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# 2019 BUYERS' GUIDE

UNMANNED VEHICLES  
DIRECTORY



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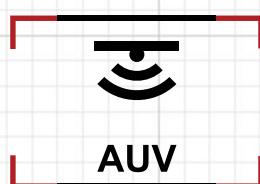
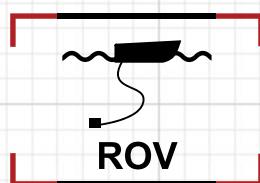
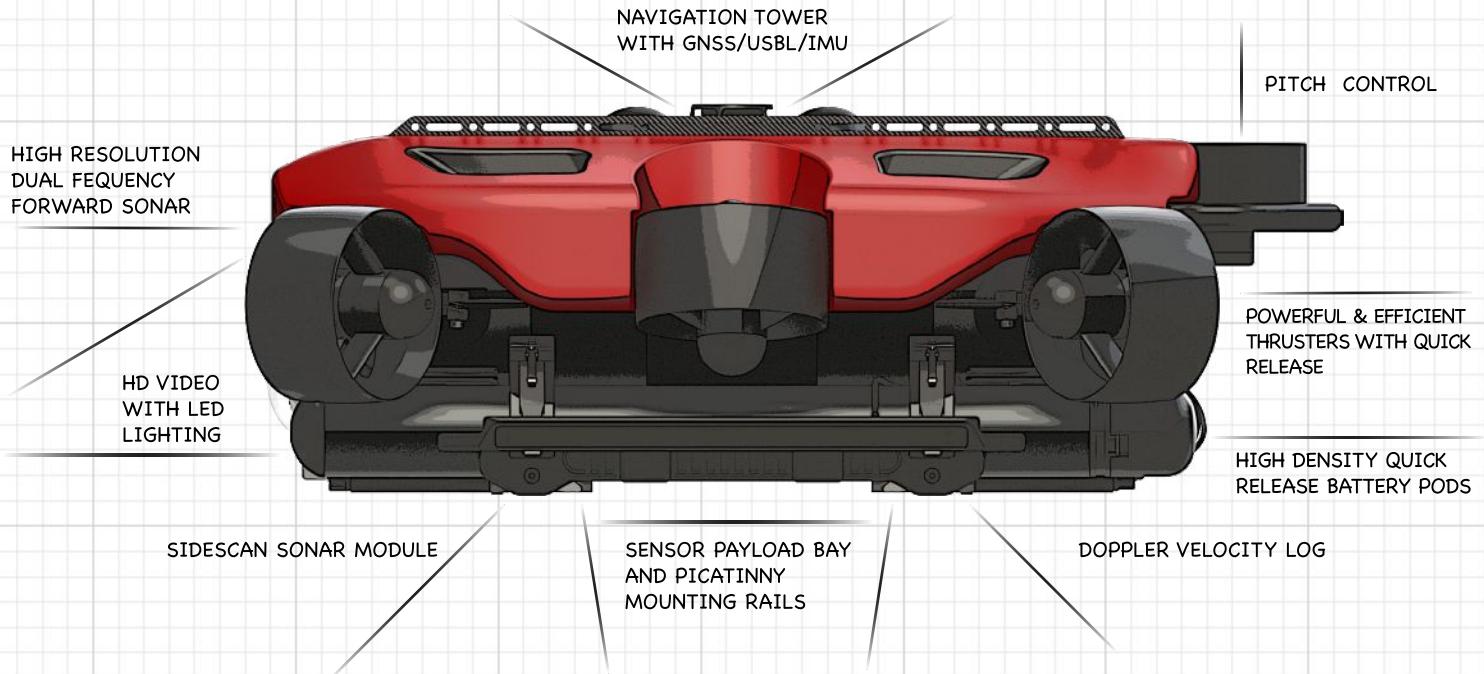


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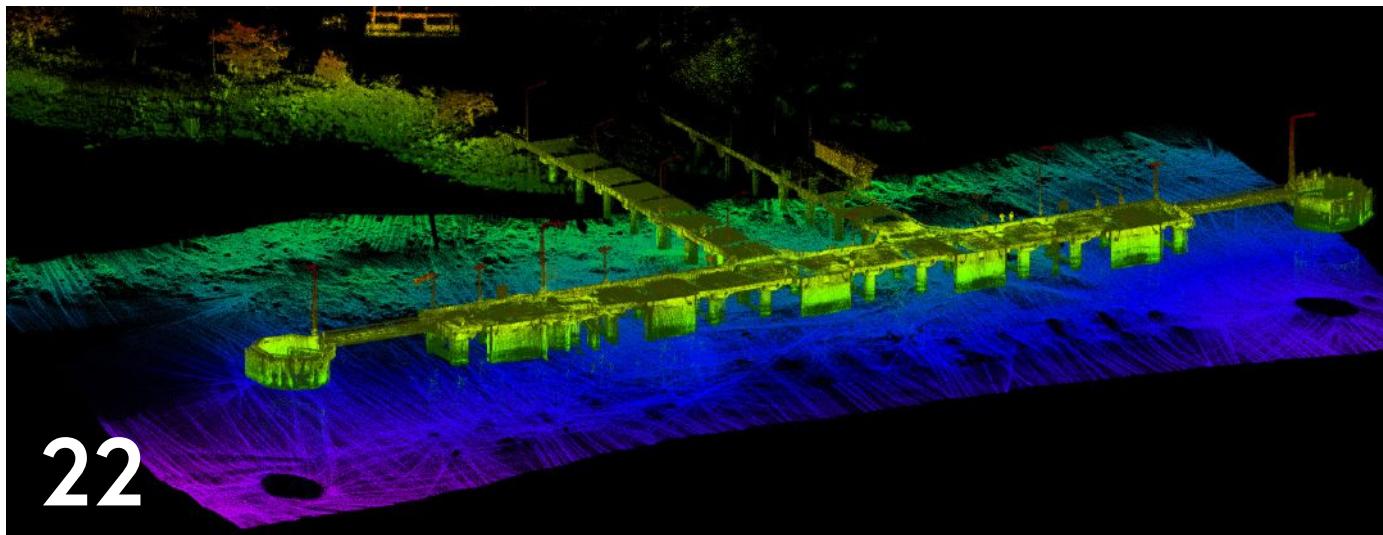
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- ✓ Full Sensor Suite
- ✓ Small Footprint
- ✓ Low Drag Tether
- ✓ Highly Intuitive
- ✓ Intelligent Control System
- ✗ Generator

**22****42**

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**Published by**  
Technology Systems Corporation  
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**Ocean News & Technology ISSN# 1082-6106**  
is published 10 times a year in print and digital by  
Technology Systems Corporation, 7897 SW Jack  
James Dr, Suite A, Stuart, FL 34997, telephone  
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## WE NEED UMV STANDARDS THAT ENCOURAGE GROWTH

**BY: TOM REYNOLDS,  
VICE PRESIDENT OF BUSINESS DEVELOPMENT & STRATEGY,  
HYDROID**

Every industry is judged by how well it solves a problem or creates an opportunity. In the case of unmanned maritime systems (UMVs), the industry has been successfully "introduced" to the market; a significant investment has been made in furthering the development of the technology; and it is now at a transition point for "growth". With this evolution, UMV customers are more knowledgeable now than ever before and they can better forecast a return on investment in this technology. There is also a greater social acceptance for unmanned systems, thanks to trail blazers in the air and ground domains. Finally, key technologies (autonomous software, high fidelity sensors, more reliable machinery) are more advanced and the maritime "ecosystem" is evolving to include unmanned vehicles.

However, in order to maintain this momentum, the industry needs safety and reliability standards that increase the public's trust, while also being feasible and encourage growth. Safety and reliability are now, and will remain, the benchmarks for how all vehicles in every domain are judged. Industry will never be satisfied improving UMVs. Our customers demand safe and reliable transport of people, cargo or high value sensors. However, as with manned vehicles, a level of risk to

perform certain tasks (and each is different) becomes acceptable. Establishing this, and the means to measure and certify UMVs, is necessary for growth to be realized.

The burden is not on the vehicle alone. The "ecosystem" which all ships-at-sea operate within is becoming increasingly digital with more data being shared through a larger constellation of satellites. Navigation and positioning systems have improved, and weather conditions can now be predicted more quickly so that routes can be adjusted. Additionally, high data rate communication systems allow for positive control of vessels to be more responsive during remote control operations or for overwatch of unmanned vessels during autonomous operations.

Under certain conditions, UMV technology for fishing, surveying the sea floor or for the safe transportation of goods exists today. With ships having been built to serve for decades, autonomy is being developed to convert manned vessels to unmanned vessels. Unmanned vehicles can dive to deeper depths for longer periods than manned vehicles. As we explore our oceans, this capability may reveal opportunities for new customers. But what continues to be at the forefront of the commercial market is that both manned

and unmanned vessels must coexist and be certified to follow the navigation rules of the ocean (USCG COLREGs).

In the defense market, where risk comes in many more forms, the ability to have unmanned vehicles go where manned ships cannot has its own value even if it is a one-way trip. In an environment where lives are risked, every unmanned vehicle becomes potentially expendable, something that will never be said of a manned system. However, governments must be answerable to their citizens and unmanned maritime vehicles must meet reliability standards to be worth the investment.

We have every reason to be optimistic but, to realize the full potential of UMVs, industry and regulatory bodies need to work together to establish and meet standards that will enable growth as well as build customer and public confidence in our new industry.

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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.

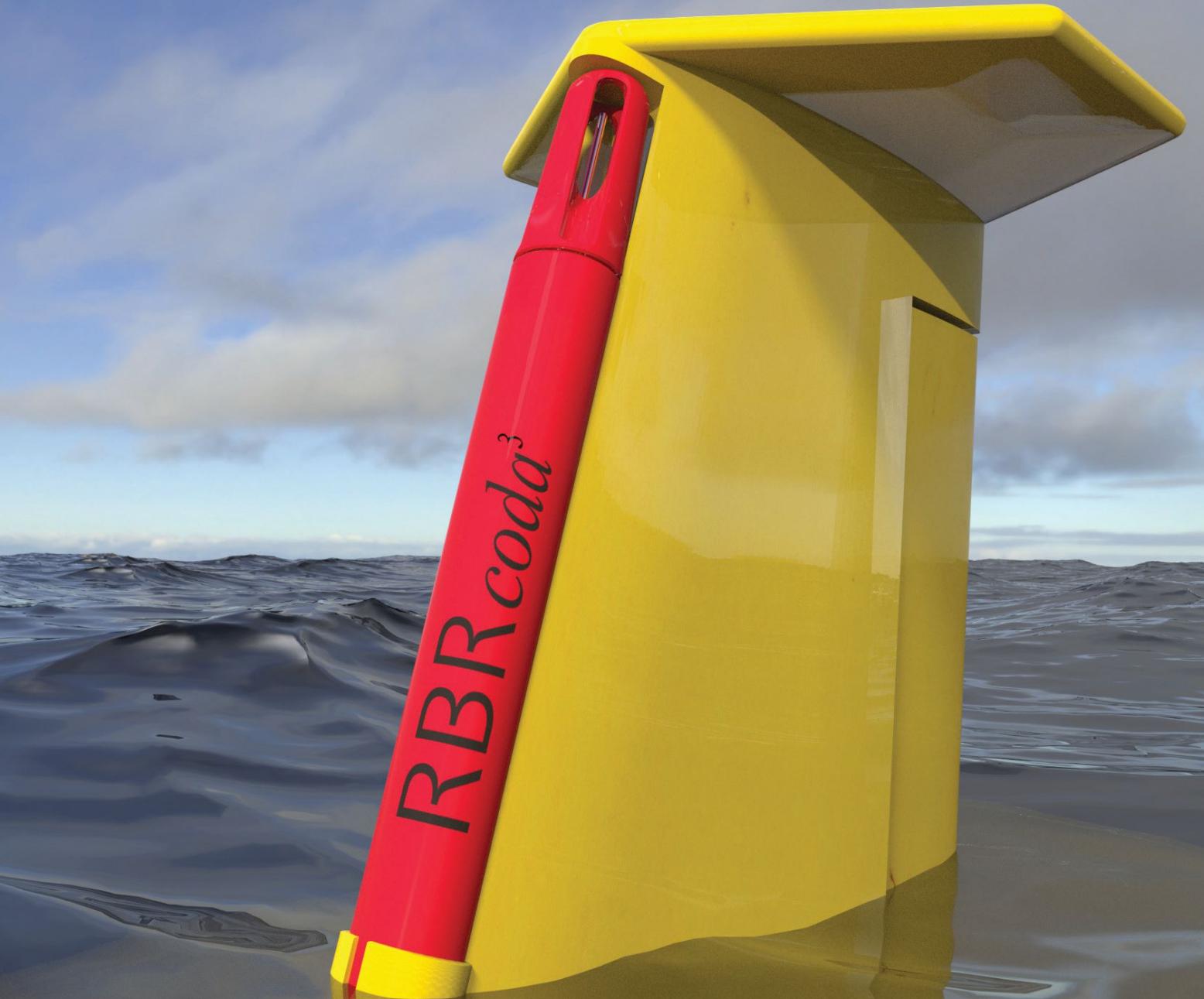
Our EdgeDVR is currently used worldwide by most of the major ROV and diving contractors.

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.

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» EvoLogics S2C T 18/34 modem



» S2C T 18/34 modem with cable-mounted transducer



» S2C R, M and T 18/34 modems (left to right)

## New Form Factor: Next Generation "Tiny" Modems From EvoLogics

In April 2019, EvoLogics GmbH from Berlin, Germany, introduced the company's latest addition to their range of underwater acoustic modems: the new generation S2C T modems. The light and ultra-compact design represents a size reduction of almost 20% compared to EvoLogics M-series mini-modems at only 25 cm standard height and 1200 g weight.

Same as its counterparts from the highly-customizable R-series and the compact M-series, the new model features a fully-fledged S2C data delivery engine with no compromises in acoustic performance. It is a great fit for small AUVs and ROVs where size and weight are critical. Perfect as transponders for positioning, the S2C T are capable of simultaneous tracking and reliable bi-directional data transmissions with advanced networking. The S2C T series form factor is available for EvoLogics high frequency models, catering to various short- and mid-range applications with 4 frequency range/directivity options.

EvoLogics reliable S2C spread-spectrum communication technology stems from bionic concepts and over the years evolved into a whole ecosystem of products. This includes several series of underwater acoustic

modems, modular underwater positioning systems (USBL, LBL, SBL), as well as a framework for developers in both networking and hardware design. The S2C R "standard" build modems are highly configurable. They offer the widest selection of options and depth ratings to find an exact match even to most unique and application-specific tasks. The S2C M "mini" devices are smaller and lighter, providing essentials for numerous communication and positioning scenarios. The new S2C T - the "tiny" line - steps up to enable smarter, lighter and more effective solutions to modern subsea applications that demand fast and reliable communication.

The T-series modems are now available as builds with integrated or cable-mounted transducers in several housing options.

