allows fleets of gliders to be operated remotely with minimal personnel and infrastructure. Slocum gliders are modular, allowing for rapid sensor reconfiguration to respond to emergency conditions or situations. (Customizable)



OBS | A&T | NDT



» VideoRay Splashproof Controller.

VIDEORAY: MODULAR RELIABILITY

VideoRay has been developing new technologies to enhance performance for their Remotely Operated Vehicles in response to the requirements of current MISSION SPECIALIST systems. MISSION SPECIALIST operators include many commercial and government customers with demanding uses – typically in deep, fast-moving, and turbid water. While MISSION SPECIALIST systems handle these conditions well, users ask for better portability and flexibility in deploying their remotely operated vehicles (ROVs).

VideoRay is launching a hand-held, Splashproof Controller and new Vehicle Batteries to replace the need for generators on small boats, vehicle batteries to allow very small diameter tethers and more vehicle power, and a tether reel for this new tether.

VideoRay responded to needs of commercial operators who require the Splashproof Controller, such as wind farms and offshore inspection companies. Infrastructure inspection companies require long tethers in tunnel penetrations that exceed 2 kilometers. Many inspections can be deployed directly on an offshore rig, eliminating the need for vessel deployment. If a vessel is needed, smaller boats can be used, which dramatically decreases inspection costs. The MISSION SPECIALIST system is flexible, allowing VideoRay customers to customize their Mission Specialist system for their operations. In addition to commercial users, the US Navy is in the process of deploying a large fleet of DEFENDER ROVs in the Maritime Expeditionary Standoff Response

(MESR) program of record. The new expeditionary operator console is an exciting option for those who cannot avoid sea spray, nor have the luxury of a seated station with a table surface.

VideoRay has developed new Vehicle Battery power options that adapt well to the demands of those operating in challenging conditions with minimal space. The surface power supply replaces generators with no noise, fumes, or burdensome ventilation requirements. It uses either readily available (and transportable) Lead Acid or Nickle Metal Hydride (NiMH) or more powerful Lithium-Ion (Li). Vehicle batteries can be either NiMH or Li as well. The vehicle batteries allow the use of either a thin copper tether or a thin fiber tether. The new thin copper tether is particularly valuable to the US Navy, as it is a field – indeed boat- repairable if cut or damaged. This flexibility keeps the warfighter in action and ensures uptime, particularly when compared to fiber tether solutions. Fiber tether is available, however, for deep or long deployments.



» The VideoRay Defender shown with modular submersible batteries.

One of the most critical benefits of the new products is that they are backward compatible and work with every MISSION SPECIALIST System that VideoRay has sold. Any vehicle – with whatever accessories and sensors fitted – can work with any of these new control or power options. This flexibility allows existing assets to be used in two basic configurations. In Expeditionary mode, the system is configured to minimize the ROV operational footprint. In Workhorse mode, the system is configured to maximize the power of the ROV system.

These new features not only demonstrate the continuous improvement that VideoRay users rely on, particularly with our MISSION SPECIALIST series, but also the protection of their investment in our company and solutions.

ABOUT VideoRay

VideoRay delivered its first ROV in 2000 and has since become the world's leading manufacturer of underwater, portable, inspection-class ROVs. VideoRay underwater robots help prevent terrorism, find and retrieve objects, inspect infrastructure both inland and offshore, and keep divers safe from hazardous conditions. Operators prefer VideoRay systems because they are optimized for intuitive operation, performance, size, weight, payload, and deployment speed. To learn more about VideoRay, visit videoray.com or call at +1 610-458-3000.



» *EvoLogics USBL Buoy at UUV field trials.*

THE USBL BUOY FROM EVOLOGICS



The USBL buoy is a fully integrated device, first introduced by EvoLogics (Berlin, DE) at the end of 2020.

The buoy is an all-in-one solution for ultra-short baseline (USBL) positioning of underwater targets where position fixes are obtained from ranges and angles estimated by the USBL antenna.

The buoy is mono-unit with a USBL transceiver, an on-board PC, dual-antenna GNSS receiver and WiFi access point, built for applications that require a non-permanent installation of the USBL antenna with quickest possible setup and recovery.

Its design concept is focused on "drop and play" deployment and hassle-free operation.

Since the USBL antenna and the GNSS receiver are part of the same hardware assembly, there is no need for system calibration to estimate the positions of these sensors relative to each other. The system enables geo-referenced positioning of target transponders, and the dual GNSS antennas ensure accurate yaw measurements without being affected by magnetic interference. RTK option can be added to further increase precision and accuracy.

The buoy runs EvoLogics SiNAPS software, so the positioning data is calculated on-board the unit and is immediately available over WiFi. SiNAPS web-based interface allows the user to operate the system and visualize target positions. Positioning data can be streamed in NMEA format and routed to other user applications for real-time processing.

