MARINE TECHNOLOGY REPORTER

July/August 2012 www.seadiscovery.com

Interview:
SEA CON's
Craig Newell

M T R

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July/August 2012

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Volume 55 • Number 6

MTR 100

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Gregory R. Trauthwein, Associate Publisher & Editor of *Marine Technology Reporter.*
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This is the Seventh Annual installment of the MTR100, *Marine Technology Reporter's* yearly review of 100 compelling companies serving the subsea industry. The chore of sifting hundreds of applications to find the hidden gems is one of the more harrowing tasks undertaken by the *MTR* staff in a given year, but the reward is a unique look at 100 companies and technologies ... many names that you know, quite a few that you may not. And the chore this year was particularly difficult, as applications for the honor were up more than 20% over 2011.

From its debut in 2006, the MTR100 was geared to not only report on the largest companies serving the market, or the most profitable (and for anyone in the know, discovering real financial details is nearly impossible, particularly among the smaller privately held firms). It is designed instead to offer a fair representation of the wide diversity of small, medium and large companies; a patchwork quilt if you will of the diversity of people, technologies and techniques that come together to weave the fabric that is the subsea industry.

The trend toward consolidation continues in 2012, as larger corporate entities continue to seek and acquire unique pockets of knowledge and technology. To that end, you will see several familiar brands with new parents, with, for example, Teledyne, Xylem, L3 and Forum Energy Technologies continuing their respective pushes to bring multiple capabilities under one corporate roof. Speaking of the latter, Forum Energy Technologies celebrated its Initial Public Offering (IPO) in the Spring of 2012, and is certainly a company to watch in 2013 to see how it may deploy its influence across the market.

New for 2012 are a series of 10 company reports from our Boston-area correspondent, Rhonda Moniz. As many of you have read, both in print and online at **SeaDiscovery.com**, Rhonda is a regular and highly valued contributor, delivering a keen insight and vast industry experience to her timely reports. The Northeast U.S., and more specifically the hub in and around Massachusetts, is one of the richest regions for subsea technology innovation on the planet. Rhonda's task: Find and visit 10 companies with compelling people, technologies and stories, a job she handled admirably as I think you will agree when reading her profiles throughout this edition.

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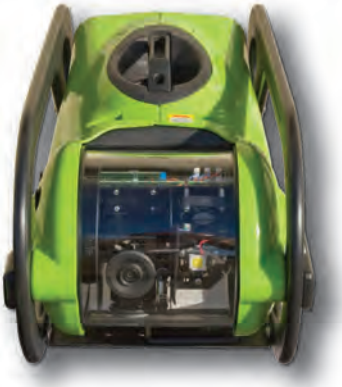
SeaBotix



PART:

Little Benthic Vehicles

VIEW:

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NOTES:

World leading MiniROV manufacturer setting the benchmark.

QR CODE:

LOCATION:

www.SeaBotix.com • Tel: +1 619.450.4000 • Email: Info@SeaBotix.com

Aanderaa Data Instruments AS

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https://www.aadi.no
CEO: Mr. Thorleif Lauritz Lohne Gustavsen
Number of Employees: 102

Aanderaa Data Instruments, a Xylem brand, is headquartered in Bergen, Norway where we design, manufacture and sell sensors, instruments and systems for measuring and monitoring in demanding environments. Aanderaa recently obtained a technology breakthrough in commercially available Remote Underwater Observation Systems. Its new Seaguard Host and an expanding line of distributed Smart Sensor technology, as well as our new Aanderaa Real-Time Communication System, marks a turning point in distributed instrumentation for underwater and atmospheric measurements of Hydro Acoustic, Electro-Optical, Electro-Chemical, Pressure, Temperature, Meteorological data in

observing networks and self-contained instrumentation. At the core of the system is the CANBus based AiCaP protocol, which enables self-detection of connected sensors and dynamic setup of configuration menus. This protocol was developed by Aanderaa in order to achieve the extreme low power requirements of the Underwater Observatories. The master-slave protocol extends the CANBus protocol with extra signaling to efficiently wake up sensors or datalogger to receive data when necessary. Sensors on the bus perform their own measurements at the required intervals and send collected data to the Seaguard or Smartguard logger.

Airmar Technology

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http://www.airmartechnology.com
CEO: Steve Boucher
Engeneering Director: Sean Frazier, VP Engineering
Number of Employees: 180

Airmar Technology Corporation is a leader in the design and manufacture of ultrasonic sensor technology for marine and industrial applications. Its product line includes advanced ultrasonic transducers, flow sensors, WeatherStation instruments, and electronic compasses used for a wide variety of applications including fishing, navigation, meteorology, survey, level measurement, process control, and proximity sensing. Airmar manufactures transducers for many different marine and air-ranging applications. Some of these marine applications include hydrographic survey, flow-sensing, fish-detection, and acoustic backscatter. Those OEMs and researchers pursuing these applications

DOE Incorporated

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E-mail: sales@deepocean.com
Website: www.deepocean.com

CEO: Bob Sabo
Employees: 15

The Case

DEEP OCEAN ENGINERING has delivered nearly 600 purpose-built ROV's and tooling to more than 250 customers in more than 40 countries since the company was founded in a small workshop in 1982.

The Company

DOE Inc. (Deep Ocean Engineering) started as a small engineering company in 1982, has over 600 sophisticated ROV systems in the field, world wide. It recently moved to a new facility in San Jose, Calif., where it is building, designing and manufacturing the high quality ROV systems. DOE Inc. manufactures ROV solutions to a wide variety of industries. DOE

Inc. understands the complexity of the work required and is focused on designing not only ROV's for underwater inspection and observation but to integrate the necessary sensors and tools for specific applications.

The Tech

DOE Inc (Deep Ocean Engineering) first developed the Phantom line of ROV's and that system was the technological leader in the industry for many years. Recently its added more sophisticated systems to the product line. With the introduction of the Swordfish S5N and Triggerfish T4N systems, it has added more features and enhancements to the "analog: or hardwired Phantom Line. The new digital systems represent the latest in technology to meet the ever increasing demands of the new sensors and tools that are now available.

demand high acoustic sensitivity as well as broadband performance. The acoustic performance of such transducers - extremely low-ringing, large bandwidths, low Q ratings, and reduced sidelobes - are preferred. Applications: Single & Multi-Beam Sonar; Acoustic Backscatter; Acoustic Doppler; Hydrographic Survey; Custom Configurations; Interferometry; Fisheries Research; CHIRP Sonar; Underwater Modem; Parametric; Hydrophones.

Applied Acoustics

Marine House, Marine Park,
Great Yarmouth Norfolk NR31 0NB, UK
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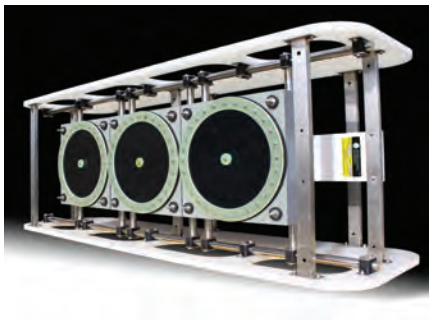
Email: general@appliedacoustics.com
http://www.appliedacoustics.com
CEO: Adam Darling
Marketing Director: Sue Meeken
Sales Manager: Gavin Willoughby
Engeneering Director: Neil MacDonald
Number of Employees: 40

Applied Acoustics designs and manufactures high tech subsea positioning transponders, USBL underwater tracking systems and sub-bottom profiling equipment. The company, founded in 1989, initially supplied equipment to the O&G sector, but now supplies its products to oceanographic institutions and defense industries in addition to its traditional offshore survey customers. Heavy investment in R&D results in



a steady stream of new products to increase operational efficiencies, including the Nexus Easytrak, fast becoming the generic name for USBL subsea tracking, and the S-Boom, a novel 3-plate high power synchronised sound source to improve resolution and penetration during shallow water geophysical surveys. The higher penetration, high resolution profiles obtained from the S-Boom have resulted in superior results during nearshore wind farm site surveys.

Kongsberg Maritime

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Email: subsea@kongsberg.com
Website: www.kongsberg.com

CEO/President: Walter Quam
President: Geir Håøy (Kongsberg Maritime)
Facility: Kongsberg Maritime – Horten and Kongsberg, Norway, Aberdeen, Scotland: Kongsberg Seatex – Trondheim, Norway
Kongsberg Mesotech – Vancouver
Employees: 3600
Testing Capabilities:
- Simrad Echo test boat and large pool in Horten, Norway
- Test tank in Port Coquitlam and a test barge in Port Moody.

The Company

Kongsberg Maritime is a global company providing solutions for shipping, offshore, oil & gas, subsea, navy, coastal marine and fisheries, maritime training, port and harbor surveillance and more. The company delivers systems for positioning, surveying, navigation and automation, and is a market leader in dynamic positioning systems, automation and surveillance systems, process automation, satellite navigation and hydroacoustics. Integration of various systems is a key driver to Kongsberg Maritim.

Headquartered in Kongsberg, Norway, the company is present in 25 countries. Kongsberg Maritime's subsea department develops and markets underwater positioning and navigation, including the standard of HPR and HiPAP systems and inertial navigation through Hydroacoustic Aided Inertial Naviagation, the HAIN systems.

Transponders for any water depth and any of the LBL, SBL, SSBL or combined principles. Underwater cameras. Acoustic telemetry vertical and horizontal, up to 15 km. Acoustic BOP emergency control.

Hydrographic precision echo sounders of single beam and multibeam types, for surface ship,

ROV towed and AUV applications. Hydrographic dataprocessing software. Integrated instrumentation systems. Active sonars for both antisubmarine warfare, obstacle avoidance and mine detection and classification. Products specially designed for Littoral Warfare and brown water operations.

The Tech

Kongsberg Maritime is committed to developing new and innovative products that use the latest technology and techniques to the operational and economic benefit of its many customers. The company's multibeam echo sounder systems for seabed mapping include models for all water depths, and virtually any application and the subsea department offers hydroacoustic systems for all eventualities. In addition to the Horten facility, Kongsberg Mesotech's Vancouver facility is responsible for the design and manufacture of underwater acoustic products, including:

- *Imaging and Profiling Mechanically Scanned Sonars*
- *Multibeam Imaging Sonars*
- *Altimeters*

Kongsberg Maritime offers complete mapping systems, providing turn-key survey solutions including multibeam echo sounders connected to positioning equipment, heading and motion sensing instruments, as well as sound velocity sensors in order to position the soundings correctly. The entire package, including software is designed, manufacturer and often installed by Kongsberg Maritime. The company is also a leader in the field of underwater cameras and AUV development, counting several navies and the world's leading survey companies as customers of its HUGIN AUV. This cutting-edge AUV has been a key technology development area since 1990 and is used for a variety of civilian and military applications, including: High-resolution high-speed seabed mapping and imaging; Ocean exploration and monitoring; Marine geological survey; Inspection of underwater engineering structures and pipelines; Mine countermeasures - MCM; Rapid environmental assessment -REA/Battlespace access; and Anti-submarine warfare - ASW

2G Robotics

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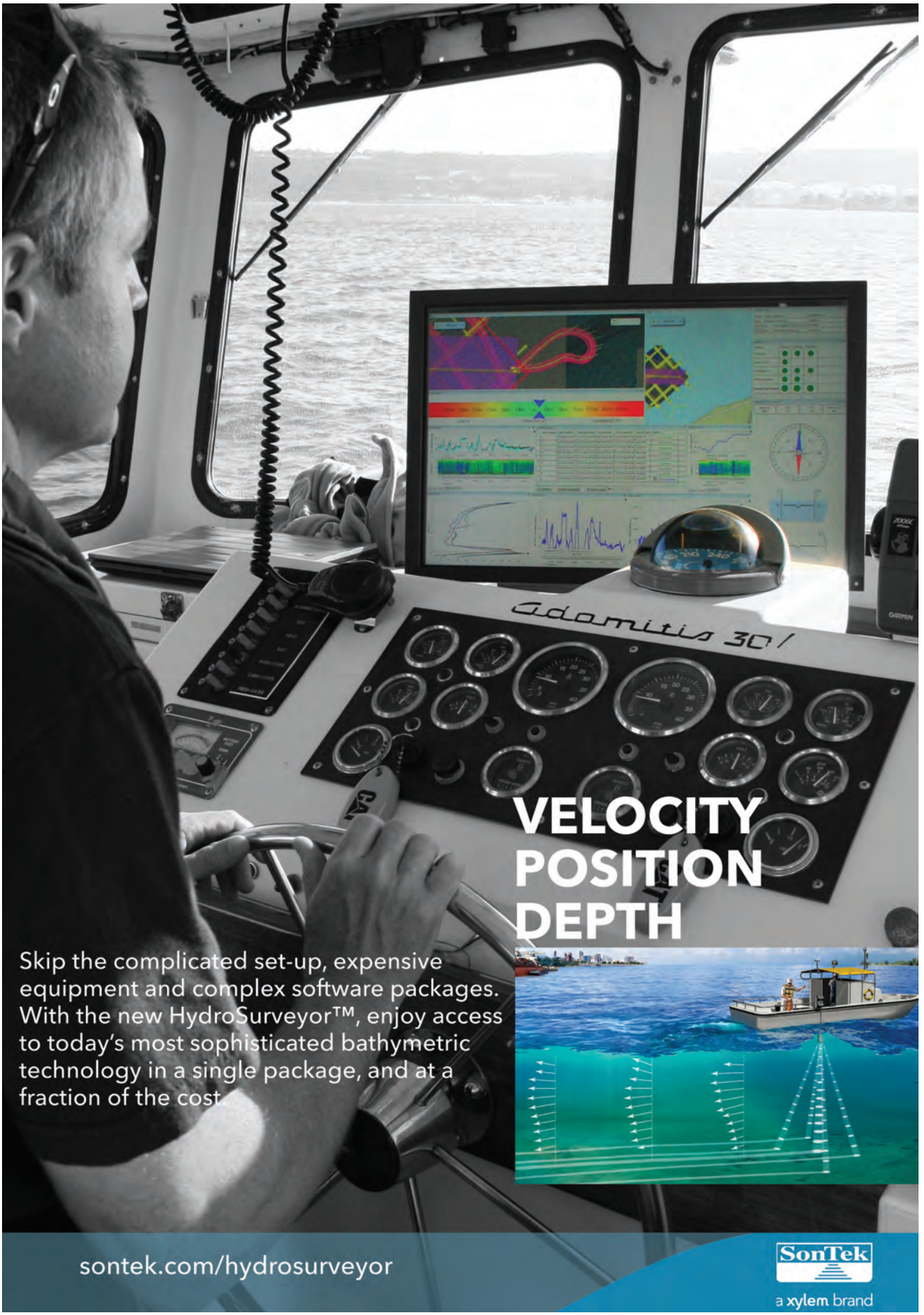
Ontario, Canada N2V 1A2
Tel: 519-886-8859
Email: jmielke@2grobotics.com
http://www.2grobotics.com/

CEO/President
Jason Gillham

Number Of Employee 5

Based in Waterloo, Ontario, and founded in 2007, 2G Robotics underwater laser scanner and imageenhancement software goes beyond the capabilities of traditional sonar and video inspection to provide detailed inspection of even the slightest variances in underwater environments. 2G Robotics engineering experience in systems design and deployment of underwater, terrestrial, and aerial robotic systems, combined with our use of advanced engineering design methods makes our company the ideal partner for advanced underwater inspection.

The scanners have been designed to create digital 3D models of the object(s) being scanned to provide precise measurements. When in operation, the ULS scans an area defined by the 50 degree fan beam emitted from the scanner and the rotation of the scanning head, capable of scanning a full 360 degree circumference. The ULS systems have an effective operating range of over 5 m; however, best results are achieved when the scanner is as close as possible to its target.



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Tetra Tech CES/Marine Mapping Group

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Tel: 360-434-7390
Email: Brian.Williams@tetratech.com
Website: www.tetratech.com

CEO: Dan L. Batrack
Vice President: Ronald J. Chu
Marketing Director: Michael A. Bieber
Engeneering Director: William R. Brownlie
Number of Employees: 13000
Annual Sales: $2.2b

The Case

Tetra Tech/Marine Mapping Group has the proven capability to design, integrate, conduct, and document complex hydrographic, geophysical, and oceanographic surveys, using myriad technologies and sensors optimized for the task, with precision navigation and positioning in any environment (depths from 1 to 5,000m).

The Company

Tetra Tech is a provider of consulting, engineering, program management, construction, and technical services; a diverse company, including individuals with expertise in science, research, engineering, construction, and information technology. Its strength is in collectively providing integrated services—delivering the best solutions to meet our clients' needs. The company supports government and commercial clients by providing innovative solutions to complex problems focused on water, environment, energy, infrastructure, and natural resources. With more than 13,000 employees worldwide, Tetra Tech's capabilities span the entire project life cycle. Our Hydrographic and Geophysical survey services include complete system integration, real-time data processing and analysis, and display of geospatial data. Applications for our surveys include dredging, marine facilities design, fish habitat analysis, cultural resource/debris mapping, sediment investigations, geologic fault mapping, and other marine-related activities. Our work spans marine, estuarine, riverine, and wetland environments on all three coasts, the Great Lakes, and inland river systems in the United States and abroad.

The Tech

Tetra Tech/Marine Mapping Group performs high-accuracy bathymetric surveys using single- and multi-beam echo sounding systems designed to evaluate bottom features in marine, coastal, and other environments. These evaluations include dam facilities, such as surveys of forebay and tailrace areas and dam structures to analyze volumes, sediment transport, scour, and general conditions. These surveys are normally conducted using a combination of differential global positioning systems (DGPS) or real-time kinetic (RTK) GPS, inertial-aided positioning, and navigation post-processing, to ensure the most accurate surveys possible. Among Tetra Tech's surveying equipment is the RESON SeaBat 7125, one of the highest resolution

With 13,000 employees worldwide, Tetra Tech/ Marine Mapping is well outfitted for most any project

multibeam sonar commercially available, installed on our own vessels or vessels of opportunity worldwide. Tetra Tech also owns and operates the most advanced processing and data visualization and analysis tools which provide the most complete information possible.

Testing Capabilities

* Mapping in 2-D and 3-D: Tetra Tech has expertise in the collection and manipulation of bathymetric survey data to provide 2- and 3-dimensional mapping
* Laser Scanner Surveys: Tetra Tech has adapted a 2-D laser line scanner (LiDAR) to conduct surveys from dynamic platforms such as boats and vehicles to collect data for condition surveys, inspections, and time series comparisons.
* LiDAR Processing: Vessel-mounted LiDAR processing begins with the initial review of data to ensure that there are no gaps in coverage. Once calibration is confirmed, the data are submitted to automated classification routines that filter and iteratively generate bare earth models.
* Side-Scan Sonar Surveys: To provide high-quality imagery and to augment the multibeam sonar data, Tetra Tech scientists deploy a high-resolution digital side-scan sonar towfish capable of covering hundreds of feet on each side of a moving survey vessel to digitally map seafloor topography and locate targets of interest or navigational risks Magnetometer Surveys.

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CDL

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Website: www.cdltd.net

CEO: Colin Crichton
Employees: 30

Since its inception CDL has been dedicated to becoming a world-leading provider of innovative engineered solutions supporting the dynamic challenges of the subsea industry. CDL offers a wide variety of market ready products and systems. Pioneers of the Tiny Optic Gyro System (TOGS), CDL also provides products that satisfy the markets inertial positioning, sensor, telemetry and navigation requirements through their Fiber Optic Gyro (FOG), Ring Laser Gyro (RLG), Doppler Velocity Log (DVL), and Acoustic technologies. CDL is headquartered in Silverfield House in Aberdeen, Scotland, and also has offices in Houston, Texas and Rio de Janiero offering regional sales and customer support services covering the North, Central and South America customer base.

CDL solution offerings include Inertial Navigation for both Subsea and Surface (Offshore and Onshore) applications, Positioning Systems, Remote & Topside Data Collection, Attitude (Heading, Pitch & Roll Sensors) Sensing, Data Transfer.

The Tech

CDLs activities cover the innovative design, manufacturing, as well as the refurbishements/upgrading of equipment for surface and subsea use in the offshore and maritime industry. The product range includes a variety of inertial sensors including Gyrocompasses, Attitude and Heading Reference Systems (AHRS), Inertial Measurement Units (IMU), and Inertial Navigation Systems (INS) that provide measurement units for control and aid in navigation. CDL's product range covers the following market areas:

- *motion sensors*
- *positioning and navigation equipment*
- *data transfer*
- *ROV sensors*
- *data logging*
- *subsea and surface, and*
- *control & monitoring.*

DOER Marine

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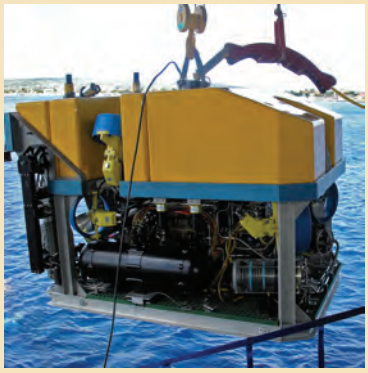
E-mail: Liz@doermarine.com
Website: www.doermarine.com

CEO: Liz Taylor
Employees: 20



DOER was founded in 1992 as Deep Ocean Exploration and Research with a focus on field support services and systems integrations, growing to include the design and build of purpose driven solutions. Today, DOER has a variety of products including ROVs, human occupied submersibles, manipulators, hydraulics and thrusters, while continuing to provide custom builds and field support. DOER builds range from the traditional, such as the H2000 ROV and Sea Mantis manipulator, to the uniquely innovative, such as the Deepsearch submersible and Sub Ice ROV. Areas of expertise include extreme tunnel inspection systems, deep water ROVs and submersibles along with systems tailored for science, ocean observatory, and film making. DOER offers a variety consulting and testing services. The company is an independent; woman owned entity.

The Tech

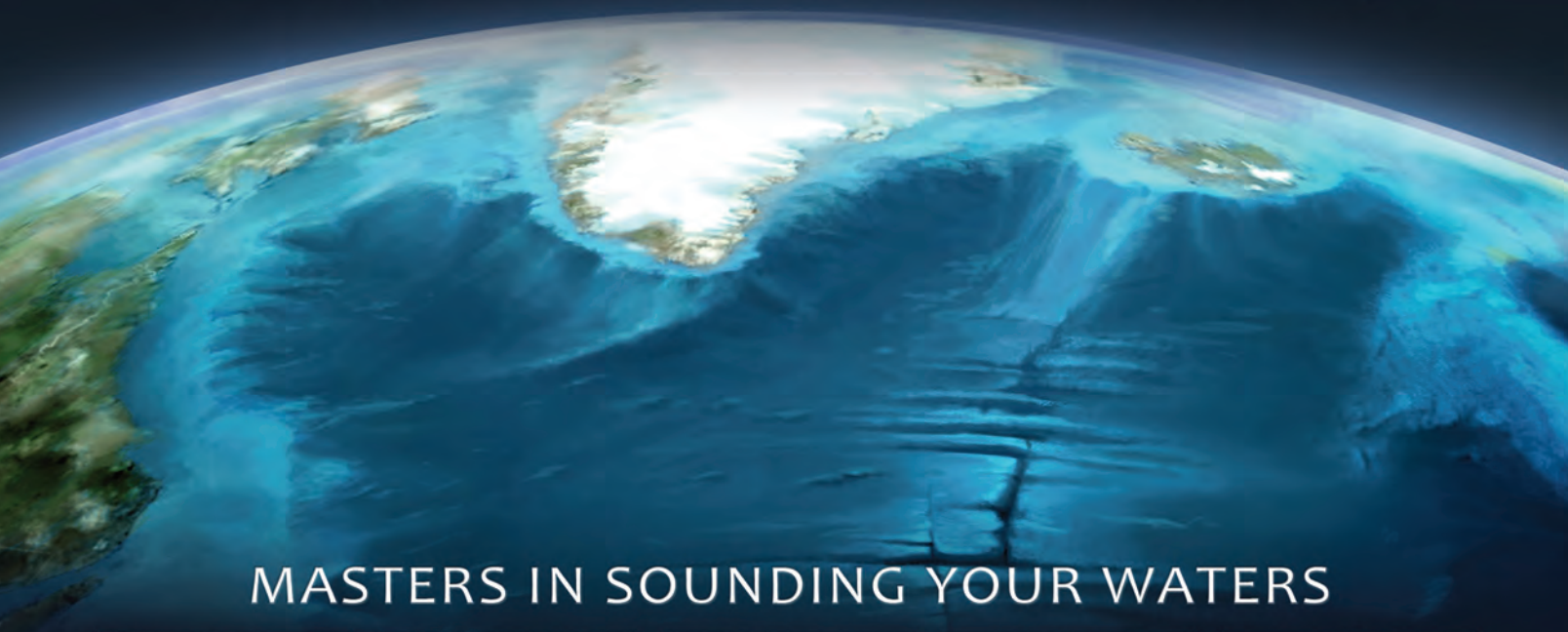
The technology developed by DOER has an eye towards use of COTS and MOTS components. When solutions must be developed from the ground up, DOER controls costs through use of our own resources including Deep Machine, DOER's in house machine shop. Although DOER is known for taking on complex and unusual builds, there are many common assemblies and components that work across a variety of manned and unmanned platforms, helping to keep costs down. Examples are hydraulic manifolds and compensators that have been used on landers, samplers, ROV's and manned submersibles. The Sea Mantis manipulator, a proportional control arm, has been used on 7 submersibles, 5 ROVs and is adapted for use with special tooling and cutters. DOER is one of the few companies that will not only custom build for clients but will also assist with ship board integrations and operational concerns. This has been of particular interest to yacht owners considering the addition of subsea equipment and the scientific community when working from vessels of opportunity. Having the ability to capture specimens and share images is a critical part of any subsea operation. To that end, DOER has developed many sampling tools, skids, lighting and camera booms, along with fiber optics, Ethernet and custom camera housings.

THE GLOBE

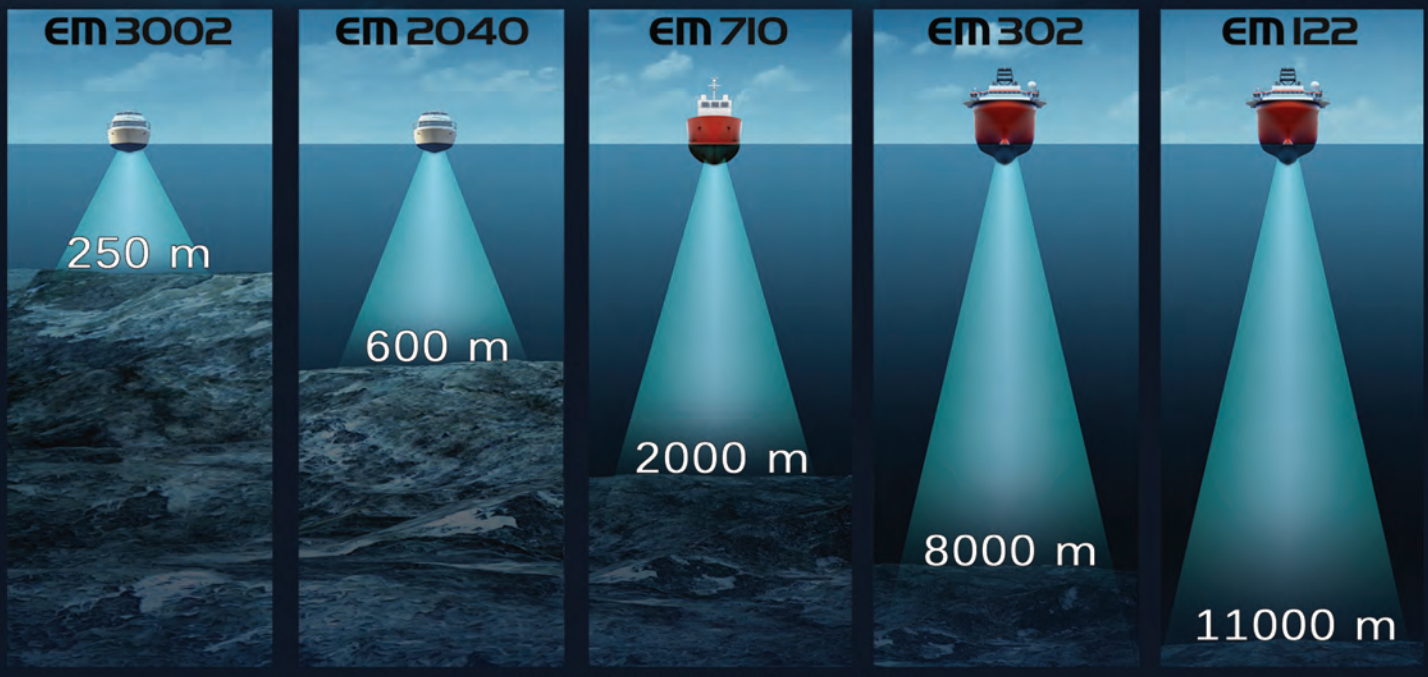
KONGSBERG

1/3 COVERED BY LAND
THE REST IS COVERED BY KONGSBERG

The complete multibeam echo sounder product range



MASTERS IN SOUNDING YOUR WATERS



WWW.KONGSBERG.COM

THE FULL PICTURE

Ecosse Subsea Systems Limited

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Website: www.ecosse-subsea.com

CEO: Mike Wilson
Employees: 13

The Company

Established in 1996, Ecosse Subsea Systems has earned a global reputation for outstanding service delivery to the energy sector. Its range of services include: SCAR Trenching; Subsea Lifting; Engineering Consultancy + Personnel Supply Technologies. Mike Wilson has designed and developed a number of patented subsea engineering products, and has extensive experience in the subsea arena. "Our vision is to be the customers' first choice for trenching, subsea lifting, high calibre engineering consultancy and tailored personnel services to the subsea and marine markets. We are passionate about the development of innovative technology and specialist construction systems in the field of subsea operations and pipeline installation." Mike Wilson, MD. Ecosse are an industry front runner in the delivery of trenching, subsea lifting and technology development services and expertise; and our personnel oversee offshore construction and diving work for our clients.

