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April 2014

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GOING DEEP... WITH FULLY-INTEGRATED ROV SOLUTIONS

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Worker high atop an offshore oil derrick.

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By Ray Tyson

Restrictions on oil exports could hurt U.S. production

Lifting long-standing restrictions on U.S. crude exports no doubt will be a hot topic at the podium and in the halls of next month's Offshore Technology Conference in Houston, Texas, just as it was at last month's annual IHS CERAWeek bash, also held in America's oil and gas capital. Oil companies big and small are lobbying for an end to export limits, warning that failure to do so would cause major problems on the homefront, including forcing producers to slowly cut back on production. And that ultimately could put a damper on the need to explore.

U.S. export restrictions stem from U.S. policies imposed in the wake of the 1973 Arab oil embargo, which for those who were around to witness it, created long lines at the pumps and those all-too-familiar "sold out" signs. The overwhelming political theme of the day, and for years to come, was to keep as much domestically produced oil as we could. This became even more acute as America became increasingly reliant on imports. But this has all changed.

Actually, it wasn't until fairly recently that anyone cared much about exporting more oil, as well as liquefied natural gas (LNG), to foreign markets. For this, we can largely credit the onshore shale boom, along with offshore production. In fact, the United States is estimated to have surpassed Russia and Saudia Arabia last year as the world's largest producer of oil and natural gas. U.S. oil production grew by a record 1.136 mmbbl a day last year to 8.121 million at year-end, according to the U.S. Energy Information Administration.

Ironically, though crude exports are severely restricted, no such limit applies to products that are processed in refineries. U.S. refiners are exporting record amounts of gasoline while producers contend with the depressed oil prices.

The impact of production growth with only very limited access to global markets under the restrictions likely will keep crude prices depressed. Therefore, cutbacks in output would gradually emerge, argues Rick Bott, president of Continental Resources, a major player in North Dakota's Bakken shale fields.

"It may be death by a thousand cuts," Bott said during a panel discussion of oil logistics at the CERAWeek energy conference. He said producers are already seeing impacts of what he called steep backwardation in the U.S. oil market, where current prices are higher than those in the future. "We're already having an impact on upstream I believe. It certainly will next year and it will the year after," he said.

Crude exports could mean an additional $70 billion in U.S. upstream investments by 2020, leading to an increase in U.S. oil production by as much as 500,000 bbl per day, according to a recent study by an American Petroleum Institute (API)-commissioned study by ICF International. Putting this additional U.S. oil on the world market could reduce crude prices by as much as a dollar per barrel, potentially leading to $6.6 billion in annual savings for American consumers by 2020, according to the study.

"It's undeniable that the American energy revolution has rendered our current export policies obsolete," said Kyle Isakower, API's vice president for regulatory and economic policy, "Allowing exports will ensure that U.S. production remains strong in a way that supports American consumers. Opening new markets for American production is a benefit to the economy."

However, at least in the eyes of U.S. Energy Secretary Ernest Moniz, industry must do more to convince the American public that oil exports are needed from a country that still imports 5 mmbbl of oil a day. "I don't think the industry has done a very good job of clearly and concisely stating the case," he said in a CERAWeek presentation.

Already, as politicians continue to study the pros and cons of lifting oil export restrictions, the energy department has received 35 applications from companies seeking to export LNG and capture prices in Asia that are five times higher than domestic rates. The approvals so far would allow shipments of more than 9 bcf feet of gas, according to the department. Five of six proposals to export natural gas that the department has tentatively approved are under review by the Federal Energy Regulatory Commission, Moniz said. One other project has received a license.

"For the first time in generations, the United States is an energy superpower," Erik Milito, API director of upstream and industry operations, said on a conference call with reporters in March. "And the world—especially Europe and countries like Russia, China, and India—is watching closely to see if American policymakers are ready to harness that power on the international stage."