The shape of the unit derives from fishing floats that remain highly stable even in rough seas thanks to their long stems and minimal cross-section near the surface. This allows the elongated buoy to remain stable in harsh conditions, and when deployed close to a vessel hull or pier walls, where the waves are taller. The buoyant body of the unit is made of carbon and glass fiber composites, making it lighter, more compact and robust than conventional designs with foam-based floatation collars. The system packs up into a single case and can be easily transported, assembled and deployed by a single operator.

The USBL buoy quickly became the go-to positioning solution for EvoLogics' own robotics department - to track UUVs and USVs during field tests and demos without the extra hardware installations, interfacing and calibration steps.

The buoy configuration is available for all models from the EvoLogics USBL transceivers range and is compatible with same-frequency underwater acoustic modems as target transponders.

EvoLogics GmbH

Ackerstrasse 76,
13355 Berlin, Germany

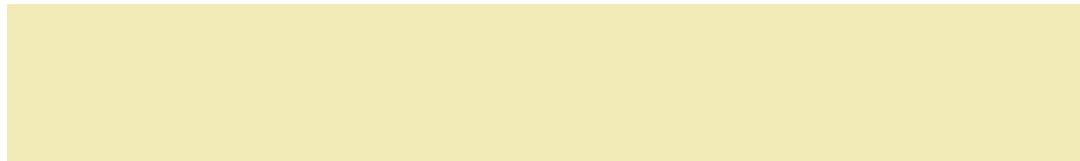
Tel.: +49 30 4679 862 - 0
Fax: +49 30 4679 862 - 01

WWW.EVOLOGICS.DE



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USV

2491 Keen Rd.
Fort Pierce, FL 34946 USA
 Sales
+1 (561) 632-8333
robert.asia11@gmail.com

Aleron Limited

Work Class ROV

Aleron House, Unit B,
Kintore Business Park,
Aberdeenshire, AB51 0YQ
UK
 Gary McConnell
+44 (0) 1467 424060
gary@aleron-group.com
www.aleron-group.com

AllOceans Engineering Ltd.

Observation ROV, Towed & Bottom Crawling Vehicle

Tyrebagger Works, Clinterty
Kinellar, Aberdeen AB21 0TT UK
 Brian Abel
+44 (0) 1224 791001
brian@alloceans.co.uk
www.alloceans.co.uk
www.ac-cess.com

Alseamar

Glider

60 avenue Olivier Perroy
Rousset (13790) France
 Romain TRICARICO
+33 (0) 442 616 480
rticarico@alseamar-alcen.com
www.alseamar-alcen.com

Aquabotix

Observation ROV, AUV

21 Father DeValles Blvd,
Unit 8/Suite 106
Fall River, MA 027723 USA
 Sales
+1 (508) 676-1000
sales@aquabotix.com
www.aquabotix.com

Argus Remote Systems

Observation ROV with Payload Option, Work Class ROV
Laksevaag Norway
 Jan Bryan
+47 (0) 91377109
jan@argus-rs.no
www.argus-rs.no

BlueRobotics

Observation ROV
2740 California
St. Torrance,
CA 90503 USA
 Sales
sales@bluerobotics.com
www.bluerobotics.com

Boston Engineering Corp.

AUV
300 Bear Hill Rd.
Waltham, MA 02451 USA
 +1 (781) 466-8010
info@boston-engineering.com
www.boston-engineering.com

Boxfish Research Ltd.

Observation ROV with Payload Option
234A Orakei Road, Remuera
Auckland, New Zealand
 Vera Bronza
+096001910
vera@boxfish.nz
www.boxfish.nz

Cellula Robotics

AUV
B109-9000 Bill Fox Way
Burnaby/BC/ V5J 5J3 Canada
 Adrian Woodroffe
+1 (604) 540-5530
info@cellula.com
www.cellula.com

Chelsea Technologies Group

Towed & Bottom Crawling Vehicle
55 Central Avenue
West Molesey UK
 Ellen Keegan
+44 (0) 2084 819000
ekeegan@chelsea.co.uk
www.chelsea.co.uk

Clearpath Robotics, Inc.

USV
1425 Strasburg Rd. Suite 2A
Kitchener, ON N2R 1H2 Canada
 1 (800) 301-3863
info@clearpathrobotics.com
www.clearpathrobotics.com

BAE Systems

AUV
212 South Meadow Road, Suite 2
Plymouth, MA, 02360 USA
 Paco Santana
+1 (774) 343-9023
riptide@baesystems.com
www.baesystems.com/riptide

Bellamare, LLC

Towed & Bottom Crawling Vehicles
6491 Caminito Aronimink
La Jolla, CA USA
 Charles Cousin
+1 (858) 578-8108
charlescousin@bellamare-us.com
www.bellamare-us.com

Copenhagen Subsea A/S
Observation ROV with Payload Option
Troljevej 2
Hellerup Denmark
 Allan Nygård Bertelsen
 +45 (0) 70221162
sales@copenhagensubsea.com
www.copenhagensubsea.com