**EvoLogics GmbH**  
Ackerstrasse 76,  
13355 Berlin, Germany  
Tel.: +49 30 4679 862 - 0  
Fax: +49 30 4679 862 - 01

[WWW.EVOLOGICS.COM](http://WWW.EVOLOGICS.COM)



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SPEC SHEET

## OBSERVATION ROV

### ALL OCEANS

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 Teher 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

WWW.AQUABOTIX.COM | Sales | sales@aquabotix.com



#### 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

WWW.BLUEROBOTICS.COM

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.



## CRYSTAL CAM IMAGING INC.

WWW.CRYSTAL-CAM.COM | Ibrahim Amerih | info@crystal-cam.com



### DELTA EXTREME

The Delta Extreme is an intuitive remotely operated robotic system designed for remote visual inspection inside confined spaces and hazardous environments. Equipped with specially designed track belts providing optimal traction in a wide variety of environments, its shape-changing ability allows it to adapt to different terrain on-the-fly, both on land or underwater. (Customizable)



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### DELTA MICRO

The Delta Micro is a miniature remote visual inspection system, for operation in confined spaces as small as 10"/254mm. Capable of navigating through tight spaces, over objects and around obstacles due to its shape changing capabilities, the system is light weight, portable and easy to use. The entire system can be carried and operated by a single user. (Customizable)



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## DEEP OCEAN ENGINEERING, INC.

WWW.DEEPOCEAN.COM

Sales | sales@deepecan.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.



## DEEP TREKKER INC.

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



### 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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### 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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## TASKS

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## OBSERVATION ROV

### DEEP TREKKER INC.

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



#### 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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### EPRONS GROUP

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  
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Positioning system; Rear camera.  
NEW! Two channel video output at the  
same time.



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#### RB 600

Working depth till 300 meters. Tether  
length 300 meters (up to 1200 m).  
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Rear: additional color/BW camera 700  
TVL. 7 Thrusters: 4 Horizontal; 2 Vertical;  
1 Lateral.



### EPRONS GROUP

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#### 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/BW camera 700  
TVL. 12 Thrusters: 6 Horizontal; 4 Vertical;  
2 Lateral.



### FAST ENGINEERING LTD

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#### FASTANK BUND

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### FORUM SUBSEA TECHNOLOGIES

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#### 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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## JW FISHERS MFG. INC

WWW.JWFISHERS.COM | Christopher Combs | info@jwfishers.com



### SEALION-2 ROV

For over 40 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.



### SEAOTTER-2 ROV

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### MARINE DISTRIBUTION & CONSULTING

WWW.PALANQUEE.FR/BLUEROV2BYMDC  
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### 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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SURVEY

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INSPECTION

CON  
CONSTRUCTION

INT  
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## OBSERVATION ROV

### OUTLAND TECHNOLOGY

WWW.OUTLANDTECH.COM | Jeffrey Mayfield | jeff@outlandtech.com



#### ROV 1000

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### SAAB SEAEDGE LTD

WWW.SEAEDGE.COM

James Douglas | rovs@seaeye.com



#### SABERTOOTH

The Seaeye Sabertooth is a merger of the Double Eagle SAROV (Saab Autonomous Remotely Operated Vehicles) and Saab Seaeye technologies, resulting in a hovering hybrid AUV/ROV with deep water capability, long excursion range and a six degrees of freedom control system.



### SEAMOR MARINE LTD.

WWW.SEAMOR.COM

Don Darling | ddarling@searobotics.com



#### 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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### POWERDOCKS LLC

WWW.POWER-DOCKS.COM

Anthony Baro | abaro@power-docks.com



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### SEAVIEW SYSTEMS, INC.

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Matthew Cook | mcook@seaviewsystems.com



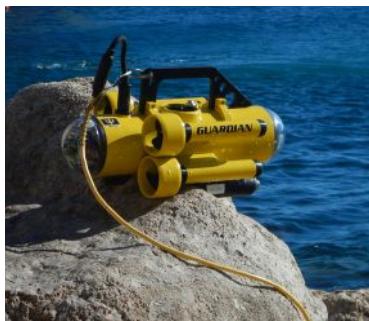
#### TITAN

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.



## 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)



OBS | VC&L | A&T



### 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.



OBS | VC&L | A&T



### ROBIS MINI-ROV

Robis is designed for ballast tank inspection without prior emptying. Vectored thrusters and small dimensions make ROBIS extremely maneuverable for inspection of highly confined areas. Two high resolution video cameras (front on Pan&Tilt), multiple sensors (US gauge, CP probe, laser tool) and an innovative acoustic positioning system allow detailed mapping of measurements and defects inside the ballast tank.



OBS | VC&L | A&T



### SENTINEL MINI-ROV

Sentinel is the perfect compromise for those looking for an affordable underwater inspection solution offering only the essential features. Embedded batteries allow 4h autonomy and operation in the most remote areas down to 150m depth. The complete system with a 50m umbilical is packaged in a single transport bag (20 kg). (Customizable)



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# Batteries



### Vehicle Batteries

- Highest capacity, reliability, safety
- Your power source for AUV and ROV
- MIL-STD approved



NEW 2019: high-energy family

### Subsea Oil+Gas Batteries

- Subsea UPS
- All-Electric / actuator battery
- 24V to 600V - 1kW to 50kW



### Our values - your success

- Highest capacity, reliability, safety
- Longest lifetime
- Proven track record
- Customizing and personal support
- Simplest operation on board
- Qualification API17F, UN T38.3 etc.



SubCtech GmbH

info@subctech.com  
www.gosubsea.com  
www.subctech.com

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WORK TOOLS

**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 manoeuvring 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.



# IT'S IN OUR DNA...

**...to engineer and manufacturer the broadest range of MARINE ANTENNAS for the most demanding Positioning, Navigation, Timing and Communication applications the world over.**

Antcom produces GNSS and Communication antennas optimized for Marine and Submarine Vessels, AUVs, Buoys, and Hydrographic and offshore equipment. Our deep-sea proven antennas are precision crafted to the highest metrics and to the most rigorous operational certifications.

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### 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 13" convertible touchscreen tablet and wireless Logitech controller. The Ultra BASE can accept most basic VideoRay accessories.



### 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. Available in Rugged, Plus, Rack Mount, and Autonomous Control configurations.



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## Gain Visibility, Accuracy, and Speed

The V-Wing™ Towed Depressor Product Line is ideal for deep-water mapping, research, side-scan surveys, reconnaissance, and more.



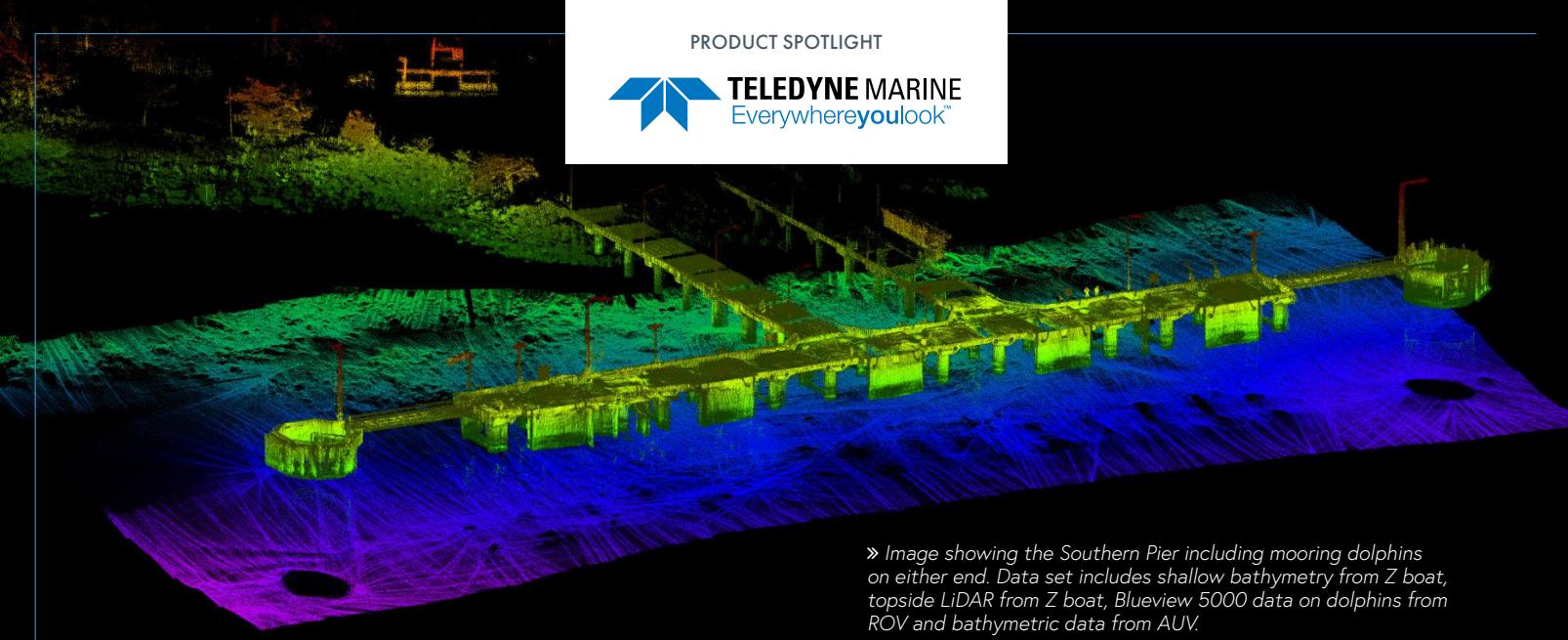
### Advantages:

- Enable a range of missions (six V-Wing products, multiple mount options)
- Increase sensor accuracy via V-Wing's stable transportation
- Descend and ascend rapidly
- Set/maintain mission depth easily

### Learn More:

- info@boston-engineering.com
- www.insight.boston-engineering.com/v-wing





## Expeditionary Systems for Multinational Security Exercise

Recently Teledyne Marine was approached by a military customer who was participating in a multinational security exercise. As a part of this exercise a team made up of three allied navies was tasked with surveying subsea and surface aspects of critical infrastructure as well as side scan and bathymetric surveys around ship channels. The assigned missions included an inspection of an aging pier to plan for its subsequent demolition, inspection of a second pier to assess previously placed anodes and determine if the "dolphin" structures at either end required demolition, survey the related shipping channels to confirm safe passage, survey a small bay to assess the possibility of building a boat launch, and survey three marked shipwrecks on local shipping charts.



The original concept of operations called for the use of naval divers and the use of a small launch with a towed side scan with bathymetry to conduct all required surveys. Issues with this approach include safety of personnel operating in close proximity to decaying and unstable infrastructure, speed of survey, and data quality.

Teledyne Marine possess an array of unmanned systems products and capabilities including expeditionary class survey UUVs – AUVs, ROVs, USVs and Gliders and was uniquely positioned to assist our client meet their survey requirements. As a part of this exercise Teledyne Marine was invited to demonstrate a family of unmanned expeditionary systems to meet participants objectives. The Teledyne approach utilizing a Family of Expeditionary Systems has a number of benefits over traditional means and was capable of meeting the mission requirements safer, quicker, and coupled with higher quality data than would have been possible using solely divers and small boats.

During the exercise, Teledyne Marine operated a multibeam sonar and LiDAR from the Oceanscience Z-Boat USV, which conducted bathymetric surveys in shallow waters to the shore as well as topside infrastructure inspection using LiDAR. The SeaBotix vLBV300

» Expeditionary Systems ready for deployment: Teledyne Team with Gavia AUV, Oceanscience Z-Boat, and SeaBotix ROV

ROV carried a 3D multibeam to inspect infrastructure including the mooring dolphins, which were especially hazardous to divers due to construction material seepage. The Gavia AUV carried two kinds of sidescans (including interferometric options) coupled with high-resolution multibeam. Data from above and below the waterline from all three vehicles was stitched together in one continuous point cloud of data covering over 1km<sup>2</sup> sea floor from shipping lanes, both piers, and the bay utilizing Teledyne Caris software. Actionable data from the surveys will be used for demolition planning, construction, safe ship passage, and the updating of charts where it was discovered three wrecks were no longer at the marker points.

Teledyne Marine is a group of leading-edge subsea technology companies that are part of Teledyne Technologies Incorporated. Through acquisitions and collaboration over the past ten years, Teledyne Marine has evolved into an industry powerhouse, bringing Imaging, Instruments, Interconnect, Seismic, and Vehicle technology together to provide total solutions to our customers. Each Teledyne Marine company is a leader in its respective field, with a shared commitment to providing premium products backed by unparalleled service and support.

[WWW.TELEDYNEMARINE.COM](http://WWW.TELEDYNEMARINE.COM)



# OBSERVATION ROV WITH PAYLOAD OPTION

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ENVIRONMENTAL



DEFENSE



OFFSHORE OIL & GAS



SCIENCE



SCIENCE



OCEAN RENEWABLES

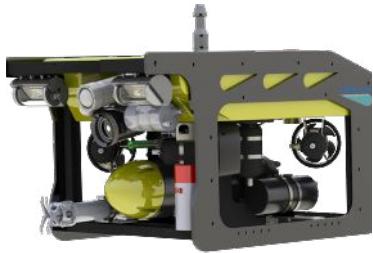


SPEC SHEET

## OBSERVATION ROV WITH PAYLOAD OPTION

### 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

### DEEP OCEAN ENGINEERING

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



#### PHANTOM® FIREFLY

Sized to penetrate through and below the top guide and core plate. Normally used for steam dryer visual exam during BVR 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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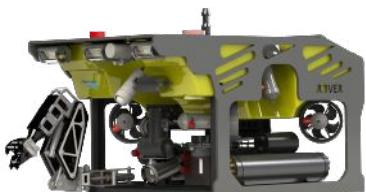


#### PHANTOM® P-150

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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#### 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



#### 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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## DWTEK CO., LTD

WWW.DWTEKMARINE.COM  
info@dwtek.com.tw



### INVESTIGATOR 90 (I-90)

Suitable for Port & Harbor Security, Search & Rescue Operations, Real-time Submerged Monitoring, Pipe & Cable Tracking, Scientific Task & Surveys, Dam & Tunnel Inspections, Offshore oil & Gas, and Renewable Energy Search.



## ECA GROUP

WWW.ECAGROUP.COM | Sales | sales@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 : ROV FOR INSPECTION AND LIGHT WORK

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.