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ADVANCES IN AUV PIPELINE INSPECTION

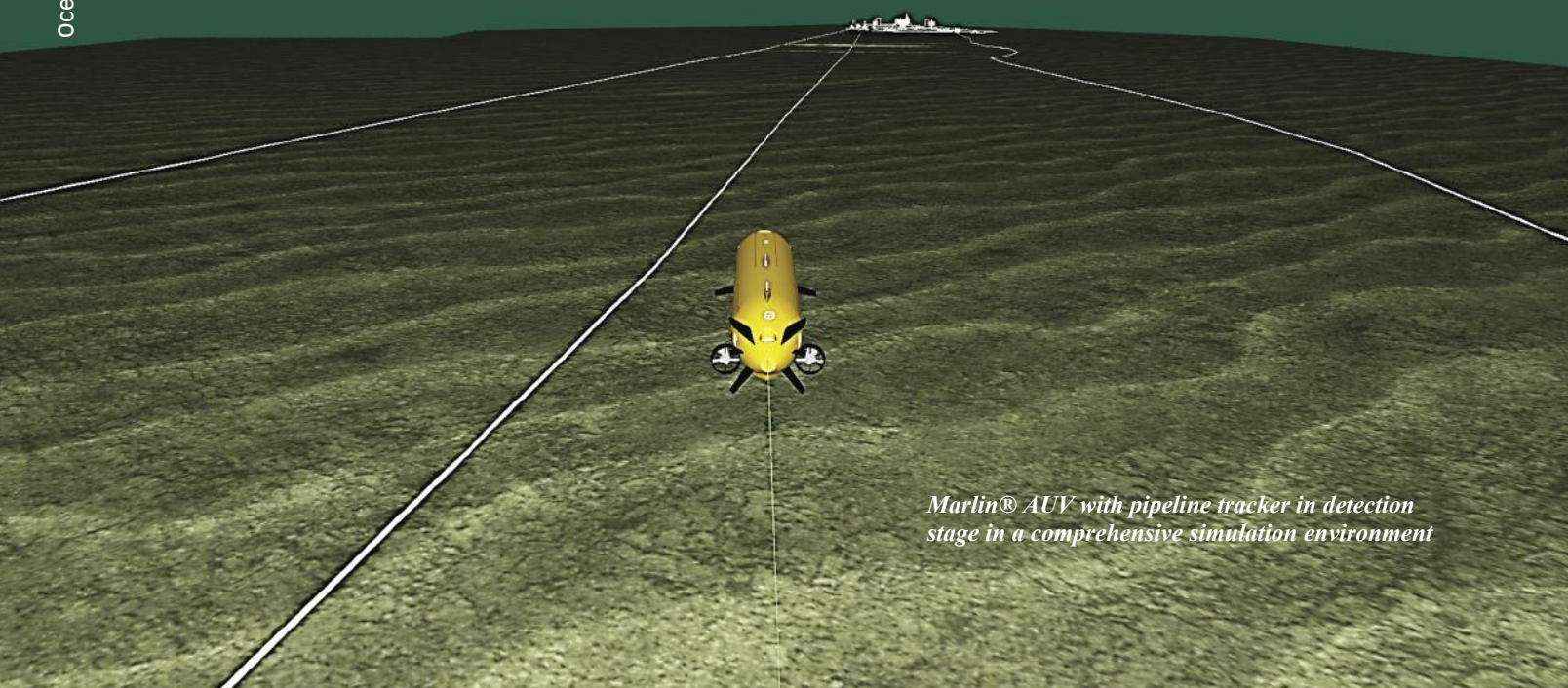
By: Lou Dennis and Sekhar Tangirala, Lockheed Martin Corporation

There is a growing need for advancement in Autonomous Underwater Vehicle (AUV) technology and capabilities to perform effective deepwater pipeline inspections, allowing operators to take full advantage of the efficiencies to be gained through the use of autonomous inspection systems. Oil & Gas (O&G) companies are proactively developing new specifications for AUV pipeline inspection surveys that will necessitate AUV suppliers and survey service operators to enhance their existing capabilities. These advancements will provide superior data quality and result in improved integrity management of subsea pipeline assets while also reducing the dependency on expensive surface vessels.