Deep Ocean Engineering, Inc.
Observation ROV, USV
2403 Qume Dr.
San Jose, CA USA
 Sales
 +1 (408) 436-1102
sales@deeppocean.com
www.deeppocean.com

Deep Trekker Inc.
Observation ROV, Towed & Bottom Crawling Vehicles
830 Trillium Drive Kitchener,
ON N2R 1K4 Canada
 Shannon Regan
 +1 (519) 342-3177
sregan@deeptrekker.com
www.deeptrekker.com

Del Mar Oceanographic
Gliders & Profilers (new name as of 2021)
10457 Roselle St, Suite A,
San Diego, USA
 Chris Kontoes
 +1 (858) 524-3300
chris@delmarocean.com
www.delmarocean.com

DOER Marine Operations
Work Class ROV
PO Box 6249
Alameda, CA USA
 Liz Taylor
 15105309388
liz@doermarine.com
www.doermarine.com

DotOcean
USV, Towed & Bottom Crawling Vehicles
Gistelse Steenweg 294 box 205
8200 Sint-Andries (Brugge) Belgium
 +32 50 68 30 54
sales@dotocean.eu
www.dotocean.eu

dstl
USV
Portsdown West Portsdown Hill Rd
Fareham, Hampshire PO17 6AD UK
 Ian Campbell
 +01980 957672
iscampbell@mail.dstl.gov.uk
www.gov.uk/government/organisations/defence-science-and-technology-laboratory

DWTEK Co., LTD
Observation, ROV with Payload Option
Taichung City 401 Taiwan,
East District No.22, Dong Ying Rd
Taichung City 401 Taiwan
 +886 435024890
info@dwtek.com.tw
www.dwtekmarine.com

ECA Group
AUV, Work Class ROV, Towed & Bottom Crawling Vehicles
262 Rue des frères Lumière
83130 La Garde, France
 Anthony Penn
 +33 4 94 08 90 00
sales.robots@ecagroup.com
www.ecagroup.com

Edgelab Srl
AUV
c/o CSCA, Via degli Altiforni, 3
57037 Portoferraio (LI) Italy
 +39-0187 1822943
edgelab@edgelab.eu
www.edgelab.eu

EdgeTech
Towed & Bottom Crawling Vehicle
4 Little Brook Rd
West Wareham, MA 02576 USA
 Sales
 +1 (508) 291-0057
info@edgetech.com
www.edgetech.com

EIVA a/s
Towed & Bottom Crawling Vehicles
Niels Bohrs Vej 17
8660 Skanderborg Denmark
 +45 2048 7737
eiva@eiva.com
www.eiva.com

Emma Technologies GmbH
USV
Felmer Strasse 4b
24251 Osdorf/ Kiel Germany
 +49 431 2609370
ask-emma@emma-technologies.com
www.emma-technologies.com

EPRONS ROV Ltd.
Observation ROV
11 Audupes Street
Riga, LV1030 Latvia
info@eprons.eu
www.eprons.eu

EvoLogics GmbH
USV
Ackerstrasse 76
13355 Berlin Germany
 +49 30 4679 862-0
sales@evologics.de
www.evologics.de

Exocetus Autonomous Systems
Glider
7 Laser Lane
Wallingford, CT 06492 USA
 Joe Turner
 +1 (860) 512-7260 Ext. 3
jturner@exocetussystems.com
www.exocetussystems.com

Fast Engineering Ltd.
Observation ROV
5 Windmill Court
Antrim BT41 2TX N Ireland
 Joanne
 +44 (0) 28 9442 8686
sales@fastank.com
www.fastank.com

MANUFACTURER LISTING / A-Z

Forum Subsea Technologies

Work Class ROV, Towed & Bottom Crawling Vehicles

Ings Lane Kirkbymoorside, York,
YO62 6EZ, UK

📞 +44 (0) 1751 431751

rov.sales@f-e-t.com

www.f-e-t.com

Forssea Robotics

Observation ROV with Payload Option

France

👤 Gautier Dreyfus

📞 +44 (0) 1751 431751

gdreyfus@forssea-robotics.fr
www.forssea-robotics.fr

Fugro

USV

7 Valetta Road
Kidman Park,
South Australia, 5025

👤 Hugh Parker

📞 +61 8 8161 4100

h.parker@fugro.com

www.fugro.com

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AUV

553 South Street Quincy,
MA 01201 USA

👤 Adam Mara

📞 +1 (617) 715 7014

Adam.Mara@gd-ms.com
www.gdmissonsystems.com/sea

GPA Seabots

USV

Calle Maracaibo 1, Nave 2-6
Barcelona, Spain

👤 Jaume Viñola

📞 +34637858008

j.vinola@gpaseabots.com
www.gpaseabots.com

Graal Tech s.r.l

AUV

Via Jacopo Ruffini 9R
16128 Genova Italy

📞 +39 010 8597680

info@graaltech.it
www.graaltech.it

H2O-Robotics

USV

Unska 3
10 000 Zagreb

Croatia

👤 Sales

📞 +385 91 3105 480

marin@h2o-robotics.com

www.h2o-robotics.com

International Submarine Engineering Ltd. (ISE)