The Tech

Ecosse Subsea Systems hold patents on a number of designs.

1) *Subsea Trenching System: SCAR Plough: Reported by the company to be the world's first in-trench, multipass plough; can operate from shore ends to +3000m and creates trenches from 0-5m+*

2) *Olympic Spoolbase is a modular system for onshore fabrication and storage of pipelines which allows long lengths of pipeline (10km +) to be stored prior to reeling.*

3)*We work in partnership with Aubin to deliver the engineering for their subsea Gels (Gel Lift System and Deepbuoy); and with Marin Subsea for complimentary trenching and excavation tasks.*

Horizon Marine, Inc.

The Company

Horizon Marine provides oceanographic services supporting offshore energy. Using technologies to acquire and analyze oceanographic data, it maps, models, and forecasts strong oceanographic features. The stress and strain on structures caused by 1.5 to 4.0 knot currents can severely impact and often halt critical deepwater operations. In 1982 Jim Feeney established Horizon Marine as an oceanographic services company focusing on extreme environments. Utilizing the instruments he helped develop while working for Sippican Corporation (now a Lockheed Martin company), Horizon initially tracked Gulf Stream eddies and hurricane-induced currents in support of deepwater drilling activity. As the offshore industry ventured deeper into the Gulf of Mexico, it experienced strong 'Loop Currents' and eddies, oceanographic features capable of impacting a site with 4.0 knot currents. Offshore operations have various current thresholds for safety and equipment performance. Due to the high costs of deepwater operations, any downtime incurred while "waiting on currents" can be extremely expensive.

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CEO: Jim Feeney
Employees: 18

The Tech

Horizon Marine has invested in the development of unique data acquisition, telemetry, and delivery systems to provide clients with detailed information required to make operational decisions. Examples of these technologies include drifting GPS buoys, vessel-mounted Acoustic Doppler Current Profilers (ADCPs), and Autonomous Underwater Gliding Vehicles (AUGVs). More than 3,800 Far Horizon Drifters (FHDs) have been deployed in the Gulf of Mexico, between French Guiana and Trinidad, and offshore Brazil, Australia, and East Africa since 1985. Following launch from a fixed-wing aircraft, the parachute becomes a sea anchor, minimizing buoy slippage due to wind. The GPS receiver allows hourly position retrieval and a battery lifetime between 120 and 180 days.

Offshore operations supported from Houston include FAST Eddy and an expanding AUGV fleet.

Ten companies, a sea of solutions.

SURVEY

COMMUNICATE

NAVIGATE

MEASURE

EXPLORE

OBSERVE

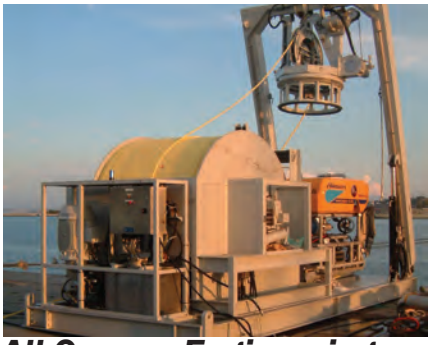
CONNECT

From the surface to the seafloor, the Teledyne Marine companies deliver the products, technology, and talent you demand to get the job done. Find your solution at www.teledynemarine.com

TELEDYNE MARINE

www.teledynemarine.com

BENTHOS • D.G.O'BRIEN • GAVIA • GEOPHYSICAL INSTRUMENTS • IMPULSE • ODI • ODOM • RD INSTRUMENTS • TSS • WEBB RESEARCH



All Oceans Engineering

Tyrebagger Works, Clinterty, Kinellar, Aberdeen Aberdeenshire AB21 0TT, Scotland
Tel: 44 (0)1224 791001
Email: admin@alloceans.co.uk
http://www.alloceans.co.uk
CEO: Brian Abel
Number of Employees: 10

A specialist global player, ALL OCEANS design and supply ROV, Diving and diverless intervention solutions in support of underwater construction, resource recovery, oceanography, renewables, nuclear, military, security, aquaculture and all underwater markets. It is the company's intention to enhance its position as one of the world's foremost suppliers of underwater mechanical handling technology solutions. It is further diversifying its business extensively into remote vision and sensing technologies through its sister company AC-CESS Co UK Limited established in 2004. ALL OCEANS is the design, development and manufacturing arm for AC-CESS products.

Mechanical Handling Underwater
- Winches/LARS/Underwater Winches /Tether Management Systems
- Torque Tools
- General Products
- Workshop Services
- Engineering

Remote Operated Vision and Sense
- Micro inspection ROV.
- 190mm pipe fly through, 100m depth rating, foul proof center-less thrusters, intuitive control with flight assist features, truly robust, 3000m fly-out systems

ASI Group Ltd.

250 Martindale Road,
St. Catharines Ontario L2R 7R8, Canada
Tel: 905-641-0941
Email: rgicante@asi-group.com
http://www.asi-group.com/
CEO: Carmen Sferrazza
Marketing Director: Rebecca Gicante
Number of Employees: 100

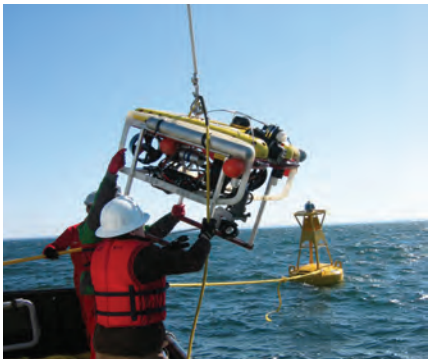
ASI Group Ltd. (ASI) is a private Canadian company founded in 1987 that develops and provides water and wastewater services for industries, utilities and municipalities specializing in remotely operated vehicle inspections of flooded tunnels and pipelines, zebra mussel control, aquatic toxicology, commercial diving, marine construction and water/wastewater management.

- Pipeline and Tunnel Inspections

Assessment of structural integrity of flooded tunnels and pipelines prompted ASI to develop a fleet of specialized robotic vehicles. These vehicles have the capability to complete internal inspections ranging from pipelines 15 cm in diameter to tunnels 6 m in diameter. Fiber-optic technology is currently applied in the completion of flooded tunnel inspections to produce clear and detailed images which can be transmitted over long distances.

- Zebra Mussel Control

ASI has conducted and completed a number of significant research and development programs which have established techniques and protocols for industrial control of zebra mussel biofouling.



ASV Ltd

6a Trafalgar Wharf, Hamilton Road ,
Portchester Hampshire PO6 4PX UK
Tel: +44 02392 382573
Email: vince.dobbin@asvglobal.com
http://asvglobal.com
CEO: Dan Hook
Marketing Director: Vince Dobbin
Engeneering Director: Richard Daltry
Number of Employees: 11

ASV is currently designing an unmanned multirole marine craft. It is a UK company and part of Global Fusion, a privately owned international marine services group based in Lafayette, La. The Global Fusion family of companies provide a range of marine services including offshore positioning, survey, geoscience, and autonomous marine vehicle services worldwide.

Concept Design - A range of hydrodynamic, structural, mechanical, electronic and software engineering skills. These are used to undertake concept design studies. For more fundamental research work, the company has access to a wide range of university facilities.

Vehicle Production - ASV has exclusive production agreements with a number of local companies for the fabrication of vehicle components which provides it with the ability to rapidly assemble prototype and production vehicles.

Existing Craft Conversion - ASV is able to convert existing craft into unmanned surface vehicles using our proven control systems. Converting an existing craft can provide a cost effective method for organizations to explore the capabilities an unmanned system.

Remote Ocean Systems

5618 Copley Drive, San Diego, CA 92111 USA
Tel: (858) 565-8500
E-mail: sales@rosys.com
Website: www.rosys.com

CEO/President: Robert Acks
Employees: 50

The Company

Remote Ocean Systems (ROS) is a leader in the development, design and manufacture of advanced technology inspection and lighting systems for the most severe offshore, oceanographic, industrial and military applications. The ROS product line includes the most complete selection of underwater video cameras, lights, pan and tilts and control systems available in the industry. ROS' Quality Management System complies with ISO 9001 with a commitment to ensure customer satisfaction and continuous improvement. ROS' headquarters, design and manufacturing facility is located in San Diego, California.

The Tech

ROS Lightning is a versatile LED Light. This new technology design offers breakthrough LED features that include: various power and control options to match specific needs, spot or floodlight configuration options and more. The ROS Lightning generates 10,000 lumens from a 36 LED Ultra-High Intensity White Array and is depth rated to 6000m. A variety of connectors are available for ease of change-out and service. ROS also offers Next Generation Video Camera Systems, including the MANTIS HD High Definition Color Zoom Camera and the Spectator 36:1 with an ultra-wide 88° Diagonal Field of View.

Bluefin Robotics Corporation

553 South Street,
Quincy, Mass.
Tel: (617) 715-7000
Email: info@bluefinrobotics.com
Website: bluefinrobotics.com

President/CEO: David P.Kelly

Marketing Director/Sales Manager: Omer Poroy

Engineering Director: Louis Quartararo

Facility: Bluefin's headquarters is a 55,000 sq. ft. facility in Quincy, Mass., with direct ocean access. The newly renovated building houses all engineering, manufacturing, marine operations, and administrative functions.

Testing Capabilities: Three saltwater test tanks, pressure chamber, machine shop, 58-ft. workboat, RHIB for shallow-water and case-boat support, knuckle-boom crane rated for 1-ton at 10-meter.

The Case

This year marks Bluefin Robotics' 15th anniversary of being a leader of Autonomous Underwater Vehicles. In addition to its traditional AUV and battery products, Bluefin now offers large-diameter, small-diameter and remotely operated vehicles. Recent contracts include the SMCM UUV, HULS and DSOP programs. All of which leverage Bluefin's existing technology and assist in advancing the current state of underwater robotics.

The Company

Bluefin Robotics develops, builds, and operates Autonomous Underwater Vehicles (AUVs), subsea batteries, and related technologies for defense, commercial, and scientific customers worldwide. It offers a full range of modular, free-flooded AUV platforms. Using a core set of building blocks, it has designed more than 50 different configurations. This includes more than 70 different sensors on more than 80 AUVs. Bluefin seeks to be a full AUV lifecycle provider by offering research and development, technology integration, full-scale manufacturing, platform training, and operations support to our customers. With ample space for equipment and direct ocean access, it is able to design, build and test systems all in a single location allowing our team to work efficiently and effectively. No other provider has our depth and breadth of expertise and resources dedicated exclusively to AUV development and production. In 1997, Bluefin was founded by a core group of engineers from the Massachusetts Institute of Technology (MIT) AUV Laboratory, and in 2005 became a wholly-owned subsidiary of Battelle.

The Tech

Bluefin Robotics continuously advances the state of AUV technology through internal R&D funding as well as through several development contracts. Bluefin recently delivered two HAUV-3 vehicles to PMS-EOD for the Hull Unmanned Underwater Vehicle Localization Systems (HULS) production systems. HAUV-N, which includes a manipulator arm, will provide a robotic ship hull mine and Improvised Explosive Device (IED) identification and neutralization capability for use in Joint Service Explosive Ordnance Disposal. With regard to the other Bluefin platforms, the company has been subcontracted by General Dynamics AIS to design and deliver SMCM UUV Knifefish, a specialized Bluefin-21 UUV System for the Mine Countermeasures Mission Package on board the Littoral Combat Ships. Bluefin is also designing a small-diameter expendable vehicle customized for Anti-Submarine Warfare and a very deep-rated Bluefin-21 for the Deep Sea Operations (DSOP) Technology and System Development Program sponsored by DARPA. Along side Battelle and The Columbia Group, Bluefin is developing Proteus, a large-diameter Dual-Mode UUV that will function as a testbed. Bluefin recently expanded its product line to include Remotely Operated Vehicles by purchasing the assets of Hawkes Remotes. The designs offer scalable, modular solutions including a thin fiber-optic tether and on-board batteries that will reduce the total cost of ownership/operating costs while simultaneously outperforming existing ROV technology. The company is currently building its first prototype. Lastly, Bluefin is engaged in several battery projects focusing on using Bluefin's standard 1.5 kWh subsea batteries as well as new, custom designs.

JW Fishers Mfg. Inc.

1953 County St., East Taunton MA 02718
Tel: (508) 822-7330
E-mail: jwfishers@aol.com
Website: www.jwfishers.com

CEO: Jack Fisher
Employees: 20

JW Fishers has been manufacturing and supplying a line of underwater search equipment for more than 40 years. Its equipment is in use by commercial diving companies, law enforcement agencies, and military units. JW Fishers manufactures a complete line of underwater search equipment including underwater metal detectors, marine magnetometers, underwater video systems, ROVs, side scan sonars, scanning sonar, acoustic pingers and receivers, and pipe and cable trackers. JW Fishers specializes in the design and manufacture of reasonably priced, high tech underwater search systems. The company's areas of expertise include acoustic design, software development, R&D of metal detection systems and magnetometers, and the design of underwater video systems including ROVs. The product line includes: Hand-held metal detectors; Boat-towed metal detectors; Hand-held magnetometers; Boat-towed magnetometers; Pipe and cable trackers; ROV-mounted metal detectors; Side scan sonars, single and dual frequency; Scanning sonars; Acoustic pingers and receiver; Helmet-mount, hand-held, drop and towed video systems; ROVs; Underwater altimeter; and Depressor wing.

AXSUB Inc.

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Tel: 418-731-1539
Email: eric.gaudreau@axsub.com
http://www.axsub.com
CEO: Eric Gaudreau
Sales Manager: Luc Garand
Engeneering Director: Yan Levesque
Number of Employees: 4

The management and staff of AXSUB is committed to a policy of Quality Control with the highest level of detail toward our recognition, development and sustainability within the commercial diving and hyperbaric industries. Its commitment is to make our clients needs and satisfactions the primary focus of our business and operations.

AXSUB designs, fabricates and supply technological tools to the commercial diving and hyperbaric industries. With state of the art know-how and an extended expert network, we create and support innovative products for our customers under standard and custom basis.

The product lines includes: Underwater SMART Cameras; Underwater LED Lamps; LED Lamp controller & Camera viewer; Dive Data Management System (REAL TIME data recording & monitoring); Breathable air distribution system; and breathable gas analyser

C-Nav World DGNSS

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Tel: +1 337 210-0000
www.cnavgnss.com

C-Nav, a division of C & C Technologies, manufactures high level GNSS positioning products, including C-Nav Precise Point Positioning solutions and range of GNSS receivers, long range Ultra RTK, C-Monitor, C-NaviGator and P3QC packages with the acclaimed C-Scape online GNSS/DP suite.

Earlier this year C-Nav announced the development of C-Mariner, an Integrated DGNSS/Inertial Positioning System. C-Mariner is a result of a long-term collaborative effort between C-Nav and Honeywell to develop a navigation system designed to improve position accuracy, integrity, continuity, and availability throughout the maritime industry. It is distributed through C-Nav's Global Sales and Support Network.

Aquabotix Technology Corporation

1082 Davol St. Fall River, Ma 02720
Tel: (508) 676-1000
E-mail: dawn@aquabotix.com
Website: www.aquabotix.com

CEO: Durval Tavares
Contact: Dawn Doraz
Employees: 20

A new and upcoming company, **Aquabotix** located in Fall River, Ma is filling a gap by producing lower cost underwater viewing tools. The company's objective is to change the way people interact with the underwater world. The team consists of engineers, software developers, marketers and innovative leaders.

Its AquaLens is a complete portable underwater viewing system that sends live video to the surface. The system is easy to use and includes a color video camera, LED lighting, pole attachment, and an LCD monitor that can be worn on the operators forearm for easy viewing. The unit also comes with a battery power supply with a running time of 10 hours. It is a light unit weighing a mere 3lbs in air, and is depth rated to 75 feet. The AquaLens provides a compact easily stored alternative when performing important inspections on boat hulls, moorings, and dock inspections. It is also a great tool for underwater viewing that can be used by the entire family.

Another product designed and developed by the company is the HydroView. It is a remote controlled underwater vehicle that can record and capture photos in High Definition that can be streamed to your iPad. The system is designed to reach a depth of 150 feet and can travel forward at a speed of up to 5 kts, with a reverse speed of 1 kt. The unit's battery run time is 2 hours with a battery recharge time of 16 hours. It has a number of optional accessories including hovering control, extended battery, and deluxe pontoon lights. The unit weighs 8 lbs in air with a width of 14.6 inches, a length of 19 inches and a height of 7 inches. Aquabotix's products, the HydroView and AquaLens, let you experience ponds, lakes, seas, and oceans—without getting wet. The user can perform inspections, assess water depths, and have that sense of safety and security on the water. These products are affordable, easy to use, and friendly to underwater environments. – *R. Moniz*

Oceanic Platform of the Canary Islands

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Telde Las Palmas
35200, Spain
Tel: +34 928 134414
E-mail: carlos.barrera@plocan.eu
Website: www.plocan.eu/index.php/es

CEO: Dr. Octavio Llinas
Employees: 35

The Company

The Oceanic Platform of the Canary Islands (PLOCAN) is an innovative public infrastructure (Singular Scientific and Technical Infrastructure) for research, development and innovation in ocean science and technology. It is funded by the joint initiative of the Autonomous Government of the Canary Islands and the Spanish Government through the Ministry of Economy and Competitiveness, supported by the European Regional Development Fund (ERDF)

PLOCAN is a world flagship initiative to support observation, exploration and innovative management of the oceanic space. It is located east of Gran Canary Island (Canary Islands, Spain), and can provide rapid access to great depths at shorts distances offshore. It provides a permanent deep-sea observatory, a base for underwater vehicles and a test site for innovative technologies. Its infrastructure offers support to training and innovative services delivered by external entities in ocean science and technology.

PLOCAN infrastructure and services are available to national and international scientific and technological communities from private and public sectors.

The Tech

PLOCAN is a world flagship initiative to support observation, exploration and innovative management of the oceanic space. It is located east of Gran Canary Island (Canary Islands, Spain), and can provide rapid access to great depths at shorts distances offshore. We provide a permanent deep-sea observatory, a base for underwater vehicles and a test site for innovative technologies. Our infrastructure offers support to training and innovative services delivered by external entities in ocean science and technology.

PLOCAN infrastructure and services are available to national and international scientific and technological communities from private and public sectors.

OHMSETT

Atlantic Highlands
NJ 07716
Tel: (732) 866-7055
E-mail: Matthew.Quinney@bsee.gov
Website: www.ohmsett.com

CEO: BSEE
Employees: 16

OHMSETT – The National Oil Spill Response Research & Renewable Energy Test Facility is located in Leonardo, NJ. It provides independent and objective performance testing of full-scale oil spill response equipment and marine renewable energy systems (wave energy conversion devices), and is dedicated to improving technologies through research and development.

It is the largest outdoor saltwater wave/tow tank facility in North America and is the only facility where full-scale oil spill response equipment testing, research, and training can be conducted in a marine environment with oil under controlled environmental conditions (waves and oil types). With recent emphasis on developing renewable energy sources, Ohmsett's mission has expanded to offer a research and testing venue for wave energy conversion devices. The facility consists of a large outdoor above-ground concrete test tank measuring 667 feet long by 65 feet wide by 8 feet deep filled with 2.6 million gallons of crystal clear salt water, conference rooms, maintenance/machine shop, oil/water chemistry laboratory, and offices.

The U.S Department of Interior's, Bureau of Safety and Environmental Enforcement (BSEE) operates the Ohmsett facility as part of its mandated requirements to ensure that the best and safest technologies are used in offshore oil and gas operations.

Ohmsett plays a critical role in developing effective response technologies and represents an intermediate step between small scale bench testing and open water testing of equipment.

The facility has the capability to test and evaluate oil spill response technologies such as: chemical treating agents and dispersants, fire-resistant containment booms, remote sensing and detection instruments, sorbent materials, temporary storage devices, viscous oil pumping units and oil water separators. In addition, Ohmsett provides a venue for first responders with the most realistic hands-on training available, providing them with skills for rapid and efficient response to an actual spill event. Ohmsett's wave generator can generate random waves that closely approximate waves in the ocean, such as sinusoidal and harbor chop, Pierson-Moskowitz, JONSWAP, and Frequency Modulated (FM) Slide, with scalable ocean water depth, wind speed, and model scale factor.

Optech Incorporated

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Canada
Tel: +1 905 660 0808
E-mail: inquiries@optech.com
Website: www.optech.com

CEO: Don Carswell
Employees: 285

Optech is a leader in the development, manufacture and support of advanced lidar and camera survey instruments. Optech offers both standalone and fully integrated solutions in airborne mapping, airborne lidar bathymetry, mobile mapping, terrestrial laser scanning, mine cavity monitoring, and industrial process control, as well as space-proven sensors.

- **Airborne Survey:** Optech's airborne survey products excel in the efficient acquisition of high-accuracy spatial data over land and water. Available in both application and platform-dependent configurations, Optech ALTMs offer the greatest flexibility and efficiency available to the professional surveyor today. Optech also offers a complete line of robust and high-performance digital aerial cameras, both standalone and lidar-integrated.
- **Mobile Survey:** Optech's Lynx Mobile Mapper is a mobile mapping system that integrates lidar sensors with imaging, navigation and product warranty and support.
- **Terrestrial Survey:** Optech's ILRIS Terrestrial Laser Scanner is a complete, portable, laser-based 3D imaging and digitizing system for the commercial survey, engineering, mining and industrial markets.

The Tech

Optech CZMIL is an airborne coastal zone mapping system that produces simultaneous high-resolution 3D data and imagery of the beach and shallow water seafloor, including coastal topography, benthic classification and water column characterization. CZMIL performs particularly well in shallow, turbid waters. Its bathymetric lidar is integrated with a hyperspectral imaging system and Optech digital metric camera. Optech HydroFusion, a powerful end-to-end software suite, handles all three sensors—from mission planning through to fused lidar and imagery data sets.

- **ALTM Aquarius** - Compact Shallow Water Mapping Sensor: Optech's ALTM Aquarius is an innovative solution for mapping coastal and inland waterways. Compatible with the ALTM Gemini system, Aquarius collects simultaneous land and water-depth measurements, enabling wholly complete data sets that span the land/water interface. Designed as a complementary sensor to Optech's full-featured lidar bathymetry systems, Aquarius provides depth information in relatively shallow water environments not previously accessible to conventional topographic mapping sensors alone.

Chelsea Technologies Group Ltd

55 Central Avenue, West Molesey
Surrey KT8 2QZ UK
Tel: +44(0)20 8481 9000
Email: sales@chelsea.co.uk
http://www.chelsea.co.uk

CEO: Dr Brian Phillips
Number of Employees: 35

Chelsea is an ISO 9001:2008 and ISO13485:2003 accredited company and it is its policy to supply high performance, well designed, safe and reliable products at competitive prices and consistent quality to customers.

Chelsea has a test tank and state of the art calibration facility.

A team of engineers and scientists are engaged in the design and manufacture of a range of sensors and systems for the marine, environmental, defence, homeland security, industrial process control and life science markets. For nearly 50 years, customers have been using its high quality sensors and systems in a wide range of applications - submariners are using them to understand the environment they pass through, water authorities are using them to test water supplies to guard against chemical attack by terrorists. Scientists are using the sensors to monitor oceanic algae to tackle climate change and shipping companies have installed state of the art in-line sensors to monitor their exhaust gas cleaning systems and ballast water in order to prevent contamination of seas. Oil companies are using the sensors to detect subsea pipeline leaks and monitor oil spills. Demand for the Chelsea sensors and systems has also come from the food and automobile industries.

Chelsea Technologies Group specializes in the production of a range of innovative multi-parameter sensors and systems for the monitoring of the physical, optical and biological oceanographic environment. Parameters include temperature, conductivity, depth, chlorophyll, turbidity, transmission, fluorescence and bioluminescence. Products include the newly launched low cost Lux family of miniature digital Fluorometer and the high performance FastOcean Fast Repetition Rate Fluorometer systems together with a full range of underwater acoustics sensors and towed vehicle systems.

PMI Industries, Inc.

PMI Industries, Inc. designs, manufactures and tests innovative products for solving underwater cable, wire rope and tension member application problems that withstand even the harshest underwater conditions.

Backed by more than 40 years of quality and service, PMI has been serving customers in the marine seismic industry with a full line of high performing products that are designed to protect multi-million dollar cable investments and minimize downtime.

PMI is committed to providing the most robust cable systems and hardware available to the military, commercial and scientific communities.

From initial product concept through quality assurance testing, PMI is a complete underwater cable system facility offering solutions for all types of applications in the marine industry including: Cable Installation, Defense & Surveillance, Monitoring & Fisheries, ROVs & Ocean Equipment, Salvage, Search & Recovery Operations, Seismic & Survey Exploration and more.

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Ohio 44103
Tel: +1 216 881 4914
E-mail: sales@pmiind.com
Website: www.pmiind.com

CEO: Robert J. Schauer
Engeneering Director: Jay C. Marino
Employees: 21

The Tech

The gripping principles of PMI's products are based upon the geometry and behavior of helically preformed wire. Through innovation and exhaustive laboratory testing, this unique helical gripping concept was engineered into many of PMI's products, resulting in a very reliable standard line of products, including:

The DYNA-HANGER Suspension System (DHSS), which is a highly-reliable, cable-mounted attachment point for seismic streamers, paravanes, surface and subsurface floats, cable depressors and wherever a mid-span termination is required. It is an engineered system that has been laboratory tested and field proven by PMI Industries.

The EVERGRIP Termination is a full-strength, field installable termination. Designed to hold 100 percent of the cable's rated breaking strength, it protects against fatigue of the cable system under severe dynamic conditions.

The STOPPER/CABLE GRIP Terminations are ideal for getting a quick grip on your cable. The reliable, unique helical grip design offers both standard and custom options to fit most wire rope and E/M cables.

Mariscope Meerestechnik

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24251, Germany
Tel: +4943466000490
E-mail: christian@mariscope.de
Website: www.mariscope.com

CEO: Christian Haag
Employees: 18

Mariscope Meerestechnik was founded in 1994 in Kiel, Germany, with the aim to develop and construct oceanographic equipment. The main manufacturing lines are: ROVs (Remotely Operated Vehicles); Underwater cameras and communication systems; Towed vehicles; Deep Sea systems; and, custom designed systems

Since April 2001 Mariscope Meerestechnik opened a branch in Puerto Montt, Chile, with the name Mariscope Chilena Ltda. The most important fields in which Mariscope Chilena is active are: Underwater robotic; Professional diving equipment; Professional diving courses; Hyperbaric facilities; Oceanographic sensor technology; and, oceanographic engineering.

The Tech

Mariscope designs, develops and builds almost all components in house. Fully equipped electronic and mechanic workshops in Germany for the manufacturing. Fully equipped mechanic and electronic workshops for service and repair in South America. Some systems are developed in strong cooperation with other marine technology companies in northern Germany, where Mariscope is part of a Maritime Cluster.