The predominant practice today is to perform ROV-based pipeline inspections that have been an evolution of the best practices used by O&G service providers as new inspection sensors and post-processing data products are developed or fielded and lessons learned. AUV-based pipeline inspection is considered to be an emerging technology that provides the benefits of advanced autonomy and new sensor technologies to perform more cost-effective operations in deepwater, including faster inspection speeds, safer operations without the need for a tether and following surface vessel, more stable platform, and smaller support vessel.

Although there are many benefits associated with AUV-based pipeline inspections, there are also a number of technology challenges driven by the absence of a tethered surface-supported vehicle and the lack of real-time sensor data display for the operator. Sensing and reacting to the presence of seabed and pipeline conditions such as partial burials, debris, berms, free spans, and pipeline motion are extremely challenging in the absence of operator input when such anomalies are encountered.

Lockheed Martin continues to enhance its Marlin® AUV portfolio of capabilities with the addition of a robust pipeline detection, tracking, and inspection capability. The goal is to explicitly address the environment-based shortfalls in existing technologies and to advance pipeline tracking and inspection technologies to increase the utilization of AUVs in the O&G industry. With these advancements, the benefits of AUV-based inspection can be fully realized as a result of the increased reliability of pipeline trackers and consequent improvement in inspection data quality.



Marlin® AUV with pipeline tracker in detection stage in a comprehensive simulation environment

Some of the major challenges in developing a robust pipeline inspection capability include:

- The presence of bundled, forking, crossing, and partially buried pipelines;
- The presence of bottom features such as berms, free spans, and clutter;
- The ability to contain navigation error growth over time;
- The ability to detect and measure the movement of pipelines;
- The ability to detect and localize features and pipeline anomalies;
- The ability to measure vertical and horizontal deformation;
- The ability to provide adequate feedback over a very low bandwidth communication link to the operator to ensure data quality and mission progress; and
- The level of autonomy for mission planning, mission operation, and contingency management, including obstacle detection and avoidance.

To increase robustness, system design begins with an analysis of common failure modes and the root causes of these failures. The primary challenge in AUV-based pipeline inspections is the uncertainty in the operating environment and the absence of operator feedback, which could result in the AUV losing track on the pipeline and having to re-acquire it, thereby diluting one of the chief benefits of AUV-based inspections.

Environmentally driven issues are addressed by two main innovations — a robust tracker that is tolerant to object and surrounding feature clutter and unknown/changing numbers of pipelines and the capability for fusion of a priori information such as bathymetric charts and field infrastructure maps with the sensor information to account for moved or partially buried pipelines. The autonomy system of the Marlin® AUV is designed to automatically initiate a tiered set of re-acquire maneuvers designed to re-establish a track on the pipeline if lost. The tracker is implemented as a two stage — detection and tracking — system to effectively decouple the sensor-based detection step from the tracking step, enabling the tracker to be easily customized for alternate sensors.

The Marlin® system uses traditional navigation aiding — INS, GPS, DVL, and USBL — and also uses a host of emerging advanced navigation aids such as terrain-relative navigation, structure/feature relative navigation, and map-based navigation. All available aiding is optimally fused both in real-time and in post-processing to achieve a very high level of positioning accuracy. This allows for a two-pronged approach where real-time navigation error growth is constrained by fusing disparate navigation aids as they become available to allow the AUV to complete its mission and gather the relevant data. Post-processing can be used to globally optimize the positioning and consequently improve the quality of the data product.