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## TOOLS

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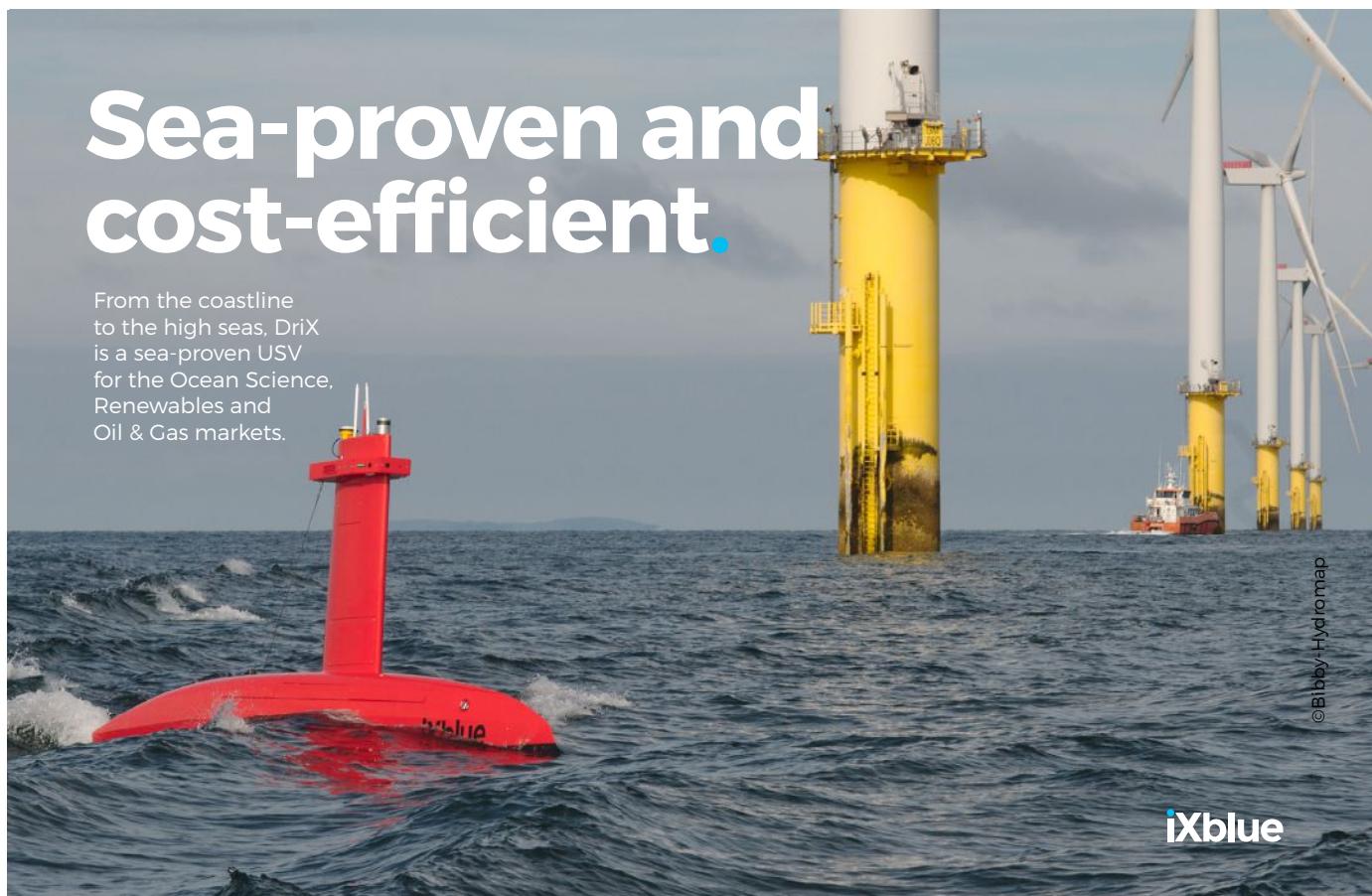
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# Sea-proven and cost-efficient.

From the coastline to the high seas, DriX is a sea-proven USV for the Ocean Science, Renewables and Oil & Gas markets.



iXblue

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## OBSERVATION ROV WITH PAYLOAD OPTION

### MARINE IMAGING TECHNOLOGIES

WWW.MARINEIMAGINGTECH.COM

Evan Kovacs | info@marineimagingtech.com



#### CINEMA CLASS ROV

Pixel, the first Cinema Class ROV, created to reimagine the art of underwater storytelling, remote exploration and research. Built around two immense cinema camera housings and a multi-fiber optic tether, Pixel offers new options in underwater cinematography. (Customizable)



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### RJE OCEANBOTICS

WWW.OCEANBOTICS.COM

Geoff Dean | GDean@rjeint.com



#### OCEANBOTICS SRV-8 ROV

With 8 Thrusters providing unmatched agility and maneuverability, the RJE Oceanbotics SRV-8 ROV sets a new standard for underwater inspection and exploration. Intuitive, easy to deploy and operate, battery powered, 6 DOF - the best value ROV in its Class. Gets your missions done easier and faster...like no other! (Customizable)



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### NOTILO PLUS

WWW.OUTLANDTECH.COM | Solène Guéré | seasam.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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### 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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### ROVOTICS

WWW.ROVOTICS.AE

Tamer El Essawy | enquiries@rovotics.ae



#### SHARK G2R

Rovotics specialise in creating cutting edge, highly dependable ROVs and components including Junction Boxes, Subsea Housing and CP Equipment. Using the latest software, Rovotics systems have a proven track record in efficiency, especially in minimising downtime. This has allowed the ROV manufacturer to attract a loyal, returning client base. (Customizable)



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### SAAB SEA EYE LTD

WWW.SEA EYE.COM

James Douglas | rovs@seaye.com



#### FALCON

Portable, powerful inspection class ROV system. (Customizable)



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## SEAMOR MARINE LTD.

WWW.SEAMOR.COM

Robin Li | sales@seamor.com



### CHINOOK ROV

The CHINOOK is an industrial grade inspection ROV with a wide range of capabilities. Explore the depths down to 1,000ft/300m with the standard vehicle or 2,000ft/600m with the deep water version. A true workhorse, the CHINOOK offers a stable platform yet remains compact. (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

Marla Isenstein | misenstein@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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WORK TOOLS

An advertisement for Outland Technology featuring their ROV-500. The background shows a yellow ROV-500 submersible in the water. To the left is the Outland Technology logo, which includes a stylized blue and green wave icon followed by the company name in blue and green. Below the logo is the model name "ROV-500" in large, bold, white letters. To the right, there is text about trade shows and a list of features for the ROV-500. At the bottom right is the website address "www.outlandtech.com".

*Visit Us at:*  
Underwater Intervention, Stand# 611  
New Orleans, LA Feb 4-6, 2020  
Oceanology Int'l, Stand# H700  
London, U.K. March 17-19, 2020

**-High Power/Weight  
-Light Weight Design  
-NO batteries required  
-300M Depth Rated  
-Dual Lateral Thrusters  
-High Power LED Lights  
-LOW Maintenance  
-EASY Operation**

[www.outlandtech.com](http://www.outlandtech.com)

## OBSERVATION ROV WITH PAYLOAD OPTION

### 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".



### STRATEGIC ROBOTIC SYSTEMS

WWW.SRSFUSION.COM

Jesse Rodocker | jesse@srsfusion.com



#### FUSION-ROV

**FUSION** The FUSION is the next generation UUV that is a uniquely designed battery powered system with full supervisory/autonomous control and high-resolution sensors such as HD video, forward looking multi-beam sonar and DVL. Highly intuitive control system, 2.4mm diameter tether and no generator required make the FUSION perfect for small boat operations in demanding conditions. (Customizable)



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## BARRACUDA

### A New Breed of ROV

*Designed to work in high current.*

*Small, Streamlined, Extremely Powerful and loaded  
with Advanced Capabilities.*

- Shark Marine's "DiveLog" Control Software"

Provides:

- 3D Route Following.
- Station Keeping.
- Auto Depth / Altitude.

- Integrated Total Navigation System (TNS) Including GPS, DNS,(LBL also available).

- Able to run off of a wide range of power supplies.

- Easy to Deploy, High Thrust.



Shark Marine Technologies Inc. www.sharkmarine.com sales@sharkmarine.com Ph: (905) 687 6672

## SUBMERSIBLE SYSTEMS INC.

WWW.SSIROVS.COM | Wolfgang Burnside | rwolfgang@ssirots.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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## TELEDYNE SEABOTIX

WWW.TELEDYNEMARINE.COM | Jamie Carrig | Seabotix\_Inquiries@teledyne.com



### LBV200-4

The LBV200-4 is designed with features typically found in larger ROVs. Powerful thrusters, high resolution video, industry leading low drag tether and an extensive list of available options make the LBV200-4 the perfect inshore/offshore solution. (Customizable)



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### LBV300-5

The LBV300-5 takes stability and versatility to a new level with dual vertical thrusters. Increased vertical control and stability make the LBV300-5 a great tool in demanding conditions. Add the revolutionary Crawler Skid and you have the ultimate maritime security system. (Customizable)



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### 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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## OBSERVATION ROV WITH PAYLOAD OPTION

### TELEDYNE SEABOTIX

WWW.TELEDYNEMARINE.COM  
Jamie Carrig | SeaBotix\_Inquiries@teledyne.com



### 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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### TETIS INTEGRATED SYSTEMS

WWW.TETIS-KS.RU/EN  
Dmitry Voytov, Dmitry Garbuзов | 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.



### VIDEORAY

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



### MISSION SPECIALIST PRO 5

The VideoRay Mission Specialist Series (MSS) 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.



OBS | INS | VC&L | A&T

### 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 ordinance 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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Connecting What's Needed with What's Next™



# ADVANCING SUBSEA RESIDENCY

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As your trusted partner, Oceaneering is pushing boundaries to solve your subsea challenges. The development of the self-contained, battery-powered E-ROV and the Freedom resident ROV combines our unmatched experience, remote piloting and automated control technology, and Mission Support Centers, to safely and cost-effectively improve efficiency and de-risk operations.



DIGITAL EDGE SUBSEA



Digital Edge Subsea supplies the Oil & Gas industry with our digital video recording inspection system, the EdgeDVR. The company was formed in 2009 and began trading in 2010.

The Managing Director John Benson and the Inspection Manager Tracey Lawson have a combined offshore experience of 40 years in the Subsea Inspection industry. This has ensured that the Digital Edge Subsea product range has been developed with the end user as one of the main focuses. We pride ourselves on how user friendly our product range is, whilst satisfying the requirements of our global clients. We now have over 500 systems offshore and have a large rental pool of over 70 units.

During the present downturn, the rental market has been very strong, through our rental partners around the world. During 2019 the company has been developing the next generation of digital recording equipment, which are due for release Q3 2019. The new Version 5 software and hardware, will keep the original mandate, of being easy, simple to use and most of all, reliable. The software will now have 3 levels, EdgeLite, Edge and EdgePro.

On the software side, EdgeLite is the most basic of our recording systems. This will be an entry level unit, suitable for surveys and inspections, where there is no requirement for eventing. This product will record 4 channel video with overlay, but with no eventing capabilities. Our clients range in size, and this product has been developed to provide our smaller



clients with the same great recording capability at a fraction of the cost.

Version 5 of the EdgeDVR will provide the same capability as the current Version 4 but with the added advantage of being able to record 4 channels of HD simultaneously. As with Version 4, eventing, the creation of Workpacks and offline editing are all features that are included.

The EdgePro is an addition that has been developed with our wish to expand our Inspection department. The EdgePro will have all the capabilities of the EdgeDVR, but with the addition of an extended database that allows tasks to be assigned to components under inspection. This will allow Clients to either create Workpacks themselves from approved workscopes, or these can be created by Digital Edge, as Tracey Lawson is an experienced CSWIP 3.4u Underwater Inspection Controller. As previously mentioned our Clients vary in size and we envisage this feature to be used by our smaller clients who may have no inspection department and/or limited access to known inspection databases.

The deliverables to the Client will include an automatically generated report to capture all of the inspection results.

With regards to the hardware we will also have 3 main types, Standard Definition, High Definition and our first 4K system. The addition of a 4K(UHD) model is a reflection of the latest technology that is now being used on some of the latest ROV and diving systems worldwide.

The standard 4U rackmounted model is also complimented by a new portable laptop version, both models are available for purchase and rental.

Later in 2019 we will also be launching EdgeLive, this is a subscription based live remote monitoring service. Users will have remote access to live video, eventing, photos and anomaly clips. For low bandwidth installations and vessels, EdgeLive can transmit the video as low as a single frame per second if required. We envisage this to be used during intervention works and for onshore assessment on critical anomalies that require an engineers assessment.

In addition to our software, we also have a range of inspection tooling suitable for Inspections class ROVs. The RTK001 Rovtools kit comprises of an ROV clamp, Adjustable pole, CP Probe mount, Marine Growth Measurement Tool, Marine Growth Removal Tool, Softline Cutter and simple cleaning brush.

For more info please contact John Benson – [john@digitaledgesubsea.com](mailto:john@digitaledgesubsea.com).



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SCIENCE



OCEAN RENEWABLES



SPEC SHEET

## WORK CLASS VEHICLES

### ARGUS REMOTE SYSTEMS AS

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



#### ARGUS MARINER MKII

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



SUR | INS | CON | INT | VC&L | A&T | NDT | VSK



#### ARGUS WORKER

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



SUR | INS | CON | INT | VC&L | A&T | NDT | VSK



#### ARGUS MARINER XL

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



SUR | INS | CON | INT | VC&L | A&T | NDT | VSK

### DOER MARINE

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

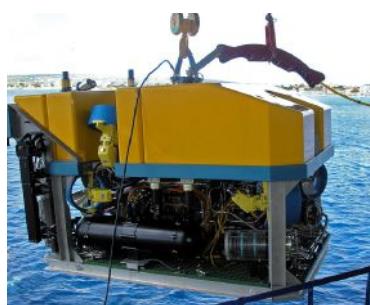


#### H2000

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.



SUR | INS | INT | VC&L | A&T | CD | NDT | VSK



#### 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.



SUR | INS | INT | VC&L | A&T | CD | NDT | VSK



#### 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.



SUR | INS | INT | VC&L | A&T | CD | NDT | VSK

## ECA GROUP

WWW.ECAGROUP.COM | Sales | sales@ecagroup.com



### H1000: WORK CLASS ROV

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).



### H2000: WORK CLASS ROV

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.



## TASKS

**OBS**  
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**CD**  
CLEANING  
DEVICES

**VSK**  
VEHICLE STATION  
KEEPING

**WT**  
WORK TOOLS

## FORUM SUBSEA TECHNOLOGIES

WWW.F-E-T.COM | Sales | rov.sales@f-e-t.com



### 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.



## WORKING CLASS VEHICLES

### FORUM SUBSEA TECHNOLOGIES

WWW.F-E-T.COM | Sales | rov.sales@f-e-t.com



#### 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.COM

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)



OBS | SUR | VC&L | A&T | VSK | NDT | CD

### 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)



SUR | INS | INT | CON | VC&L | A&T | CD  
WT | NDT | VSK



#### 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)



SUR | INS | INT | CON | VC&L | A&T | CD  
WT | NDT | VSK

## 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)



## OCEANEEERING INTERNATIONAL, INC.

WWW.OCEANEEERING.COM/ROV-SERVICES/ROV-SYSTEMS | Sales | rov-services@oceaneering.com



### ENOVUS ROV

The compact work class eNovus ROV is the newest addition to our fleet and is powered by an environmentally conscious, 150-kVA electric (235-hp hydraulic equivalent) propulsion system. This vehicle maintains work class manipulator capabilities via a dedicated hydraulic circuit. (Customizable)



### MAGNUM® PLUS ROV

Customers include Cummings, Broadsea ROV, FPSS, Marine Innotech, Blue Water. (Customizable)



## It's easy to search the harshest of environments

safe and quickly with a JW Fishers commercial grade ROV

Air bubble trapped under ice



- Highly Portable
- Commercial grade
- High power LED lighting
- 1,000' depth capability
- (4) high output motors
- Pan & tilt front **AND** rear cameras come standard
- Starting at \$20,995



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Email: [info@jwfishers.com](mailto:info@jwfishers.com)

[www.jwfishers.com](http://www.jwfishers.com)



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**WT**  
WORK TOOLS

## WORKING CLASS VEHICLES



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### OCEANEERING INTERNATIONAL, INC.