Dynaflow, Inc.

10621-J Iron Bridge Road ,
Jessup, MD 20794
Tel: 301-604-3688
Email: angela@dynaflow-inc.com
http://www.dynaflow-inc.com/
CEO: Dr. Georges Chahine
Number of Employees: 17

Dynaflow was founded in 1988 and has established a reputation for quality R&D and testing work. Dynaflow has conducted numerous R&D projects including contracts from federal agencies (ONR, DoE, NSWC, NASA, NIH, etc.) and consulting jobs from industry on a variety of subjects including a ship simulator, simulation of an amphibious vehicle in the surf zone, multi-ship interactions, ship propeller performance improvement by polymer injection, bubble augmented waterjet propulsion, acoustic tomography for bubble size measurements, cavitating jet cleaning and drilling, cavitating jet oxidation of organic compounds, , etc. DYNAFLOW is commercializing products based on its research.

Dynaflow 's core technology is cavitation and bubble dynamics related hardware and software. A few of them related to subsea industry are listed here:

DYNAJETS - Cavitating Water Jet Technology: Enhanced erosivity of water jets was achieved by various means including deliberately inducing cavitation and passive acoustic resonance due to flow interaction with the nozzle. This has broad applications to cutting, cleaning, drilling, erosion testing, enhancement of chem reactions, disinfection, and oil extraction from algae.

Software: Dynaflow has worked extensively under contracts to the U.S. Navy in modeling the dynamics of large underwater explosion generated bubbles and their effects on structures. The comprehensive 3D numerical code, 3DYNAFS, can model free surface dynamics and nearby structural interactions associated with cavitation, bubbly flows, and underwater explosions. DYNASIM is a software for PC based ship maneuvering simulation.

Channel Technologies Group (CTG)

Channel Technologies Group
879 Ward Dr., Santa Barbara, CA 93111
Phone: 805.967.0171
www.channeltechgroup.com
CEO & President: Kevin Ruelas
VP/Manufacturing: Gary Douville
VP/Engineering: Mark Shaw
VP/Support Services: Randy Copperman
Channel Industries, Division of CTG
Director of Business Dev: Kathy Atiles
Phone: 805.690.5108
www.channelindustries.com
ITC, Division of CTG
Director of Business Dev: Brian Dolan
Phone: 805.690.5521
www.itc-transducers.com
Sonatech, Division of CTG
Director of Business Dev: Brent Febo
Phone: 805.729.5428
www.sonatech.com

Blue Wolf Capital Partners LLC, the New York-based private equity firm, announced that Blue Wolf Capital Fund II, L.P. ("Blue Wolf"), through an affiliate, has acquired Channel Technologies Group, LLC ("Channel Technologies" or the "Company"), a vertically-integrated manufacturer and supplier of piezo-electric ceramics, transducers and complex systems and services, from Channel Technologies, Inc. The Company's executive management team and Gladstone Investment Corporation (NASDAQ: GAIN) are investing in the Company alongside Blue Wolf.

Fischer Connectors

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Tel: +41 21 800 95 95
Email: mail@fischerconnectors.ch
http://www.fischerconnectors.com
CEO: Dominique Glauser
Number of Employees: 400

Anyone who works in the marine industry knows the challenge that water, especially salt water, brings to the table. Fischer Connector's engineering team has applied the latest knowledge to its connector technology, expanding options for working in wet environments. The technology for sealing connectors against water is generally classified into two groups: external sealing, provided by accessories such as a flexible boot, and internal sealing, which uses some combination of o-rings or potting material. Stéphane Rohrbach is Engineering Director at Fischer Connectors SA, in Switzerland.

He says that the more water that's involved, the more important it is to have internal sealing. For instance, there are many applications that need protection against splashes or sprays. When not connected, the unmated connector can be sealed with a protective cap. But when you are diving, or in long-term contact with water, Rohrbach says you'll want to use an internal technology. We provide solutions that are IP68 rated, mated or unmated, just for these applications.

Rapp Hydema AS

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E-mail: office@rapphydema.com
Website: www.rappmarine.com

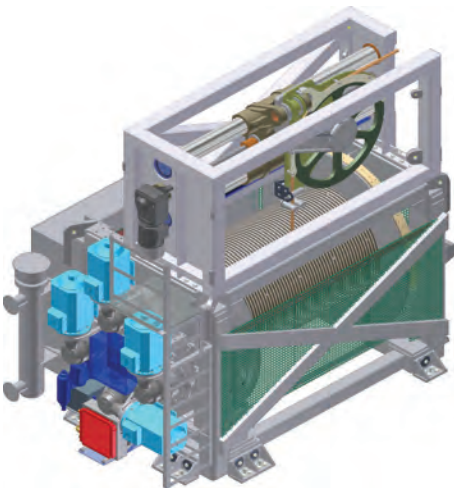
President: Inge Henning Andersen
Employees: 80

For more than 40 years, Rapp Hydema has manufactured and supplied deck machinery to the oil & gas, marine, and fishing industries. Founded 1907, Rapp Hydema has served the Marine Industry in more than a century. The majority of customers come from offshore or subsea, fishing or research. Rapp Hydema AS is part of the Rapp Marine Group. Based in Bodø in Norway's far north with representation in 21 countries, RM Group services a global market via local offices and close customer links. Worldwide the workforce of includes 450 personnel trade for almost NOK 500 million per annum. Rapp Hydema has implemented and do maintain Quality Management System which fulfills the requirements of ISO 9001:2008. Rapp Hydema also has facility to perform a full scale Factory Acceptance Test (FAT) combined with Umbilical/wire spooling under controlled tension.

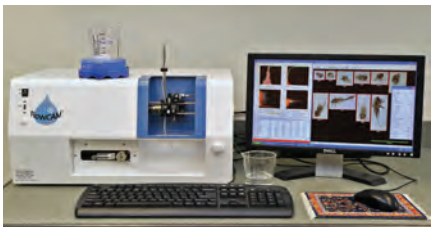
The Tech

Rapp Hydema is known for its production and sales of robust, heavy-duty winches and deck machinery for the global Research, Fishing, Merchant and Towing and Offshore/ Subsea Vessel Market. Vessel State-of-the-art hydraulic and electric winches are keys to the range, featuring efficient, computerized control systems.

- ***Offshore Vessels:*** Electric powered ROV-Winches for the Offshore, Sub Sea Drilling/Construction. Specially designed and developed for use with a range of Remotely Operated Underwater Vehicles with computerized Active Heave Compensation Control systems and LARS ROV Systems. Winch Drive Conversions with our High Performance Electric Winch Drive and Control System. We perform upgrading of Your Existing ROV-Winches with our Standard Triple Motor Electric Winch Drive including Active Heave Compensation (AHC).



- ***Heavy Lift Winches:*** Electric & Hydraulic Deepwater Heavy Lift Winches with Superior Performance, Specially Designed for Subsea Abandonment, Recovery and Installation Operations. Winch Control System PTS Pentagon MHW. Electric Winch are prepared for Active Heave Compansation.
- ***Research Vessels:*** Electric & Hydraulic Winches customized for Specific Requirements: CTD Winches, Hydrographic Winches, Traction Winch System, Deep Sea Corer Winches, Multi Purpose Winches, Side Scan Sonar Winches, Pentagon Monitoring and Control System including Active Heave Compensation. Launch & Recovery system (LARS) incl. A, T & L Frames, Overhead CTD Cranes and Corer Handling System. Our high priority of R&D activities create products and solutions at the technological forefront.
- ***Fishing Vessels:*** Complete Electric & Hydraulic Deck Machinery for Fishing vessels made to Customers Requirements for Efficient Fishery.
- ***Merchant and Towing Vessels:*** Towing Winches: Electric & Hydraulic. Tailor Made to Customers Requirements for Safe Ocean and Harbour Towing with Winch Control System PTS-Pentagon.



Fluid Imaging

65 Forest Falls Drive, Yarmouth ME 04096
Tel: 207-846-6100
Email: lew@fluidimaging.com
http://www.fluidimaging.com
CEO: Kent Peterson
Marketing Director: Lew Brown
Sales Manager: Harry Nelson
Number of Employees: 25

Fluid Imaging Technologies was founded in 1999 as a spinoff from Bigelow Laboratory for Ocean Sciences in West Boothbay Harbor, ME. The original FlowCAM was developed at Bigelow for studying plankton in ocean water. A novel concept, the FlowCAM was designed to combine the benefits of a flow cytometer and a microscope in a single instrument. Marine Biologists from around the world visited the lab and were exposed to the FlowCAM. Many of these scientists found the instrument to be so useful for their research that they expressed interest in acquiring one for their own lab. At this point, Fluid Imaging Technologies was formed to manufacture instruments for other researchers.

During the initial 5 years of the company's history, the FlowCAM was sold exclusively to the oceanographic research community. Today, the FlowCAM is in use throughout the world in many different applications, including analysis of biopharmaceuticals, food and beverage applications, chemicals, ocean health and change monitoring, produced water analysis, analysis of drilling muds and ballast water analysis.

The FlowCAM is a continuous imaging flow cytometer and particle analyzer designed for conducting research and monitoring of microorganisms and particles in both marine and freshwater systems. A laser interacts with a high resolution digital camera to capture images and data of a passing particle or organism. The instrument has two channels for the detection of fluorescence as well as a channel to detect forward light scatter events. By providing high resolution digital images of discrete particles, the FlowCAM can provide cell counts, size data, including length, width, area, various diameter readings, as well as biovolume measurements, along with up to 32 additional image parameters of imaged particles. The FlowCAM has proprietary software that includes a pattern recognition algorithm allowing the user to 'train' the instrument to identify organisms of interest. This also provides for the capability to automatically classify organisms in samples based on image analysis.

There are three models of the FlowCAM – Bench Top, Portable, and a Submersible model for in situ deployment and continuous, real-time data acquisition. Within each model are numerous options that allow the FlowCAM customer to configure an instrument to meet their needs and budget.

Helzel Messtechnik

Carl-Benz-Strasse 9, Kaltenkirchen
Schleswig-Holstein 24568, Germany
Tel: +49-4191-95 200
Email: hzm@helzel.com
http://www.helzel.com/
CEO: Thomas Helzel, Matthias Kniephoff
Number of Employees: 12
Annual Sales: $2m

Helzel Messtechnik GmbH founded in 1995, specializes in the development and production of environmental and oceanographic measurement systems. WERA – Remote Ocean Sensing is a shore-based over-the-horizon radar to measure ocean currents, waves and wind up to ranges of more than 200 km.

The WERA Ocean Radar provides important ocean parameters for coastal management and offshore operators as well as for research institutes. Due to the reliable high-quality of its output data, WERA enjoys a unique reputation as leading system and is installed more than 20 countries world wide.

INNOMAR Technologie

Schutower Ringstr. 4, Rostock
M-V 18069, Germany
Tel: +49 381 440790
Email: info@innomar.com
http://www.innomar.com
CEO: Sabine Müller
Number of Employees: 18

Innomar develops and produces efficient acoustic underwater systems for about 15 years. The main product line is the SES-2000 series of parametric sub-bottom profilers with echo-sounder functionality for shallow (1m to 500m) and deep water (up to full ocean depth). Applications include the detection of fluid mud layers and sediment structures for dredging and geological surveys as well as searching embedded objects like pipelines or archaeological artefacts. Two new models combine a parametric sub-bottom profiler and a dual-frequency sidescan sonar to give a handy tool for applications were both, seabed and sub-seafloor information is required. Innomar's main focus is on parametric acoustics and using this technology to get sub-seafloor information at excellent resolution.

RJE International, Inc.

15375 Barranca Pwky, Ste B-107, Irvine, CA 92618
Tel: (949) 727-9399
E-mail: bo@rjeint.com
Website: www.rjeint.com

CEO: Robert Jechart
Employees: 11

For more than 20 years, RJE International has been supplying the offshore and military communities with underwater acoustic marking/relocation solutions. In addition it supplies military divers worldwide with diver navigation platforms and sonars to support subsea mine clearance and salvage.

The Company

Founded in 1992, **RJE International, Inc.** established distribution channels in more than 30 countries worldwide and operates on a global scale. Robert Jechart, President and CEO, and Bruce OBannon, Vice President, have more than 30 years experience in the subsea marketplace and built RJE International into an INC500 company.

The Tech

For over 20 years, RJE International has been supplying the offshore and military communities with underwater acoustic marking and relocation solutions to ensure the safe recovery of subsea equipment and vehicles. In support of military divers worldwide, RJE International has been a leader in diver navigation platforms and sonars to support subsea mine clearance and salvage.

In addition, RJE is one of the largest suppliers of "Black Box" recovery beacons, which supports downed aircraft recovery worldwide. To support the recovery of "Black Boxes" or other equipment packages to a depth of 6000 meters, RJE International has developed a line of directional acoustic receivers for ROV's and AUV's.

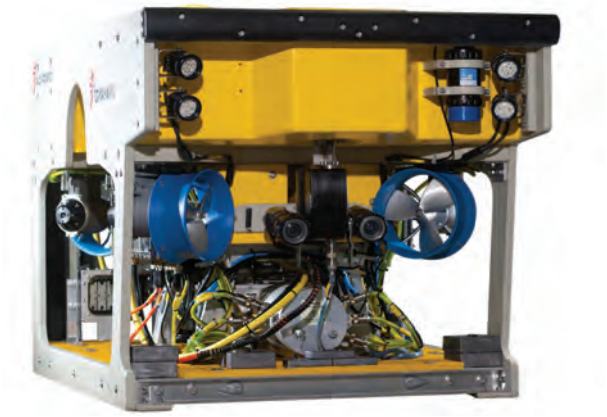
Forum Energy Technologies, Inc.

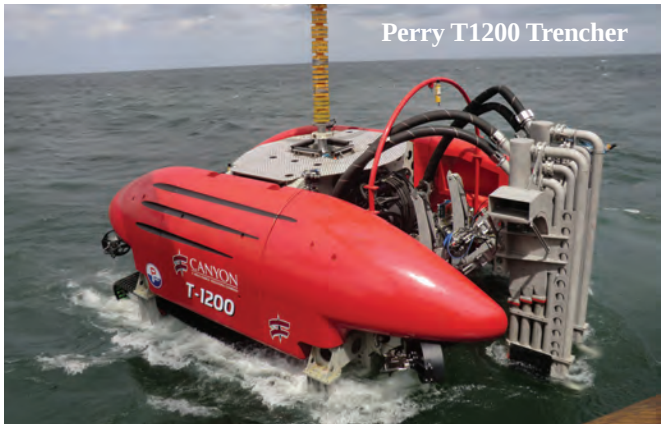
920 Memorial City Way, Suite 1000
Houston, TX 77024
Tel: 281.949.2514
www.f-e-t.com

CEO & Chairman of the Board: C. Christopher Gaut

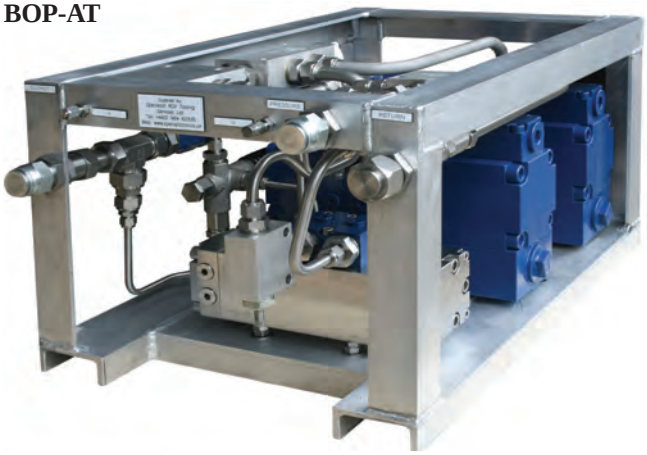
President of Drilling, Downhole and Subsea Segment: Charles E. Jones

Tomahawk





BOP-AT



The Case

The overriding news for emerging and fast growing subsea industry powerhouse Forum Energy Technologies, Inc. was the completion in the Spring of 2012 of its its initial public offering (IPO) of its common stock at $20.00 per share. Net proceeds received by the company from the sale of the 13,889,470 shares of common stock were approximately $258m after deducting underwriting discounts and estimated offering expenses. The company used the net proceeds to repay outstanding borrowings under the revolving portion of its credit facility. The company did not receive any proceeds from the sale of shares by the selling stockholders.

J.P. Morgan, BofA Merrill Lynch, Credit Suisse, Citigroup and Deutsche Bank Securities acted as joint book-running managers for the offering. Simmons & Company International and Tudor, Pickering, Holt & Co. acted as senior co-managers for the offering. Capital One Southcoast, Dahlman Rose & Company, FBR, Howard Weil Incorporated and Johnson Rice & Company L.L.C. acted as co-managers for the offering.

The Tech

While the business end of the diversified FET was the newsmaker, the headlines continue to be the recent additions to FET's ever expanding product portfolio include three from its Subsea Technologies group:

Tomahawk: This next-generation Sub-Atlantic Observation ROV and platform offers high reliability and adaptability within a small footprint, reducing deck space, capital and operating costs. Tomahawk is fast and agile, sharing the same 35 kilowatt power system and thrusters as Sub-Atlantic's largest Comanche ROV. Rated to a depth of 3,000 meters and supporting a payload of 160 kilograms, Tomahawk can be deployed and operated in demanding environments, which makes it ideal for deep-water operations and a variety of tasks, including surveys, well intervention and drilling support.

Perry T1200 Trencher: Our Perry T1200 Trencher is a heavy trenching system that can produce a trench to a depth of three meters in all seabed conditions, from sand to stiff clays. Capable of deploying non-contacting water jetting tools with back wash and educator debris clearance systems, this cable and pipe burial ROV can carry an optional backfill and pipe following tool.

Blowout Preventer Actuation Tool (BOP-AT): Designed to be operated by a workclass ROV with speed and accuracy, our BOP-AT closes the blow out preventer remotely, delivering over 300 liters of fluid per minute at pressures up to 7500 psi. It fully actuates most BOPs in under 45 seconds, which safely and effectively seals the wellbore.

SeaBotix Inc.

The Company

SeaBotix Inc. is a manufacturer of the underwater remotely-operated vehicle (ROV), Little Benthic Vehicle (LBV). SeaBotix has pioneered in the development of observation-class ROVs with the Little Benthic Vehicle since the early 1990s, manufacturing just over 100 systems per year. The Little Benthic Vehicle, a continuously advancing system, can perform a multitude of tasks including maritime security, search and recovery, hull and pipeline inspection, hazardous environment intervention, aquaculture, and beyond dive-restriction oceanographic research. SeaBotix remains competitive with advanced tether, thrusters, and a revolutionary system enabling unprecedented stability on ship hulls and other hard surfaces, the Crawler Skid. Depth rated between 150m and 600m, the LBV can be fitted with sonar, HD cameras, scaling lasers, and a number of other components.

2877 Historic Decatur Rd. Suite 100, San Diego CA 92106
Tel: (619) 450-4000
E-mail: jesse@seabotix.com
Website: www.SeaBotix.com

CEO: Donald Rodocker
Employees: 50

The Tech

SeaBotix Inc. manufactures the underwater observation class ROV, Little Benthic Vehicle (LBV). The LBV, a continuously advancing system, performs a multitude of tasks including maritime security, search and recovery, hull and pipeline inspection, hazardous environment intervention, aquaculture, and beyond dive-restriction oceanographic research. LBVs remain competitive with their size, affordability, and such features as an advanced tether, thrusters, and crawler skid. Depth rated between 150m and 600m, LBVs can be fitted with sonar, HD cameras, scaling lasers, and a number of other components. Since the early 1990s, SeaBotix has pioneered in the observation-class ROV field, now sending just over 100 systems into the field per year.

Falmouth Scientific, Inc.

1400 Route 28A, PO Box 315 Cataumet, MA 02534-0315
Tel: (508) 564-7640
E-mail: fsi@falmouth.com
Website: www.falmouth.com

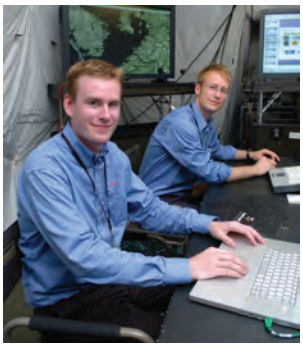
President: John Baker
Employees: 15

Falmouth Scientific, Inc. (FSI) is a manufacturer of precision instrumentation for oceanographic applications. Founded in 1989, FSI operates from a state-of-the-art manufacturing facility in Cataumet, Mass., close to many prestigious organizations. FSI's manufacturing processes and personnel have fabricated, tested, and delivered numerous oceanographic instruments and other acoustic based systems to customers around the world. FSI resources include all necessary environmental and electronic test equipment required for the design, development, and testing of oceanographic sensors and underwater acoustic systems. The facilities include an equipped acoustic test tank for performing transducer beam patterns and sensitivity measurements, a pressure chamber, pull-test facility, low- and high- temperature oven, a calibration facility with multiple constant-temperature baths, salinity baths, and precision references and all necessary electronic test equipment.

FSI designs and manufactures wave height and direction meters, tide sensors, and specialized underwater acoustics and communications systems such as portable sidescan sonar systems, seismic profilers, and a Solar-powered Autonomous Underwater Vehicle (SAUV).

FSI capabilities also include stress monitoring systems for drill riser pipes for the petrochemical industry, tethered communications buoys, and prototyping, production, and test of acoustic transducers and systems. The company's system integration includes bouy-mounted systems, telemetry options, and customer specific sensor suites. FSI specializes in transducer and subsystem manufacturing and testing including rapid prototyping and testing, potting and assembly, electrical testing, and acoustic testing. There is an on-site 10,000 psi pressure test tank, calibration services, and potting and molding with cable assemblies and specialized configurations.

SeeByte



SeeByte was founded in 2001 with a vision of improving underwater operations by combining streams of sensor-derived data to deliver enhanced performance in inaccessible underwater situations or locations.

SeeByte has achieved a position of leadership in the development of smart software for remote or unmanned assets in both the military and energy sectors, and provides products and services to major government and commercial clients around the world.

SeeByte has worked to automate complex technology challenges for the naval Mine Counter Measures (MCM) community, where the company's flagship product, SeeTrack, is used to enable asset-agnostic mission planning, mission execution and post mission data management. Within the Oil & Gas industry, SeeByte has automated the tracking of pipelines with man-portable AUVs, provided the most advanced control capabilities for ROVs, and, in partnership with Subsea 7, developed the software for the industry's first truly autonomous inspection vehicle (AIV). SeeByte is now partnering with other subsea product providers to offer whole product solutions.

30 Queensferry Road,
Edinburgh City of Edinburgh EH4 2HS, Scotland
Tel: +44 (0)131 447 4200
E-mail: sales@seebyte.com
Website: www.seebyte.com

CEO: Bob Black
Employees: 45

The Tech

SeeTrack Military is an open-architecture platform solution for rapid on-site analysis & data fusion. Developed as a mission-planning, monitoring & post-processing tool, this technology has been successfully deployed on many surveys, operations & scientific experiments.

SeeTrack CoPilot has led the way in the offshore oil & gas industry automating standard inspection & repair procedures on subsea structures by being easily retro-fitted to ROVs in the field. It helps the operator carry-out the same inspection time & time again so that data can be easily compared while providing improved survey data. **SeeTrack AutoTracker** was developed to enable AUVs to carry-out export pipeline inspections using its existing payload sensors to detect & adjust its own trajectory to accurately track the pipeline.

Triton Submarines, LLC

9015 17th Place, Vero Beach FL 32966
Tel: (772) 770-1995
E-mail: marc@tritonsubs.com
Website: tritonsubs.com

CEO: Bruce Jones
Employees: 15

Triton Submarines, LLC was established in 2007 to manufacture manned submersibles designed exclusively for yacht based deployment. Triton has since emerged as a global leader in deep diving submersible engineering, design, manufacture and operations. Triton is a subsidiary of US Submarines Inc., a company engaged in the design and manufacture of manned submersibles since 1993.

The Tech

The principals of Triton have over 60 years of deep ocean systems experience spanning a variety of industries including offshore oil and gas operations, marine tourism, submersible design and manufacture, and marine science.

The Triton team has over 350 years of combined experience in deep-ocean technologies including, manned-submersible design and operation, deployment and maintenance of scientific monitoring systems, maintenance of offshore buoy systems, design and fabrication of hydraulic, pneumatic, electrical and interface technologies, diving systems, and several other core competencies.

Triton's team members have been responsible for the design, engineering, manufacture, deployment and operation of several new technologies for deep submergence. These include manned submersibles providing world-leading capabilities, scientific sampling and monitoring equipment, power and thrust systems, hydraulic systems etc.

Shark Marine Technology

4-23 NIHAN DR, St. Catharines, Ontario, Canada
Tel: 905-687-6672
Email: wendy@sharkmarine.com
www.sharkmarine.com

CEO/President: Jim Garrington
VP: Wendy Garrington
No. Of Employees: 21
Annual Sales : $7 to 7.5m (est. 2012)

Shark Marine Technologies has been producing innovative, quality products for underwater imaging applications and more for almost three decades. Shark Marines' customer base has grown throughout the years to include commercial diving, various government agencies, fisheries and undersea research facilities, search and rescue organizations, gas and oil exploration, and survey firms. Clients include NOAA, NAVSEA, US Undersea Warfare, US Air Force, Canadian Navy and Army, French Navy, British Navy and Marines, and various nuclear facilities to only mention a few. Shark Marine Technologies Inc., operates from a 10,000 sq. ft. manufacturing facility in St. Catharines, Ontario, Canada, employing engineers, software developers, technicians, machinists, and export specialists. Shark Marine's Navigator, a Diver held underwater sonar processor and navigation system is an award winning product used by NATO forces around the world. The Navigator is a self-contained, navigation and underwater sonar imaging system that provides the diver with target location, navigation and situational awareness. Typical applications include search and recovery (SAR), mine countermeasures (MCM), crime scene investigation, ship hull inspections, archaeology and more.) The recent development of the SeaSAR search and recovery system has received global interest as a simple to use, complete Search and Recovery package for all types of SAR operations. Working together with military and SAR customers, Shark's employee's listen to their feedback and design products to improve the users situational awareness and to increase safety and overall capabilities.

Teledyne Benthos

49 Edgerton Drive North Falmouth, MA 02556
Tel: (508) 563-1000
Website: www.benthos.com

Vice President/General Manager: Thomas Altshuler, Ph.D.
Employees: 200

Teledyne Benthos is located in North Falmouth, Massachusetts, not far from the Woods Hole Oceanographic Institute. Originally known as Benthos, the company was founded in 1962 by Samuel O. Raymond. Mr. Raymond's mentor was the famed Harold "Doc" Edgerton, a well-known and beloved professor of electrical engineering at the Massachusetts Institute of Technology. During the company's early years the main focus was in supplying underwater equipment to the military and government. Over 20 years ago the company began to provide technology to meet the growing needs of the commercial market. Their products expanded into geophysical survey equipment, underwater modems, and locator devices. The company was then acquired by Teledyne Technologies Incorporated in 2006, and continues to enjoy continued growth in several sectors including Oil and Gas, Research and Scientific, Military, and Oceanographic applications.

Products offered by Teledyne Benthos include high-speed acoustic modems and releases, hydrophones, geophysical survey equipment, ROV's, and a complete line of locator products. The company's focus is on underwater systems with underwater communications at the core of Teledyne's business. Recently the organization has grown to include Teledyne Webb Research, a manufacturer of gliders, also located in Falmouth, MA, and Teledyne GAVIA, a company located in Iceland. Webb research focuses on buoyant, autonomous drifters and profilers, autonomous underwater gliding vehicles, and moored underwater sound sources. The Icelandic division GAVIA produces Autonomous Underwater Vehicles for offshore, scientific and defense applications. The AUV's are portable, versatile, and can carry an array of sensors with custom payload modules able to carry out a wide range of missions.

– R. Moniz

MacArtney Underwater Technology Group

The MacArtney Underwater Technology Group is a global supplier of underwater technology specializing in design, manufacture, sales and service of a wide range of systems to offshore operators, surveyors, the renewable energy sector, ocean sciences, security forces and navies across the world. MacArtney's proven systems and components are backed by an international network of subsidiaries, providing local access to global service. MacArtney has been supplying products and engineering solutions for over 30 years and is a privately owned corporation with group headquarters in Esbjerg on the west coast of Denmark. From its head office in Denmark, it has been providing logistical, technical, financial and marketing support to all of the companies within the group since 1978.