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1734 Broadway Street
V3C 2M8 Canada

👤 Sales

📞 604-942-5223

info@ise.bc.ca

www.ise.bc.ca

IQUA Robotics SL

AUV

Pic de Peguera 11
Girona 17003, Spain

👤 Joseta Roca

📞 +34972183311

info@iquarobotics.com
www.i quarobotics.com

iXblue

USV

34, rue de la Croix de Fer
78100 Saint-Germain-en-Laye
FRANCE

👤 Guillaume Endeline

guillaume.endeline@ixblue.com
www.ixblue.com

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👤 Brian Fisher

📞 (800) 822-4744

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www.jwfishers.com

Kongsberg Maritime

Glider, AUV

Headquarters, Kirkegårdsveien 45
NO-3616 Kongsberg Norway

📞 +47 32 28 50 00

km.sales@kongsberg.com

www.km.kongsberg.com

Hydromea

Observation ROV, AUV

Av Longemalle 11,
Renens, Switzerland

👤 Igor Martin

📞 +41 792699579

igor.martin@hydromea.com
www.hydromea.com

In Nature Robotics Ltd.

USV

116 Ferguson Road,
Hanwell, Canada

👤 Murray Lowery-Simpson

📞 +1 (506) 457-8365

murray@innaturerobotics.com
www.innaturerobotics.com

Independent Robotics

AUV

Montreal, QC Canada

📞 +1 (646) 789-4022

info@independenterobotics.com
www.dudek.org

Kraken Robotic Systems Inc.
Towed & Bottom Crawling Vehicles, AUV
 189 Glencoe Drive
 Mount Pearl Canada
 ☎ +709-757-5757
 scotie@krakenrobotics.com
 www.krakenrobotics.com

Kystdesign AS
Work Class ROV
 Norway
 ☎ Åge Holsbrekken
 post@kystdesign.no
 www.kystdesign.no

L3Harris (Portchester, UK)
USV
 12 Murrills Estate Portchester,
 Hampshire PO16 9RD UK
 ☎ James Cowles
 ☎ +44(0)2392 382573
 James.Cowles@L3Harris.com
 www.L3Harris.com

L3Harris
AUV
 275 Martine St. Fall River,
 MA, 02723 USA
 ☎ James Kirk
 ☎ +1 508-678-0550
 james.kirk@l3t.com
 www.L3T.com/ASV

Liquid Robotics
USV
 1329 Moffett Park Drive
 Sunnyvale USA
 ☎ Sarah Zweng
 ☎ +1 408 636 4200
 sarah.zweng@liquid-robotics.com
 www.liquid-robotics.com

MacArtney
Towed & Bottom Crawling Vehicles
 Gl. Guldagervej 48
 DK-6710 Esbjerg V
 Denmark
 ☎ Lars Jørgensen
 ☎ +45 7613 2000
 lj@macartney.com
 www.macartney.com

Marine Advanced Research USV
 1301 South 46th St., Building 300A
 Richmond, CA 94804 USA
 ☎ +1 (510) 232-1685
 info@wam-v.com
 www.wam-v.com

Marine Imaging Technologies
Observation ROV with Payload Option
 P.O. Box 1997
 North Falmouth, MA 02556 USA
 ☎ David Ullman
 ☎ (617) 394-1188
 Info@marineimagingtech.com
 www.marineimagingtech.com/rov

Mariner Underwater Electronics
Work Class ROV
 20-22 Pilis str.
 Piraeus Greece
 ☎ +30 210 4100656 -57
 marhge@otenet.gr
 www.mariner.gr

MarineTech
USV
 Zi de Signes
 350 avenue de Copenhague
 83870 Signes, France
 ☎ Magali Mouries
 ☎ +33 (0) 9 54 82 10 52
 contact@marinetech.fr
 www.en.marinetech.fr/Marine-survey-USV

Mariscope Meerestechnik
Workclass ROV, Observation ROV with Payload Option, Observation ROV, Towed Bottom Crawling
 Redderkoppel 6A
 Kiel / 24159 Germany
 ☎ Niklas Becker
 ☎ (+49) 4316 0837645
 n.becker@mariscope.de
 www.mariscope.de

Maritime Robotics
USV
 Brattørkaia 13 B
 7010 Trondheim Norway
 ☎ +47 73 40 19 00
 info@maritimerobotics.com
 www.maritimerobotics.com

Martec Systems
USV
 511 N. John Rodes Blvd. Ste. 103
 Melbourne, FL, 32934 USA
 ☎ 321-292-9443
 info@martacsystems.com
 www.martacsystems.com