[WWW.OCEANEERING.COM/ROV-SERVICES/ROV-SYSTEMS](http://WWW.OCEANEERING.COM/ROV-SERVICES/ROV-SYSTEMS)  
Sales | [rov-services@oceaneering.com](mailto:rov-services@oceaneering.com)



#### 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)



### SAAB SEAEDGE LTD

[WWW.SEAEDGE.COM](http://WWW.SEAEDGE.COM) | James Douglas | [rovs@seaeye.com](mailto:rovs@seaeye.com)



#### COUGAR

The Seaeye Cougar-XT is a compact, highly flexible and extremely powerful electric ROV with working depths of 2000 metres.



#### COUGAR COMPACT

The Seaeye Cougar-XT Compact is the shallow water compact version of the field proven and extremely powerful Cougar-XT.



#### COUGAR XTi

THE SEAEDGE COUGAR-XTi is the deep water version of the compact, highly flexible and extremely powerful Cougar-XT.



## SAAB SEAEDGE LTD

WWW.SEAEDGE.COM | James Douglas | rovs@seaeye.com



### JAGUAR

The Seaeye Jaguar represents a new era in ROV design and continues the long tradition of innovation and excellence that Saab Seaeye is world renowned for.



### LEOPARD

The Seaeye Leopard is designed to offer operators an exceptionally powerful electric work class ROV in a compact chassis. Developed from the highly successful Panther XT-Plus, the Seaeye Leopard produces an impressive half tonne of forward thrust, with fifty percent more payload, three times the tooling power and double the depth rating, whilst maintaining the same deck footprint.



### LYNX

The Seaeye Tiger and Lynx are widely regarded as the leading observation and inspection vehicles within the oil and gas industry. Increasingly they are also being taken up as the ROV of choice by military and scientific customers seeking increased capability in deep water.



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### WT

WORK TOOLS



### PANTHER XT

The customisable Seaeye Panther-XT is designed as the benchmark for electric work ROVs and challenges heavier and more costly hydraulic vehicles, particularly where deck space is at a premium.



### PANTHER XT PLUS

The customisable Seaeye Panther-XT Plus is designed as the benchmark for electric work ROVs and challenges heavier and more costly hydraulic vehicles, particularly where deck space is at a premium.



### TIGER

The Seaeye Tiger and Lynx are widely regarded as the leading observation and inspection vehicles within the oil and gas industry. Increasingly they are also being taken up as the ROV of choice by military and scientific customers seeking increased capability in deep water.



## WORKING CLASS VEHICLES

### 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)



SUR | INS | VC&L | A&T



#### 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)



SUR | INS | CON | INT | VC&L | A&T | WT



#### 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.



#### 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.



#### 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.



## 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.



## 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)



SUR | INS | CON | INT | VC&L | A&T | NDT | VSK



### 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)



SUR | INS | CON | INT | VC&L | A&T | NDT | VSK



# UNDERWATER PORT SECURITY ENVIRONMENTAL MONITORING INFRASTRUCTURE INSPECTION

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VEHICLE STATION  
KEEPING

## WT

WORK TOOLS

## AUV - ROV - GIS Services & Training

Efficient  
Effective  
Economical

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+1-619-628-0068



## Oceaneering Provides Innovative Subsea Solutions with Next-Generation ROV Systems

At Oceaneering, we do things differently, creatively, and smarter. From sea to space, we transform subsea solutions to engineer the low carbon future.

The industry has long called for more innovative subsea solutions. Resident remotely operated vehicles (ROVs) and autonomous underwater vehicles (AUVs) that can stay down for longer periods with increased battery life and without the need of a support vessel are the future of subsea operations. By removing dedicated support vessels, operators can simplify logistics and reduce their carbon footprint by removing personnel offshore, instead keeping them onshore.

As the world's largest ROV operator and the leading ROV provider to the oil and gas industry worldwide, we sought to solve this new challenge. To date, software and data communications are being developed that enable safe, reliable operations for underwater vehicles. Oceaneering was selected by a North Sea operator to design a robust, resident subsea vehicle: our Empowered ROV (E-ROV) system. The E-ROV is a self-contained, battery-powered, work class vehicle capable of carrying out inspection, maintenance and repair, commissioning, and underwater intervention activities.

The E-ROV uses electric propulsion systems with state-of-the-art electronic controls and intelligent diagnostics. It comes with a cage-mounted 100kW battery pack and tether management system, as well as a communication buoy, which hosts an antenna mast to improve signal reception and battery power to support communication transfers. The E-ROV system can be controlled from one of our onshore control centers, with communication provided by a 4G/LTE broadband network from the buoy.

It can be placed subsea in a particular location by a vessel of opportunity with a self-deploying buoy, and it can be recovered similarly by a vessel of opportunity and redeployed to another location within 48 hours.

Battery life and system reliability are hugely important for sustaining subsea residency. Currently, battery life for the E-ROV system is up to three months, depending on the activity required for assignments. It can also be connected to a subsea power source to have an unlimited duration. However, Oceaneering is working to extend subsea residency battery power to up to six months with our Freedom ROV.

Freedom will be supported by a docking station at the seabed and is capable of operating in autonomous and tethered modes. It will be able to inspect miles of flowlines or remote wellheads as it pilots around the field. The Freedom ROV could also be piloted remotely from our onshore control centers while in tethered mode.

With the development of our next generation resident vehicles, E-ROV and Freedom, we have combined our unmatched experience, remote piloting and automated control technology, and onshore control centers, to safely and cost-effectively improve efficiency and de-risk operations.

As your trusted subsea partner, our advanced technologies allow us to both lead the way and adapt to changing market conditions. With our safety-focused and innovative approach, Oceaneering pushes the frontiers of deep water to solve any complex challenge—from routine to extreme. By working together, we will safely and reliably re-shape the future of the oil and gas industry.

[WWW.OCEANEERING.COM](http://WWW.OCEANEERING.COM)



# TOWED & BOTTOM CRAWLING VEHICLES

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SPEC SHEET

## TOWED & BOTTOM CRAWLING VEHICLES

### ALL OCEANS

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)



SUR | INS | CON | INT | VC&L | CD | NDT  
A&T | VSK | WVT

### BELLAMARE, LLC

WWW.BELLAMARE-US.COM

Charles Cousin | info@bellamare-us.com



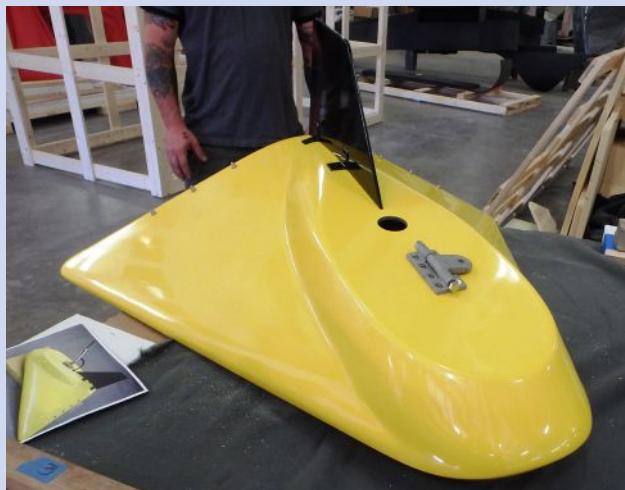
#### STINGRAY

From passive sleds to smart remotely operated vehicles, Bellamare manufactures reliable vehicles with a proven track record.



### BOSTON ENGINEERING

WWW.BOSTONENGINEERING.COM | Roger Race | rrace@boston-engineering.com



#### V-WING PRODUCT LINE

6 standard wing sizes from 18" to 5 feet. All Fiberglass dyhedral design.  
All Can be customized



CON | VC&L | A&T

### 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)



CON | INT | A&T

## CHELSEA TECHNOLOGIES GROUP LTD

WWW.CHELSEA.CO.UK

Ellen Keegan | ekeegan@chelsea.co.uk



### 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.DEEPTREKKER.COM

Sales | sales@deeptrekker.com



### DT640 UTILITY CRAWLER

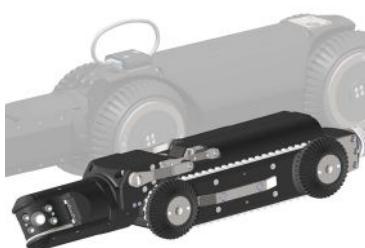
The DT640 Utility Crawler is the most versatile inspection vehicle of its kind. The sleek, three-wheel submersible comes with a magnetic option, creating the ideal vehicle for an array of underwater work. Compact for transportation and extremely portable. (Customizable)



OBS | VC&L | A&T | VSK

## DEEP TREKKER INC.

WWW.DEEPTREKKER.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)



OBS | VC&L | A&T | VSK



### 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)



OBS | VC&L | A&T | VSK

## TASKS

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ACOUSTIC & TRACKING

### CD

CLEANING DEVICES

### VSK

VEHICLE STATION KEEPING

### WT

WORK TOOLS

## ECA GROUP

WWW.ECAGROUP.COM

Sales | sales@ecagroup.com



### ROVING BAT

Hybrid ROV and crawler, Roving Bat can swim as a ROV but, thanks to 4 vertical thrusters, it tilts, rolls and sticks 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.



### 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.



OBS | VC&L | A&T | VSK

## TOWED & BOTTOM CRAWLING VEHICLES

### EDGEtech

WWW.EDGEtech.COM | Sales | info@edgeTech.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.



CON | INT | B&T | A&T



#### EDGEtech 2300

EDGEtech 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.



CON | INT | B&T | A&T | WT



#### EDGEtech 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.



CON | INT | B&T | A&T | WT

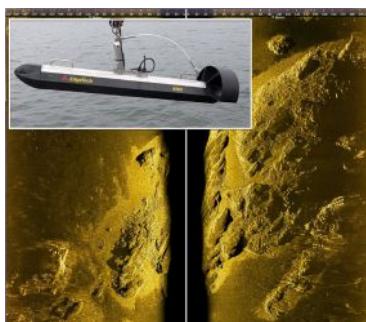


#### EDGEtech 4125

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.



CON | INT | B&T | A&T



#### EDGEtech 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.



CON | INT | B&T | A&T | WT



#### EDGEtech 6205

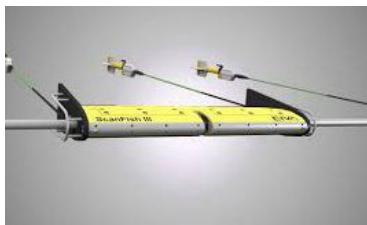
The 6205, a Multi Phase Echo Sounder (MPES) produces real-time, high resolution, three dimensional (3D) maps of the seafloor while providing co-registered simultaneous dual frequency side scan imagery. Utilizing EdgeTech's Full Spectrum® technology, the 6205 exceeds IHO SP-44, NOAA and USACE specifications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



CON | INT | B&T | A&T | WT

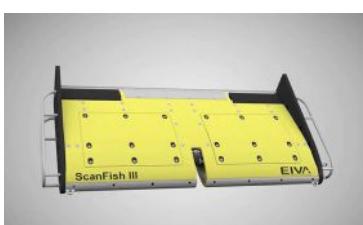
## EIVA A/S

WWW.EIVA.COM | Sales | inquiry@eiva.com



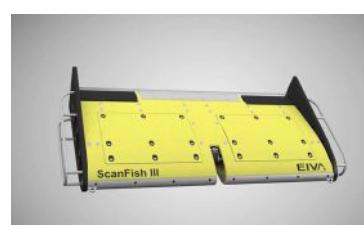
### SCANFISH KONIA

The ScanFish Konia 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)



## TASKS

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### CD

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### VSK

VEHICLE STATION  
KEEPING

### WT

WORK TOOLS



**OKEANUS**  
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## TOWED & BOTTOM CRAWLING VEHICLES

### FORUM SUBSEA TECHNOLOGIES

WWW.F-E-T.COM | Sales | rov.sales@f-e-t.com



#### 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)



B&T | VC&L | A&T | WT

### INUKTUN SERVICES LTD.

WWW.INUKTUN.COM | Sales | sales@inuktun.com



#### MAGGHD™

The MaggHD™ miniature magnetic crawler offers a unique solution for High Definition (full 1080p HD) remote visual inspection (RVI) across a broad range of applications. Its durable construction and ease of use make it perfect for examining steel structures like wind turbines, storage tanks and ship hulls – even in the splash zone! (Customizable)



CON | B&T | VC&L | CD



#### MAGGUT™

The MaggUT™ magnetic crawler is an economical system with integrated UT scanning capability. It is easily deployed and controlled by a single operator and specifically designed to incorporate standard industrial ultrasonic probes and flaw detectors from Olympus. The MaggUT™ easily integrates with your existing NDT equipment. (Customizable)



CON | B&T | VC&L | A&T | WT

### 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).



OBS | SUR | INS | VC&L | A&T



#### MAGGUT™ MARINE

MaggUT™ Marine (MUM) magnetic crawler is operable above or below the water line. MUM provides detailed visual inspections and thickness measurements on ship hulls, pressure vessels, large diameter pipes or almost any steel infrastructure. Portable and powerful, the MUM incorporates a Crystal Cam® camera and an ultrasonic testing (UT) transducer from Cygnus Instruments.



CON | B&T | VC&L | A&T | CD

## INUKTUN SERVICES LTD.

WWW.INUKTUN.COM | Sales | sales@inuktun.com



B&T | VC&L | CD

### MICROMAG™ MARK II

The MicroMag™ Mark II employs four Microtracs™ and is fitted with a brush system designed to handle harder remote cleaning and anti-fouling of ships than our standard miniature magnetic crawlers offer. Whatever your application – from waterjet tools and manipulator arms, to laser profiling sensors and CP probes – most equipment can be easily integrated onto the vehicle. (Customizable)



CON | B&T | VC&L | A&T | WT

### NANOMAG™

The NanoMag™ is a miniature crawler system with built-in rare earth magnets, allowing it to travel vertically, horizontally and even upside down on ferrous metal surfaces. With both a front facing pan and tilt camera and a rear facing fixed camera, the vehicle itself is still small enough to enter extremely confined spaces like pipes, pressure vessels and HVAC ductwork. (Customizable)



CON | B&T | VC&L | A&T | CD | WT

### MICROTRAC

"Microtrac™ crawlers are designed for remote applications in confined spaces where performance and reliability are critical. Manufactured from brass, aluminum or stainless steel, these miniature modules operate effectively in dry areas or subsea environments. Based on Inuktun's Multi-Mission Modular technology, Microtracs™ are included in our standard and customized Versatrax™ crawler systems." (Customizable)



CON | B&T | VC&L

### VERSATRAX 150™

The Versatrax 150™ pipe crawler system is a robust workhorse designed for the inspection of long pipelines, tunnels, culverts and other confined areas with a limited number of access points. The Versatrax 150™ is readily adaptable for different Spectrum™ cameras, sensors and tooling to perform comprehensive inspections across a range of industries. (Customizable)



CON | VC&L | A&T | CD | WT

### MINITRAC™

Minitracs™ are small and rugged, providing the user with access to confined spaces and harsh environments. They can be operated individually or as multiple units. Each unit is individually powered and can be easily fitted to a variety of equipment platforms to suit a wide range of applications.