Gl. Guldagervej 48, 6710 Esbjerg V, Denmark
Tel: +45 7613 2000
E-mail: info@macartney.com
Website: www.macartney.com

Group Managing Director/CEO: Niels Erik Hedeager

The Tech

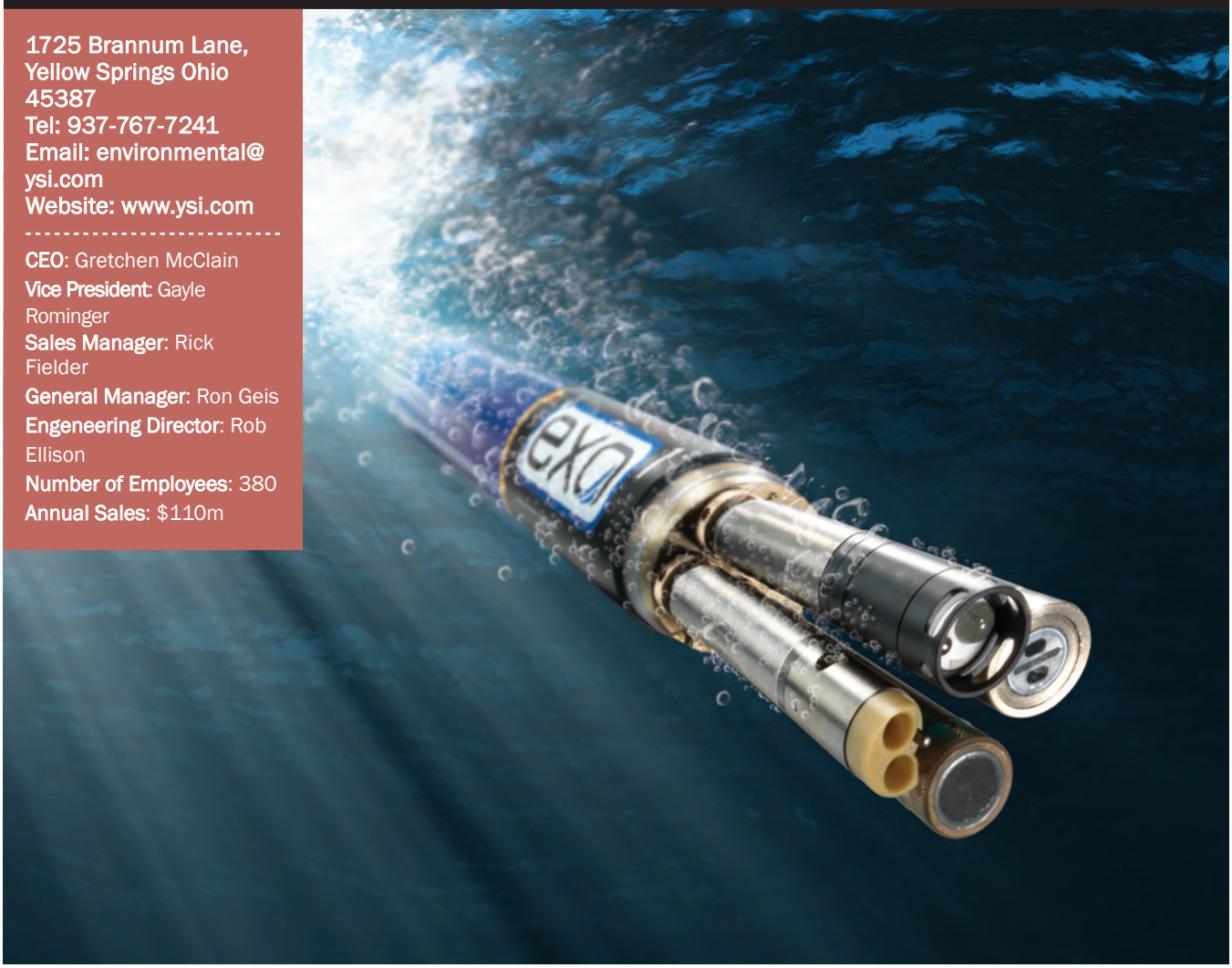
The MacArtney Group supplies and services a wide range of integrated systems and products, many of which have been designed, developed and manufactured by MacArtney. The company is trusted representatives of many leading manufacturers of underwater products and systems. MacArtney is expert at combining own products with customer or supplier products into integrated systems. MacArtney supply includes cable and connector systems, advanced fibre optic telemetry systems, complete launch and recovery systems – including active heave compensation winches and electrical winches for work class ROVs. Our range of oceanographic equipment includes the MacArtney FOCUS-2 and TRIAXUS vehicles, which are highly regarded as fast and precise towed vehicles.

System integration with qualified, experienced engineers is an important part of MacArtney's portfolio. Combined with a wide range of products and systems, MacArtney can offer turnkey solutions designed specifically for requirements and installed ready for use wherever needed.

YSI Inc.

1725 Brannum Lane,
Yellow Springs Ohio
45387
Tel: 937-767-7241
Email: environmental@ysi.com
Website: www.ysi.com

CEO: Gretchen McClain
Vice President: Gayle Rominger
Sales Manager: Rick Fielder
General Manager: Ron Geis
Engeneering Director: Rob Ellison
Number of Employees: 380
Annual Sales: $110m



YSI, a Xylem brand, designs and manufactures sensor instrumentation and real-time monitoring systems for professionals who protect natural resources and aquatic life. For more than 64 years, YSI has offered a variety of environmental monitoring instrumentation that fit together into a comprehensive system to measure baseline data and monitor changes in quality in water bodies, including ocean acidification studies and hydraulic fracturing operations.

With locations around the world, YSI provides products, systems, solutions, and technical support to help people monitor and protect water resources. The company's global headquarters, research and development lab, and largest manufacturing facility are in Yellow Springs, Ohio, USA. Additional YSI sales and service facilities are in California; Florida, Louisiana; Utah; Brazil; England; Spain; Japan; China; Arabian Peninsula; India; Hong Kong; and Australia.

Technology offered from the company inculdes:

- ***EXO Advanced Water Quality Sondes:*** CTD plus 3-5 additional sensors in one small package for challenging marine conditions. EXO1 and EXO2 rugged sondes are rated to a depth of 250 meters. Low power consumption extends underwater deployments to at least 90 days.
- ***High-accuracy EXO sensors include:*** Temperature, Conductivity, Depth, Optical Dissolved Oxygen, pH/ORP, Turbidity to 4000 FNU, the unique Total Algae (Blue-green Algae and Chlorophyll in one sensor), and fDOM.
- ***Floating Platforms:*** 6 newly redesigned floating platforms for continuous water monitoring and profiling. These environmental monitoring modules reduce integration work and are designed to make data collection and transmission more reliable. Works easily with YSI water quality sondes or third-party instruments.
- ***EcoMapper AUV:*** An autonomous underwater vehicle which maps large areas of water, generating high-resolution data of water quality, bathymetry (using side-scan sonar), stratification, and velocity logs.

Sea-Bird Electronics

Sea-Bird is a leading manufacturer of oceanographic CTDs and integrated water sampling systems. Sea-Bird has been serving customers in universities, oceanographic institutes, government agencies, engineering firms, and navies throughout the world for more than 30 years, and has built a reputation for producing the most accurate data possible.

The Company

Sea-Bird Electronics manufactures oceanographic CTDs and integrated water sampling systems. The CTDs are designed to measure conductivity, temperature, and pressure (depth), dissolved oxygen, and other variables, enabling oceanographers to determine salinity, density, and other properties contributing to ocean circulation, the function of marine ecosystems, and global climate dynamics. The company's top management has extensive oceanographic and sea-going experience and is dedicated to advancing the science of ocean measurement and developing new capabilities that contribute to better understanding of the oceans. Sea-Bird has been serving universities, oceanographic institutes, government agencies, engineering firms, and navies throughout the world for over 30 years. Sea-Bird employs 110 people, including 5 oceanographers, and has more than 40 products in current production. Sea-Bird Scientific was formed in 2010, joining Sea-Bird Electronics, WET Labs, and Satlantic to provide the best in biogeochemical and physical oceanographic sensors, and allowing us to better develop, design, and deliver comprehensive, integrated systems for our customers. The Sea-Bird Electronics European calibration and repair center opened in 2011. Located in Kempten, Germany, Sea-Bird GmbH offers our European customers the same high-quality repair and calibration services that had only been performed at its facility in the U.S.

The Tech

CTDs on research vessels, fixed moorings, moored profilers, autonomous drifting profilers (Argo floats), surface salinity floats, AUVs, autonomous gliders, and large-scale networked sensor arrays in ocean observatories all present different and complex challenges in acquiring high-accuracy data. These instruments are designed to eliminate or minimize dynamic errors and preserve initial accuracy throughout a deployment.

Sea-Bird profiling CTDs share key features that minimize dynamic errors. The basic design creates an enclosed flow path within which the critical sensors (T, C, & DO) are located. Pumping water through the system forces all measurements to be made on the same sample of water, with predictable delay and flow effects. By pumping at a constant rate, T and C sensor response times can be engineered to match and to remain independent of the CTD's speed through the water. This dramatically reduces salinity spiking errors produced when sensors with different response times encounter a gradient. Since the transit time of the water is fixed, lag times between measurements made at different locations are a known constant, so measurements can be aligned and coordinated relative to pressure automatically in hardware or with processing software.

Sea-Bird moored CTDs are also designed to make measurements in an enclosed flow path, but for different reasons. Pumping delivers a completely new sample of water to the conductivity and oxygen sensors, independent of ambient circulation. Between measurements, water is trapped in the sensors and plumbing, and anti-foulant concentration accumulates to effective levels by diffusion, preserving the initial accuracy for long deployments.

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E-mail: seabird@seabird.com
Website: www.seabird.com

CEO/President: Dr. Norge Larson
Employees: 110

Fugro GEOS

Fugro House, Hithercroft Road, Wallingford, Oxfordshire,
UK OX10 9RB
Tel: +44 1491 820500
Email: uk@geos.com
Website: www.geos.com

CEO/ Managing Director: Jeff Coutts

Facilities: Fugro GEOS Inc, Houston, USA; Fugro GEOS Ltd, Wallingford, UK; Fugro GEOS Ltd, Glasgow, UK; Fugro GEOS, Abu Dhabi, UAE; Fugro GEOS Sdn Bhd, Kuala Lumpur, Malaysia; Fugro GEOS Pte Ltd, Singapore; Fugro OCEANOR, Trondheim & Sandnes, Norway; Fugro GEOS, Perth, Australia; Fugro Mexico, (Oceanographic Division), Ciudad del Carmen, Mexico; Fugro Brasil, (Oceanographic Division), Rio de Janeiro, Brazil

Employees: >200

Fugro GEOS is a leading supplier of meteorological and oceanographic (metocean) services for commercial offshore and coastal engineering applications and for institutions and governmental organizations. Working in a variety of locations and environments across the globe, workscopes are diverse and include supporting the development of oil and gas exploration and production facilities, subsea cable installation and pipe-laying surveys, marine mining support, coastal industrial and port development, renewable energy developments, waste disposal management, land reclamation, coastal zone management and sea defenxes. Fugro GEOS claims to have the world's largest commercially available inventory of metocean measurement equipment and it upholds a policy of continual investment in new technology. More than half of its 200 employees are experienced oceanographers, meteorologists and marine environmental scientists. Operating on a global basis with offices in Europe, north America and Latin America, the Middle East, Southeast Asia and Australia, Fugro GEOS is well placed to respond to the measurement and consultancy needs of worldwide clients. Fugro GEOS is part of the Fugro Group that specializes in providing comprehensive earth and environmental science services throughout the world. The Group has over 280 offices in more than 60 countries. Close links between sister companies and the ability to draw on the international resources of the Group further enhance services to clients.

The Tech

Fugro GEOS provides metocean solutions through cost-effective, high quality and technically advanced services in measurement, consultancy, information systems, ocean observing systems, forecasting and platform and riser response monitoring.

- ***Measurement Services***: The entire range of metocean parameters and including physical oceanographic measurements; meteorological measurements; in situ corrosion experiments for subsea facilities; unusual measurements.
- ***Offshore Systems***: Design, installation and maintenance of reliable, real-time measurement systems and integrated metocean and structural monitoring systems plus CCTV surveillance networks.
- ***Consultancy Services***: Bridging the gap between meteorological and oceanographic specialists and all end users of data to provide meaningful products and interpretation.
- ***Forecasting Services***: Oceanographic and meteorological forecasting services for operational planning, using sophisticated mathematical models, using data from satellite and ocean observing systems.
- ***Oil Spill Services***: Drawing on the capabilities and resources of sister companies of the Fugro Group, Fugro GEOS recently introduced two additional specialist oil spill services from all offices worldwide.

Versatrax 100 MicroMag™ (Modified)

Inuktun Services Ltd

2569-C Kenworth Rd.,
Nanaimo BC V9T 3M4, Canada
Tel: 1-877-INUKTUN
Email: marketing@inuktun.com
http://www.inuktun.com
CEO: Colin Dobell
Number of Employees: 45
Annual Sales: $8m

Inuktun was founded 23 years ago to design and manufacture Remotely Operated Vehicles (ROVs) and modular robotic systems for use in the Subsea industry.

Inuktun Services is a designer and manufacturer of Modular Mobile Robotic Crawler Vehicles and Industrial Waterproof Video Cameras used for remote inspection of confined spaces and hazardous environments.

In addition to manufacturing and selling a complete line of standard equipment for a variety of remote robotic inspection applications, Inuktun also offers a complete range of services from engineering conceptual design through to project completion.

Inuktun's highly qualified team of engineers, designers and machinists modify standard systems frequently to meet unique industry specific applications.

iXBlue

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Email: phillip.wilson@ixblue.com
http://www.ixblue.com
CEO: Philippe Debaillon Vesque
Number of Employees: 450
Annual Sales: $120m

iXBlue is a global leader in high-performance inertial navigation systems based on fiber-optic gyroscopes technology, acoustic positioning systems, seabed mapping sonars and multi-axis motion simulators. iXBlue provides a range of high technology equipment, systems and turn-key solutions in the areas of navigation, pointing, positioning, seabed imaging, offshore & onshore exploration, surveying. iXBlue has used its own funds to develop a portfolio of ultra-innovative technologies protected by key patents.

Loggerhead Instruments

6576 Palmer Park Circle,
Sarasota FL 34238
Tel: 941-923-8855
Email:
dmann@loggerheadinstruments.com
http://www.loggerheadinstruments.com
CEO: David Mann
Number of Employees: 3

Loggerhead Instruments pioneered long-term underwater acoustic recordings for monitoring of underwater noise and animal sounds. Loggerhead has just released OpenTag, the first in a line of open source datalogging oceanographic sensors. OpenTag integrates a depth and temperature sensor with a 3D-accelerometer, 3D-magnetometer, and 3D-gyroscope, to fully characterize underwater 3D motion. Loggerhead Instruments manufactures the DSG-Ocean underwater acoustic recorder for extended high-bandwidth acoustic recordings to flash memory. Loggerhead released the Arduino-compatible OpenTag motion datalogger in 2012. OpenTag integrates a high resolution pressure and temperature sensor with a 3D accelerometer, 3D magnetometer, and 3D gyroscope to provide high resolution data on 3D motion. OpenTag is available as circuit boards or potted in an underwater device with a rechargeable lithium battery.

LYYN AB

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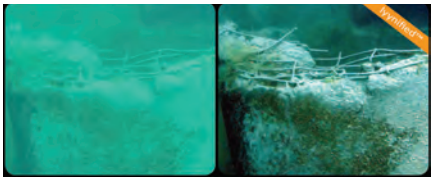
Tel: +46 46 286 57 90
Email: fredrik.beckman@lyyn.com
http://www.lyyn.com
CEO: Bengt Sahlberg
Number of Employees: 5

LYYN is a Swedish product company working on real-time video enhancement to improve visibility in various applications with over 1200 users worldwide. Based on many years of research in the human vision system, LYYN plug-n-play products improve visibility in for instance fog, haze, snow, rain, dust, darkness, subsea etc.



Maritime Applied Physics Corporation

1850 Frankfurst Ave.,
Baltimore, Md. 21226
Tel: (443) 524-3330 x 113
Email: mrice@mapcorp.com
http://www.mapcorp.com
CEO: Mark Rice
Number of Employees: 54

MAPC designs and builds unmanned surface vessels, unmanned undersea vehicle, watercraft launch and recovery systems, components for U.S. Navy ships and submarines (LCS, DDG 1000, VIRGINIA Class). MAPC is currently designing a deep sea power system (thermoelectric) that will extract energy from thermal vents. Our engineers and naval architects have designed surface and subsurface systems for companies in S. Korea, France, Scotland, and in the United States. MAPC employs personnel with the following skill sets: naval architects; electrical engineers; mechanical engineers; ocean engineers; software engineers; marine engineers; engineering physics; materials scientists; welders; fabricators; electronics technicians; machinists; model makers. We have software tools for dynamic analysis, structural analysis, hydrodynamics, seakeeping, hydrostatics, and the simulation of control systems.

Marport

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Tel: 709-757-5757
Email: gleyte@marport.com
http://www.marport.com
CEO: Cyril McKelvie
Sales Manager: Oskar Axelsson
Number of Employees: 100

Marport focuses on innovating, developing and marketing Software Defined Sonar (SDS) technology and products for a variety of underwater sensing and communication applications. Our target markets are Commercial Fisheries, Underwater Defence, Offshore Energy and Ocean Science. Unlike traditional hardware sonar designs, Marport's software-centric sonar platform is unique in that it supports dynamic re-configuration of multiple functions, waveforms and signal processing techniques. Software platforms are the invisible engines of innovation transforming many global industries. As such, Marport's technology has the potential to become the dominant sonar "engine" in a wide variety of existing and future underwater sensing and communications applications.

Marport's new Forward Look Sonar (FLS-450) uses advanced digital signal processing, low-power electronics and broadband piezo-composite transducer arrays to create high resolution, real-time imagery at medium to long ranges. With a centre frequency of 450 kHz and bandwidth of 50 kHz, the FLS-450 provides real-time streaming sonar images with a range resolution of 2cm. The compact sonar is optimized for low power consumption with an Ethernet interface.

Multi-Electronique (MTE)

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Tel: 418-724-5835
Email: info@multi-electronique.com
http://multi-electronique.com
CEO/President: Jacques St-Pierre

Multi-Electronique was founded in 1982 and principally focused on the repair of electronic equipment while doing small design projects. Over the years, the company has expanded and now designs and manufactures scientific instruments for customers worldwide. Its office is located on the shore of the St-Lawrence River in Quebec, a privileged position for marine researches.

Multi-Electronique is world renowned for the quality of its products and its effective after-sale service. The company offers a large and diversified range of product but the two main devices are the AURAL-M2 and the Instrumental Oceanographic Buoy. Both products have been conceived and developed in collaboration with Fisheries and Oceans CANADA. The AURAL-M2 is an autonomous underwater recording device. It can numerically record underwater sounds over a period up to a year with total autonomy. It is mainly used for the listening of marine mammal's noises, but also for underwater noise pollution, methane bubbles and the Grand North ice cracking as examples. At the same time, it records pressure and water temperature. It is powered by Alkaline "D" cells and available in three lengths for short, medium and long deployment (respectively 16, 64 and 128 batteries).

Sky Research, Inc.

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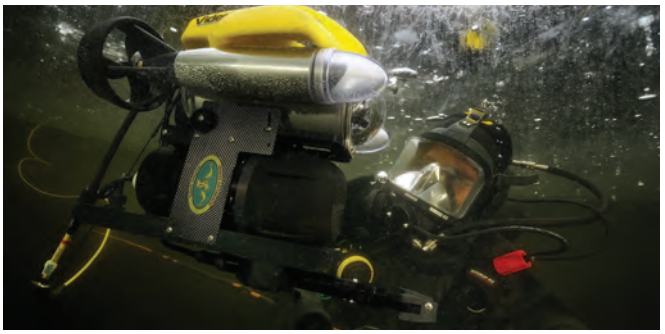
E-mail: Jack.foley@skyresearch.com
Website: www.skyresearch.com

CEO: Anne Sky
Employees: 144

SKY was founded in Ashland, Oregon in 1995 to focus on environmental remediation including the assessment and detection of unexploded ordnance at active and former military facilities. Office locations include Centennial, CO, Ashland, OR, Hanover, NH, Boston, MA, Vancouver, BC and Brisbane, Australia. SKY developed a Wide Area Assessment (WAA) approach for terrestrial UXO assessment using airborne sensors such as LiDAR, orthophotography, hyperspectral and synthetic aperture radar, and low-altitude helicopter-mounted magnetometers to supplement ground-based visual surveys and geophysics. To respond to the rising number of encounters with subsea military munitions in ports, harbors and waterways, SKY transitioned this integrated sensor approach to the marine setting. SKY integrates commercial and customized proprietary technologies to address marine UXO applications. Multibeam sonar (bathymetry) and sub-bottom profilers (sediment layers) support excavations and risk analysis. Side scan and stationary sonar locate targets and map surface debris. Geophysical data are collected using SkyDiver, an internally developed ultralow-noise towed magnetometer array. SkyDiver includes a fully-instrumented tow kit, 4m wide hydrofoil wing and auxiliary sensors, and custom data acquisition and processing. Composed of closed-cell foam integrating Cesium-vapor magnetometers, the array operates 1-2 m above the seafloor at depths to 35 m. Precise depth and altitude control is achieved with a variable length flexible tow cable using a topside winch. RTK-GPS vessel positions are translated to 3D sensor positions with demonstrated accuracy of 25 cm using tow angle and line length encoders, vessel/wing attitude and depth measurements. Small ROVs equipped with video, sonar, manipulator arms and electromagnetic sensors are used to verify other data and investigate selected targets. Large ROVs are used to clear debris, investigate targets and collect items. ROVs are positioned with USBL or DVL systems based on the specific environment, used in conjunction with RTK-GPS. Effectively combining these technologies significantly focuses diver time and effort, and in some cases removes entirely the need for divers at munitions sites.

VideoRay



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Website: www.videoray.com

Director of Business Development: Scott Bentley
Employees: 35

The Case

VideoRay is the largest volume producer of underwater Remotely Operated Vehicles (ROVs) in the world. With more than 2,200 systems delivered worldwide, VideoRay is the best-selling and most trusted ROV on the market. VideoRay users on every continent utilize the ROV in a variety of underwater inspection, location, and recovery applications where reliability is a necessity.

The Company

VideoRay is the largest volume producer of ROVs in the world. Established in 1999, VideoRay has worked with technology and mission partners throughout the world to develop and prove the small ROV tool for a wide range of applications. With over 2,200 units delivered – to a wide range of organizations, for a wide range of missions, throughout the world, hundreds of VideoRays work every day under water keeping us free from terrorism, finding and retrieving objects, inspecting infrastructure both inland and offshore, and keeping divers safe from hazardous conditions. We pride ourselves on state-of-the-art customer support and easy to operate and maintain underwater robotic systems.

Since the first systems were delivered, users have tried VideoRays in increasingly challenging situations and environments. Today, VideoRays can be found on every continent, and owners have learned to trust them to perform in a growing number of industries. VideoRay has established itself as the worldwide leader in observation class ROVs, and underwater accessory manufacturers now develop their sensors around the size and payload capacity of VideoRays. When you purchase a VideoRay Professional ROV system, you have the choice of the best sonars, positioning systems, metal thickness, cathodic protection, water quality and radiation measuring devices, and many other underwater tools and sensors.

The Tech

The VideoRay Pro 4 (VideoRay's latest ROV system) is the culmination of 10 years of ROV design and development. Building off the success of the VideoRay Pro 3 model, the Pro 4 incorporates the latest in small ROV design and technology making it the most advanced, capable, and versatile small ROV on the market today. Completely computer driven by a sleek, intuitive, and powerful software platform called VideoRay Cockpit, the Pro 4 is more advanced than anything offered in its class. With the Pro 4 ROV hardware in position, incorporating new features such as vehicle autonomous control, the latest imaging sonar and positioning hardware and software, or a variety of other sensors and tools developed around the size and capability of the Pro 4 couldn't be easier. Following VideoRay's proven ideals of making our ROV systems and accessories "plug and play", capabilities can be added or subtracted with either a simple software update or a quick hardware add on in the field - all without the system being sent back to the factory.

Because VideoRay has sold over 2,200 ROV systems to date while maintaining close relationships with our customers, we have learned an enormous amount about pairing the VideoRay Pro 4 ROV components into configurations that will make our customers successful in their respective job tasks.

The VideoRay Pro 4 systems were designed for professionals demanding easy to use, portable, versatile, and cost effective technology that can make them successful. Our mission is to deliver just this.

SonTek

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CEO:
Gretchen W. McClain

Founded in 1992 on the premise that precision water velocity measurement should be practical, affordable, and easy, **SonTek** today offers a wide variety of acoustic Doppler instrumentation. Simply put, its instruments use sound waves to tell the user how fast water is moving, where it is moving, and even if it is moving at all. Customers are scientists, engineers, hydrologists, research associates, water resource planners and anyone that needs to collect velocity (speed) data in every kind of body of water imaginable. SonTek is now a part of Xylem, a leading provider of fluid technology and equipment solutions for the planet's most challenging water issues. The 10-MHz Acoustic Doppler Velocimeter (ADV), was developed in cooperation with the US Army Corps of Engineers' Waterways Experiment Station. Originally designed for laboratory use, the ADV is a single-point, high-resolution Doppler current meter used for detailed studies of 3D velocity fields. Since its introduction, the ADV has become established as the standard for high-resolution velocity data. The ADV product line includes laboratory and field instruments with options for integrated sensors and autonomous operation. The Acoustic Doppler Profiler (ADP) is a current profiler with profiling ranges of up to 200 m. The ADP revolutionized the market for current profilers. SonTek later refined current profiling by introducing the Pulse-Coherent ADP (PCADP) – one of the highest resolution acoustic Doppler current profilers available. With the introduction of the Argonaut-MD, SonTek produced a new level in user-friendly, low-power Doppler current meters. The Argonaut line expanded to include the Argonaut-SL and Argonaut-XR for hydrological and harbor monitoring applications and the Argonaut-ADV for single point measurements where power is limited. onTek recently released the award-winning, multi-frequency RiverSurveyor. This highly accurate ADP is designed to measure 3D water currents and depths from a moving or stationary boat.

BlueView Technologies, Inc.

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E-mail: rick.elento@blueview.com
Website: www.blueview.com

CEO: R. Lee Thompson
Employees: 32

BlueView Technologies is a manufacturer of compact acoustic imaging, measurement, and automation solutions for navy, energy, civil engineering, transportation and port security applications worldwide. BlueView's proprietary solutions use a technology breakthrough that delivers high performance multibeam imaging sonar in compact, low power systems. Since delivering the first products in mid 2005 BlueView has grown rapidly, attributed to a combination of its proprietary underwater acoustic technology and a customer-first service policy. More than 500 BlueView commercial systems have been deployed on micro and work-class ROV platforms, small to medium sized UUVs, diver hand-held units, boat mount systems, manned submersibles, and fixed surveillance platforms to fast become the new standard in multibeam imaging sonar. These systems have been delivered to offshore oil and gas groups around the world; more than 25 major US port security groups, US and international navies, NOAA, global defense contractors, as well as universities for a wide range of underwater imaging, measurement, and automation applications.

The Tech

BlueView delivers high performance multibeam imaging sonar in compact, low power systems for a wide range of underwater imaging, measurement, and automation applications. BlueView has developed a broad line of 2D and 3D commercial systems that operate from 225 kHz to 2.25 MHz to meet a broad range of underwater applications for defense, energy, transportation, research, and security industries. Within the last year, and in response to multiple industry segments, BlueView expanded its line of real-time 2D multibeam systems with multiple field-of-view options (including a breakthrough 130°), and long-range detection capability with a maximum range of 300m. In addition, BlueView's line of 3D multibeam scanning systems have established new standards in underwater 3D visualization and mapping. The 3D systems deliver high-resolution, fully interactive 3D point clouds of underwater structures and areas with centimeter level accuracy. The first systems were delivered in early 2010. Today BlueView 3D Multibeam Scanners are deployed in the oil and gas, civil engineering, and research sectors.