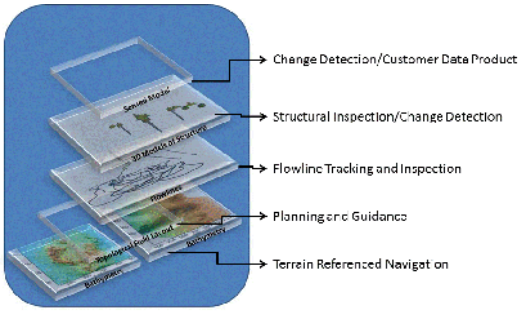


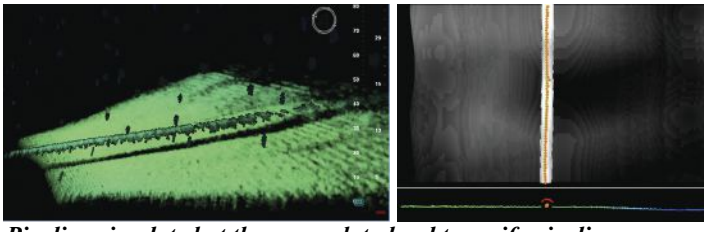
Figure 1. Illustration showing use of maps and other a priori information as part of the Marlin® autonomy system

The use of maps and other a priori information is an integral part of the Marlin® autonomy system as illustrated in Figure 1. Feature maps are used for mission planning and feedback in addition to providing inputs to the tracker to ensure tracking integrity through partial burials. Bathymetric maps are used for terrain-relative navigation. 3D models of structure are used for very accurate structure relative navigation and change detection. Maps may be available to the Marlin® system prior to the beginning of a mission; however, if there is no prior knowledge available, a survey map will be created by the Marlin® system when it first encounters the area for reference aiding during the performance of the active mission.

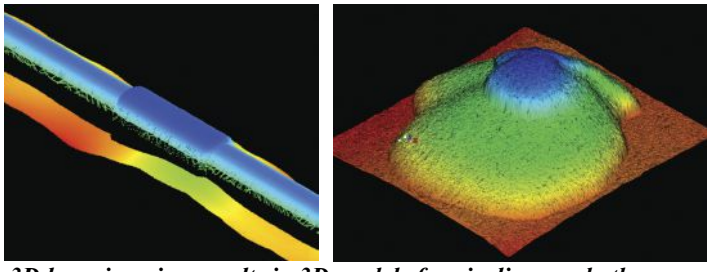
In addition, advancements in technologies such as AUV-based 3D sonar and laser imaging and real-time 3D model building from a fast-moving AUV enable more precise navigation, robust pipeline tracking, and autonomous change detection. These capabilities result in the generation of high-resolution geo-registered 3D models that enable sophisticated data collection and analysis techniques and the ability to autonomously identify and measure changes in critical pipeline and seabed conditions such as free span, scour, berm, buckling, lateral movement, and anode depletion.

The long-term benefits of AUV-based pipeline inspection are significant. First, the field operator reaps the benefits of AUVs over ROVs, including smaller vessels and crews, faster surveys with better data quality, and higher operational safety and efficiency. Second, the use of pre-planned, repeatable autonomous inspection missions enables the collection of consistent, parallel datasets and the methodical comparison of inspection results to prior inspection results. Finally, the availability of detailed 3D models with geo-tagged data from prior surveys, combined with the efficiency of third-party software tools for 3D analysis, will improve the efficiency of structural integrity management and translate into lower overall life-of-field costs.