CON | B&T | VC&L

### VERSATRAX 150™ MARK II

The Versatrax 150™ Mark II pipe inspection vehicle can operate in pipes as small as 150mm/6in. It is suited to a variety of inspection applications including sewers, storm drains, hydroelectric penstocks and fish bypass lines, petrochemical and power plant intake pipelines, and difficult to access pipes in the oil and gas industry. (Customizable)

## TASKS

**OBS**  
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& LIGHTING

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DEVICES

**VSK**  
VEHICLE STATION  
KEEPING

**WT**  
WORK TOOLS

## TOWED & BOTTOM CRAWLING VEHICLES

### INUKTUN SERVICES LTD.

WWW.INUKTUN.COM | Sales | sales@inuktun.com



#### VERSATRAX 300™

The Versatrax 300™ is the solution to long range pipe inspection challenges. Able to inspect more than 2km/1.3mi of pipe in a single run, the Versatrax 300™ includes three onboard video cameras, multiple sensor options and is operable in pipe as small as 300mm/12in internal diameter. (Customizable)



B&T | CON | VC&L | WT



#### VERSATRAX 450™

The Versatrax 450™ is designed specifically for hazardous environments and is perfectly suited for a wide range of applications where remote handling and inspection are required. The portable system can be deployed in a matter of minutes, allowing you to inspect, capture, and safely remove dangerous materials from any site faster than by conventional means. (Customizable)



CON | B&T | VC&L | A&T | CD | WT



#### VT150 VERTICAL CRAWLER™

The VT150 Vertical Crawler™ is a unique inspection vehicle based on the successful VT100 Vertical Crawler™. It employs three Minitracs™ and an expandable tripod chassis, allowing it to perform difficult inspections over a range of pipe sizes in virtually any orientation. Basic functions for control allow operators to quickly learn and navigate this flexible system. (Customizable)



CON | B&T | VC&L | A&T | WT

### JW FISHERS MFG.

WWW.JWFISHERS.COM | Jeffrey Mayfield | info@jwfishers.com



#### SBP-1 SUB BOTTOM PROFILER

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



## KRAKEN SONAR SYSTEMS INC

WWW.KRAKENROBOTICS.COM

info@krakensonar.com



### KATFISH

Standard KATFISH:  
250m range SAS, 3cm res, 8kts  
Gap filler  
MBES  
Full swath bathymetry  
High accuracy USBL



## 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.



## MACARTNEY

WWW.MACARTNEY.COM

Hans-Jørgen Hansen | hjh@macartney.com



### FOCUS (2 & 3)

The vehicle FOCUS 2 is constructed using carbon fibre technology and is based on the successful TRIAXUS vehicle design. It uses state-of-the-art computer technology and fibre optic telemetry for vehicle and sensor communication providing high data capacity in a very efficient package. FOCUS 3 is the result of more than 25 years of constant product development and customer feedback.



### TRIAXUS

Adding a new dimension to towed vehicles, the TRIAXUS is the natural step forward from the existing 2D towed vehicle technology to a true 3D towfish. The TRIAXUS uses state-of-the-art computer technology and fibre optic telemetry for vehicle and sensor communication.



## TASKS

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& TRACKING

### CD

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DEVICES

### VSK

VEHICLE STATION  
KEEPING

### WT

WORK TOOLS

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High Sensitivity

Designed with AUVs, UUV's and ROV's in mind

[OceanSonics.com](http://OceanSonics.com)

## TOWED & BOTTOM CRAWLING VEHICLES

### QINETIQ NORTH AMERICA

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



#### 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



#### 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.



INS | VC&L | CD

### SEAVIEW SYSTEMS, INC

WWW.SEAVIEWSYSTEMS.COM  
Marla Isenstein | misenstein@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)



OBS | SUR | INS | CON | INT | VC&L  
A&T | NDT | CD | WT

### 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.



INS | VC&L | CD

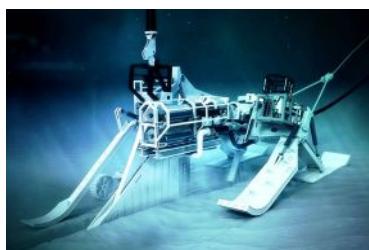
### SMD

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.



#### 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)

**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.

**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 SMD are able to supply a turnkey flexible solution.

**TASKS**

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OBSERVATION

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DEVICES

**VSK**  
VEHICLE STATION  
KEEPING

**WT**  
WORK TOOLS

## TOWED & BOTTOM CRAWLING VEHICLES

### SMD

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



#### 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)



#### 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)



## 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)



CON | B&T | A&T

### TTV-290 MID TOW

The TTV-290 Mid Tow vehicle is designed for hydrodynamic stability for side scan surveys and other applications down to 2000m. The stainless steel mid plate is a rigid platform for a combination of multi-beam and side scan sonars, sub-bottom profilers, producing co-located data sets. (Customizable)



CON | B&T | A&T

## TELEDYNE SEABOTIX

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)



CON | B&T | A&T

### LBC - LITTLE BENTHIC CRAWLER

Unmatched in versatility, the SeaBotix LBC 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)

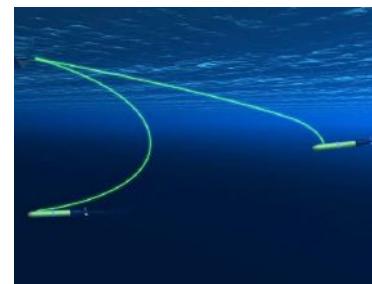


CON | B&T | A&T

## VEHICLE CONTROL TECHNOLOGIES, INC.

WWW.VCTINC.COM

Douglas E. Humphreys | edhumphreys@vctinc.com



### POWERED TOW BODY (PTB)

Powered Tow Body (PTB) differs from MTB in that it has propulsion system like a UUV and it uses power and pitch to achieve depth. Autopilot depth control eliminates need for constant winch operator control. VCT modular tail design allows the vehicle to scale in diameter to accommodate payload requirements.



## TASKS

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### NDT

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### A&T

ACOUSTIC & TRACKING

### CD

CLEANING DEVICES

### VSK

VEHICLE STATION KEEPING

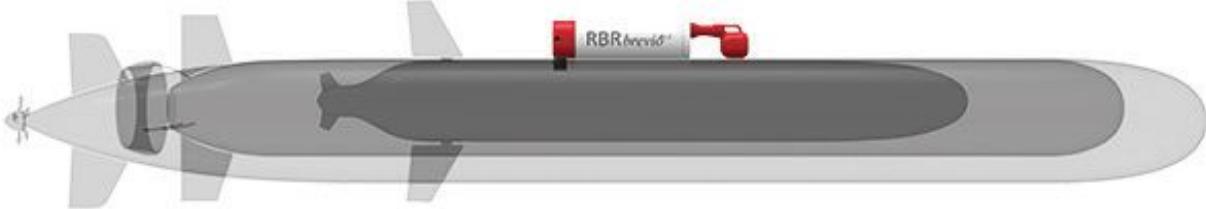
### WT

WORK TOOLS



## RBR Enables Innovation Through Responsive OEM Partnerships

By: Eric Siegel, Director of Sales



RBR creates oceanographic instruments to measure the blue planet. From the ocean abyss to the polar ice cap, RBR sensors track water parameters – temperature, depth, salinity, dissolved gases, turbidity, fluorescence, pH, and many others. As a globally recognized provider of sensors, loggers, integrated systems, and customized OEM products, RBR has collaborated with a number of unmanned vehicle developers to enable new measurement opportunities and applications. The dedicated OEM technical team 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. The RBR loggers act as a 'sensor hub' to control and communicate with a suite of sensors (sound velocity, density, CTD, dissolved oxygen, turbidity, chlorophyll fluorescence, etc). The sensor hub approach improves operational efficiency by reducing redundant system integration efforts.

The Argo-approved RBRargo<sup>3</sup> 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 RBRargo<sup>3</sup> platform has enabled biogeochemical researchers to easily order floats with other integrated sensors, such as the RBRcoda T.ODO (temperature and optical dissolved oxygen sensor).

The RBRbrevio<sup>3</sup> CTD and RBR/legato<sup>3</sup> 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 totally silent operation is ideal for low-power, stealth missions, and passive acoustic listening.

A responsive partnership collaboration with Saildrone has led to the development of an integrated CTD with an optical dissolved oxygen sensor and fluorometer to enable long-term, high-accuracy, and low-drift measurements to oceanographic research teams making long-term observations. Several Saildrone unmanned vehicles with the RBR sensor suite have been delivered to customers for programs in the northern Pacific and southern Pacific Ocean.

For more information, visit  
[RBR-GLOBAL.COM](http://RBR-GLOBAL.COM)





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VEHICLES  
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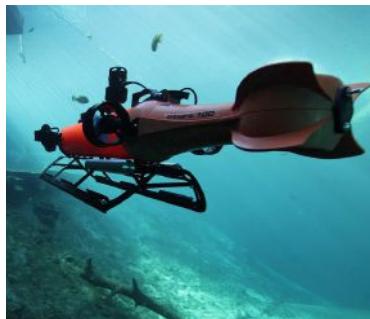
OCEAN RENEWABLES



SPEC SHEET

**AQUABOTIX**[WWW.AQUABOTIX.COM](http://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 UK**[WWW.UK.ATLAS-ELEKTRONIK.COM](http://WWW.UK.ATLAS-ELEKTRONIK.COM)

Tommy Kaltfoten | tommy.kaltfoten@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.

**BATTELLE / HUNTINGTON INGALLS**[WWW.BATTELLE.ORG](http://WWW.BATTELLE.ORG)

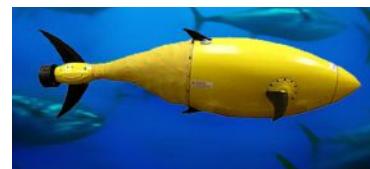
Bob Geoghegan | geoghegr@battelle.org

**PROTEUS - DUAL-MODE****UNDERWATER VEHICLE**

The Proteus DMUV is available for sale or lease. It can be viewed in Panama City, FL. Operations can be manned or unmanned. Large internal volume and ballasting capacity make it amenable to many payloads. Integration and operation support is available.

**BOSTON ENGINEERING**[WWW.BOSTON-ENGINEERING.COM](http://WWW.BOSTON-ENGINEERING.COM)

marketing@boston-engineering.com

**BIOSWIMMER™**

Boston Engineering's Advanced Systems Group (ASG) has developed an unmanned underwater vehicle designed to resemble a tuna, called the BIOSwimmer™. Why the tuna? Because the tuna has a natural body framework ideal for unmanned underwater vehicles (UUVs), solving some of the propulsion and maneuverability problems that plague conventional UUVs.

**CELLULA ROBOTICS LTD.**[WWW.CELLULA.COM/ALL-AUV-PRODUCTS](http://WWW.CELLULA.COM/ALL-AUV-PRODUCTS)

Adrian Woodroffe | info@cellula.com

**IMOTUS**

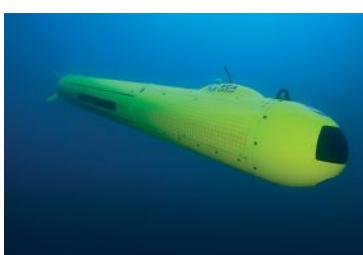
Imotus is a hovering autonomous underwater vehicle (HAUV) with six degrees of freedom for inspection & data acquisition missions in confined and open water environments. Imotus uses scanning sonars and proprietary SLAM algorithms to provide navigational control and spatially referenced survey data. (Customizable)



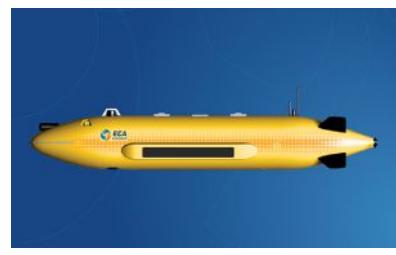
OBS | SUR | INS | VC&L | A&T | NDT | VSK CD

**A9 (A9-M / A9-S / A9-E)**

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

**A18D**

Deep water modular and flexible platform for high resolution 3D survey.

**A18-E**

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

**TASKS****OBS**  
OBSERVATION**SUR**  
SURVEY**INS**  
INSPECTION**CON**  
CONSTRUCTION**INT**  
INTERVENTION**B&T**  
BURIAL &  
TRENCHING**TOOLS****VC&L**  
VIDEO CAMERA  
& LIGHTING**NDT**  
NON-  
DESTRUCTIVE  
TESTING**A&T**  
ACOUSTIC  
& TRACKING**CD**  
CLEANING  
DEVICES**VSK**  
VEHICLE STATION  
KEEPING**WT**  
WORK TOOLS

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Model 2020  
115kgf forward  
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THE LEADER IN SUBSEA PROPULSION

**ECA GROUP**

WWW.ECAGROUP.COM | Cyril Pedeontaa-Hiaa | eca-rsm@ecogroup.com

**A18S**

AUV with interferometric synthetic Aperture Sonar (ISAS)

- Easy launch and recovery in bad sea state condition
- Extended coverage and endurance capacities
- User friendly mission management system

**A27 (A27-E / A27-M)**

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

**EDGELAB SRL**

WWW.EDGEGLAB.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**

WWW.GDMISSIONSYSTEMS.COM

Adam Mara | Adam.Mara@gd-ms.com

**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, the Bluefin-9 is the professional's tool to KNOW WHAT'S BELOW..

(Customizable)



SUR | VC&amp;L

**BLUEFIN™-21**

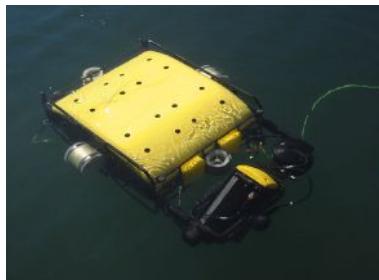
The Bluefin-21 is a highly modular autonomous underwater vehicle able to carry multiple sensors and payloads at once. It boasts a high energy capacity that enables extended operations even at the greatest depths. The Bluefin-21 has immense capability but is also flexible enough to operate from various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



SUR | VC&amp;L

## GENERAL DYNAMICS MISSION SYSTEMS

WWW.GDMISSIONSYSTEMS.COM  
Adam Mara | Adam.Mara@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)



OBS | SUR | A&T

## 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.



## HYDROID

WWW.KM.KONGSBERG.COM | Alex Kern | sales@hydroid.com



### REMUS 100

With a track record second to none, the Remus 100 is the most prolific compact AUV to be selected by the U.S. Navy fleet for their mine counter measure operations. The system is in operation in more than 17 countries, has over ten years of continuous product development and thousands of hours of field operations. (Customizable)



### REMUS 600

The Remus 600 is designed to support the growing need for operations requiring endurance, increased payload capacity and greater operating depth. (Customizable)



### REMUS 6000

The Remus 6000 AUV is a deep water workhorse. This model can operate in up to 6,000 m of water, allowing for increased operational scope. (Customizable)



## TASKS

### OBS

OBSERVATION

### SUR

SURVEY

### INS

INSPECTION

### CON

CONSTRUCTION

### INT

INTERVENTION

### B&T

BURIAL &  
TRENCHING

## TOOLS

### VC&L

VIDEO CAMERA  
& LIGHTING

### NDT

NON-  
DESTRUCTIVE  
TESTING

### A&T

ACOUSTIC  
& TRACKING

### CD

CLEANING  
DEVICES

### VSK

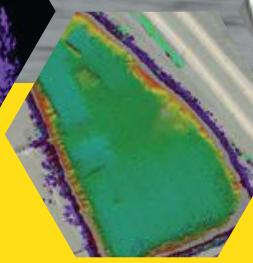
VEHICLE STATION  
KEEPING

### WT

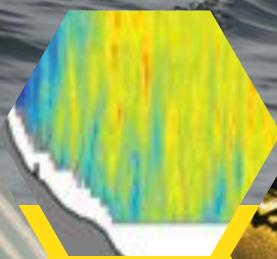
WORK TOOLS



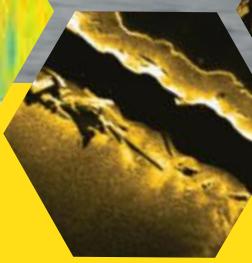
LiDAR



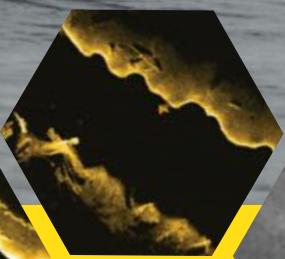
Wide Swath  
Bathymetry



ADCP  
Discharge  
Measurement



550 kHz  
Side Scan Sonar



1600 kHz  
Side Scan Sonar



Backscatter



Motion  
Tolerant  
Side Scan  
Sonar

The SR-Surveyor M1.8 simplifies hydrographic survey in shallow and hard-to-navigate waters.