True North Technologies

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Tel: 978-897-5400 x231
E-mail: bpowell@tntc.com
Website: www.tntc.com

Director of Business Development: Bill Powell
Employees: 10

True North Technologies was founded in 1993 and is located in Maynard, MA, in the former corporate headquarters of Digital Equipment Corporation. True North Technologies develops and manufactures custom products for marine, air, and land-based applications with a concentration in electronic compassing. Our products include custom designed electronic compasses for marine and land use in recreational, commercial, and industrial markets. In addition to products for OEM customers, True North offers the TNT REVOLUTION™, an off-the-shelf, strap-down electronic compass sensor for scientific, agricultural, oceanographic, robotic, and geological applications. There are 4 versions of the Revolution compass depending on the customers' needs.

The electronic compass business has changed considerably over the last decade. For navigation applications, GPS has limited the compass to the spaces that satellites can't reach; underwater and underground and to some extent indoors. The majority of our customers are now interested in compasses as "pointing" solutions for drilling, antenna positioning, and down hole survey. In combination with GPS and rangefinders they also have been used for various military purposes. Amazingly, technology now allows for fully featured compasses to be installed in handheld devices like phones and tablets that are used as part of games and e-commerce applications. Unfortunately, size does matter with compasses and the shrinking of components sacrifices both accuracy and repeatability. True North targets a market for compasses, which demands high accuracy in changing and often harsh conditions. We are one of the only companies that uses an electrolytic (fluid-filled) tilt sensor to electronically gimbal our devices. While it is an older technology, it is still the most stable and consistent of pitch and roll sensors, even in down-hole and marine environments.

– R. Moniz

Tritech International Ltd

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Aberdeenshire, AB32 6JL
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E-mail: sales@tritech.co.uk

Managing Director: Simon Beswick
Employees: 100

Established in 1991, **Tritech International Limited [Tritech]** began with the aim of producing an innovative range of subsea products for the offshore oil & gas industry, military and other worldwide subsea markets. As specialists in the production of high performance acoustic sensors, sonars, video cameras and mechanical tooling equipment we serve professional underwater markets, including; defense, energy, engineering, survey and underwater vehicles. In recent years, new markets have emerged from within these professional underwater markets, within the energy industry; decommissioning, debris clearance, hydro-electric and renewables and in within the defence industry; law enforcement and Search and Rescue (SAR). Operations in these working environments usually result in low-visibility and in very shallow or very deep water. From our imaging ranges (mechanical and multibeam) to our bathymetric sensors, to hydraulic and mechanical equipment, Tritech are able to support these developing industries. Today, Tritech remains a leader in the provision of sensors and tools for ROV (Remotely Operated Vehicles) and AUV (Autonomous Underwater Vehicles) markets.

For fast, reliable and complete operational flexibility, all products in the SeaKing family can be run simultaneously on a single ArcNet communications link, using the same processor and display.

- ***Obstacle Avoidance & Target Recognition Sonar***
- ***Dual-Frequency Sonar – Super SeaKing***
- ***Advanced Broadband Sonar – Super SeaPrince***
- ***Ultra Compact Sonar – Micron***
- ***360° Mechanical Scanning Survey Sonar – SeaKing Hammerhead***
- ***Real-Time Multibeam Imaging Sonar – Gemini 720i***
- ***RAMS:*** RAMS is a fully automated system which detects the presence, integrity and position of mooring lines and risers deployed beneath a FPSO. This field-proven technology is deployed through the FPSO turret where the RAMS sonar provides 24/7 simultaneous real-time feedback from a single sonar head, on the status of all lines.

RESON

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Tel: +45 4738 0022
Emreson@reson.com

President and CEO: Kim Lehmann

RESON is a long-tenured and respected name subsea systems. RESON is a market leader in underwater acoustic sensors, state-of-the-art echosounders, multibeam sonar systems, transducers, hydrophones, and software. RESON's SeaBat and HydroBat multibeam sonars have become a standard in areas such as hydrography, dredging, and offshore operations as well as within defense & security applications.

Its fourth generation of sonar systems is designed to provide unprecedented performance for the international oil and gas exploration industry in terms of accuracy, resolution, depth rating, and range. Headquartered in Denmark, RESON has a global presence with six offices around the world.

RESON earlier this year announced that Forum Subsea Technologies' equipment rental business line, DPS Offshore –increased its investment in RESON SeaBat technology. Forum Subsea Technologies provides its clients with the latest version of the SeaBat 7125ROV2 multibeam sonar system. In addition, all systems have been purchased with the optional FlexMode, which adds significant capability in small object detection.

Five Minutes with SEA CON

Craig Newell, SEA CON's VP of Sales & Corporate Business Development.

This month *Marine Technology Reporter* is pleased to present insights from **Craig Newell**, VP Sales & Corporate Business Development, SEA CON.

Please provide for us a brief personal and professional background, with insights on how you came to your current position.

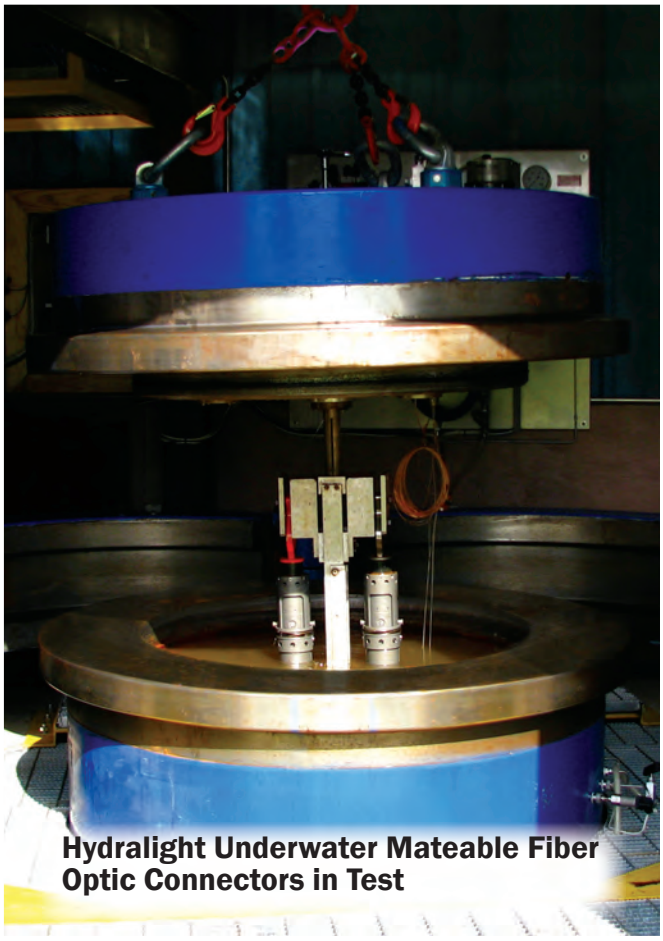
I have been involved in the subsea environment for more than 20 years. I still have fond memories of my early years, starting with the defense division of Standard Telephones and Cables (STC). They developed towed array systems for surface ships and submarines. Working with other businesses in the same sector, honing my skills as an engineer it was clear I had a passion for problem solving and giving the customers solutions that were a perfect fit.

I vividly remember my first involvement with SEA CON. I was working for STC, now Atlas Elektronik UK Ltd (Atlas UK) and we were facing some significant challenges with a project. Added to this was the difficulty in finding a supplier of connectors who was willing to only supply an insert rather than a complete connector. You've guessed it SEA CON was the only supplier we found at that time who not only met the technical requirements, but was willing to give us exactly what we wanted as we continued to push the design envelope.

My next contact with SEA CON came a few years later when I was the Engineering and Contracts Manager with Electrocatalytic. We were developing systems for land powered stations and again, I was involved in a step change in design, working on a modular design based around a container concept for a large electrochlorination system. While not subsea we still approached SEA CON to provide a connector system for the instrumentation. Again their support had a significant impact on the project and it almost seemed inevitable that I would eventually join the SEA CON team.

That feeling of inevitability came to pass when I was eventually hired by SEA CON as Technical Sales Manager at their European facility based in the UK. I then moved to Houston, TX in 2004 as Business Development Manager to support the growth of SEA CON, in particular the underwater mateable fiber optic systems being developed by the advanced products division.

My passion for the business and in particular SEA CON and my interests in all things sales and marketing in this highly technical field saw me take the reins of a more efficient centralized sales and marketing team. This eventually lead to my most recent appointment as Vice President of Sales and Corporate Business Development in 2009.



Hydralight Underwater Mateable Fiber Optic Connectors in Test

Please give to our readers the executive overview of SEA CON's capabilities?

The SEA CON Group has an international footprint which comprises of six divisions positioned in strategically important locations. This footprint gives us the capabilities that include design, prototype, testing and manufacture, with the flexibility to fulfill requirements for large or small numbers as well as project based production orders, all undertaken to reduce costs and increase efficiency.

We have the capability to offer an extensive and diverse range of industry standard or bespoke electrical, optical and hybrid connectors, cable systems and complex distribution harness systems.

Our qualified and experienced design and engineering teams are well known for their capabilities and are able to analyze, evaluate and produce suitable specifications and then use this data to design a product to meet the needs of our clients using software at the cutting edge of our industry.

Our mission requires us to constantly invest and develop our manufacturing capabilities mainly through our people, hardware and software. This constant development gives us the ability to produce high volume connectors in a vast range of specifications and materials. We continue to develop and each step we take sees the production of more advanced products in increasing quantities. The key to this continuing success is partially due to our ever expanding machining capabilities. Recent examples include the purchase of the latest CNC machines. The success is also down to a dedicated team of engineers using the latest and best software, allowing for the production of complex components for our products.

Our capability also lends itself for the production of parts in large numbers with exceedingly high levels of accuracy using materials such as Stainless Steel, Bronze, Titanium, Monel, Inconel, Nitronic, Elgiloy and Plastics such as PEEK (Polyetheretherketone).

On the East Coast of the United States we have a specialist manufacturing facility that allows us to manufacture and supply a wide range of glass to metal sealed, MIL-SPEC and harsh environmental connectors.

Another important aspect of our capabilities includes the significant investment made in test equipment, which helps to build customer confidence in the safety and reliability and fit for purpose status for intended use. Our testing capabilities include pressure cycling up to 20,000 psi, electrical, optical, accelerated life, gas leak, cold water, sand, silt and full mechanical, environmental, vibration and tensile strength testing.

SEA CON is also focused on providing its customers with the infield support that is so vital in many of the verticals in which we operate. With our highly qualified and trained technicians, we have the capability to provide immediate and professional responses to any service requirement in any location.

It is these capabilities, twined with our desire to develop beyond the now and our passion to push the boundaries of innovation for our customers that enable SEA CON to be a world leader in the supply of connectors, cables and distribution systems.

When you look at the expanse of your operations, what do you count as the primary strength of your company?

From my first contact with SEA CON some 20 years ago to the projects I work on today, I would have to say the primary strength has been the ability and willingness to do whatever it takes within the bounds of our core values, to develop and support solutions that match the needs of our customers perfectly. This can be from a range of possibilities such as modifications to a connector from our standard range, to the development of a new connector to meet a technology gap within an industry.

SEA CON has always and will continue to provide customers with one of the widest ranges of connector solutions that have created the industry standard, such as the rubber molded dry-mate connectors (commonly known as Marsh & Marine connectors), Metal Shell and Mini-Con Series of high density connectors, the wet pluggable Wet-Con and Micro Wet-Con

connectors, through to the highly specialized Field Installable MUX connector solutions. We also count amongst our key strengths the industry leading underwater mateable HydraLight fiber optic connector system.

This is really only part of the bigger story surrounding the key strengths of SEA CON. In addition to our standard range of products we are also on a journey of constant review and innovation where our customer requirements are concerned. Where it is not possible to deliver a standard solution, we will develop one that fully meets with their specific requirements.

This capability to meet needs, even when the need cannot be met by a standard solution, comes from the multiple divisions within SEA CON. Each division has a specific product focus, but also increases its reach through its own engineering and development expertise, allowing it to modify, innovate and combine to address the customers needs. The final part of this advantage is our capability to pool resources across the divisions to look for new solutions.

How is your company investing today?

SEA CON has always taken a serious approach towards investment, the amount of time, effort and resources we place in our development of products, as well as the services we provide our customers. We see this as a vital component to our overall corporate strategy.

A key area for investment is to expand and develop the use of fiber optics. A good example of this is the developments made a few years ago after identifying the need for a hybrid optical/electrical connector as an off the shelf product. This lead the business to develop the Opti-Con connector range available in five main shell sizes with channels configurable to either optical or electrical, or even blanked out if not needed. Until Opti-Con became available, the hybrid connectors were selected from existing configurations. When this was not available tooling manufacture was required which lead to lead-time and cost impacts.

Fiber optics remains one of our leading focuses for investment. Most recent has been the development and qualification of the SEA CON Precision MKII hose conduit. This together with the development of a Subsea Umbilical Termination Assembly (SUTA), has enabled SEA CON to be in a position to supply complete systems solutions for the subsea control market.

What new products/systems have you recently launched (or will soon launch) that you deem important for this sector?

SEA CON is not a business known for standing still and so in recent times we have launched a number of new and modified products and into the future we have established plans to continue to push the boundaries through modifications, innovations and new products. Our divisions give us the

SEA CON

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CEO: Patrick G. Simar
Employees: 700

A prime example of this is **SEA CON**'s commitment to supporting the use of fiber optics within the Oil & Gas industry through the development of dry-mate optical products, including the MINI-CON and OPTI-CON connector series, the underwater mateable HYDRALIGHT connector and even the down-hole multi channel fiber optic G3 connector series. To achieve this broad spectrum of product supply and service, the SEA CON group has six globally located manufacturing facilities, each staffed with highly experienced design/development teams. SEA CON maintains multiple CNC machining departments, routinely manufacturing electrical contacts from 28 AWG to components weighing hundreds of pounds. SEA CON also has several molding departments with a wide variety of composites/elastomers and an in-house glass to metal sealing facility. To complement our design and manufacturing capabilities, SEA CON has extensive in-house testing capabilities that includes, electrical, optical, dimensional, pressure, shock, vibration, axial pull equipment all with experienced staff. To support its product in the field SEA CON provides a 24/7 field service support through its many highly trained field service teams.

The Tech

SEA CON has been providing products and services to many harsh environmental markets over the years and has been proud to provide some of the most leading edge solutions available in the market. This focus on technology can be traced back many years through products like the ALL-WET connector series. These connectors not only provided the market with the ability to mate electrical connectors 'wet', but gave the flexibility of connecting multiple individual instruments, lights, etc into a single interface connection point on a control pod with the further development of the 'Split' ALL-WET connector range. As markets change SEA CON has adapted existing products to meet market needs. The MSS Range has been one of the main product lines for SEA CON, providing high contact density and a variety of power and signal configurations. This series has also provided SEA CON with the ability to meet the requirements of API-16D standards with the inclusion of 'test ports' at seal interfaces.

G3 Wet-Mate, Down Hole, Fiber Optic Connector

SEA CON®'s High Density MINI-CON Connector Range

ability to produce a truly diverse range of products, some that are worthy of mentioning are as follows:

The first is the expansion of the capabilities of the industry leading HydraLight connector series, with the release of the APC version of this series. This version enables the HydraLight to meet the back reflection needs as we are seeing for sensing systems. In addition to this we have also released the high fiber count HydraLight which provides up to 48 fiber optic channels within the same basic envelope of the standard HydraLight connector.

We have also seen developments in the use of fiber optics within the OEM market. SEA CON has recently introduced numerous high specification optical, electrical, coaxial and hybrid connectors developed to meet the always expanding technical requirements of OEM manufacturers; one of the main challenges being to provide these capabilities within the smallest possible connector.

Over your career, what do you consider to be the leading technological developments that have most impacted your business?

I know fiber optics have been around in our industry for many years now, but it has only been more recently that I have seen the use of fiber optics as the main stream communication system. As a business we feel this trend will continue to grow and with it the technologies. Fiber optics will not just be used as the backbone communication line, but also throughout all elements of subsea control systems.

It is with this vision that SEA CON has not only developed new fiber optic products, but also looks to fill technology gaps that exist within the market. A good example of this being SEA CON were the first to provide a multichannel (6 channel) wet-mate down hole fiber optic connector, our third generation (G3) connector.

With the expansion of use and projected future market, SEA CON has extended its manufacturing reach in fiber optics so that all 6 manufacturing locations have the capability and are actively involved in the manufacture of fiber optic products.

What technology or trend in the way in which your products are used do you feel will most impact your business in coming years?

Fiber optics will, without doubt, continue to be one of the technologies that will impact our business in the coming years. Particularly for oil, gas and defense, due to all the exciting developments in these sectors we are witnessing.

We are also seeing a need for high power connection systems. While initially this need was being driven by the push for subsea processing, in recent years this has also been driven by the growth of renewable energy developments.

SEA CON has been involved in a number of important renewable energy projects utilizing our standard products such as the Sea-Mate connector series as well as the HydraLight underwater mateable fiber optic wet-mate. In addition to these connectors, we are also seeing an increase in the need for high power. Many of our competitors have gone with the standard oil and gas connector solution utilizing these connectors for this market, however SEA CON has taken a more pragmatic route, based on reviewing the market needs and predicting future needs. We have concluded that both the operational and environmental conditions vary considerably from the oil and gas subsea markets and lead us to consider a range of alternate more innovative potential solutions.

VectorNav Technologies

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http://www.vectornav.com

CEO: John Brashear
Vice President: Jeff Cheek
Marketing Director: Jakub Maslikowski
Number of Employees: 11

VectorNav Technologies specializes in manufacturing high performance inertial navigation sensors using the latest miniature solid-state MEMS inertial sensor technology. Since its founding by four graduates of Texas A&M University in 2008, VectorNav has been providing customers worldwide access to high quality, fully calibrated orientation sensors with state-of-the-art digital filtering technology. With a strong background in aerospace engineering and experience in the development and testing of spacecraft, launch vehicles, and micro-aerial vehicles, VectorNav brings high performance Aerospace filtering and calibration techniques into the world of low-cost industrial grade MEMS sensors, expanding the possibilities of today's MEMS sensor technology.

The Tech

VectorNav combines its expertise in aerospace engineering principles with the latest in MEMS technology to provide low-cost, high-performance inertial measurement units and inertial navigation systems. Sophisticated calibration techniques allow for optimization of the MEMS components to ensure accuracy in a wide variety of environments. VectorNav's VN-100 is miniature, high performance 3D orientation sensor available in a surface mount package and aluminum encased package (the VN-100 Rugged). VectorNav's newest product, the VN-200, is the world's smallest & lightest, high-performance GPS-Aided Inertial Navigation System (GPS/INS). Combining an advanced GPS module with the latest in MEMS inertial & pressure sensor technology, the patent pending VN-200 provides unprecedented opportunities for embedded navigation in a footprint no larger than a postage stamp.

Valeport Ltd

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CEO: Charles Quartley
Vice President: Matt Quartley
Sales Manager: Kevin Edwards
Number of Employees: 54

Valeport was established in 1969, in the small port town of Dartmouth in the South West of England, with a simple product range based around the Braystoke Impeller Flow Meter. It was sold in 1982 to Oceonics plc, who were keen to expand its portfolio with manufacturing companies in the underwater sector. In 1985 a strategy change saw Valeport put up for sale, and it was acquired in a Management Buy Out by Charles Quartley, Technical Director of Oceonics. Since then, Valeport has expanded its product range, and developed a strong reputation within the industry for high quality, reliable instrumentation. In 2003, the company finally outgrew the factory in which it had been based since 1969, and acquired a site a few miles up the river Dart in the historic town of Totnes. In 2005, Charles stood aside as Managing Director to be replaced by his son Matthew, who has been with Valeport since graduating in 1994. The business now employs around 54 staff, and continues to invest heavily both in new product development, and also in all the facilities necessary to manufacture and supply the quality products for which Valeport is known.

Products include Current Meters, Sound Velocity profilers & Sensors, Tide Gauges, CTD's, Altimeters, Echo Sounders, Bathymetry Sensors and Wave Recorders

L-3 Communications Klein Associates, Inc.

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Website: www.L-3Klein.com

CEO: John Cotumaccio

Facility: L-3 Klein is headquartered in Salem, New Hampshire and is a design and manufacturing facility of approximately 56,000 square feet conveniently located approximately 30 miles Northwest of Boston, Massachusetts. A Department of Defense Secret facility clearance operating in compliance with the National Industrial Security Operating Manual (NISPOM) is in place at this facility. The facility contains two sonar test tanks, the largest of which contains approximately 16,000 cubic feet of water, a state of the art temperature and humidity controlled transducer laboratory and the latest in digital design and manufacturing equipment.

Employees: 66

The Case

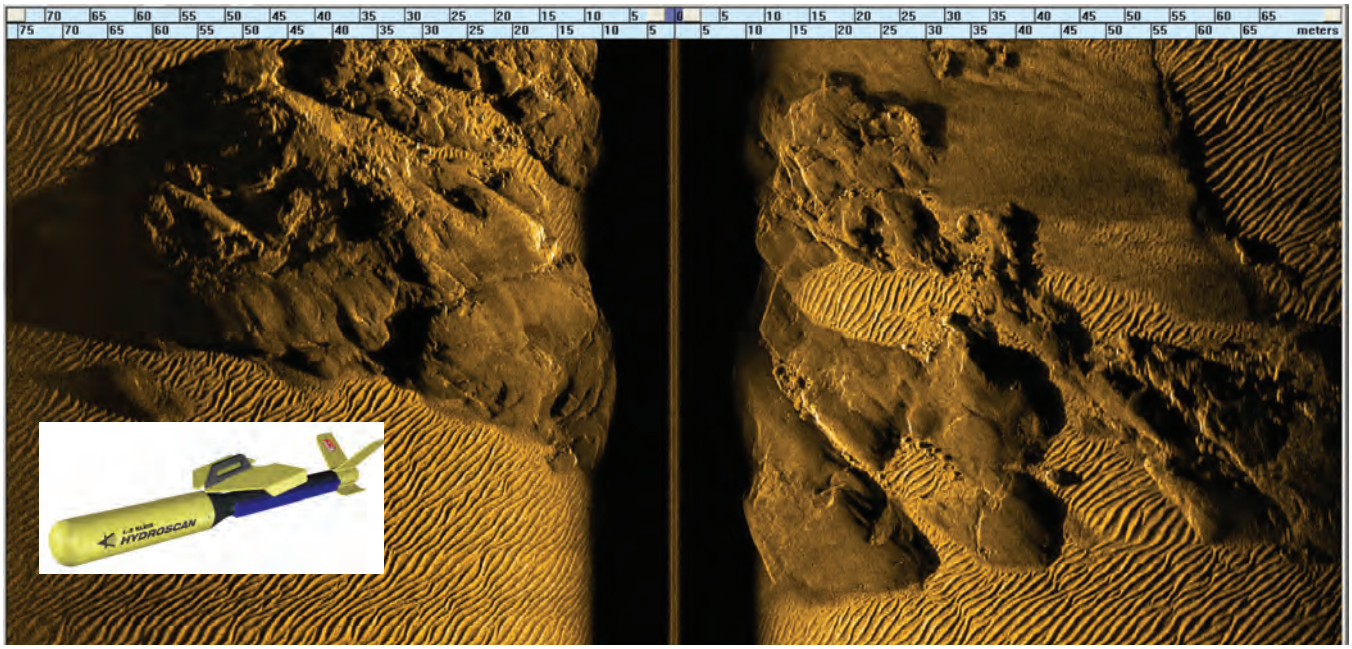
Dating back to 1968 Klein Associates, Inc. became the first commercial manufacturer of side scan sonar in the world. Since then, L-3 Klein has become the leading supplier of side scan sonar equipment and waterside security and surveillance systems to navies, shipbuilders, secure installations, researchers, oil and gas explorers and hydrographers all over the globe.

The Company

Side scan sonar is still its primary business, and in the tradition of Marty Klein, the company continues to work to produce the most innovative and productive systems possible. In 2010, the company announced that in addition to its successful product lineup that includes the workhorse Klein 3000, the Klein 3900 SAR, the Multi-beam Klein 5000 V2 (available with interferometric bathymetry), and the minehunting SSS of all-time, the Klein 5900. In 2011, we introduced the all-new HydroChart 5000 hydrography system that combines high-resolution 455 kHz Multibeam side scan sonar with high-definition Interferometric bathymetry sonar for the most spectacular IHO quality imagery possible. In addition, we also introduced the UUV-3500 High Resolution Side Scan sonar for UUVs. The UUV-3500 operates exclusively with L-3 Klein's proprietary wideband technology providing side scan range and resolution performance in a low power, compact and lightweight payload. And now in 2012 the company has introduced its new HydroScan, professional-grade side scan sonar (pictured inset below) for shallow water and rapid-deployment applications.

The Tech

The all-new HydroScan is a professional-grade side scan sonar for shallow water and rapid deployment applications. L-3 Klein's proprietary Wideband technology provides side scan range and resolution in a compact, one-man portable package. The UUV 3500 was developed as a side scan sonar with the unprecedented benefit of an advanced bathymetry payload for the growing Autonomous Underwater Vehicle (AUV), Remotely Operated Underwater Vehicle (ROV) and UUV markets. In addition, the new system utilizes L-3 Klein's proprietary wideband technology for unmatched range and resolution while operating at lower power to deliver superior capability at a highly affordable price. The HydroChart 5000 represents the latest technology for the acquisition; display and processing of highly accurate bathymetry data integrated with high resolution side scan imagery, meeting IHO SP-44 Special Order Standards.



Turner Designs

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Email: sales@turnerdesigns.com
http://www.turnerdesigns.com
CEO: James Crawford
Vice President: Pam Mayerfeld
Sales Manager: Tom Brumett
Engeneering Director: James Crawford
Number of Employees: 25

Turner Designs provides innovative fluorescence-based solutions for basic environmental research, water quality analysis, environmental monitoring, and pollution control analysis. Having a unique focus on fluorescence instrumentation for over 40 years and customers throughout the world, Turner Designs is the leader in filter fluorometer design, manufacturing, and support. Providing solutions to researchers, monitoring agencies, system integrators and spill response teams, Turner Designs is known for providing rugged, reliable and stable instruments. We provide submersible, field, handheld, laboratory, and online fluorometers and turbidimeters varying in functionality, size and price to fit any type of user need.

Turner Designs is continuously expanding our repertoire of optical instruments to meet new application requirements. Standard optical configurations include in vivo and extracted Chlorophyll, blue-green algae pigments such as phycocyanin and phycoerythrin, active fluorescence, Dissolved Organic Matter (Algal as well as Terrestrial), ammonium, optical brighteners, dye tracers, and crude and refined oils as well as infrared wavelengths used to detect turbidity. Data acquisition is available real-time and through several datalogging possibilities. Submersible instruments can be configured for depth profiling, long-term monitoring and horizontal mapping with GPS-integration at depths up to 6000 meters. Solid Secondary Standards which enable quick instrument verification and calibration checks are available for most applications and are known to hold their value over several years of usage.

EdgeTech

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EdgeTech traces its history back to 1965 when it started out as a division of EG&G Marine Instruments. In 1995, EdgeTech became a private company and selected its name in part to honor the late Dr. Edgerton, marine instrumentation pioneer and a founder of EG&G. In the early 2000's ORE Offshore became part of the company, and continued to operate under the ORE Offshore brand name until March of this year. The company designs, manufactures and sells a variety of standard and engineered-to-order underwater sonar systems including side scan sonar, sub-bottom profilers, bathymetric, combined and modular systems. The systems are available in a range of configurations for towed, deep towed, AUV, ROV, ROTV and custom platforms. With the addition of what was once ORE Offshore, the company also provides highly advanced and reliable USBL acoustic tracking and positioning systems, transponder beacons, deep sea acoustic releases, shallow water and long life acoustic releases, motion reference units (MRU), underwater acoustic command and control systems, and custom-engineered acoustic products.