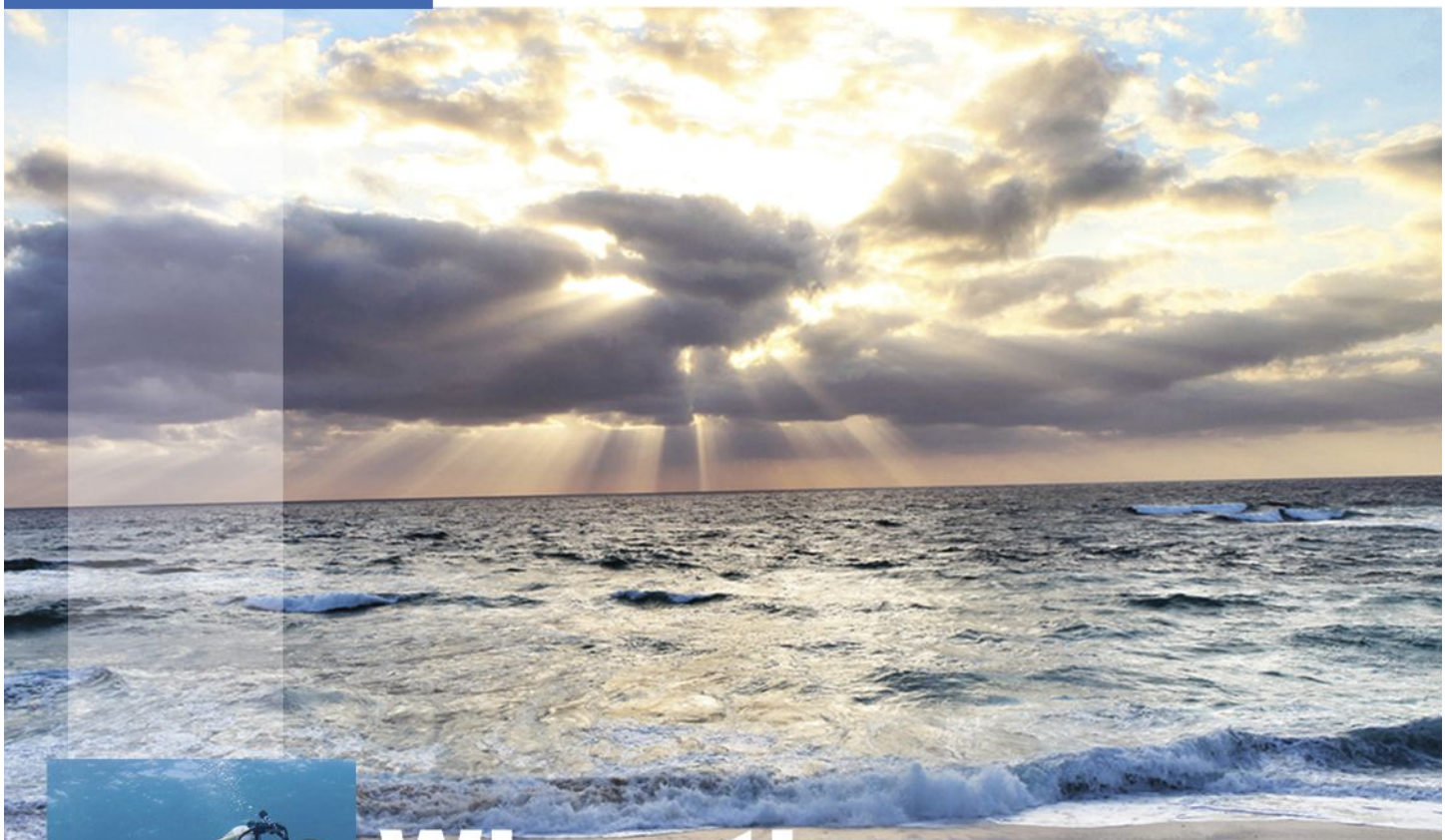
As AUVs and new sensor technologies become more sophisticated and the reliability and the economic benefit of their advanced autonomy continues to be successfully demonstrated, it is evident that the Marlin® family of AUV products slated to address pipeline inspections will be well positioned to meet the needs of the O&G market's inspection needs, not only for pipeline inspections, but also for deepwater facility inspections, integrity management, life-of-field programs, and future field and subsea resident applications. For more information about Lockheed Martin's Marlin® AUV system, please visit http://www.lockheedmartin.com/us/products/marlin.html.



Pipeline simulated at the sonar data level to verify pipeline tracker performance and accuracy.