Man-portable and quick to deploy, the SR-Surveyor M1.8 is the complete package for bathymetry, habitat mapping, structure inspection and search and rescue.

ASVs for hydrographic survey and marine operations



[SeaRobotics.com](http://SeaRobotics.com)

**INDEPENDENT ROBOTICS**

[WWW.INDEPENDENTROBOTICS.COM](http://WWW.INDEPENDENTROBOTICS.COM)  
info@independenterobotics.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](http://WWW.ISE.BC.CA)

**TASKS**

**OBS**

OBSERVATION

**SUR**

SURVEY

**INS**

INSPECTION

**CON**

CONSTRUCTION

**INT**

INTERVENTION

**B&T**

BURIAL &

TRENCHING

**ISE EXPLORER AUV**

International Submarine Engineering (ISE) initiated the design of a modular AUV, the Explorer, following the success of the ARCS AUV from which some component designs were borrowed. The modularity of the Explorer AUV is optimized for longevity and adaptation to new requirements. The cylindrical pressure hull and the wet payload fairing are modular and can be lengthened or shortened. (Customizable)



SUR | VC&L | A&T

**KONGSBERG MARITIME**

[WWW.KM.KONGSBERG.COM](http://WWW.KM.KONGSBERG.COM) | Richard Mills | richard.mills@kongsberg.com

**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)

**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 operations. 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)



**EdgeTech**  
The Leader in Underwater Technology

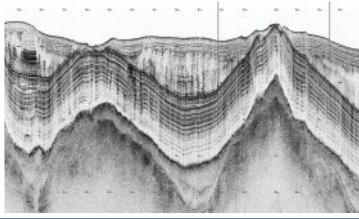
## Clearly Superior Imaging

# SONAR SYSTEMS

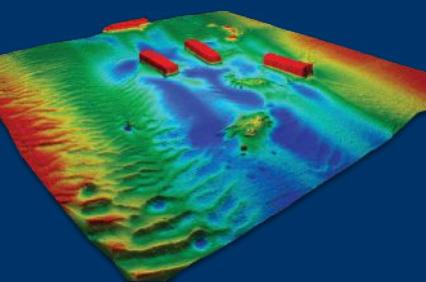
### SIDE SCAN SONARS



### SUB-BOTTOM PROFILERS



### BATHYMETRY SYSTEMS

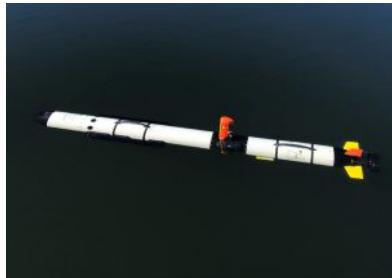


**EdgeTech.com**

**info@edgetech.com**  
**USA 1.508.291.0057**

**L3HARRIS**

WWW.OCEAN-SERVER.COM | WWW.L3HARRIS.COM | Jim Kirk | james.kirk@l3harris.com

**IVER3 AUV**

Iver is the first commercially developed family of low-cost Autonomous Underwater Vehicles (AUVs). They are ideal for coastal applications such as sensor development, general survey work, sub-surface security, research and environmental monitoring. These modern AUVs are single man-portable, and feature a state-of-the-art open system and simple point-and-click mission planning. (Customizable)



SUR | VC&amp;L | A&amp;T | NDT

**IVER4 AUV**

The Iver4 offers users a new 300-meter depth rated, man-portable system featuring long duration capability (20+ hour run times) and swappable battery chemistry. The Iver4 comes standard with industry leading tracking and safety communications, precise and repeatable measurements, high accuracy navigation and low drag side scan and bathymetry transducers. (Customizable)



SUR | VC&amp;L | A&amp;T | NDT

**OCEAN AERO**WWW.OCEANAERO.COM/VEHICLES  
Neil Trenaman | ntrenaman@oceanaero.us**SCOUT, DISCOVER, AND NAVIGATOR AUSV**

Ocean Aero has developed the world's first hybrid, wind and solar-powered Autonomous Underwater and Surface Vehicles (AUSVs). There are three models (Scout, Discovery, and Navigator) that offer the unique ability to perform ocean observation on and below the water's surface. The vehicles also feature extended persistence for thorough data collection. (Customizable)



OBS | SUR | A&amp;T | NDT

**OCEANEERING INTERNATIONAL, INC**WWW.OCEANEERING.COM  
Sales | survey@oceaneering.com**OCEAN SURVEYOR**

Standard Equipment: C-Nav L-Band DGPS | Intertial Navigation | Simrad HiPAP USBL | RDI Navigator Doppler Velocity Log | Kalman Filter | Digiquartz Depth Unit | SBE 49 FastCAT CTD Sensor | Multibeam Echo- sounder: Kongsberg Simrad EM 2040 | EdgeTech / Side Scan Sonar: 120 / 410 kHz Chirp AUV / UUV DF Seafloor Mapper / White High Resolution Digital Camera | 2G Robotics / ULS-500 Pro Laser Line Scanner | Magnetometer | Battery: Lithium Io (Customizable)



OBS | SUR | A&amp;T | NDT

## OCEANSCAN-MST LDA

WWW.OCEANSCAN-MST.COM

info@oceanscan-mst.com



### LAUV

Lightweight AUV targeted at innovative surveying and inspection tasks. 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)



OBS | SUR | VC&L | A&T

## RIPTIDE

WWW.RIPTIDEAS.COM

Jeff Smith | jeff@riptideas.com



### MICRO-UUV

Riptide is offering a new, highly flexible UUV that provides users a state-of-the-art, low cost development solution ideally suited for developers of autonomy and behavior, power systems, subsea sensors, and new payloads.



## QINETIQ NORTH AMERICA

WWW.QINETIQ-NA.COM

Knut Streitlien | knut.streitlien@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

Luc Simon | info@rtsys.eu



### 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)



# IVER

## Next Generation UUVs



### TASKS

#### OBS

OBSERVATION

#### SUR

SURVEY

#### INS

INSPECTION

#### CON

CONSTRUCTION

#### INT

INTERVENTION

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BURIAL &

TRENCHING

### TOOLS

#### VC&L

VIDEO CAMERA & LIGHTING

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NON-DESTRUCTIVE TESTING

#### A&T

ACOUSTIC & TRACKING

#### CD

CLEANING DEVICES

#### VSK

VEHICLE STATION KEEPING

#### WT

WORK TOOLS



[www.l3harris.com](http://www.l3harris.com)  
[www.ocean-server.com](http://www.ocean-server.com)

**RTSYS**

[WWW.RTSYS.EU](http://WWW.RTSYS.EU)  
Luc Simon | info@rtsys.eu

**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)



OBS | SUR | A&T | NDT

**STRATEGIC ROBOTIC SYSTEMS**

[WWW.SRSFUSION.COM](http://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)



OBS | SUR | VC&L | A&T | NDT

**TELEDYNE GAVIA**

[WWW.TELEDYNEMARINE.COM](http://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)



SUR | VC&L | A&T | NDT

**THE BOEING COMPANY**

[WWW.BOEING.COM](http://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.

**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)



SUR | A&T | NDT

## VEHICLE CONTROL TECHNOLOGIES, INC.

WWW.VCTINC.COM

Douglas E. Humphreys | dhumphreys@vctinc.com



### HYBRID PTB-UUV

Users that benefit from a single system that can be used as a high-performance tow body and an untethered UUV based on the same vehicle. Search and survey; mine countermeasures (MCM); open architecture R&D platform.



### HARBORSCAN UUV

VCT modular tail design means this vehicle scales in diameter to accommodate your payload requirements/load requirements.



## YSI INTEGRATED

WWW.YSI.COM



### iXO ECOMAPPER AUV

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



OBS | SUR | A&T | NDT

## TASKS

OBS  
OBSERVATION

SUR  
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## TOOLS

VC&L  
VIDEO CAMERA  
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ACOUSTIC  
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CLEANING  
DEVICES

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VEHICLE STATION  
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WT  
WORK TOOLS



FULLY ELECTRIC

## A wide range of ROVs & electric manipulators for offshore operations

Numerous users in the areas of Oil & Gas, Hydrography and Defence approve ECA Group solutions:

- **Observation and Work Class ROVs** for exploration, localization, assistance & interventions at any depth up to 2000 m
- 5 and 7 functions **electric manipulator arms**, compact and lightweight for easy integration on ROVs

Discover our solutions  
for maritime sectors



**ECA**  
**GROUP**  
HYTEC™

contact@ecagroup.com | www.ecagroup.com



## FUSION – The Next Generation Underwater Vehicle.

Strategic Robotic Systems (SRS) was inaugurated in 2015 with the mission of realising a very focussed ideal; - to design and build a new generation small underwater vehicle that represents a fresh approach to the challenges faced by a range of underwater operators.

The vision was to develop a new, battery-powered vehicle with fully integrated sensors and for the vehicle to be able to operate independently of the tether in full AUV mode.

The design goals were to produce a reliable system with a footprint as small as possible to allow operation from small surface craft, to be intuitive to operate and easy to train users, to remove the requirement for generators on the surface and to be simple to maintain.

From an early stage, SRS engaged with a team of experts from various companies and institutions to help deliver these

design goals. The vehicle was named FUSION, as it truly represented the fusion of operational capabilities, data and expert organisations working together.

Each team focused on its particular area of expertise. While SRS concentrated on the design and unique form factor of the vehicle and its power systems, the navigation and command and control software was written by leading industry specialists. Respected suppliers of sonar, USBL, HD camera and DVL modules provided bespoke versions to integrate seamlessly with the SRS vehicle design.

The result of these teams working together with a common goal is the revolutionary FUSION UUV.

A fully battery operated system, FUSION can be deployed in under 5 minutes on very small vessels, with no requirement for inverters or generators to provide power. In ROV mode, the tether is only required to transmit data, and so while highly durable, has a very small diameter, allowing FUSION to deploy up to 2000m of tether with minimal drag in-water.

The small diameter tether is easy to manage, and is supplied spooled on to a "smart" reel with level-wind mechanism to ensure the simple and neat deployment and recovery of the tether

The system is controlled by an intuitive tablet-based HMI, which manages all aspects of FUSION control and data analysis and changes the way operators interface with subsea vehicles. FUSION features a single user interface that operates all modes and allows seamless exchange of data. AUV mission planning, sensor data analysis, real-time ROV operations and data export can all be simply executed. The interface is highly user-friendly and simple to train, and users no longer require highly experienced personnel to operate.

To enhance its utility, FUSION incorporates a unique "payload bay" in the vehicle underside. This payload bay can accommodate third party sensors and utilities and connect to the FUSION through an internal connection point. Additionally, the FUSION has front and rear accessory ports allowing connection of a dual action grabber, or five function manipulator arms.

The versatility and utility of the FUSION system is ideal for military, civil and commercial clients where rapid deployment, stable control, high-quality sensors and accuracy of navigation are key.

Through the teaming approach, the FUSION vision is now reality.

For more information, visit  
[WWW.SRSFUSION.COM](http://WWW.SRSFUSION.COM)





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VEHICLES  
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ENVIRONMENTAL



DEFENSE



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SCIENCE



SCIENCE



OCEAN RENEWABLES



SPEC SHEET

**AUTONAUT**

WWW.AUTONAUTUSV.COM | Mike Poole | info@autonautusv.com

**AUTONAUT 3.5M**

AutoNaut is a storm-proven USV, wave propulsion provides long endurance. Silence and low profile make her a superb surveillance platform. Sensors on mast, through hull, and towed.



OBS | SUR | VC&amp;L | NDT | A&amp;T

**AUTONOMOUS MARINE SYSTEMS**

WWW.AUTOMARINESYS.COM | Scott Nguyen | info@automarinesys.com

**THE DATAMARAN**

Autonomous Marine Systems delivers a global platform for ocean observation using intelligent sensor networks powered by the Datamaran. Our unmanned surface vehicles autonomously collect data from above and below the surface of almost any body of water and transmit this information directly to our clients.

**DEEP OCEAN ENGINEERING, INC.**

WWW.DEEPOCEAN.COM | Sales | sales@deepeccean.com

**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)



OBS | SUR | VC&amp;L | NDT | A&amp;T

**DEEP OCEAN ENGINEERING, INC.**

WWW.DEEPOCEAN.COM

Sales | sales@deepeccean.com

**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)



OBS | SUR | VC&amp;L | NDT | A&amp;T

**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)



OBS | SUR | VC&amp;L | NDT | A&amp;T

**CLEARPATH ROBOTICS, INC**

WWW.CLEARPATHROBOTICS.COM

Robin Lefler | info@clearpathrobotics.com

**HERON USV**

Can integrate different side-scan, multibeam, dual-frequency, sub-bottom profiling sonars and other water quality sensors.



## ECA GROUP

WWW.ECAGROUP.COM

Cyril Pedehontaa-Hiaa | eca-rsm@ecogroup.com



### INSPECTOR 90

Inspector 90 can be delivered with different payload modules:

- Homeland Security following: Directional spotlight, EOD, LRAD
- Mine Counter measurer following: remote controlled robot inspection, Mine killers and very shallow Side Scan Sonar (SSS)
- Rapid Environmental Assessment result: Very Shallow Water Side Scan Sonar Towed Deployed from a remote controlled Module



## EMMA TECHNOLOGIES GMBH

WWW.EMMA-TECHNOLOGIES.COM

Maariit Loide | ask-emma@emma-technologies.com



### BOSS

Real workclass vehicle. Lightweight and rigid structure.