Recently EdgeTech introduced the PORT MFE acoustic release and the SPORT acoustic release and Pop-up, a shallow water version. Some of the most recent additions in their sonar product line include the 4600 combined side scan sonar and bathymetry system with the ability to provide a full swath coverage for shallow water operations. The 2000-DSS combined side scan and sub-bottom Tow/ROV kit, and the 2205 sonars for AUV/ROVs are also recent additions. The 2000-DSS Tow/ROV allows the customer the leeway to use it as a traditional towfish or configure it to fit on an ROV for operation in water depths up to 3km. EdgeTech's new DISCOVER II sonar software is a new GUI software package that is allows the addition of new features making the operator's job more effective. Being able to review sonar records backwards and forwards and enabling auto-measurement of underwater targets will make this software package a hit. ***– R. Moniz***

InterMoor

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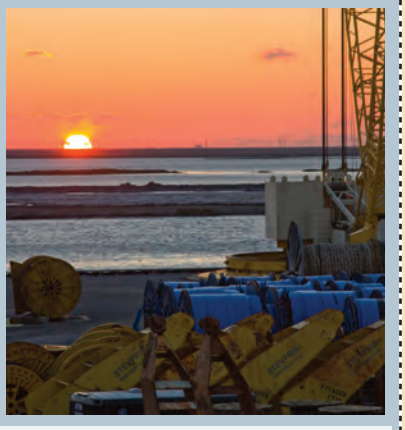
Website: www.intermoor.com

CEO: Tom Fulton
Employees: 255



The Company

InterMoor, an Acteon company, is a mooring, foundations and subsea services provider delivering innovative solutions for rig moves, mooring services and offshore installation projects. InterMoor supports operators and contractors worldwide with Engineering, Fabrication, Shore Base, Survey & Positioning and Inspection services. For operators and contractors who require rig moves or who need to anchor FPUs, MODUs, TADs, barges and other floating structures, InterMoor's mooring services provide an integrated solution that focuses on reducing cost, time and risk. InterMoor has pioneered:

- Patented Suction Embedded Plate Anchor (SEPLA)
- Deepwater mooring record off the coast of Malaysia
- Installation of the first full polyester rope mooring system in the Gulf of Mexico
- Deepwater MODU mooring record off the coast of Brazil
- Designed and installed the first suction pile in the GOM

Developed by InterMoor, in conjunction with sister company, Pulse Structural Monitoring, the Inter-M Pulse is a long term mooring connector that has the capability to monitor and track the in-situ tension of each mooring line and transmit tension data acoustically to the topside control room. With the introduction of various sensors, the Inter-M-Pulse can also detail inclination of the mooring line. Additional features include; full history of the mooring line, acoustic data transmission, on-demand data upload and a traffic light alarm system. A sea trial proved that the system communicates in a range of sea states.

This revolutionizes the mooring world, in that it incorporates for the first time electronic tension sensors within mooring lines. It is a unique mooring component:

- It uses underwater cable free acoustic communication
- It can be designed to communicate with a topside software system which raises an alarm when a mooring line exceeds the set thresholds
- It is battery powered and its ultra-low power design is meant to extend the battery life and prolong service.

Markey Machinery

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CEO/President: Blaine Dempke
Employees: 50

Markey is a provider of high and reduced power motion-compensating deck machinery used on workboats and research vessels. Pioneers of early steam, DC electric, hydraulic, and AC variable-frequency "active-drum" systems, Markey Render/Recover and Asymmetric Render/Recover technology is now a key feature of Markey workboat and oceanographic winch technology. The company's history begins in 1907, when Charles H. Markey launched a general contracting company serving both the marine and logging industries on the shores of Seattle. Although Seattle was known for a rough-and-tumble past of logging, fishing, and as a port to Alaska, it will also become home to many future companies with names like Microsoft and Boeing. Markey Machinery followed a path common to many growing firms, while finding its place in the growing west coast maritime industry. By the beginning of the Second World War it is firmly established as a manufacturer of robust deck machinery. Markey had learned much building machinery for the rough waters of the Northwestern Pacific extending up into the Bering Sea. More experience was gleaned from building deck machinery for Liberty ships. This equipment had to survive the raging storms of the North Atlantic during the war years.

But the most important lesson learned, was that not every situation could be anticipated. There was no way to learn everything. This recognition fostered a tradition followed to the present day, **"Build Hell for Stout."**

The Tech

In a recent NRC report, high performance deck and winch systems were pinpointed as critical for meeting science objectives at sea. Among the top requests by fleet operators was improved active heave compensation to improve safety and give greater ability for operation in higher sea states. In response, Markey introduced the CAST6-125, a new third generation deep sea research winch designed specifically for the vertical accelerations of ocean class research vessels. Engineered to have the lowest possible mass moment of inertia, it employs a 125HP vector duty motor directly coupled to a removable drum, (which allows quick cable changes). High-strength gearing is contained within an enclosed transmission, utilizing force-lubricated bearings. An electronically adjustable two-sheave fairlead head ensures proper spooling of up to 10,000 meters of 0.393 inch diameter cable, wire or line. The AC-variable frequency drive is operated via a touch screen and conventional joystick, enabling direct operator control of drum direction and speed, or selection of a fully-automatic overboarding process.

Hydroid, Inc.

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Website: www.km.kongsberg.com/hydroid

CEO: Christopher von Alt
Vice President of Operations: Duane Fotheringham
Director of Hydroid Europe: Graham Lester
Marketing Manager: Lorna Bandstra
Sales Manager: Graham Lester
Employees: 87

The Company

Kongsberg Maritime and subsidiary Hydroid are helping to change the way in which we explore the oceans with their full-picture HUGIN and Remote Environmental Measuring Units (REMUS) AUVs. These unmanned robots offer a nimble, flexible alternative to traditional surface vessels that can glide along the surface, dive to deep depths, explore shallow waters or hover in hazardous areas where navigation is difficult. Hydroid/Kongsberg AUVs have reduced the high costs of ocean exploration and sampling while increasing the availability, quality and quantity of scientific marine data. Using Hydroid/Kongsberg AUVs for undersea mine reconnaissance has helped save lives by eliminating human divers from mine fields, and the customizable robots have helped solve plane and ship disaster mysteries (including locating wreckage such as Air France Flight 447 and generating 3-D mapping of the Titanic). Perhaps most importantly, however, Hydroid/Kongsberg AUVs offer scientists a new view on pressing global issues including climate change, the world's declining fish population and environmental disasters.

Christopher von Alt brings unique talent to his position as President and co-founder of Hydroid. As the leader of the team that originally developed the REMUS AUV, von Alt's knowledge of the intricate technology has been integral to the products' development and widespread adoption. After years of fabricating and developing the REMUS vehicle as part of the Woods Hole Oceanographic Institution (WHOI), von Alt co-founded Hydroid Inc. in 2001, creating an independent company to commercially manufacture, support and further develop the REMUS systems.

Since its inception, Hydroid has expanded and to support this growth, von Alt has staffed Hydroid with 87 full- and part-time employees who continuously strive for the highest level of product quality and support. This team is enhanced by the organization's growing representative network, which provides local sales and support in nearly 30 countries around the globe. Major players in the maritime industry have recognized Hydroid's immense success. In 2008 Hydroid was acquired by the Norwegian technology conglomerate Kongsberg Gruppen. In the 1980's Kongsberg developed a small AUV for technology and test purposes. In 1995 the HUGIN project was created in collaboration with Statoil, Norwegian Defense Research Establishment (FFI), Norsk Undervannsintervensjon (NUI) and Kongsberg. Together, Kongsberg and Hydroid have deployed more than 300 systems to a variety of international customers in the defense, academic, government and commercial markets, the largest number of deployed AUVs in the market. Today Hydroid's REMUS vehicles complement Kongsberg Maritime's HUGIN AUVs, together offering a full suite of extreme solutions for extreme environments.

The Tech

Hydroid's innovation is the REMUS AUV itself—the vehicle's design as well as the engineering behind its constantly evolving hardware and software technologies. The REMUS AUV is the culmination of 15 years of leading-edge R&D and boasts a proven track record for highly reliable and consistent field operations. REMUS AUVs are offered in three vehicle classes: The man-portable REMUS 100; the highly versatile, modular REMUS 600; and the REMUS 6000, a deep-water workhorse.

All REMUS AUVs are built on a common and proven technology base incorporating the intuitive vehicle interface program (VIP); this keeps vehicle maintenance, mission planning, checkout, data analysis and cross-vehicle training seamless across the

SPARTON

Sparton is an end-to-end manufacturer that draws on more than 100 years of experience in the electronics and electromechanical device industry. A global company headquartered in Schaumburg, Illinois with five facilities throughout the U.S. and Vietnam. Sparton is a broad-based provider of sophisticated electronics and electromechanical solutions for businesses of all types, its expertise lies in the tightly regulated areas of defense and security, navigation and exploration, and medical. Sparton has contributed to the backbone of our national defense with its best-in-class sonobuoy line of products with over 6 million sold. We are also ISO registered, QSR compliant, and CAMCAS certified to ensure the products we build are manufactured to the highest quality level possible.

The Tech

Sparton Navigation and Exploration's Navigation Sensor products are designed to offer superior performance, providing accurate heading reference to numerous commercial and defense applications. It also develop some of the most sensitive specialty hydrophones for general purpose underwater applications and marine seismic acquisition systems, such as oil and gas exploration and sea floor mapping. Our designs operate well in all harsh environments that include extreme temperature fluctuations, high shock, and humidity. It will be introduce its new AHRS-8 navigation sensor in fall of 2012. This sensor is a fully temperature compensated Attitude Heading Reference System (AHRS), individually calibrated over the -40º to +70º C operating range, providing industry leading heading accuracy in a broad range of challenging application environments. It utilizes MEMS-based, tri-axial magnetometers, accelerometers, and gyroscopes along with our proprietary, best-in-class AdaptNav II sensor fusion algorithm and NorthTek Development System, enabling the world's only fully programmable navigation sensor.

model line. The vehicles differ by size, depth, endurance and payload sensor configuration: The lightweight and compact REMUS 100 is designed for shallow water work in depths up to 100 meters, the mid-range REMUS 600 can operate in depths of 600 or 1,500m and the deep-water REMUS 6000 operates in water depths up to 6,000m.

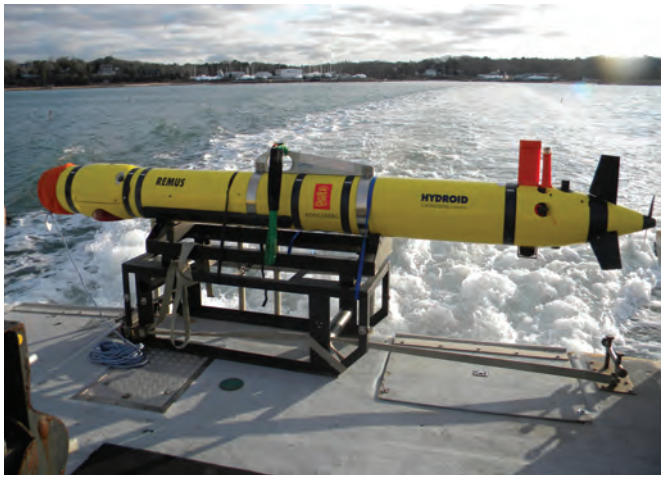
The REMUS AUVs can be equipped with many different instruments, depending on the model and the intended use. This includes advanced GPS-aided inertial navigation; Doppler velocity log; acoustic fish trackers; varying sensors; nitrate and nutrient analyzers; conductivity and temperature monitors; radiometers; side scan sonar; bathymetry; bottom-mapping, echo sounder, forward-looking sonar; video camera module; turbidity sensors; and electronic still camera with strobe and magnetometers.

All the vehicles incorporate embedded software, including the Kongsberg Inertial Navigation System, which includes a Honeywell Inertial Measurement Unit (IMU), the NavP navigation processing suite and a payload processor which initializes and controls all sensors.

Since its inception, Hydroid has delivered a continuous stream of products through a highly-efficient and well-organized manufacturing system which allows for volume production of REMUS vehicles, tracking transponders and other system components. The result is a highly-repeatable system that produces quality products in a timely and efficient manner. Hydroid's products are backed by the organization's skilled customer service staff, which provides on-site training, system commissioning and continuous product service and support.

Hydroid's R&D efforts have focused on enabling AUVs to operate multiple payload sensors simultaneously, enabling the real advantage AUVs offer over traditional survey methods. Researchers have also focused on lowering the platform's noise floor (electrically, acoustically and magnetically), as well as carefully selecting payload sensor frequencies and managing their synchronization.

In May 2011 Hydroid passed a Critical Design Review (CDR) to provide Littoral Battlespace Sensing (LBS) AUVs and associated technologies to the Space and Naval Warfare Systems Command (SPAWAR). The Critical Design Review was held to verify that Hydroid complies with design-maturity requirements and that detailed design preparations are in place to proceed with system fabrication, demonstration and testing.



LinkQuest Inc.

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Tel: (858) 623-9900
Sales: sales@link-quest.com
Support: support@link-quest.com

LinkQuest Inc. is a manufacturer of precision acoustic instruments for offshore oil exploration, construction, drilling, survey, environmental study and other oceanographic applications. Its innovative Broadband Acoustic Spread Spectrum (BASS) Technology sets new standard for acoustic communication and positioning.

LinkQuest's FlowQuest Acoustic Current Profilers and NavQuest Doppler Velocity Logs provide competitive solutions for current profiling or precision underwater navigation applications.

LinkQuest is able to produce sophisticated underwater acoustic modems, USBL tracking systems, acoustic current profilers and Doppler velocity logs.

According to the company, its SoundLink High Speed Acoustic Modems transport more than 95% of the world's acoustic communication data.

FlowQuest Acoustic Current Profilers are designed for measuring currents and flows in oceans, harbors, lakes and rivers.

With its capability for significantly longer range, standard deepwater depth rating and seamless integration with third-party sensors and LinkQuest acoustic modems, the FlowQuest system is not just a current profiler but also serves as a focal point for underwater deployments.

NavQuest Doppler Velocity Logs (DVL) are for precision navigation and positioning of underwater vehicles.

MSI (Materials Systems Inc.)

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E-mail: info@msitransducers.com
Website: www.msitransducers.com

President: Dr. Leslie Bowen
Employees: 38

MSI was founded in 1991 as a manufacturer of advanced transducer materials for ultrasound applications. The companies main business involves developing and manufacturing custom components or devices to meet customers' specialized needs. MSI also sells specialty materials to those customers who choose to build their own hardware. For customers who wish to upgrade or replace their current systems, MSI can design and manufacture sophisticated system-ready components and assemblies that integrate the most advanced materials technologies and innovative designs.

To support customers, MSI has an extensive technical staff of mechanical, electrical, acoustical and materials engineers working alongside its experienced manufacturing and quality assurance team.

MSI (Materials Systems Inc.) is an ISO 9001:2008 certified company that develops and manufactures sub-systems, components, and advanced materials for defense and commercial systems customers. Products include sonar and industrial ultrasound transducers. Most products are specially engineered into customer systems; MSI can also build-to-print for customers who have their own designs. The company manufactures custom sonar transducers and arrays for harbor defense, side-scan, obstacle avoidance, sub-bottom profiling, swath bathymetry, mine hunting, swimmer detection, and acoustic communications.

MSI personnel participated in the earliest work on piezocomposites in the late 1970's, when the performance benefits were first demonstrated under ONR and DARPA funding. Since then, MSI has developed injection-molding techniques for mass-producing these transducers. MSI's development of injection molding for manufacturing piezocomposite opened MSI's piezocomposite arrays can also be curved and shaded to achieve a specific beampattern or to achieve a hydrodynamic profile when mounting the arrays to the curved hull of a vessel or AUV. Resonant transmit designs are in production at frequencies ranging 20 kHz to 1MHz.

Measutronics Corporation

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http://www.Measutronics.com
CEO: Lou Nash
Number of Employees: 8

Measutronics Corporation thrives on challenges that face the marine construction, dredging, hydrographic survey and guidance/positioning industries. For nearly 15 years, its has been supplying quality equipment, installation, training and support services. In providing turn-key solutions, Measutronics' professional personnel rely on complimentary skill sets while combing experience in various disciplines such as: hydrographic and land surveying, electronics assembly and repair, military (US Navy), diesel mechanic and USCG boat captain licensing.

Serving as a strong base to real world solution(s) applications, its small yet effective staff draws from strong academic backgrounds to include: MS Land Surveying/Mapping and Coastal Engineering, MS Geomatics, BS Geomatics, BS Statistics, BA Business, BA Marketing, BA Education, AA Electronics and AA Marine Technology.

The Tech

Offerings include marine positioning and guidance systems, single and multibeam sonar systems, side scan and scanning sonar systems and inspection class ROVs.

Sensor Technology Ltd.

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CEO: Niru Somayajula
Vice President: VP R&D: Dr. Sailu Nemana
VP Engineering: Sylvain Terzolo
Number of Employees: 50
Annual Sales: $5m

Sensor Technology Ltd was founded in 1983 near Toronto, Canada. The company began as a research-driven manufacturer of piezoelectric materials but quickly expanded its product line to include hydrophones and acoustic transducers for underwater applications. With a long history of research and development, Sensor Technology Ltd. has conducted experiments on the space shuttle, the Mir space station, in both the Arctic and the Antarctic and in ocean depths exceeding 20,000 feet. With its strong design department and in-house machining, assembly and testing facilities, Sensor Technology Ltd. is capable of taking customers through the entire design process from concept, to prototyping, to full-scale production. From piezoelectric powder production to finished acoustic sensors, the company's vertical integration provides end-to-end quality assurance and product design optimization, as well as a high level of control over delivery scheduling.

Sensor Technology Ltd. manufactures a large number of piezoelectric ceramic materials. The company's formulations include ceramics equivalent to Navy Types I, II, III, V and VI, a range of lead metaniobates and several proprietary piezoelectric materials with unique performance characteristics, such as its ultra-hard BM200, high g constant BM740 and highly anisotropic BM300. In-house machining capabilities allow it to produce a wide range of geometries: Sensor Technology recently produced tiny ceramic tubes with an outer diameter of only 0.091", as required for a customer's miniaturization project.

Sensor Technology Ltd. has designed and manufactured a broad array of custom hydrophones and acoustic transducers. Past projects include transducers with multiple transmit frequencies, vector hydrophones, multi-channel and shaded array designs for side lobe suppression and beam steering applications, towed array hydrophones for seismic applications and ruggedized units capable of withstanding high pressures. Most recently, Sensor Technology shipped its unique SQ70-00 and SQ70-01, a transmit/receive transducer pair housed in titanium and rated to 10,000 psi.

Outland Technology

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Email: jeff@outlandtech.com
www.outlandtech.com
CEO/President: Charles Daussin
No. of Employees: 9

Outland Technology was established in Gretna, La., in 1984. From inception, the company's goal has been to design and manufacture a broad range of high quality video and audio products using high volume components adapted for specific applications. Since 1996 it has expanded to 12,000 sq. ft. Outland's primary customers are in Marine, Military and Industrial markets. Outland's design engineering staff are experienced in many disciplines. With a combined 60 years + in Electronics and Undersea work they have developed Video systems and Video components that are second to none.

Outland's manufacturing facility is central to the Gulf of Mexico region. From here product shipments are made worldwide. Electrical and Mechanical assembly, product testing and returned material repair are also handled from the same location.

Outland has spent a considerable amount of R&D monies for new product development. LED lights have been sold now for many years but the company are always working on the better LED light. These lights have tripled in light output since we first started and LED manufacturers are coming out with new devices every week. Not only are LEDs improving but cameras are as well. These cameras can go as low as .0001 lux and have a 600 line resolution in color.

The company is currently upgrading its Video Overlay boards, ROV control boards and building new HD cameras. SD208 CTD/STD with the highest accuracy and built-in wireless communication feature for transfer of data.

SeaZone

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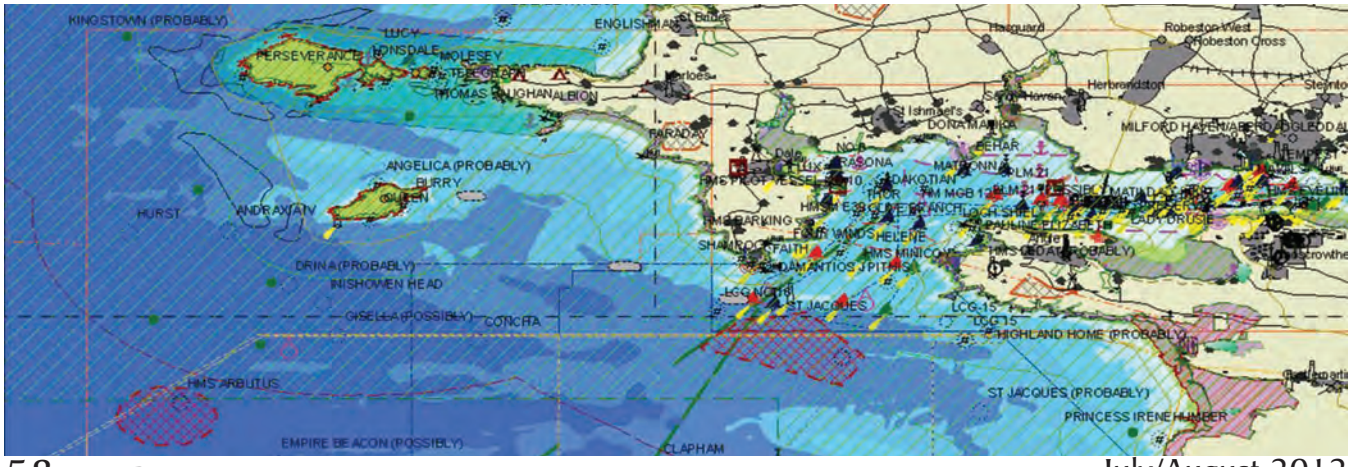
Email: s.james@seazone.com
http://www.seazone.com

CEO: Keiran Millard
Number of Employees: 20

SeaZone is a leader in the field of marine geographic information solutions, including its innovative data products; SeaZone HydroSpatial; the first 'off the shelf' authoritative digital marine map, and SeaZone TruDepth Grids; one seamless layer of best available UK bathymetry. More than 850 organizations across the oil and gas, renewable energy, conservation and public sectors use SeaZone data, software and services to help support decision making.

- **SeaZone HydroSpatial One:** digital marine map with 6 topic layers; Bathymetry & Elevation, Natural & Physical Features, Structures & Obstructions, Socio Economic & Marine use, Conservation & Environmental Protection, Climate & Oceanography.
- **SeaZone HydroSpatial Base**: the first in a new series of marine mapping layers within the new SeaZone HydroSpatial 2 product family. Benefits include an enhanced data model, allowing for intuitive feature filtering; geo-processing and spatial analysis.
- **SeaZone HydroSpatial Wrecks**: marine reference base vector product with extensive coverage throughout the world.
- **SeaZone Charted Vector**: derived purely from navigational chart data supplied by Hydrographic Offices.
- **SeaZone Charted Raster**: scanned and geocoded images of Admiralty Charts available for immediate use in Geographic Information Systems.
- **SeaZone TruDepth Points**: survey data that has been collected digitally or captured from paper survey.
- **SeaZone TruDepth Grids**: a Digital Terrain Model (DTM) based on the best available bathymetry data. TruDepth Grids is geo-referenced and supplied in half degree tiles.
- **SeaZone Charted Points:** depth information extracted from electronic navigation charts. This information includes depth soundings, depth contours and coastline.

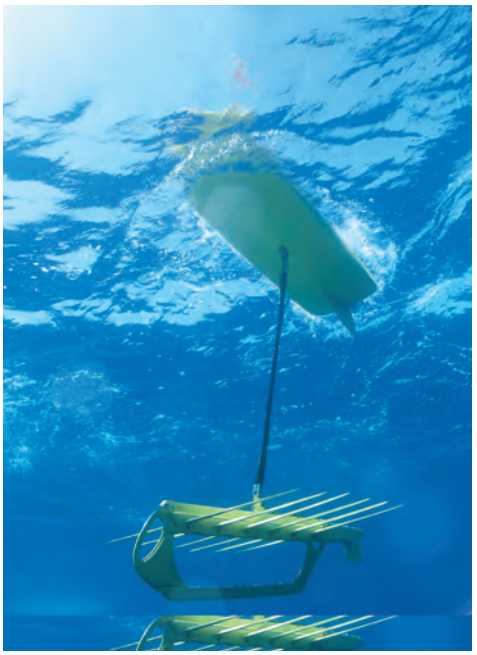


Liquid Robotics, Inc.

1329 Moffett Park Drive, Sunnyvale CA 94089
Tel: +1 408-636-4200
Email: david.bailard@liquidr.com
Website: www.liquidr.com

CEO: Bill Vass
COO/CFO: Steven Springsteel
VP of Marine Operations: Keith Kreider
VP of Strategy & Marketing: David Bailard
EVP Global Sales: Howard Dratler
Engeneering Director: Robert Olson
Employees: 80

Liquid Robotics' Wave Glider, the first wave powered autonomous marine robot, is breaking the cost and endurance barriers to ocean exploration - providing in-situ and persistent data collection, observation and monitoring at 1/10th the cost of traditional methods. **This disruptive technology requires no fuel, no personnel and produces no emissions,** and has the potential to revolutionize marine science and exploration.



Liquid Robotics, Inc. is an ocean data services provider and developer of the Wave Glider, the first marine robot to use only the ocean endless supply of wave energy for propulsion (no manpower, no emissions, no refueling). The Wave Glider employs a multi-patented design that allows it to cost-effectively collect and transmit ocean data gathered during missions lasting multiple months to years over distances of thousands of miles, or while holding station. Data gathered by Wave Gliders will help us address the biggest challenges our marine environments face including ocean acidification, climate change ocean preservation, and natural disaster mitigation.

The Tech

The flagship product is the Wave Glider, the first autonomous marine robot that harvests energy from ocean waves to provide essentially limitless propulsion and ensuring persistent presence in the oceans. This use of natural energy conversion enables the first sustained unmanned ocean operations. Liquid Robotics offers both custom and off-the-shelf mission ready Wave Gliders. They offer ocean data services on-demand, innovating to bring cloud computing to the ocean.

The Wave Glider is composed of two parts, the float (size of a surfboard), and a sub with wings. Connected by 6-meter umbilical tether, the float is on the surface of the ocean where conditions are the harshest with the sub below the surface protected from the surface conditions.

The separation between surface float and sub harvests wave energy and transforms it into forward thrust.

The Wave Glider is equipped with sophisticated computers for navigation and payload control, satellite communication systems, and state of the art ocean sensors to measure the environment around it. Highly customizable, it supports a growing array of sensors able to collect a wide variety of scientific and commercial data.

Sensors have been integrated to measure weather, sea conditions, water quality and chemistry, living organisms, bottom topography and currents. Acoustic microphones and arrays have been adapted to record passing ships and the vocalizations of whales and other mammals.

Teledyne Oil & Gas

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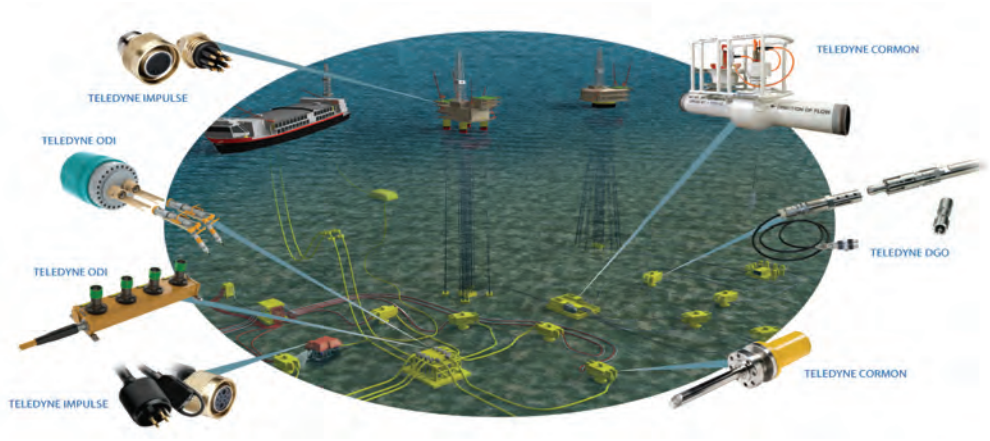
Website: www.teledyneoilandgas.com

CEO/President: Mike Read
Employees: 700
Annual Sales (USD) : ~$200M



Teledyne Oil & Gas is focused on strengthening the value proposition by delivering high-reliability engineered solutions for subsea and topside pipeline asset integrity monitoring, sensing, interconnect solutions, power/data network interfacing and distribution applications for the oil & gas exploration and production industry. Formed in 2009 from a group of four market focused Teledyne Technologies companies, **Teledyne Oil & Gas** has evolved to a single integrated organization with four major product line entities: Teledyne **ODI**, Teledyne **Cormon**, Teledyne **Impulse**, and Teledyne **DGO**. In addition, a close association with research partner Teledyne **Scientific**, a leading materials science research center in Thousand Oaks, Calif. Together the teams have participated in hundreds of subsea projects with thousands of units deployed.