3D laser imaging results in 3D models for pipelines and other bottom features



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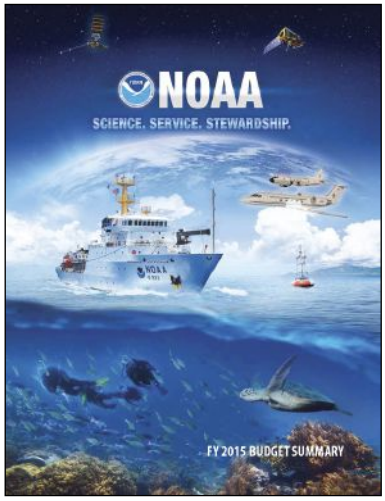
NOAA: $5.5B FY 2015 budget request promotes environmental intelligence



President Obama's fiscal year 2015 discretionary budget request for NOAA totals $5.5 billion. This is $174 million over the 2014 enacted budget, an increase of 3.2%.

The proposed budget will enhance public safety and community resiliency to weather and climate disasters. It also makes smart investments in critical infrastructure and innovative science to better position NOAA for the future and continues efforts to strengthen the agency's oceanic and coastal programs, its internal and extramural programs, all while maintaining strong fiscal discipline. The budget proposal supports vital NOAA missions and environmental priorities under the Commerce Department's Open for Business Agenda.

The 2015 budget focuses on three areas:

Investing in mission critical infrastructure: NOAA is the only federal agency with the responsibility to provide timely and accurate weather, water, ocean, climate, and ecosystem forecasts. Accordingly, this budget includes an additional $222.7 million to launch new polar and geostationary satellites and ensure essential information technology and physical infrastructure is in place to support NOAA's Weather Ready Nation initiative and atmospheric and coastal monitoring programs.

Strengthening scientific innovation: Developing the latest technological advancements and promoting an understanding of our planet is essential to keep NOAA products and services viable and invaluable to the American public. An increase of $40.6 million is proposed to advance electronic monitoring and next generation fisheries stock assessments, continue improvements to our weather products, and fund research and development related to drought, sea level rise, extreme heat, and climate impacts on living marine resources.

Providing services to enhance community resilience: Last year, seven weather and climate-related events caused more than $1 billion in damages. NOAA's environmental intelligence is vital in preparing communities for the next disaster. This budget includes an additional $47.2 million to promote public safety and marine ecosystem health, enable sustainable economic activity, and strengthen coastal communities. Improvements include the expansion of coastal inundation tools that will enable better flood warnings and improved ecological forecasting for better detection of harmful algal blooms and hypoxia.

Budget requests for NOAA's five offices include:

National Ocean Service (NOS): NOS is making critical investments in products, services and capabilities that will improve the resilience of the nation's coasts. In FY 2015, NOAA requests $496.2 million, an increase of $20.6 million over the 2014 enacted.

National Marine Fisheries Service (NMFS): NMFS provides science-based conservation and management services of the nation's living marine resources and their habitat. It also promotes sustainable commercial fisheries. In FY 2015, NOAA's budget request includes $887.2 million, which is $65.7 million below the 2014 enacted due to a $75.0 million decrease for one-time fisheries disaster funding.

Office of Oceanic and Atmospheric Research (OAR): OAR provides NOAA's research foundation for understanding our planet's complex systems and integrates those efforts through its network of laboratories and external research and science partners. In FY 2015, NOAA requests $462.2 million, an increase of $35.4 million over the 2014 enacted level.

Delta SubSea LLC announces frame agreement with FORUM/DYNACON

DSS announces frame agreement with FORUM Subsea Technologies DYNACON business as a preferred vendor of standard LARS designs. This agreement increases DSS's ability to fulfill its aggressive growth plan while maintaining the highest quality equipment as to maintain DSS's "Best in Class" mission statement. In support of this frame agreement, Dynacon has committed its resources to support DSS with service and spares globally. Scott Dingman, DSS's president – CEO, states, "I am thrilled with this partnership as it is part of our concept of securing supply chain vendors to allow for stable yet aggressive growth while providing our customers with Best in Class uptime and performance."