Navocean Inc.
USV
 SEATTLE USA
 ☎ Stuart Lochner
 ☎ +1 (206) 849-9005
 sales@navocean.com
 www.navocean.com

Notilo Plus
Observation ROV with Payload Option
 Plt de la Valentine lot 4 - Mte
 Commandant de Robien
 13011 MARSEILLE
 France
 ☎ Solène Guéré
 ☎ +33 667531704
 seasam@notiloplus.com
 www.notiloplus.com

Ocean Aero, Inc.
USV, AUV
 110350 Sorrento Valley Rd
 San Diego, CA 92121 USA
 ☎ Neil Trenaman
 ntrenaman@oceanaero.us
 www.oceanaero.com

Oceanalpha
USV
 RM 702,7/F SPA Centre, NO.53-55
 Lockhart Road, Wan Chai Hong Kong
 China
 ☎ Chris Yan
 chris.yan@oceanaalpha.com
 www.oceanaalpha.com

Oceanbotics

Observation ROV with Payload Option

15375 Barranca Parkway,
Building I-112
Irvine, California 92618 USA
 **Chris Yan**
 +1 (949) 727-9399
sales@oceanbotics.com
www.oceanbotics.com

Oceaneering International, Inc.

AUV, Work Class ROV

11911 FM 529
Houston, TX USA
 **Sales**
 +1 (713) 329-4500
sales@oceaneering.com
www.oceaneering.com

Oceanscan-MST LDA

AUV

Av. Liberdade, Polo Mar UPTec
4450-718 Leça da Palmeira
Matosinhos Portugal
 +351 220 301 576
info@oceanscan-mst.com
www.oceanscan-mst.com

OCIUS

USV

22 King St, Building R13, UNSW
Randwick Campus
Randwick NSW 2031 Australia
 +61 2 9924 6400
contact@ocius.com.au
www.ocius.com.au

Offshore Sensing AS

USV

Fantoftvegen 38
5072 Bergen Norway
 **David Peddie**
 +91652190
info@sailbuoy.no
www.sailbuoy.no

Outland Technology

Observation ROV, Observation

ROV with Payload Option

38190 Commercial Court
Slidell, LA 70458 USA
 +1 (985) 847-1104
sales@outlandtech.com
www.outlandtech.com

Pliant Energy Systems

Observation ROV

63 Flushing Ave, Bldg. 280 Ste. 614
Brooklyn, NY 11205 USA
 **Pietro Filardo**
 +1 (646) 327-7401
filardo@pliantenergy.com
www.pliantenergy.com

Poseidon Robotics, LLC

Observation ROV with Payload Option

5098 Foothills Blvd., Ste 3 #473
Roseville, CA 95747 USA
 **Peter Schubert**
 +1 480 558 6499
Peter@poseidonrov.com
www.poseidonrov.com

PowerDocks LLC

Observation ROV

151 Martine Street, Suite 107
Fall River MA USA
 **Anthony Baro**
 +1 (401) 489-2273
abaro@power-docks.com
www.power-docks.com

PowerVision

USV

260 Harbor Boulevard
Belmont, CA USA
www.powervision.me/en

QinetiQ North America

AUV, Towed & Bottom Crawling Vehicles

350 Second Avenue, Building 1
Waltham, MA 02451 USA
 +1 (781) 684-4000
contactus@qinetiq-na.com
www.qinetiq-na.com

Robotics Industry (R&Drone)

USV

3 Rue Vert Castel
33700 Mérignac, FRANCE
 +33 (0)5 33 89 18 10
www.robotics-industry.com

Rovotics

Work Class ROV

United Arab Emirates
 +971(0)65579539
sales@rovotics.ae
www.rovotics.ae

RTsys

AUV

25 rue Michel Marion
Caudan FRANCE
 Corentin Troussard
 +33 297 898 580
enquiries@rtsys.fr
www.rtsys.eu/en/

Saab Seaye

Observation ROV with Payload Option, Work Class ROV, AUV

20 Brunel Way, Segensworth East
Fareham UK
 James Douglas
 +44 (0) 1489898000
solutions@saabseaye.com
www.seaeye.com

Saildrone

USV, Towed & Bottom Crawling Vehicles

1050 W Tower Ave Alameda,
CA 94501 USA
 +1 (772) 742-3700
www.saildrone.com/contact
www.saildrone.com

SEA-KIT International

USV

Blackwater House, Woodrolfe Road,
Tollesbury, Essex, CM9 8SE UK
 Neil Tinmouth
 +44 (0) 1206 625180
n.tinmouth@sea-kit.com
www.sea-kit.com