### HYCOPS

Most advanced.



## EVOLOGICS GMBH

WWW.EVOLOGICS.DE | Francisco Bustamante | sales@evologics.de



### SONOBOT USV

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

WWW.FUGRO.COM

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.



SUR

## 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.



## TASKS

### OBS

OBSERVATION

### SUR

SURVEY

### INS

INSPECTION

### CON

CONSTRUCTION

### INT

INTERVENTION

### B&T

BURIAL &

TRENCHING

## TOOLS

### VC&L

VIDEO CAMERA & LIGHTING

### NDT

NON-DESTRUCTIVE TESTING

### A&T

ACOUSTIC & TRACKING

### CD

CLEANING DEVICES

### VSK

VEHICLE STATION KEEPING

### WT

WORK TOOLS

**INTERNATIONAL SUBMARINE ENGINEERING LTD**[WWW.ISE.BC.CA](http://WWW.ISE.BC.CA)

Hugh Parker | h.parker@fugro.com

**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)



SUR

**L3HARRIS CALZONI**[WWW.CALZONI.COM](http://WWW.CALZONI.COM)

Marcello Zannini | Marcello.Zannini@L-3com.com

**U-RANGER**

U-RANGER is manned/unmanned modular platform intended for many different tasks and roles to host and support a wide range of weapon/sensor payloads to perform multiple operational tasks.



OBS | SUR

**L3HARRIS**[WWW.ASVGLOBAL.COM](http://WWW.ASVGLOBAL.COM)[WWW.L3T.COM](http://WWW.L3T.COM)

James Cowles | sales@asvglobal.com

**C-CAT 3**

C-Cat 3 has been developed to complement the existing ocean going L3 vehicles for survey and support tasks where a smaller vehicle is better suited to missions. The design incorporates a large payload bay to enable flexibility of payloads used. The shallow draft and small size of the vehicle enables deployment in littoral areas and its modular construction facilitates the fitting of a range of scientific above and below water payloads. C-Cat 3 includes the core functionality proven in all L3 vehicles and systems and thus is a reliable and robust platform for path planning, autonomy research and scientific experimentation with payloads. (Customizable)



SUR | INS

**IXBLUE**[WWW.IXBLUE.COM](http://WWW.IXBLUE.COM) | 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. Overall, the data collected is better and the work done faster than with traditional survey assets.



OBS | SUR | A&amp;T



#### C-STAT 2

C-Stat 2 offers the capability to remain on station for extended periods without the need for a ship on station or seabed anchoring. The compact vehicle can be used for subsea asset positioning, surface to underwater communications, oceanographic data collection as well as oil spill response, port, harbour and ship security. The system can be provided with payloads or alternatively a user payload can be integrated. (Customizable)



SUR | INS | A&T | VSK



#### C-WORKER 4

The smaller of the C-Worker class of vehicles, C-Worker 4 is a diesel powered ASV designed to complete a variety of offshore and inshore survey tasks. C-Worker 4's waterjet propulsion system makes it an ideal solution for shallow water survey. The vehicle has the ability to integrate a range of standard survey payloads including ADCP, USBL, PAM and CTD.



SUR | INS | VC&L



#### C-WORKER 5

C-Worker 5 is the ideal platform to support hydrographic survey work. Designed as a force multiplier to enable increased survey coverage and minimise weather risk through reduced survey duration. C-Worker 5 is reliable through simplicity, utilising an off the shelf direct drive marine diesel propulsion system operated by L3's proven ASView control system. This system integrates quickly and easily with a wide variety of acquisition systems, enabling line plans to be uploaded to the system for accurate data collection.



SUR | INS | CONS | VC&L

#### TASKS

**OBS**  
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SURVEY

**INS**  
INSPECTION

**CON**  
CONSTRUCTION

**INT**  
INTERVENTION

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BURIAL &  
TRENCHING

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& LIGHTING

**NDT**  
NON-  
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TESTING

**A&T**  
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**C-WORKER 6**

C-Worker 6 is a multi-role work class ASV suitable for a variety of offshore and coastal tasks. The vehicle can be used to complete tasks such as subsea positioning, surveying and environmental monitoring without the need of a ship on station or sea-bed anchoring. C-Worker 6 can integrate a variety of payloads including multi-beam, USBL, CTD and ADCP via exchangeable payload frames. The ability to integrate multiple offshore payloads is unique to C-Worker 6. (Customizable)



SUR | INS | VC&L

**C-WORKER 7**

C-Worker 7 is a multi-role work class ASV suitable for a variety of offshore and coastal tasks. The vehicle can be used to complete tasks such as subsea positioning, surveying and environmental monitoring without the need of a ship on station or sea-bed anchoring. C-Worker 7 can integrate a variety of payloads – including multibeam, USBL, CTD, ADCP, and an ROV for deployment and recovery – via exchangeable payload frames. The ability to integrate multiple offshore payloads is unique to C-Worker 7. (Customizable)



SUR | INS | VC&L

**C-WORKER 8**

C-Worker 8 is a multi-role work class ASV. The vehicle is suitable for a variety of offshore and coastal tasks including subsea positioning, surveying and environmental monitoring without the need of a ship on station or sea-bed anchoring. C-Worker 8 can integrate a variety of payloads including multibeam, USBL, CTD and ADCP via exchangeable payload frames. The vehicle's redundant power system makes it an ideal solution for shore based operations while also suitable as a force multiplier to existing operations. C-Worker 8 is designed for up to 7 days endurance and operates using L3's proven ASView control system. (Customizable)



SUR | INS | CONS | VC&L

**C-ENDURO**

C-Enduro is a long endurance autonomous surface vehicle used to safely and cost effectively collect data at sea. Built to operate in all marine environments, C-Enduro uses energy harvesting technology combined with an efficient self-righting hull. C-Enduro's unprecedented payload capacity and power enables the use of a combination of payloads during any one mission. Use of the C-Enduro can dramatically reduce the cost of data collection by removing the need for traditional survey vessels. (Customizable)



SUR | INS | VC&L

**C-TARGET 1**

C-Targets are a range of lightweight, easily deployed, highly maneuverable marine targets used for naval gunnery training, weapons testing and ship command and control assessments. The vehicles are highly survivable built with aluminum hulls facilitating easy repairs. Operated using the ASView-T Control System, C-Targets can operate individually or as part of a swarm. C-Targets are available as part of a managed service package whereby we store and maintain the vehicles in readiness for instant deployment. (Customizable)



SUR | INS | VC&L

**C-TARGET 3**

C-Targets are a range of lightweight, easily deployed, highly maneuverable marine targets used for naval gunnery training, weapons testing and ship command and control assessments. The vehicles are highly survivable built with aluminum hulls facilitating easy repairs. Operated using the ASView-T Control System, C-Targets can operate individually or as part of a swarm. C-Targets are available as part of a managed service package whereby we store and maintain the vehicles in readiness for instant deployment. Our Operations Teams can be made available to lead and support trials as required.



SUR | INS | VC&amp;L

**C-TARGET 9**

C-Targets are a range of lightweight, easily deployed, highly maneuverable marine targets used for naval gunnery training, weapons testing and ship command and control assessments. The vehicles are highly survivable built with aluminum hulls facilitating easy repairs. Operating using the ASView-T Control System, C-Targets can operate individually or as part of a swarm. The C-Target 9 is a high speed vehicle capable of acting as a direct fire target or as a tow boat for inflatable targets or other small craft. The vehicle can be customized to resemble specific craft and is configurable between manned and unmanned modes.. (Customizable)



SUR | VC&amp;L

**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. The C-Target 6 can be used as a direct fire target or as a tow boat for inflatable targets. The vehicle can be customised to resemble specific craft and is configurable between manned and unmanned modes.. (Customizable)



SUR | INS | VC&amp;L

**C-TARGET 13**

C-Targets are a range of lightweight, easily deployed, highly maneuverable marine targets used for naval gunnery training, weapons testing and ship command and control assessments. The vehicles are highly survivable built with aluminum hulls facilitating easy repairs. Operating using the ASView-T Control System, C-Targets can operate individually or as part of a swarm. C-Targets are available as part of a managed service package whereby we store and maintain the vehicles in readiness for instant deployment. Our Operations Teams can be made available to lead and support trials as required. (Customizable)



SUR | INS | VC&amp;L

**TASKS**OBS  
OBSERVATIONSUR  
SURVEYINS  
INSPECTIONCON  
CONSTRUCTIONINT  
INTERVENTIONB&T  
BURIAL &  
TRENCHINGTOOLS  
VC&L  
VIDEO CAMERA  
& LIGHTINGNDT  
NON-  
DESTRUCTIVE  
TESTINGA&T  
ACOUSTIC  
& TRACKINGCD  
CLEANING  
DEVICESVSK  
VEHICLE STATION  
KEEPINGWT  
WORK TOOLS**C-WORKER 12P**

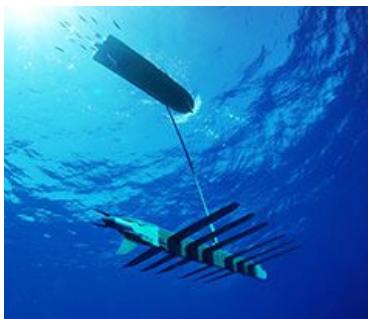
The 'C-Worker 12P' prototype is one of L3's largest unmanned vessels fitted to date: measuring just over 12 meters. The optionally manned helm will feature two moon pools for maximum sensor deployment and extended endurance missions. The vessel is a converted manned craft which uses L3's proven ASView control system for unmanned operations. The prototype vessel will be used as a testbed as L3 looks to expand the established C-Worker class of autonomous vessels.. (Customizable)



SUR | VC&amp;L

**LIQUID ROBOTICS, INC.**[WWW.LIQUID-ROBOTICS.COM](http://WWW.LIQUID-ROBOTICS.COM)

Sales | sales@liquid-robotics.com

**WAVE GLIDER**

The Wave Glider is the most experienced unmanned surface vehicle on the planet. Wave-and solar-powered Wave Gliders can host or tow a range of sensors, so you can collect and communicate real-time ocean data over long durations and in varying sea states. (Customizable)



OBS | SUR | A&amp;T | VC&amp;L | NDT

**MARINE ADVANCED RESEARCH**[WWW.WAM-V.COM](http://WWW.WAM-V.COM) | Marine Survey Department | sales@wam-v.com**16' WAM-V USV**

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**BOSS WAM-V**

Rugged, reliable, cost saving, commercial hydrography and geophysical surveys.

**MARINETECH**[EN.MARINETECH.FR](http://EN.MARINETECH.FR)**DOLPHIN**

Thanks to its small size, the RSV Dolphin is one of the only USV capable of deployment in areas with limited access such as dams or rivers. (Customizable)

OBS | SUR | INS | CON | INT | B&T  
VC&L | VSK | A&T**ORCA**

The RSV Orca is a reliable and user friendly USV dedicated to marine survey. It can be equipped with SSS, MBES, SBES, SBP, ADCP, Thermal camera, Lidar, etc. Data recorded by sensors on board are transmitted in real time to the operator to a control base and positioning is provided by high precision GPS, gyrocompass and motion sensor. (Customizable).

OBS | SUR | INS | CON | INT | B&T | VC&L | VSK  
A&T**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).

OBS | SUR | INS | CON | INT | B&T | VC&L | VSK  
A&T | CD | NDT | WT

## MARITIME ROBOTICS

[WWW.MARITIMEROBOTICS.COM](http://WWW.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.



SUR | INS | VC&L

## NAVOCEAN INC.

[WWW.NAVOCEAN.COM](http://WWW.NAVOCEAN.COM) | 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)



OBS | SUR | A&T

## OCEANALPHA

[WWW.OCEANALPHA.COM](http://WWW.OCEANALPHA.COM) | Ran Zhang | ran.zhang@ocealpha.com



### SCOUT, DISCOVER, AND NAVIGATOR AUSV

Ocean Aero has developed the world's first hybrid, wind and solar-powered Autonomous Underwater and Surface Vehicles (AUSVs). There are three models (Scout, Discovery, and Navigator) that offer the unique ability to perform ocean observation on and below the water's surface. The vehicles also feature extended persistence for thorough data collection.



OBS | SUR | A&T | NDT



### 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)



OBS | SUR | VC&L | A&T | NDT

## OCEAN AERO

[WWW.OCEANAERO.COM](http://WWW.OCEANAERO.COM)

Neil Trenaman | intrenaman@oceanaero.us



### SCOUT, DISCOVER, AND NAVIGATOR AUSV

Ocean Aero has developed the world's first hybrid, wind and solar-powered Autonomous Underwater and Surface Vehicles (AUSVs). There are three models (Scout, Discovery, and Navigator) that offer the unique ability to perform ocean observation on and below the water's surface. The vehicles also feature extended persistence for thorough data collection.



OBS | SUR | A&T | NDT

## TASKS

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## TOOLS

### VC&L

VIDEO CAMERA & LIGHTING

### NDT

NON-DESTRUCTIVE TESTING

### A&T

ACOUSTIC & TRACKING

### CD

CLEANING DEVICES

### VSK

VEHICLE STATION KEEPING

### WT

WORK TOOLS

**OCEANALPHA**[WWW.OCEANALPHA.COM](http://WWW.OCEANALPHA.COM)

Ran Zhana | ran.zhana@oceanalpha.com

**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 performance 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 muti-beam echo sounder. (Customizable)



OBS | SUR | VC&amp;L | NDT | A&amp;T

**OFFSHORE SENSING AS**[WWW.SAILBUOY.NO](http://WWW.SAILBUOY.NO)

David Peddie | info@ssirovs.com

**THE SAILBUOY**

The Sailbuoy is a fieldproven, user friendly, long endurance ocean USV capable of persistant monitoring in all weather conditions.