A global business with company headquarters in Daytona Beach, Fla., the company will generate nearly $200M annual turnover in 2012. Additional manufacturing centers are located in San Diego, California, Seabrook, New Hampshire, and Worthing , United Kingdom. Global aftermarket support centers are located in Houston, Texas, Ellon, United Kingdom, Johor Bahru, Malaysia, and two centers in Rio De Janeiro, Brazil. A new Technology Center dedicated to advanced engineered technology development will open in early 2013 in Daytona Beach, Florida.

Teledyne Oil & Gas leads with a strong reliability program based on understanding all aspects of our systems and subsystems 25 year performance life capability from the physics of failure of each material in the system to complex accelerated aging performance qualification. This is achieved by using the latest advanced methods of combined stress analysis and materials certification in association with Teledyne Scientific.

Teledyne Cormon provides engineered monitoring systems, asset management, and application expertise through corrosion monitoring equipment. Teledyne Cormon designs and manufactures subsea and surface sand and corrosion sensors. The company also produces flow integrity monitoring systems that are used in oil and gas productions systems.

Teledyne DGO incorporates the unmatched reliability of glass-to-metal seals into electrical and optical penetrators and interconnect solutions for harsh environments. In the over 1M solutions delivered since 1962, these seals have never failed to maintain pressure integrity. Combining this capability with strong design, material and process controls, Teledyne DGO delivers solutions with the greatest level of long-term reliability for high pressure and/or high temperature applications.

Teledyne Impulse designs and manufactures highly reliable electrical and optical interconnection systems for a broad range of harsh environment applications. Teledyne Impulse's proven dry mateable, wet mateable, underwater mateable, and custom product interconnect solutions are complemented by unsurpassed customer satisfaction, quality assurance, and rapid response. Teledyne Impulse provides precise and innovative engineering, flexible manufacturing process, and dedicated customer support.

Teledyne ODI is a leader in subsea electrical and fiber optic interconnect systems. Teledyne ODI's wet mateable connectors include signal and high-power electrical, fiber optic, and hybrid electro-opticalproducts. All are based on patented oil-filled, pressure-balanced technology. Companion dry mate submersible connectors complement these wet mate lines. These rugged components can be used at any ocean depth and in the harshest environments. Teledyne ODI provides top quality custom-engineered solutions for any subsea networking challenge.

Teledyne RD Instruments

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Website: www.rdinstruments.com

Employees: 200

Thirty years ago, Teledyne RD Instruments (RDI) developed the industry's first Acoustic Doppler Current Profiler (ADCP), a revolutionary device capable of measuring the speed and direction of underwater currents at up to 128 individual points throughout the water column. RDI today is a leading manufacturer of acoustic Doppler products for a wide array of oceanographic, commercial and defense applications. Lines include:

Marine Measurements:

-**Acoustic Doppler Current Profilers** (ADCPs) for fast, accurate high-resolution water current profiling in every environment – from the shallowest stream to the deepest ocean. Teledyne RDI's new next gen Sentinel V ADCP and Velocity software represents the latest in current profiling technology.

-**Citadel CTD**s (Conductivity, Temperature, and Depth) sensors for a wide array of oceanographic applications.

Navigation:

A full line of Doppler Velocity Logs (DVLs) for precision underwater navigation and diver mapping applications.

Water Resources:

ADCPs for flow and discharge measurements in rivers and streams.

The Tech

Teledyne RDI has 30 years of experience refining our core competencies in the following areas: Research & Development; Sonar Systems Design; Transducer Design; Signal Processing; Low-Power Electronics Design; Systems Engineering; Product Development; Full Scale Production; OEM Manufacturing; Build to Print Contracting; Technical Sales & Marketing; and After Sale Service & Support.

Teledyne TSS Limited

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Website: www.teledyne-tss.com

CEO: Brian Huntsman
Sales Manager: Martyn Grange
Engeneering Director: Harpal Khamba
Employees: 83
Annual Sales: $27m

The Company

Teledyne TSS Ltd. conducts research, development, manufacturing and test in addition to comprehensive customer and product support from head quarters in Watford, Hertfordshire. Regional offices in Aberdeen and Houston provide sales, and product support facilities.

The Tech

Motion sensors designed to enable highly productive surveys; Underwater pipe and cable location equipment; Navigation solutions for the commercial marine market including gyrocompasses and repeaters as well as ship steering systems; and inertial navigation systems.

EvoLogics GmbH

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sales@evologics.de

EvoLogics is a Germany-based high-tech enterprise. It was founded in 2000 by a group of international scientists and R&D experts to develop innovative key technologies for the aerospace, maritime and offshore industries through interdisciplinary cooperation between engineering and life sciences.

Recently the company announced that the SUNSET networking framework now includes drivers for EvoLogics hardware. With the release of its recent Add-On package v1.0, the SUNSET (Sapienza University Networking framework for underwater Simulation, Emulation and real-life Testing) networking framework now includes drivers for Evologics underwater acoustic modems. The SUNSET package was developed at the SENSES (SEnsors NetworkS and Embedded Systems) laboratory of the Computer Science Department at University of Rome "La Sapienza." Based on the popular network simulator ns-2 and its ns-miracle extension, SUNSET is an open source developer solution for simulation, emulation and real-life testing of communication protocols, proven well-suitable for the underwater environment. In the emulation mode, SUNSET interfaces the protocol stack with external hardware devices including commercial underwater acoustic modems, sensors and mobile underwater platforms.

Based on the SUNSET experience, "La Sapienza" has started a spinoff company named WSENSE S.r.l. which will exploit new technologies and solutions for underwater monitoring systems.

Any EvoLogics underwater communication or positioning device with firmware versions 1.4 and 1.6 can be connected to a host-PC or an embedded device (Gumstix, PC104 or other ARM-based system) running SUNSET via either Ethernet or RS-232. The SUNSET generic modem driver and the SUNSET EvoLogics driver then handle the cross-layer messages between the ns-2 and the modem, enabling the tested protocol stack with real acoustic transmissions.

The integration between EvoLogics modems and SUNSET was successfully tested during various field experiments, including tests of novel routing protocols at the NATO Undersea Research Centre (NURC), communication interface trials for remote AUV control, trials for an underwater environment monitoring network that includes sensors for temperature, CO2 and methane concentration measurements etc.

Quest Marine Services

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E-mail: info@questmarine.com
Website: www.questmrine.com

CEO: Eric Takajian
Employees: 10

Quest Marine Services provides a wide range of services to clients based primarily in the North East United States. Marine surveying and consulting services are provided worldwide. Quest Marine services include ocean engineering support, submerged cultural resource management, research and development of oceanographic engineering systems support services. The company also provides instrumentation deployment, testing and recovery, remote sensing operations and surveys, as well as bathymetric surveys.

The bulk of operations at Quest Marine Services are vessel based at sea evolutions. The majority of those operations take place from the research vessel QUEST. The R/V QUEST is a multidisciplinary research vessel based at Fairhaven Shipyard Companies, North Yard, in Fairhaven Massachusetts. The QUEST was rebuilt in 1997-98 as a dedicated research vessel custom tailored to operations in New England waters. The work deck is set up in modular fashion; equipment can be set up to suit the specific needs of a project including scientific study support, cable laying, diving and salvage operations, and has worked as a support platform for film crews.

Complex survey and salvage operations have been accomplished at open ocean locations in water depths well in excess of 200 fsw. Some survey operations have been performed close to the limit of manned diving technology. Safety and professionalism is paramount in all diving operations. Quest Marine divers continually take part in training to remain current on the latest diving techniques and methods. Equipment is maintained to the highest standards and continually upgraded. All Quest Marine divers are trained in diving accident and emergency oxygen management. Quest Marine Services surveyors and divers have a wide range of experience investigating marine accidents. This experience gives Quest Marine the ability to provide expert marine accident and forensic investigation services. Quest Marine's resource pool includes naval architects, metallurgists, marine surveyors, merchant marine officers and divers with law enforcement backgrounds.

Saab Seaeye Ltd

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+44 (0) 1489 898000
Email: dave.grant@saabgroup.com
Website: www.saabseaeye.com

CEO: Dave Grant, MD

Testing Capabilities: An in-company pressure test tank facility is installed at the company's 24,000 sq. ft. factory in the UK. In Sweden there is a 7m deep by 10m diameter test tank.

Employees: 170

Saab Seaeye is a manufacturer of electric ROV systems, claiming a market share of about 60% of the offshore energy market. It is a major ROV resource for defense forces, marine science and hydro engineering. Saab and Saab Seaeye is a leader in sensor systems, precision engagement systems, and remotely operated and autonomous underwater vehicles. When Saab transferred its underwater defense division to Saab Seaeye's UK operations, it introduced to the energy and hydro industries unmanned vehicles in the form of hybrid AUV\ROVs. This follows a history of innovations pioneered by the company since it was founded in 1986. These include: The brushless DC thruster; Polypropylene chassis; Carbon fiber electronics pod; Distributed intelligence; Modular control system; Dual fault-tolerant self-diagnostic redundancy; High frequency power distribution; Simplified man/machine interface; Control of TMS position using electric thrusters; and The intelligent control of nodes (iCON). The company is accredited to DNV ISO 9001 and is represented and supported in 28 countries around the world. More than 550 ROV systems have been sold since the company was formed. Many have been fitted with a range of standard and custom designed tooling that includes cameras, manipulators, sensors, cutters, tracking systems, sonar, torque tools and water jetting. The company also designs and manufactures a range of ROV handling devices including Launch and Recover and Tether Management Systems, together with custom-designed control cabins.

The Tech

Saab Seaeye has an ROV solution for virtually all subsea tasks with size, power and tasking options that range from the easily man-handled Falcon ROV, to the world's fastest swimming ROV of its type, the Panther XT Plus, and the pioneering work-class Jaguar, rated to 3000m. Recent breakthrough concepts include:

- Complete dual-redundancy that allows a failed component to be isolated and the ROV kept working.
- An innovative high frequency 800Hz power system that has cut the size of the ROV's on-board transformer by 80% and significantly reduced the vehicle's power to weight ratio.
- A voltage boost to 3000V to feed on-board systems, that has also reduced the diameter of the umbilical and tether cables, cutting the winch drum size and tether drag through the water.
- The risk of entanglement when multiple ROVs are deployed under a single vessel has been overcome by fitting powerful thrusters to each Tether Management System so it can hold position automatically and remain orientated ready for recovery of the ROV into the cage.
- The technology of hovering hybrid AUVs has been introduced to the offshore energy market from the defence market. This brings the benefits of autonomous and semi-autonomous field maintenance and inspection to the energy and hydro industries in the shape of a new range of hybrid AUV/ROV vehicles.
- The new iCON concept - intelligent control of nodes - allows each microprocessor node within the ROV to report its unique status to a central control system and take action if necessary. Essentially iCON manages three modes: *operational, diagnostic and update. It offers a gateway into the heart of the vehicle, where users can access diagnostics, software upgrades and system inventory directly over an enabled web interface.*

Xsens

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Email: info@xsens.com
www.xsens.com

CEO/Presiden: Casper Peeters
No. Of Employees – 75

Xsens is a leading developer and global supplier of 3D motion tracking products based upon miniature (MEMS) inertial sensor technology. Xsens can be divided into three business units: Industrial Applications, Entertainment and Movement Science.

In the summer of 2012, Xsens launched the 4th generation of the MTi. The new product portfolio consists of 7 different MTi's, ranging from the reliable, low-cost MTi 10-series to the high performance MTi 100-series, allowing customers to always find an MTi that fits their specific requirements. All products share the same mechanical, electrical and communication interface, making switching between products straightforward, should the application call for this. The MTi's are specifically designed to reject vibrations and to compensate for magnetic distortions. All MTi's are available in three form factors. The MTi 10-series is a low-cost, yet reliable product based on a proven design and comes in three integration levels. The MTi-10 IMU provides sensor data only and is excellent for customers who design their own fusion algorithms. The MTi-20 VRU outputs roll, pitch and yaw rate while the MTi-30 AHRS outputs full 3D orientation.

The MTi-100 series is Xsens' high performance and extremely versatile product, based on the latest gyroscopes and a powerful multi-core processing unit. The MTi-100 series can serve as a cost-effective, low-weight, low-power replacement for optical gyros. Available MTi 100-series are the MTi-100 IMU, the MTi-200 VRU and the MTi-300 AHRS. In addition, the MTi-G 700 GPS/INS is a GPS-aided Inertial Navigation System, outputting 3D orientation, 3D position and velocity and dynamic data at a rate of up to 500 Hz.

BioSonics, Inc.

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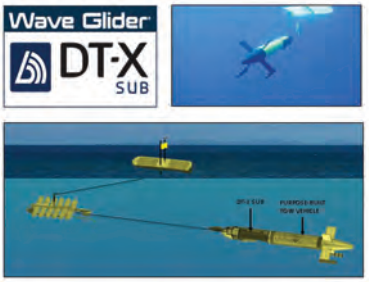
Tel: (206) 782 - 2211
E-mail: info@biosonicsinc.com
Website: www.biosonicsinc.com

CEO: Tim Acker
Employees: 17

BioSonics has manufactured scientific echosounders and hydroacoustic data processing software for more than 34 years. BioSonics introduced fixed-location hydroacoustic fish monitoring to the Columbia and Snake Rivers, beginning in 1980.

The Tech

Core products are the DT-X mobile and fixed hydroacoustic systems for fisheries and aquatic habitat assessment and monitoring. BioSonics technology centers around focused split-beam and single beam hydroacoustics. Digital transducers with superior signal to noise ratio, extremely low side-lobes, and sophisticated multi-frequency, multi-channel systems are some of the unique technology advantages offered. BioSonics has emerged as a pioneer in the innovative use of scientific echosounders in a variety of unique vehicles, applications and platforms. Recent innovations include:



• In partnership with Liquid Robotics, development of the Wave Glider DT-X SUB – A persistent, long-range hydroacoustic data collection system that is self-powered and capable of trans-oceanic surveying, with automated data collection and reporting capabilities.

• Development of entirely new echosounder system and specialized data processing/visualization software – The MX Aquatic Habitat Echosounder and Visual Habitat Software for aquatic vegetation, substrate classification, and bathymetric assessment and mapping.

• Custom-built automated salmon counting system for the Quinault Nation utilizing split-beam DT-X technology and programmable pan/tilt aiming software

• DT-X SUB autonomous submersible echosounder deployed in SCINI ROV for Moss Landing Marine Labs

• 5-week seafloor deployment of self-contained DT-X SUB observatory for temporal water column profiling as tidal energy pre-installation baseline study in Puget Sound, WA.

McLane Research Laboratories, Inc.

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E-mail: mclane@mclanelabs.com
Website: www.mclanelabs.com

CEO: Dr. Susumu Honjo
Employees: 15

McLane Research Laboratories, Inc. was founded in 1983 and is located in East Falmouth, Massachusetts. The company provides advanced time-series samplers profilers, and flotation to the oceanographic community worldwide. McLane developed two profilers: the Ice Tethered Profiler (ITP) and the McLane Moored Profiler (MMP). The ITP is an autonomous time series instrument that vertically profiles the water column under the ice collecting data such as conductivity, temperature, and depth in situ. Data is transmitted real-time via inductive modem and surface package. The MMP also profiles the water column along a fixed tether while carrying an array of oceanographic sensors. The MMP can also transmit data inductively and has successfully completed sea tests for the Ocean Observatories Initiative.

McLane manufactures a number of samplers that collect suspended and dissolved particulate samples in situ including sediment traps, remote access samplers, phytoplankton samplers, zooplankton samplers, and large volume water transfer systems. The Environmental Sample Processor (ESP) is designed to collect discrete water samples, concentrate microorganisms or particles and identify microorganisms and their gene products. The ESP was recently deployed off the coast of New Hampshire and successfully detected red tide cells. McLane's mooring products include glass flotation modules with depth ratings to 7,000 meters, glass instrument housings, mooring recovery floats, and steel buoys. The glass instrument housing effectively holds electronics, batteries, navigation devices and custom sensors in a 12" diameter glass sphere.

– R. Moniz

SMD

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Tyne & Wear NE28 6UZ
UK
Tel: 0191 234 8675
898000
Email: victoria.bosi@smd.co.uk
Website: www.smd.co.uk

CEO: Andrew Hodgson
Employees: 473
Annual Sales: $150m

The Case

SMD has established itself as a leading engineering and manufacturing company specializing in remotely operated equipment for hazardous environments. The business has continued to grow an international footprint from its domestic market origins in the North Sea oil and gas and telecoms sectors. SMD is one of the world's leading manufacturers of remote intervention equipment, working in hazardous environments worldwide. Customers span a range of sectors from energy (oil and gas, marine renewables and offshore wind infrastructure, nuclear), to telecoms, mining, naval / military and scientific communities. The company has recently reorganized itself along five key business streams: Remotely Operated Vehicles (ROVs), Trenching, Renewables, Nuclear, and Subsea Mining. **The business has grown its headcount significantly over the past two years; from 136 employees at the beginning of 2010, to more than 450 today.**

The Tech

In 2003 SMD acquired Hydrovision and set out to become the world's leading workclass ROVsupplier. The strategy in workclass ROVs was to develop a product range (the 'Q-series'), with advanced components and controls ('Curvetech') and a turnkey offering which included SMD designed launch and recovery equipment. Since winning its first order from QinetiQ in 2005 SMD has achieved its current position as the nubmber one independent supplier of workclass ROVs, measured by orders received in 2010. On the trenching side, SMD has maintained its position as the words number one trenching supplier, with systems such as UT1 (Ultra-Trencher 1) and

RT1 (Rock-Trencher 1), the world's most powerful seabed trenching systems. SMD have recently announced its intention to work with SeeByte, the global leader in creating smart software technology for unmanned systems. SMD and SeeByte plan to integrate a smart software tool for dynamic positioning and real-time monitoring of ROVs based on Seebytes Co-pilot technology into SMD's DVECSII control platform. This will be available on SMD's latest generation ROV systems, the first of which is Atom. SeeTrack CoPilot offers the industry's most extensive range of operation modes such as station-keeping, waypoint planning, path-planning, and mid-water DP. SMD's ROVs equipped with SeeTrack CoPilot, will boast the industry's most advanced ROV control for survey purposes and unparalleled control performance for construction duties.

Testing Capabilities

SMD's head office and factory site includes modern design, service, support and production offices and state of the art production control, inventory systems, and engineering design software. The extensive work shop has 2 x 50te overhead cranes, assembly space for parallel vehicle builds and height clearance for A-Frame test. Specialist manufacturing facilities include hydraulics and electronic assembly rooms, vehicle assembly pods and dedicated commissioning bays. The factory is equipped with a 3m deep indoor test tank and 4m deep outdoor test tank. SMD's ROV division is located at the i-19 facility in North Shields. The 20,000 sqft facility includes a modern office with client rooms and wifi internet access.The workshop has eight ROV build bays for parallel production and is equipped with overhead gantry cranes, large recessed test tank and commissioning areas.Offices are available specifically for the use by visiting customers with telephone, fax, and wireless internet facilities to hand

SMD's 6,400 m² LARS Production facility has 2 x 30Te and 1 x10Te cranes, has dedicated build and test areas. The facility has a Load out Quay and has also has access to an adjacent 11m dry dock.SMD offer a purpose built training facility comprising of a large classroom with state of the art training aids and an SMD developed Dri-ROV Simulator.

SAIV A/S

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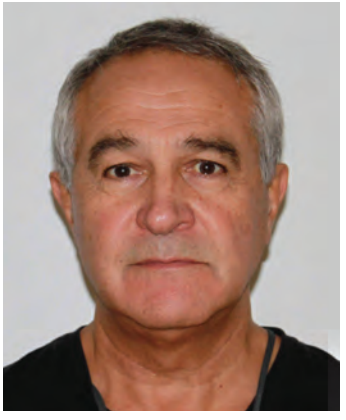
CEO: Gunnar Sagstad
Vice President: Steinar Iversen
General Manager: Monica S. Kolding



Established in 1989, SAIV's work areas and expertise includes:

• Development, design and manufacture of field instruments and sensors for the detection, measurement and recording of environmental parameters in lakes, reservoires and the ocean.
• Development, counseling, production preparation, documentation and marketing within the above fields.

Manufacturer of oceanographic/hydrographic sensors/recorders for high accuracy measurements:

• CTD/STD w/sound velocity and multi-parameter facilities: Oxygen/Turbidity/Fluorescence. Tide/Pressure/Depth/Water Level recorders.
• NEW this year: Model SD208 CTD/STD with the highest accuracy and built-in wireless communication feature for transfer of data.

iRobot

8 Crosby Drive
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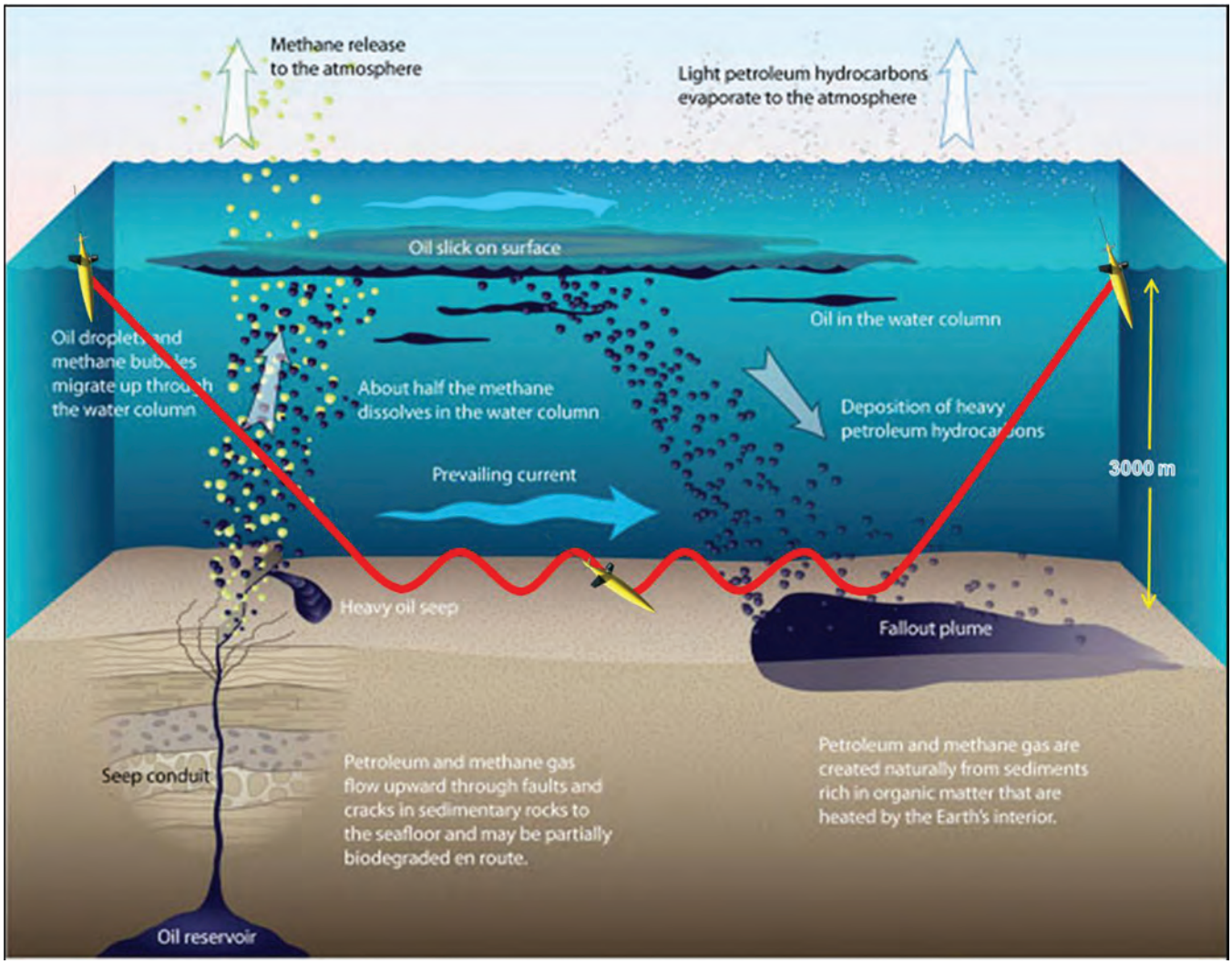
www.irobot.com

"iRobot designs and builds robots that make a difference. iRobot's government and industrial robots provide enhanced situational awareness and increased mission success on the land and in the water."

Sea gliders are winged vessels that travel by using computer controlled changes in buoyancy to descend and ascend, flying through the water along programmed paths. In recent years, sea going gliders have completed thousands of missions in every ocean, from equator to both poles, even operating under the ice for months. Gliders have crossed the Atlantic and two years ago a Seaglider, designed by Professor Charles Eriksen at the University of Washington set an endurance record of nearly 10 months, simultaneously collecting 7 different ocean parameters in the Gulf of Alaska from surface to 1000 m depths. Initially gliders were mostly used for oceanography and climate research, and to survey parameters of military importance to Navy planners. More recently, deep diving sea gliders are proving that not only are they technically robust and reliable, but they provide economic value for companies seeking to develop the ocean's resources, and to governments charged with protecting the ocean environment on modest budgets. Not only are Seagliders inexpensive compared to ships, they are portable and require modest logistical support as they can be deployed from a craft as small as a fishing boat. Once deployed gliders are piloted by shore-based personnel thousands of km away using an Internet cloud based web site, with no need for food and sleeping berths. Operating for months, sending back the data they collect multiple times a day via digital satellites, Seagliders can perform their mission regardless of prevailing surface weather conditions and only have to be return to port when their onboard batteries are low.



As an example of the economics, in 2010 a Seaglider built by iRobot was quickly deployed shortly after the Deep Water Horizon platform sank. Operating a few km from the site, Seaglider operated continuously monitoring the spill's impact on multiple ocean parameters while also mapping oil detection from the surface to 1000 m depth. From launch in May till end of July, two weeks after the well was finally capped, the Seaglider operated 7/24 for 69 days at a total cost of less than $100,000. Performing this same task with a modest manned research vessel would have cost more than $3 million.

This economic feat has caught the attention of energy companies who typically employ ships costing more than $100,000 per day to operate just to collect data. Companies are waking up to the advantages of Seagliders over older methods of surveying vast ocean volumes.

Concurrently, the development of miniature, power efficient sensor technologies is opening new glider applications. Advanced chemical sensors enable continuous insitu leak detection and the mapping of natural thermogenic seeps on the ocean floor (Figure 2). Also a low power acoustic sensor (ADCP) integrated into Seaglider maps the 3D details of currents from the surface to the seafloor, aiding oil platform construction and operation, and offering a new tool to planners of offshore wind and underwater turbine power projects.

Four years ago, iRobot Corporation saw the match between robotics and the harsh environment of the deep ocean and invested in the sole commercial license from the University of Washington design.

It has made further investments to transition this great ocean research tool into a product of commercial value. iRobot Seaglider continues to advance technically, with innovations in sensors, software and proof of economic value, Seaglider opens new futuristic windows to our evolving understanding and use of the Earth's ocean.

– Edison Hudson, Director, iRobot Maritime Systems

Seabed Technologies, Inc.

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E-mail: sales@seabedtech.com
Website: www.seabedtech.com

CEO: Hanumant Singh
Employees: 8

Seabed Technologies Inc. is a company with core business interests in imaging in the marine and polar environment. Its core technology has been spun off from the Woods Hole Oceanographic Institution and includes high dynamic range camera systems, photomosaicking and 3D image reconstruction underwater, and the Seabed family of AUVs and towed vehicles. Seabed Technologies delivers state of the art imaging algorithms for underwater vehicle systems with a focus on creating end-to-end systems including sensors, platforms and algorithms for exploring the marine environment. Customers include end-users in the offshore community, academic users as well as governmental organizations. Over the last seven years SeaBED-class AUVs have shown its versatility on missions ranging from shallow coral reef surveys to searches for deep-sea hydrothermal vents, in environments ranging from the open ocean to the dense ice cover of the Arctic. Besides the original SeaBED vehicle, it operates two other vehicles at Woods Hole (Puma and Jaguar which are rated to 5000m) and have built or are in the process of building five vehicles for other groups to operate.