Seafloor Systems, Inc.**USV**

4415 Commodity Way
Shingle Springs, CA 95682 USA
 +1 (530) 677-1019
info@seafloorsystems.com
www.seafloorsystems.com

SeaRobotics Corporation**USV, Towed & Bottom Crawling Vehicles**

7765 SW Ellipse Way
Stuart, FL 34997 USA
 +1 (772) 742-3700
info@searobotics.com
www.searobotics.com

SeaTrac Systems, Inc.**USV**

100 Hoods Lane, Marblehead,
Massachusetts, 01945 USA
 Ping Tuck Chai
 +1 (617) 981-4620
pchai@seatrac.com
www.seatrac.com

Seatrronics**Observation ROV with Payload Option**

Denmore Road Bridge of Don,
Aberdeen, AB23 8JW UK
 Jamie Neilson
 +44 (0)1224 85310
jamie.neilson@seatrronics-group.com
www.seatrronics-group.com

SeaView Systems, Inc.**Observation ROV with Payload Option, Towed & Bottom Crawling Vehicle**

7275 Joy Road, Suite A
Dexter, MI, USA
 +1 (734) 426-8978
info@seaviewsystems.com
www.seaviewsystems.com

Shark Marine Technologies Inc.**Observation ROV with Payload Option**

23 Nihan Drive St. Catharines,
Ontario L2N 1L2 Canada
 +1 (905) 687-6672
sales@sharkmarine.com
www.sharkmarine.com

Silvercrest Submarines**Observation ROV, Work Class ROV**

UK

 Mr. Whitfield
 +44 (0)1285 760620
sales@silvercrestsubmarines.com
www.silvercrestsubmarines.com

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Davy Bank, Wallsend UK
 Graeme Jaques
graeme.jaques@smd.co.uk
www.smd.co.uk

Sofar Ocean Technologies**USV**

TPier 50, Shed B, Bulkhead Office
San Francisco, CA 94158
 Sales
 +1 (415) 230-2299
sales@sofarocean.com
www.sofarocean.com

Sperre AS**Work Class ROV**

Telemark Teknologipark,
Medeveien 1
N-3676 Notodden Norway
 +47 350 25000
post@sperre-as.com
www.sperre-as.com

Strategic Robotic Systems**AUV, Observation ROV**

14842 NE 95th Street
Redmond, WA 98052 USA
 Nick Devine
 (425) 285-9229
nick@srsfusion.com
www.srsfusion.com

Submersible Systems Inc.**Observation ROV with Payload Option, Work Class ROV**

P.O. Box 1843
333 Progresso Road
Patterson, LA 70392 USA
 +1 (985) 395-0999
wolfgang@ssirovs.com
www.ssirovs.com

Subsea Tech**USV, Observation ROV, Observation ROV with Payload Option, Towed & Bottom Crawling Vehicle**

167 plage de l'Estaque
13016 Marseille France
 Gregory Maurin
 +33 491517671
gregory.maurin@subsea-tech.com
www.subsea-tech.com

Technip FMC Schilling Robotics**Work Class ROV**

201 Cousteau Place
Davis, CA, 95618 USA
 Hamish Stewart
 +1 530 753 6718
hamish.stewart@technipfmc.com
www.technipfmc.com/en/what-we-do/subsea/robotics/

Teledyne Benthos**Towed & Bottom Crawling Vehicle**

49 Edgerton Drive North Falmouth,
MA 02556 USA
 Dan Shropshire
 +1 (508) 563-1000
benthos@teledyne.com
www.teledynemarine.com/benthos

Teledyne Gavia**AUV**

Vesturvör 29
200 Kópavogur Iceland
 Arnar Steingrimsson
 +354 511 2990
gavia_sales@teledyne.com
www.teledynemarine.com/gavia

Teledyne Oceanscience**USV**

49 Edgerton Drive
North Falmouth, MA 02556
USA
 Shannon Searing
 +1 (858) 842-2600
[Oceanscience.sales@teledyne.com](mailto>Oceanscience.sales@teledyne.com)
www.teledynemarine.com/oceanscience

Teledyne SeaBotix
Observation ROV with Payload Option
49 Edgerton Drive
North Falmouth, MA 02556 USA
 Jamie Carrig
 +1 (508) 563-1000
SeaBotix_Inquiries@teledyne.com
www.teledynemarine.com/seabotix

Teledyne Webb Research Glider
49 Edgerton Drive
North Falmouth MA 02556 USA
 Chris DeCollibus
 +1 (508) 563-1000
webbresearch@teledyne.com
www.teledynemarine.com/webb-research

Tetis Pro
Observation ROV with Payload Option
Box 73, 54 Polyan St.
117042 Moscow Russia
 Dmitry Voytov
 +7 (495) 786-9855
rov@tetis-pro.ru
www.tetis-pro.ru

The Boeing Company
AUV
Boeing Corporate Offices
100 North Riverside
Chicago, IL 60606 USA
 +1 (312) 544-2000
www.boeing.com