**SEAROBOTICS CORPORATION**[WWW.SEAROBOTICS.COM](http://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&amp;T

**SEAROBOTICS CORPORATION**[WWW.SEAROBOTICS.COM](http://WWW.SEAROBOTICS.COM) | Don Darling | ddarling@searobotics.com**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&amp;T

**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)



OBS | SUR | INS | NDT | A&amp;T

## SEAROBOTICS CORPORATION

WWW.SEAROBOTICS.COM

Don Darling | ddarling@searobotics.com



### 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)



OBS | SUR | INS | NDT | A&T

## SEATRAC SYSTEMS, INC.

WWW.SEATRAC.COM

Ping Tuck Chai  
pchai@seatrac.com



### SEATRAC SP-48

The SP-48 USV is a multi-purpose long endurance solar powered platform for real-time ocean observation, data collection, intelligence, surveillance and reconnaissance missions. With its large power and payload capacity, the SP-48 can be customized with a variety of sensors and can be operated from near shore to open ocean. (Customizable)



SUR | OBS | VC&L | A&T

## TASKS

**OBS**  
OBSERVATION

**SUR**  
SURVEY

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CONSTRUCTION

**INT**  
INTERVENTION

**B&T**  
BURIAL &  
TRENCHING

## TOOLS

**VC&L**  
VIDEO CAMERA  
& LIGHTING

**NDT**  
NON-  
DESTRUCTIVE  
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



### 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)



SUR | OBS | VC&L | A&T

### 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)



SUR | OBS | VC&L | A&T

## 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&amp;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)



SUR | NDT | A&amp;T

**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)



SUR | NDT | A&amp;T

## UNMANNED SURVEY SOLUTIONS

WWW.UNMANNEDSURVEYSOLUTIONS.COM

James Williams | james@unmannedsurveysolutions.com

**INCEPTION MARK I**

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 aluminum 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)

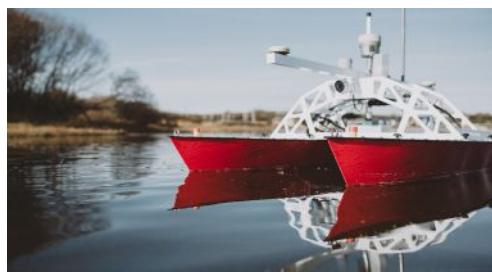


SUR | OBS | VC&amp;L | A&amp;T

## UNMANNED SURVEY SOLUTIONS

WWW.UNMANNEDSURVEYSOLUTIONS.COM

James Williams | james@unmannedsurveysolutions.com



### INCEPTION MARK II

The Unmanned Survey Solutions (USS) Inception Class MK 2 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 where access for a traditional survey vessel is restricted. (Customizable)



SUR | OBS | VC&L | A&T

## 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)



SUR | OBS | NDT | A&T

## TASKS

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f t

# AutoNaut



## Innovation and Versatility drive AutoNaut's Ambitious Expansion

By: Phil Johnston, Business Development

Marked as "one to watch" for many years, AutoNaut Ltd has impressive momentum. With the wave-powered craft now well proven, the UK-based company has undergone sustained expansion under fresh leadership. The company is set to take on more ambitious projects and expand its service offering.

Capability of the AutoNaut USV has been established from a run of successful missions through 2018 and 2019. AutoNaut has enjoyed high-

profile exposure from involvement in The Ocean Cleanup project in the Pacific Ocean. However, the company has also been quietly completing large and complex projects for oil and gas, including close pass operations and deployment in otherwise inaccessible regions. Such over-the-horizon missions - of several weeks' duration in challenging environments - have driven the development of a fleet of USVs to be both robust and straight-forward to deploy. This combination is exemplified by the launch of the new-generation AutoNaut 3.5m USV in April 2019.

Versatility is the advantage of the 5-metre AutoNaut which offers a more sizeable payload and modularity. The range of available sensors is proving attractive for marine science, especially with such a high power balance in a renewable energy based platform. Of course, with no need for carbon fuel, the reduction in costs and emissions has widespread appeal.

For applications, AutoNaut has increased its focus on Passive Acoustic Monitoring, MetOcean/ADCP and

Communications Gateway. A flexible approach to the integration of sensors (such as fisheries sonar and surveillance) extends to delivery of the client's data. Data services on offer range from the direct secure transfer of raw files to full analysis and reporting. Flexibility and responsiveness is a key part of the company ethos and this will continue as AutoNaut grows in various sectors.

AutoNaut currently has a number of projects running in the offshore industries, defence and marine science sectors. Research and development has been a strong pillar for AutoNaut and will remain so with key links to prestigious marine institutes around the world. Significant commercial expansion is the next big step. As with all of the marine autonomy sector, the challenge to date has been developing the technology. Now proven, the future looks set for AutoNaut Ltd to consolidate its role as a lead player in the marine autonomy sector.



» AutoNaut conducting Environmental Research for The Ocean Cleanup ©The Ocean Cleanup Wave-propelled AutoNaut with multi-sensor capabilities

[WWW.AUTONAUTUSV.COM](http://WWW.AUTONAUTUSV.COM)



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SPEC SHEET

## GLIDERS

### ALSEAMAR

[WWW.ALSEAMAR-ALCEN.COM](http://WWW.ALSEAMAR-ALCEN.COM)  
Romain Tricarico | [tricarico@alseamar-alcen.com](mailto:tricarico@alseamar-alcen.com)



#### TASKS

##### OBS

OBSERVATION

##### SUR

SURVEY

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INSPECTION

##### CON

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##### INT

INTERVENTION

##### B&T

BURIAL &  
TRENCHING

#### 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)



OBS | SUR | A&T | NDT

#### TOOLS

##### VC&L

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### KONGSBERG UNDERWATER TECHNOLOGY, INC.

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#### SEAGLIDER

Low cost, high endurance AUV for science, military/government and commercial applications. This mature technology has revolutionized the way that ocean data is collected, allowing extremely long duration monitoring. The resulting data is of higher temporal and spacial density than can be collected with traditional methods.



### EXOCETUS AUTONOMOUS SYSTEMS

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Joe Turner | [turner@exocetussystems.com](mailto: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)



OBS | SUR | VC&L | A&T

### TELEDYNE WEBB RESEARCH

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#### 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. Over 40 sensors and other options are available to address a wide variety of ocean conditions and sampling requirements. (Customizable)



OBS | A&T | NDT



## Maritime Industry Quickly Deploying VideoRay's Mission Specialist Technology

VideoRay's Mission Specialist technology, first available in the largest VideoRay model – the Defender - now powers the Pro 5 system. The Defender provides for precise vehicle maneuvering and is optimized for heavier payloads and lifting. It is used for demanding missions such as rendering unexploded ordnance safe or cavitation cleaning. The smaller Pro 5 is just slightly larger than the popular Pro 4 model, and is optimized for missions where size, space, weight, and deployment speed are key.

Mission Specialist technology provides power, flexibility and reliability built at the component level. If a problem is found, repairs can be completed in the field by simply replacing the affected module. Thrusters, for example, are identical on the Pro 5 and Defender.

### *Science and Research Application – Charles Darwin Foundation in the Galapagos*

Both a Defender and a Pro 5 were used in late 2018 in the Galapagos collecting data in the form of video transects using a third party stereo-video. The Defender's larger and more powerful design allowed it to carry a Doppler Velocity Log (DVL) which made the automatic navigation of straight transects easier. The Pro 5 was more portable and easier to deploy in challenging sea conditions. The data collected was critical to the Galapagos Marine reserves.

Several other Universities are using Mission Specialist technology for Science & Research, including:

- Texas A&M
- Louisiana State University
- Florida Institute of Oceanography Research

### *Defense Application – Indian Navy*

In 2016, VideoRay was awarded a contract with the Indian Navy to provide a fully upgradable Military Configured Remote Operated Vehicle (ROV) meet the requirements of underwater inspection and repairs, underwater bottom surveys, hydrographic

reconnaissance, and the defense of Indian Navy maritime assets, as well as conduct underwater victim rescue and recovery, defend territorial seas, deter underwater swimmer intrusive or aggressive acts, conduct maritime Intelligence, Surveillance, Reconnaissance (ISR), and ensure safe rite of passage and protection of maritime assets. In December 2018, the Indian Navy mobilized their fleet of MSS Defenders successfully, in very challenging conditions, to search for and recover victims of a mine flood.

Several other Navies are using the Mission Specialist technology, including:

- US Navy
- UK Ministry of Defence

### *Civil Inspection Application – Dagfin Skaar*

Dagfin Skaar of Norway, who purchased a Mission Specialist Defender, completed a tunnel inspection with the custom system. The Mission Specialist Defender entered the tunnel via the lake that is the reservoir for the hydro plant and travelled about 150 meters to get to the inspection site. Due to low visibility and mission requirements, two sonars were used for navigation and successful completion of the mission.

Several other companies are using the Mission Specialist technology for a variety of applications:

- Aquaculture
- Wind Infrastructure construction and inspections
- Water Management
- Search & Recovery
- Offshore Oil & Gas
- Nuclear

For more information, visit  
[WWW.VIDEORAY.COM](http://WWW.VIDEORAY.COM)



Part of the Teledyne Imaging Group

## From Ship-to-Shore, CARIS Onboard Provides a Modern Web Interface for Monitoring Unmanned Survey Systems.



For more than 40 years, Teledyne CARIS has designed software for the marine GIS community. Developed in cooperation with hydrographic clients and universities, the CARIS™ toolset provides clients with resource optimization and a true operational advantage. Known for its Ping-to-Chart™ solution, CARIS' comprehensive portfolio of products, from the processing of the echo-sounder ping, to the production and distribution of the chart have enabled the charting of hundreds of thousands of nautical miles of ocean and waterways around the globe.

With a focus on marine survey, CARIS products have become the go-to solution for unmanned systems by adding specialized tools to tackle some of the challenges that are unique to unmanned systems. Recognizing the short falls of using a traditional desktop application for unmanned systems, CARIS Onboard was released in 2015 to provide a unique approach to

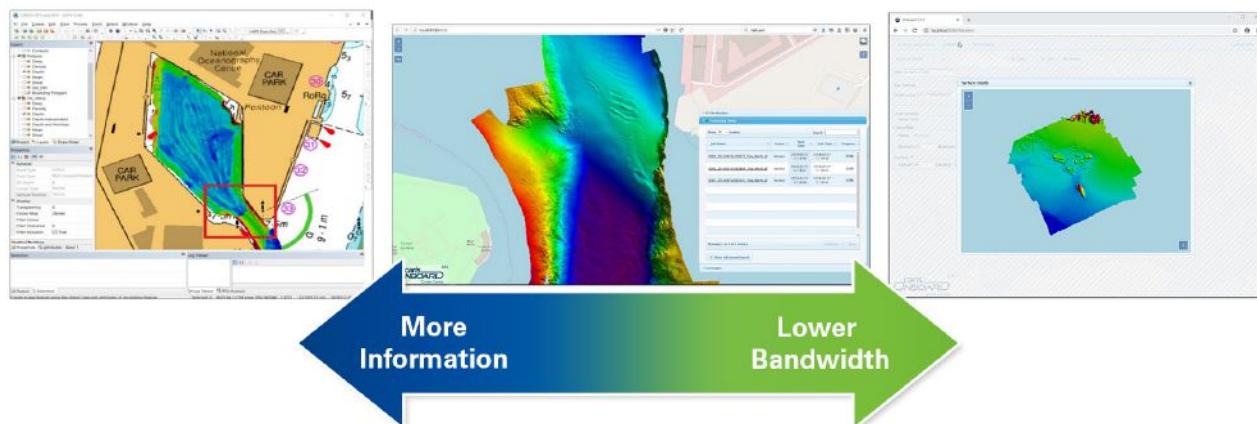
processing survey data from unmanned systems. Built on a web services platform, CARIS Onboard provides a comprehensive automated system which processes data in real-time, converting high volume raw data into information products that can easily be streamed to the system operator.

Accessing a desktop application running on an unmanned system requires the use of remote desktop to interact with the system, or to retrieve any information. This outdated approach is bandwidth intensive, lags with slow connections, and is difficult to manage when there are several systems competing for screen space. CARIS Onboard is a unique solution which overcomes these challenges by streaming products through a web service and providing a modern web user interface (UI) to dynamically control and monitor the automated system. Products generated including surfaces and backscatter mosaics, are live-streamed during acquisition and

accessed through a web browser. By providing access to processed products in a web application, the new Control Centre allows review of a survey dataset from any device with a network connection to the vessel. This increased access allows information about survey operations to be accessible when and where needed without interfering with system operations.

CARIS Onboard version 2.1 was released earlier this year and introduced the concept of scaled bandwidth. There are now 3 different methods to interact with the system, allowing the amount of information transferred to be scaled to match the available communication bandwidth.

Find out why CARIS software is selected by national mapping and charting agencies, survey companies, port and water way authorities, oil and gas companies, and academic institutions worldwide by visiting [www.teledynecaris.com](http://www.teledynecaris.com).





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- time, space and cost-saving solutions
- low power consumption for autonomous operations
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- extendable platform with multiple configuration options: power-saving Wake Up module, acoustic releaser, additional sensors, custom solutions, OEM versions available

## USBL POSITIONING SYSTEMS

**simultaneous** positioning and communication - no need to switch between positioning mode and modem mode

- flexible SiNAPS positioning software
- reliable data transmissions
- range: up to 8000 m
- accuracy: up to 0.04 degrees

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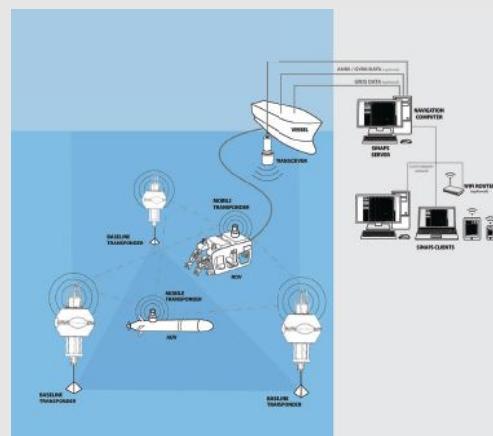
reliable data transmissions even in adverse conditions, customizable R-series modems, light and compact M-series "mini" modems, **new S2CM-HS high-speed modem**, special editions for developers, S2C communication and positioning emulator - remote access or standalone device

- range: up to 8000 m
- depth: up to 6000 m
- data rate: up to 62.5 kbps

## LBL POSITIONING SYSTEMS

highly accurate, precise and stable performance, simultaneous positioning and data transmissions

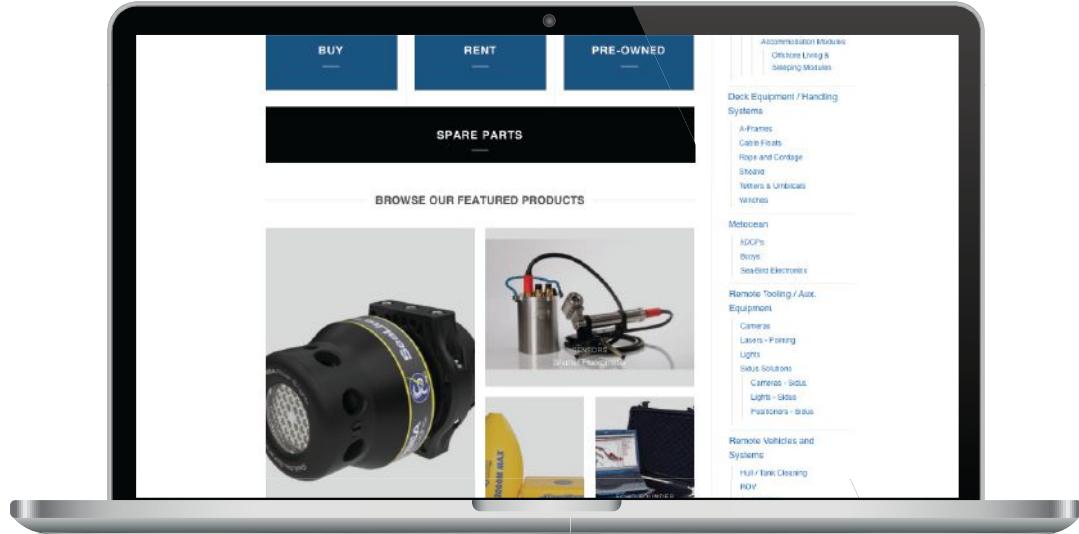
- flexible SiNAPS positioning software
- reliable data transmissions
- range: up to 8000 m
- accuracy: better than 0.01 m





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