Applied Acoustics and iXBlue announce formal co-operation

Applied Acoustic Engineering (AAE) in the UK and iXBlue, a global leading provider of navigation and positioning solutions, have released details of a formal working relationship between the two companies, permitting cross compatibility between their acoustic positioning products to create a greater degree of flexibility across a wide market area. Conceived during 2013 and approved earlier this year, the agreement allows Applied Acoustics' complete range of 1000 Series transponders to operate with iXBlue's GAPS USBL systems using a jointly developed set of acoustic protocols. Speaking on behalf of Applied Acoustics, managing director Adam Darling stated, "This collaboration represents a significant step forward for both companies, giving us the ability to service new clients while adding extra versatility to our existing product ranges. I look forward to a long and successful partnership and to providing long-term benefits to our joint customer base." According to Christian Giroussens, VP of iXBlue's acoustic products division, "The established cooperation between our companies allows the variety of GAPS compatible beacons to expand, for instance with high directivity / high source level beacons, and therefore provides our customers with an enhanced solution in very difficult environments. For sure, the joint experience of both companies will create value for the entire community of USBL users."

National Weather Service (NWS): NWS is the nation's official voice during life threatening weather events and provides warnings to communities nationwide, including specialized forecasts every day for public aviation, marine transportation, space weather, and river flooding. NOAA's FY 2015 request is part of a broader effort to help the NWS deliver more efficient, responsive, and advanced operations to communities around the country. The proposal will align the NWS budget to both function and performance. It includes $1.06 billion, a decrease of $3.9 million from the 2014 enacted level.

National Environmental Satellite, Data, and Information Service (NESDIS): NESDIS is responsible for the procurement, launch and operation of the Nation's civil operational environmental satellites and manages three National Data Centers that house and provide easy access to the world's largest archive of global environmental data from both satellite and in situ sources. Funding in FY 2015 totals $2.2 billion, an increase of $164.8 million over the 2014 enacted level.

For more information, visit www.noaanews.noaa.gov/stories2014/20140313_budget_statement.html.

Court approves Odyssey Marine Exploration contract for gold cargo recovery

Odyssey Marine Exploration, Inc., a pioneer in the field of deep-ocean exploration, has been awarded the exclusive contract to conduct an archaeological excavation and recover the remaining valuable cargo from the SS Central America shipwreck located approximately 160 mi off the coast of South Carolina. The ship, which was immortalized in the best-selling book, "Ship of Gold in the Deep Blue Sea," sank in 1857 with one of the largest documented cargoes of gold ever lost at sea.

Odyssey was selected for the project by Ira Owen Kane, the court-appointed receiver who represents Recovery Limited Partnership (RLP) and Columbus Exploration LLC (CE). The contract has been approved by the Common Pleas Court of Franklin County, Ohio, which has jurisdiction over Recovery Limited Partnership and Columbus Exploration LLC. Kane is charged by the court with overseeing the recovery project and has the benefit of a permanent injunction and exclusive salvage rights over the SS Central America shipwreck granted by the U.S. District Court for the Eastern Division of Virginia.

"We are excited about returning to the SS Central America and welcome the opportunity to work with Odyssey Marine Exploration on this historic undertaking. We are confident that Odyssey's unparalleled experience, superbly qualified personnel and state-of-the-art equipment will build on the successes of the first recovery effort, which has been characterized as a story of American initiative, ingenuity and determination," stated Kane.

The SS Central America shipwreck site was discovered in 1987 at a depth of approximately 2,200 m (7,200 ft) and less than 5% of the site was investigated at that time. An extensive collection of gold coins, bullion and raw gold were recovered from the site during the following years. The salvors have not returned to the site for more than two decades as lengthy legal battles played out. In May 2013, the court appointed Kane as receiver to supervise the resumption of recovery operations.

For more information, visit www.odysseymarine.com.

State of the Gulf of Mexico summit to focus on restoration of vital national resource

Restoration is the focus of the third "State of the Gulf of Mexico" summit to be held next week in Houston by the Harte Research Institute (HRI) for Gulf of Mexico Studies at Texas A&M University-Corpus Christi.