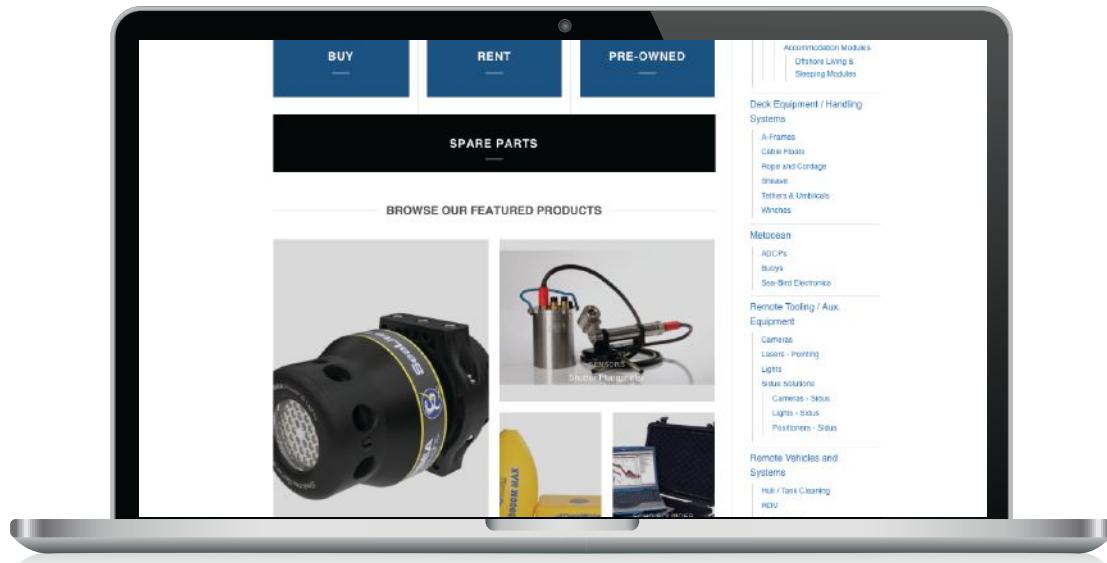
Underwater Robotics Ltd.
Observation ROV
36 Nakhimovskiy prospect
117997 Moscow Russia
 +7 499 1292045
gnom@gnom-rov.com
www.gnomrov.com

Unmanned Survey Solutions USV
Unit 7 Hayle Marine Renewables Business Park, North Quay Hayle, Cornwall, TR27 4DD UK
 James Williams
 +44 (0)1872 630070
james@unmannedsurveysolutions.com
www.unmannedsurveysolutions.com

VideoRay LLC
Observation ROV, Observation ROV with Payload Option
212 East High Street
Pottstown, PA 19464 USA
 +1 (610) 458-3000
sales@videoray.com
www.videoray.com

XOcean
USV
XOCLEAN, Greenore Co.
Louth, IA91 E765 Ireland
 +353 42 9419200
info@xocean.com
www.xocean.com

YSI Integrated Systems & Services
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Digital Edge Subsea supplies the oil and gas industry with their digital video recording system. The company, founded more than 12 years ago, boasts a team of hand-picked specialists who have been highly successful in establishing and nurturing strong customer relationships. Over the years, this industry partnership has been underpinned by a true sense of collaboration and open customer feedback, all of which has been incorporated into the development of the Version 5 Edge DVR software suite.

This constructive dialogue between developer and operator is the keystone to real-world innovation and, once again, has culminated in an exciting new product development at Digital Edge Subsea: Welcome to EdgeArchive.

EDGearchive

EdgeArchive is a breakthrough data storage and back-up solution that uses an exclusive proprietary app within the Edge architecture, and so means that operators can avoid using a 3rd party app.

EdgeArchive handles the transfer of data from the internal DVR drives to client storage, either on a NAS, a Raid, or a phased delivery to multiple external hard drives.

Being a native app, the data transfer ensures that the quality of live recordings is not impacted by a 3rd party program trying to access the same file that the DVR app is currently using, ensuring recorded data integrity and quality is of the highest importance.

DATA INTEGRITY

EdgeArchive can act as a simple data mirror of the correct internal drive data folders or can be used to create multiple simultaneous backups of client deliverables. This can be

done in a continuous backup or a phased approach, i.e., after each dive.

Digital Edge's Operations Manager, John Scott, explains: "Clients transitioning to 4k or 4HD channels from SD has had an impact in data storage terms, previously they would be able to get months of data on the internal hard drives which is no longer possible, as hard drive space becomes more of an issue. Responding to our client's needs dynamically, Digital Edge has invested the last year of development into creating an archiving application that allows clients to remove data from the DVR without threatening the integrity of the DVR Project. Using EdgeArchive ensures that access violations of "live recording" files do not occur when the data is transferred, which is especially beneficial for clients in the field on extended campaigns."