A number of marine biological, geological and archaeological applications share the need for high-resolution optical and acoustic imaging of the seafloor. In particular, there is a compelling need for conducting studies in depths beyond those considered reasonable for divers (~50m) down to depths at the shelf edge and continental slope (~1000-2000m). SeaBED-class vehicles are designed expressly with these applications in mind. Each AUV consists of two hulls connected by aluminum spars. Most of the negative buoyancy is in the lower hull, while most of the positive buoyancy is in the upper hull; this makes the vehicles naturally stable in pitch and roll. The vehicles are designed for low-speed photographic and acoustic bathymetric mapping, and are designed to "fly" within a few meters of a rugged undulating sea floor. – R. Moniz

SoundMetrics

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www.soundmetrics.com

Sound Metrics Corporation designs and manufactures imaging sonars that deliver clear, detailed video images. The company's line of products can be deployed from vessels, ROVs (remotely operated vehicles), AUVs (autonomous underwater vehicles) and by divers. In 1999, the U.S. Navy asked engineers at the Applied Physics Lab, University of Washington, to develop a tool capable of identifying swimming intruders in cloudy or dark water. With very detailed image quality and fast frame rates, the imaging sonar the researchers created delivered near video-like data, enough to capture the behavior of highly dynamic objects. Requests for other applications soon followed and in 2002 the research team founded Sound Metrics Corp.

Now more industries worldwide requiring optimal clarity underwater rely on Sound Metrics, including military, oil & gas, underwater construction, law enforcement and more. From the most remote reaches of Tierra del Fuego to the depths of the North Sea, Sound Metrics sonars are the choice when failure isn't an option.

Sound Metrics launched its newest product, the ARIS Explorer line of high-definition imaging sonars, in early 2012. A demonstration tank at Oceanology International showed the detail and video-like resolution of the three ARIS Explorer models - the 3000 (3MHz) for highly detailed close-up inspection, the 1800 (1.8MHz) for general purpose detection and inspection and the 1.2 MHz which allows long range location, detection and inspection. Soon to be released will be a Diver Held model along with several market specific software module se enhancements.

OCEANSCIENCE

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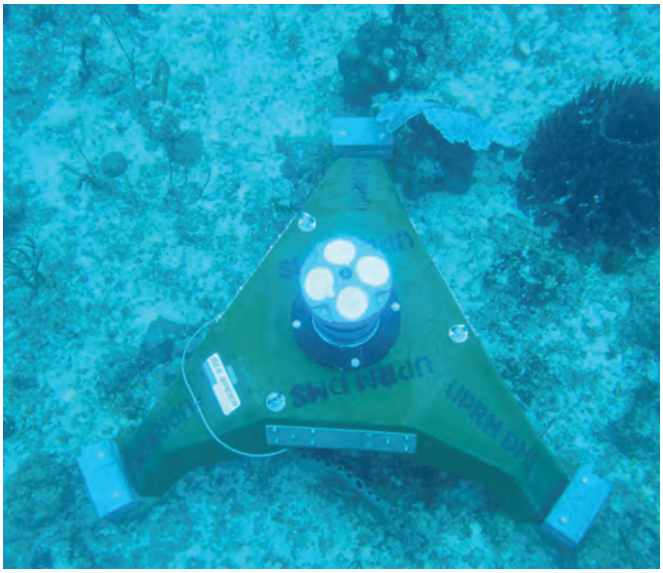
President and CEO: Dr. Ron George
Senior Scientist: Dr. Jochen Klinke
Number of Employees: 21
Annual Sales: $5M



Since 1998, Oceanscience has developed and manufactured oceanographic, hydrographic and hydrologic field equipment and instrumentation for corporations, major government agencies and institutions in more than 50 countries. One-third of its staff of 21 are either ocean scientists or mechanical, robotics, or ocean engineers. Oceanscience focuses on building collaborative relationships with its customers, industry partners and representatives around the globe and placing an emphasis on customer satisfaction.

Oceanscience manufactures a wide range of integrated systems for measuring and monitoring the world's waterways, from the deep-ocean and coastal waters to rivers, lakes and ponds.

- **Underway Profiler Systems:** The UnderwayCTD and UnderwaySV provide low cost, high quality CTD and Sound Velocity profiles for oceanographic researchers and hydrographic surveyors around the globe. Profiles are made while a vessel is underway at speeds up to 20kt and no expendable parts are left behind.

- **Remotely-Operated Hydrographic Survey Boats:** Oceanscience Z-Boats offer a portable, fully integrated ready-to-use bathymetric survey solution for shallow waters. There's no need to mobilize a manned boat for a small survey area or to complete time-consuming administrative procedures before surveying hazardous waters. Instead simply launch the remotely-operated Z-Boat (weighing less than 90 lbs with typical payload) and start surveying.

- **Environmental Monitoring Deployment Systems:** Its seafloor and surface buoy-mounted platforms for acoustic Doppler current profilers and other instruments lead the industry in ease-of-use, reliability and ruggedness. The Sea Spider and Barnacle bottom mounts and Clamparatus buoy-of-opportunity mounts are used by major oceanographic institutions and government agencies around the world.

- **River Discharge Boats for ADCP's:** Oceanscience has supplied field survey equipment to the hydrologic monitoring industry since 2001, when we introduced the Riverboat tethered boat for deployment of ADCP's. Since then Oceanscience has shipped more than 4000 unmanned boats for a wide variety of fresh- and saltwater applications.

Bowtech Products Ltd

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CEO: Steve Bowring
Employees: 39

The Company

Bowtech Products specializes in the design, manufacture and supply of visual inspection systems, cameras, lights, emergency relocation strobes, custom moulded cable assemblies, electrical and fiber-optic connectors, fiber-optic multiplexers and slip rings for use in hazardous areas or underwater, to any ocean depth. Bowtech's products are deployed in the most severe environments in the leisure, defense, oil and gas/subsea, nuclear and oceanographic industries.

The Tech

Bowtech Products has been innovating with the following camera ranges. Its innovations include 3D HD and SD camera technology, which enables users to view underwater environments in 3D with high or standard definition options. It also has high and standard definition color zoom cameras, which are ideal for mounting on ROVs. The HD and Color Zoom Range include: 3D SD, Surveyor HD, Surveyor 100, Surveyor 100HD, Surveyor HD Wide Angle and Surveyor SD.

Bowtech has also come up with ultra-low light CCD cameras, which allow users to see in extremely dark environments, offering better than SIT performance. Bowtech also have no intensifier, which it says improves the cameras compared to other cameras.

- Its diver camera ranges have been upgraded in resolution by 100TVL.

- It came up with more solutions for video inspection on topside environments.

- It also manufactures LED lights and emergency relocation strobes and supply underwater connectors.

Caley Ocean Systems

The Company

Based in East Kilbride, near Glasgow, Scotland, and established in 1968, Caley Ocean Systems Ltd. has a strong international reputation as a center of excellence in offshore handling for the Offshore, Oceanographic Marine Science and Naval Emergency vessels. With an experienced, skilled, engineering team and dedicated manufacturing facilities, Caley Ocean Systems' services include innovative marine handling systems, design consultancy, professional project management and engineering services. In addition to comprehensive systems design facilities including 3D modelling (Autodesk Inventor & Solidworks) and Finite Element Analysis (ANSYS Professional), Caley has a large manufacturing facility. The high bay multi-function workshops covering over – 25,000 sq ft (2,323 m2) and has two 2 x 40 ton overhead cranes and is situated in Westway Business Park immediately adjacent to Glasgow Airport.

A dedicated quay provides access to the River Clyde, and is used for loading out large and out of gauge handling systems onto barges.

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Tel: +44 1355 246626
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Website: www.caley.co.uk

CEO: David Cooper
Employees: 50

The Tech

With a track record that includes several systems in continuous service for over 30 years and many thousands of successful deployments, the company's submersible handling systems continue to prove their worth time and again. Since delivering their first system in the mid '90s Caley has established itself as one of the UK's leading supplier of bespoke, modular carousels, turntables and spoolers for handling a wide range of rigid and flexible pipe products including cables, umbilicals, dynamic risers and hoses. The company has experience of successfully delivering carousel systems ranging from the world's largest carousel with a capacity of 9,000 tons (OD 32m) through to a 400 tons, sea and road transportable, portable modular carousel, and 75 ton, self-contained spooler and drive systems. Caley Ocean Systems offers a full range of dive handling solutions.

OceanServer Technology

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kirk@ocean-server.com
President: Bob Anderson
Engineering Manager: Jon Crowell

OceanServer Technology, Inc. is a provider of man-portable AUVs, three axis digital compasses and high efficiency Lithium Ion battery solutions. The Iver2 AUV is an affordable, commercial vehicle used around the globe for sensor development, water quality surveys, sub-surface security and general research. OceanServer's compasses and battery solutions are designed to be cost effective and easy to integrate into user equipment. This allows customers to dramatically reduce time-to-market and expedite new product introductions for real-world applications.

The Iver2 is a low-cost, simple to operate AUV system that incorporates an open software architecture and a well-defined hardware interface that enable researchers and OEMs to quickly adapt the Iver for a variety of applications. The vehicle comes standard with OceanServer's VectorMap Mission Planning and Data Presentation tool and common payloads included High Resolution Side Scan Sonar (SSS), Doppler Velocity Log (DVL), Acoustic Doppler Current Profiler (ADCP), Conductivity, Temperature and Depth (CTD) sensor, and Multi-beam Imaging sonar. Researchers and developers can choose from one of the Iver Expandable Payload (EP) models that include a 2nd CPU and intuitive API for remote helm command or sensor development. The VectorMap program can input virtually any geo-referenced chart, map or photo image, allowing the operator to intuitively develop missions using simple point-and-click navigation. The base vehicle has a starting price at just over $50,000.

SIDUS Solutions, LLC

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Tel: 619-275-5533
Email: info@sidus-solutions.com
http://sidus-solutions.com

CEO: Leonard Pool
Marketing Director: Marian Slagman
Engeneering Director: Marc New
Number of Employees: 14

Simply put, SIDUS Solutions builds high quality products and offers outstanding support. Founded in September 2000 as Sidus Solutions Inc., the company was reorganized as SIDUS Solutions, LLC in April 2010 with the partnership of Rolloos Holdings (Top Side Offshore Technology), a Dutch corporation. The joint business activities are directed towards assisting, supporting and increasing safety, efficiency and control of business operations. SIDUS Solutions, LLC benefits from a broad group of agents in several strategic locations worldwide (North & South America, Europe, Asia and Australia). Recently a new Houston Area office was opened as part of SIDUS' 2012 expansion plans.

Currently, one of the main focus point for SIDUS is Situational Awareness, as worldwide, on-going pressure is being placed on the safe extraction and operation in oil and gas exploration. After the Deepwater Horizon accident, the US and other world governments have mandated 'Situational Awareness' to the daily operations of large and small operators. The new checks and balances help verify the safe operation of each asset.

SIDUS Solutions designs and manufactures cutting-edge subsea video cameras, lighting and robotic positioning devices for extreme environments. It also specializes in custom, end-to-end underwater systems including customized controllers and cabling. Their engineering staff provides seamless system integration, design, installation and commissioning of all remote video surveillance systems

SIDUS' camera's range from high definition, high and low resolution color, monochrome, low-light to infrared. SIDUS also provides the ability to transmit the images via LAN/WAN or the Internet.

The SIDUS SS501 deep sea pointing and scaling device utilizes a powerful 55mW, 532 nm green laser. With a range of nearly 20 miles, this product outperforms other less powerful underwater laser devices. SIDUS has the ability to direct any camera, sonar transducer, antenna or sensor that requires a positioning device, capable of moving to precisely where the target is. Their positioning products achieve smooth motion at desired speeds by using high torque motors with low backlash gears.

Rockland Scientific Inc.

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Website: www.rocklandscientific.com

CEO: Rolf Lueck
Employees: 9

The Case

Ocean turbulence has emerged as a key component in understanding climate change and the harnessing of tidal energy. Rockland Scientific has become an expert and innovator of oceanic turbulence measurement, making it the foremost supplier of turbulence instrumentation.

The Company

Rockland Scientific designs and manufactures high-accuracy instrumentation for oceanographic research, focussing on sensors and methods for turbulence measurements. Ocean turbulence is a key area of interest because it influences climate, greenhouse gas deposition, and pollutant dispersal. Turbulence also significantly affects the efficiency and endurance of tidal power generation facilities.

Recently, RSI has formed a strategic partnership with JFE Advantech, a major oceanographic instrumentation manufacture in Japan. The Agreement involves technology transfer, manufacturing licensing, distribution, and joint development of new sensor technology.

The Tech

Rockland Scientific offers a wide range of turbulence measurement systems and sensors for operation in the upper ocean and down to 6000 m. The product lineup falls into three major categories: vertical profiling instruments; modular sensor packages for deployments on AUV, gliders and other autonomous platforms; and customized measurement solutions for science, engineering, and security applications.

The vertical profilers come in a variety of sizes that can be deployed in a range of environments, from lakes and coastal zones to deep ocean areas. The flag-ship profiler is the VMP-6000 profiler, a completely autonomous profiling robot that can probe turbulence levels in the deep ocean down to depths of 6000 m.

The modular MicroRider system is successfully deployed and used on AUV platforms such as Hydroid's Remus 100, 600 and 6000 AUVs. The most versatile application of the MicroRider is the integration with the Teledyne Webb Slocum glider, which makes it possible to conduct turbulence measurements autonomously for many weeks.

ROMOR Ocean Solutions

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E-mail: sales@romor.ca
Website: www.romoroceansolutions.com

CEO: Darrin Verge
Employees: 10

The Case

ROMOR is an innovator and solutions provider for all requirements related to the subsea marketplace. ROMOR offers a unique mooring solution called the C-ROM Compact Recoverable Ocean Mooring which provides reliable and simplicity to clients and their mooring requirements.

The Company

ROMOR Ocean Solutions provides advanced technical services and integrated instrumentation solutions for the ocean surveying and oceanographic industries. With more than 25 years of experience, ROMOR has the capability to bring together the technical knowledge and expertise with specialized instrumentation to provide a complete solution that has been customized to satisfy the client's application and requirements.

The Tech

The ROMOR C-ROM is an oceanographic subsurface mooring solution that offers a reliable and compact design to moor-ing and recovering oceanographic instrumentation. The C-ROM and C-ROM Plus units consist of a subsurface flotation collar mounting assembly for instrumentation that provides approximately 80 & 105 lbs (36 & 48 kg) positive buoyancy starting at depths of 750m, progressing to full ocean depth. The flotation collar encloses a customer specified acoustic release as well as the client specified instrument(s) that can be accommodated within the dimensions of the design. As an option, the C-ROM SeaRecovery Anchor Retrieval Roto-Drum can be included with the C-ROM to enable recovery of the mooring anchor once the mooring has been released and surfaced. Other options such as real time integrated acoustic modem systems, RF and flasher beacons, and deeper models are available.

BIRNS, Inc.

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Website: www.birns.com

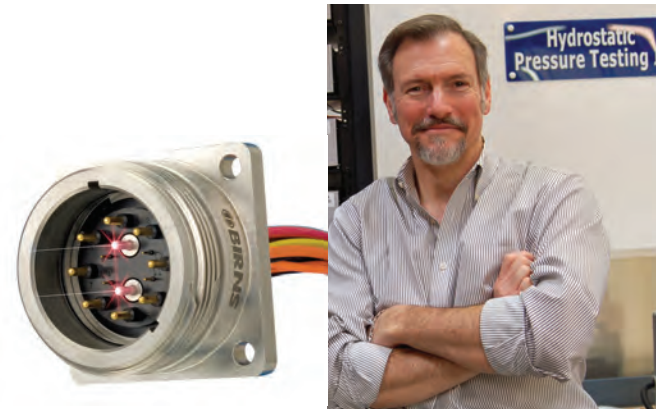
CEO: Eric Birns
Employees: 25

Testing Capabilities
BIRNS has a state-of-the-art, high performance hydrostatic pressure testing system, with a range of vessels rated to 20,000, 10,000, 5,000 and 1,000 psi. The system also has a robust, high volume helium testing capability, exceeding stringent ABS/DNV requirements for man-rated penetrator testing. BIRNS has provided industry-leading hydrostatic pressure testing for man-rated electrical penetrators and complex connector solutions since 1995, with the addition of saltwater testing in 2006. The hyperbaric device has a unique control panel for diverse, comprehensive testing on up to three circuits and in seven chambers simultaneously, allowing several different tests to be run on multiple products.
The company's advanced in-house testing capabilities include a custom, automated Kikusi 16-channel Hi-Pot and IR testing system, as well as several new Mantis 3D scopes with digital computer imaging.
BIRNS performs electrical testing (to 10kV) and hydrostatic pressure testing (to 20,000psi) per MIL-STD-1344, triple optical loss testing and custom tests like mechanical pull testing (to 16,000 lbs.) in straight or side loading and numerous test per UL requirements. BIRNS tests all of its products to meet or exceed ABS standards, as well as other stringent industry safety and design requirements--including DNV, Underwriters Laboratories and Lloyd's of London.

The Company

BIRNS has a long and successful history in the marine market—starting back in 1957, when the company was called upon to supply underwater camera housings with 400-ft. magazines for a classified project for the U.S. Navy. BIRNS later created advanced lighting solutions for the Sea Lab program in 1963, and soon developed a reputation for excellence in delivering trusted, field proven lighting systems for the offshore and subsea scientific industries. In 1968, the company received the largest contract for underwater lighting that the U.S. Navy had ever awarded—and in 2010 commemorated 50 consecutive years of ongoing partnership with the US Navy, and has since proudly supplied lighting and connector systems to other naval organizations around the globe.

In 1990 the BIRNS Connector Division was founded in response to increasing customer demand for high-quality underwater connectors, which led to the development of several



full ranges of high performance connectors, penetrators, and custom cable assemblies. The company's brilliant lighting solutions continue to lead the industry, from intensely bright commercial diving helmet systems to extreme depth vehicle lights in LED and Light Emitting Plasma (LEP) formats. Today, BIRNS products provide illumination at greater depths, and faster, more robust communication options for extreme applications, from submarines, diving bells and decompression chambers, to ROVs, AUVs and UUVs worldwide.

The Tech

The company's Quality System is certified to ISO 9001:2008 by DNV (Det Norske Veritas) and complies with NRC 10CFR50, Appendix B ("Quality Assurance Criteria For Nuclear Power Plants and Fuel Reprocessing Plants"). In 2012, BIRNS' cable shop became SUBMEPP-certified to NAVSEA S9320-AM-PRO-020, and all BIRNS QA personnel and production technicians have been certified to J-STD-001 Class 3 and WHMA-A-620-A Class 3 for years. The company was awarded ABS (American Bureau of Shipping) Product Design Assessment (PDA) Certification for all of its popular lines of commercial submarine and man-rated SAT-system penetrators for ABS-classed vessels in 2011.

In 2012 BIRNS launched a new line of innovative fiber optic penetrators, tailored for the rigors of the subsea environment and which can be adapted to a wide range of different cables, and recently introduced a new stocking system that allows the company to deliver BIRNS Millennium connectors and cable assemblies with an average lead time of just four weeks.

The popular BIRNS Millennium series is rated to 6km and tailored for a wide range of optical, electro-optical, coax, electro-coax configurations and electromechanical applications (to 3 tons). The versatile series can be configured for high voltage—hybrid electro-optical options can include both high voltage (= 3.6kV) and low voltage (=600V) conductors, and has the lowest losses in the industry (>1dB).

Sonardyne

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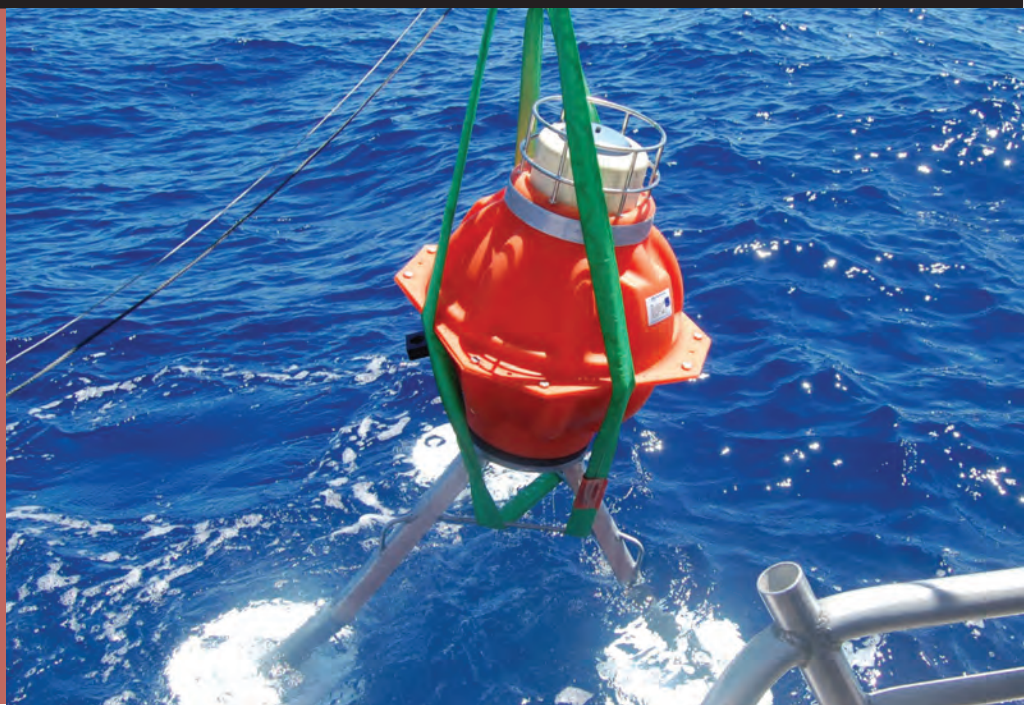
Vice President: Simon Reeves
Marketing Director: Rob Balloch
Employees: 300



The Case

Sonardyne International has been at the cutting edge of subsea solutions for 40 years. Today Sonardyne reaches beyond its roots in acoustics, with sonar imaging, wireless communications and inertial navigation technologies all integral to its offering. Sonardyne remains an independent manufacturing business with 300 employees worldwide in seven regional centers.

The Company

Four decades after the company was founded, Sonardyne has remained true to its roots as a subsea pioneer. Innovation and performance have maintained Sonardyne's reputation for technical leadership and today it has an impressive portfolio of acoustic and non-acoustic technologies for use in the most challenging marine environments.

Sonardyne's expertise ranges from autonomous undersea networks of wirelessly controlled seabed sensors, monitoring safety critical positioning and control systems around offshore platforms through to the early detection of deadly tsunami waves.

Furthermore, as a vertically integrated company with research, design, manufacturing, testing, marketing, distribution and support all under one roof, Sonardyne has the ability to quickly respond to the needs of its clients and the markets that it services. This speed of response coupled with its commitment to the development and creation of innovative technologies along with its expertise and level of service has helped build Sonardyne into one of the most vibrant companies in the global subsea industry today.

The Tech

Sonardyne's portfolio of technologies covers four categories:

- ***Acoustic Positioning*** - Sonardyne's USBL, LBL and LUSBL systems are operational in every deep water field development, helping to precisely navigate underwater vehicles, install subsea structures and position multiple surface vessels. Sonardyne's sixth generation (6G®) hardware platform utilises ultra-wide bandwidth signals to provide exceptional subsea navigation, communications and positioning performance.

- ***Inertial Navigation*** - This offers contrasting and complementary characteristics to acoustic positioning. Sonardyne's seamless integration of both technologies produces a single solution offering the best of both – a continuous position output with no drift. Sonardyne INS systems tailored for DP reference and subsea vehicle positioning deliver greater overall precision and accuracy than acoustics or inertial alone.

- ***Wireless Communications*** – Reliable through-water acoustic communications is something that Sonardyne is renowned for. In 2012, the company introduced a unique optical system; BlueComm was developed in collaboration with WHOI and enables subsea data to be transferred at speeds equivalent to broadband.

- ***Sonar Imaging*** - Sonardyne technology is protecting vulnerable waterside facilities and vessels from the threat of attack, enabling autonomous underwater vehicles to gather pixel-perfect imaging of the seabed around them or monitor a billion cubic feet of water for the smallest oil leaks in deep water.

TE SubCom

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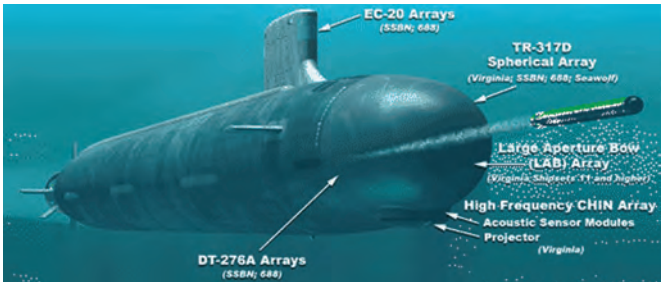
E-Mail: sales-hq@subcom.com
www.subcom.com
Number of Employees: 900
Annual Sales (USD): $700m (avg.)

TE SubCom, a TE Connectivity Ltd. company, is an industry pioneer in undersea communications technology and marine services and a leading global supplier for today's undersea communications requirements. Drawing on its heritage of technical innovation and industry recognized performance, SubCom delivers the most reliable, high quality solutions to organizations with undersea communications needs vital to their core mission. The company designs, manufactures and installs systems around the world, and has deployed more than 490,000km of subsea communication cable—or enough to circle the earth more than 12 times at the equator. SubCom's global presence, backed by industry leading research and development laboratories, manufacturing facilities, installation and maintenance ships, depots, and management team work together to implement integrated solutions and network upgrades, with unsurpassed reliability, that support the needs of telecommunications, internet providers, offshore and science customers worldwide. In addition to designing, manufacturing and installing new, state-of-the-art undersea cable systems, SubCom is focused on assisting its customers in optimizing existing systems by migrating capacity from 10G to 40G to 100G data rates and beyond. With its technology and expertise, SubCom provides reliable, scalable and adaptable offerings that enable its customers to consistently provide the most advanced, high-capacity services. In early 2011, SubCom was contracted to provide the first 40G upgrade in a system more than 9,500km in length, using its next-generation G4 SLTE technology.

This year, the company completed testing and began offering a 4-port branching unit, making it the first undersea communications supplier to provide the solution and paving the way for the deployment of multilayered undersea communication networks.

SubCom also offers complete marine support for undersea networks of any size, including route survey and engineering; cable installation; terrestrial constructions; cable data management; deep and shallow water repair; cable recovery and retrieval. The company's fleet of Reliance-class vessel cable ships, with their advanced tools and technology, provides the most efficient means for cable installation and ensures rapid recovery and repair of damaged cable worldwide.

Massa Products Corporation



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E-mail: info@massa.com
Website: www.massa.com

CEO: Don Massa
Employees: 57

Massa Products Corporation designs a wide variety of sonar transducers and arrays. For over six decades, Massa has successfully performed on over 570 sonar development and production contracts, with over 75 contracts having been received in the last five years. Many of these contracts required advancing the state of the art in sonar technology, and virtually all were delivered on or ahead of schedule. Hundreds of different types of transducers and systems have been designed, and many millions have been mass-produced to the exacting performance and reliability requirements of military, industrial, and commercial markets. This success is due to the basic design and production engineering philosophy instituted by Frank Massa that still defines the methodology for the design, manufacturing, and testing of each product.

Massa developed the Projector Array for the anti- mine sonar on the Virginia Class Attack Submarine, and successfully passed First Article under subcontract to Electric Boat and Newport News through Lockheed Martin. Massa delivered the first three production HFCA Projectors and Cable Assemblies in 2002 and is currently under contract to supply Ship-Sets 11-18 Massa has twice received the prestigious Star Supplier Award from Lockheed Martin for its work on the Chin Program. The founder of Massa Products Corporation was Frank Massa, considered by most to be the father of modern electroacoustics, Frank Massa is the recognized pioneer in the design of transducers and systems for both air and underwater applications. Today under the leadership of Don Massa, his son, Frank Massa's legacy of innovation still exists throughout the company, from initial design concepts through the final production process. For over six decades, Massa Products Corporation has been an innovator in the design and manufacture of electroacoustic products for both air ultrasonic applications and underwater sonar systems. – ***R. Moniz***

MTR Marketplace

PRODUCT & PROFESSIONAL SERVICES DIRECTORY

Your photo could be on the front cover of MTR

Contest ends November 9, 2012

Share your images of work in the subsea industries - your entry will be seen by colleagues around the world. The winning photos will be published in a special section of the Nov / Dec issue, with the Grand Prize Winner featured on the front cover.

Go to:

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to submit your best subsea images. Complete rules and terms can be found on the website, or go to:

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Photo by Claus Mayer

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Picture This

The ability to "see" underwater continues to grow leaps and bounds, in part due to innovative work by companies such as L-3 Klein (featured on page 51).

While the word "pioneer" is often thrown about liberally, L-3 Klein is a true pioneer in side scan sonar, per the tradition of Marty Klein.

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