LIVE DEMOS

With a reputation for uncompromising product quality and second-to-none customer service, the Digital Edge team is pleased to offer demonstrations to all parties interested in finding out how EdgeArchive can benefit their particular project. And to help offset the economic difficulties of the last 12 months or so, Digital Edge is also making their DVR units available under flexible rental agreements. This is both for the rack mounted system and laptop version.

For more information or to schedule a demonstration, please contact:
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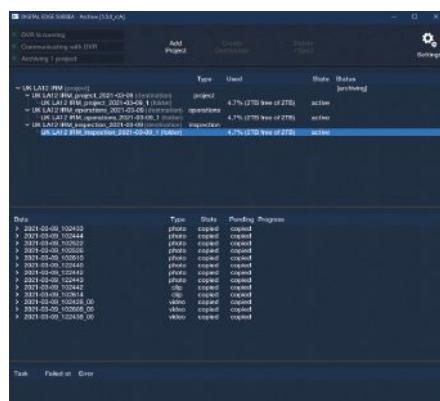


» Being a native app, the data transfer ensures that the quality of live recordings is not impacted by a 3rd party program. (Image credit: Digital Edge Subsea)

V5 Software Suite

EdgeArchive

Edge DVR—3 versions:
 Lite, Edge and Pro
 Workpack Creator/Editor
 Event Button Creator/Editor
 Network Viewer (4 Channel)
 Client Viewer
 Offline Editor
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» EdgeArchive can act as a simple data mirror of the correct internal drive data folders or can be used to create multiple simultaneous backups of client deliverables. (Image credit: Digital Edge Subsea)

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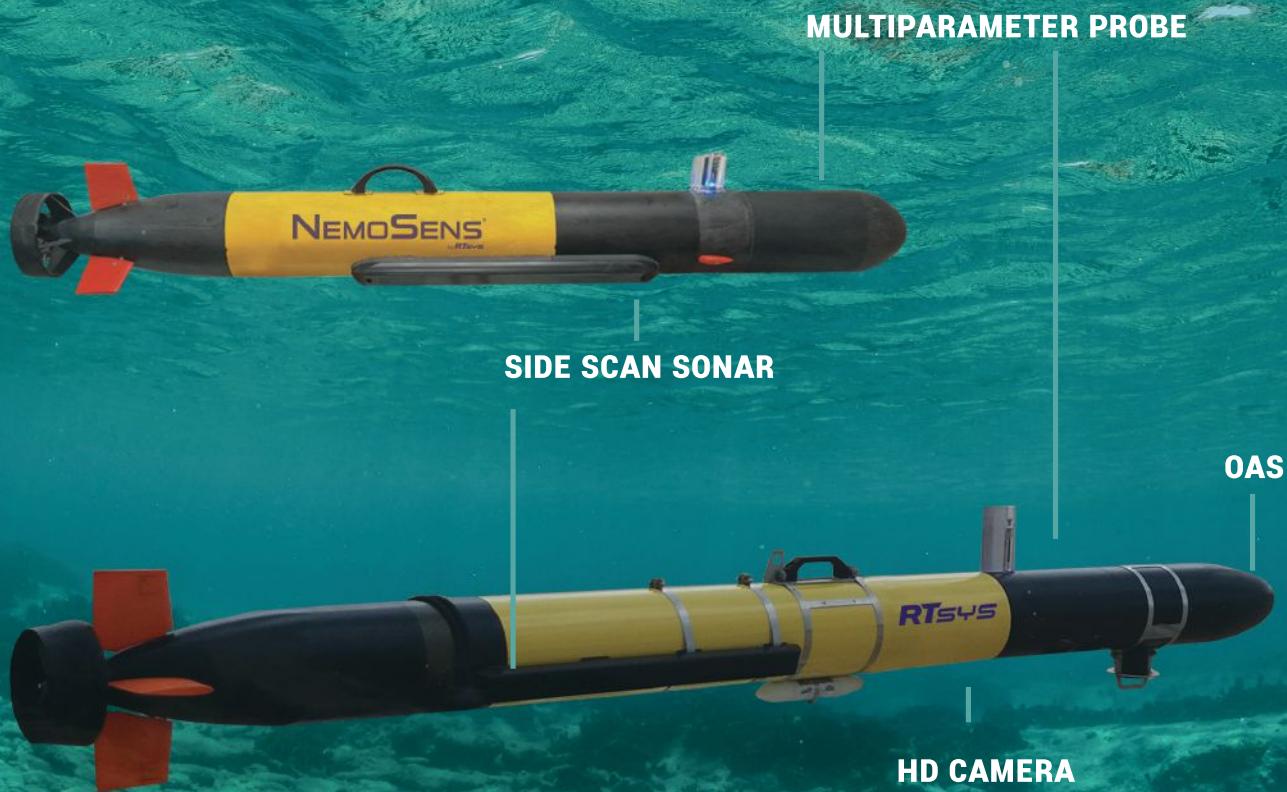
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