A report from the Gulf of Mexico Alliance shows that the five U.S. states that border the Gulf have a gross domestic product of over $2 trillion. Much of that economic activity is dependent on or related to the Gulf of Mexico and the health of its coastal natural resources. Just a few examples include:

- Tourism and recreation provide over 620,000 jobs;
- 27% of domestic crude oil production comes from the Gulf region; and
- The major commercial fishing ports of the Gulf region bring in over 1.2 billion pounds of fresh seafood every year.
- Six of the top 10 leading shipping ports in the country are found in the Gulf region.

This year, the 4-day summit has five main objectives:

- Connecting science and restoration efforts to inform decision-making and identify gaps;
- Advancing restoration that contributes to the broader Gulf of Mexico ecosystem;
- Linking state, federal and non-governmental organization restoration strategies;
- Assuring Gulf restoration and national ocean policy work together; and
- Defining a clear, positive role for business and industry in the restoration process.

The "State of the Gulf of Mexico Summit" is 24-27 March at the Omni Galleria Houston Hotel.

For more information, visit http://sgmsummit.org/.

Two years, 19 countries, and 1 million images

It's been 2 years since the Catlin Seaview Survey, sponsored by Catlin Group Limited, announced a partnership with communications platform Google. This collaboration has changed the way the world is able to view our underwater world.

In addition to the work completed with our founding scientific partner, The University of Queensland's Global Change Institute, we've worked with some fantastic scientific partners at specific locations over the past 12 months. Survey work in the Galapagos was supported by The Galapagos National Park & Charles Darwin Foundation, while The Oceanographic Museum of Monaco and the Prince Albert II Foundation gave us assistance during our temperate water survey of Monaco. Professor Hoegh-Guldberg thanked all of these scientific bodies during his presentation that was attended by the Prince of Monaco himself.

Brand manager for the Google Oceans Program, Jenifer Foulkes was pleased to announce that there are now even more marine locations to explore through the Google Street View platform.

Monaco

- The Larvotto Marine Reserve
- Roche Saint Nicholas (featuring the Oceanographic Museum of Monaco)

Mexico

- The UNESCO World Heritage site Sian Ka'an
- The amazing MUSA underwater museum off the coast of Isla Mujeres
- The popular Cozumel dive sites of Santa Rosa Wall and the Columbia Deep — and a brush with the world's largest fish, whale sharks at Isla Contoy

U.S.

- The San Francisco Bay shoreline that was surveyed by a Google trekker camera atop the stable autonomous WAM-V® USV robot.

For more information, visit www.catlinseaviewsurvey.com.

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ABS to class two newbuild offshore construction vessels
ABS, the leading offshore and maritime classification society, has been selected by Edison Chouest Offshore and Island Offshore through the company Island Ventures II LLC to class two next-generation offshore construction vessels (OCVs). The ULSTEIN SX165 design vessels, ordered through Island Ventures II LLC, will be built at Ulstein Verft in Norway and Edison Chouest's LaShip yard in Houma, Louisiana in the U.S. The OCVs will be 28 m wide and 145.7 m long with accommodations for 200 people. They will be equipped with one 400-metric-ton crane and one 140-metric-ton crane, a large moonpool measuring 11.2 x 12 m, and two smaller moonpools with remotely operated vehicle installed in a centrally located hangar. The vessel has three separate engine rooms to provide extreme operational reliability. Health, safety and the environment have been fully considered in the development of this design. The vessel's design provides for crew comfort and safety in accordance with international regulation ILO Maritime Labour Convention and features four lifeboats, two on each side. In addition, the vessels are equipped with SCR catalyst systems for NOx emission reduction. According to Ulstein Verft, this will be the largest vessel to date to be built at the yard and is the company's largest single shipbuilding contract. "Ulstein Verft is pleased to work with ABS for this exiting project, and we are looking forward to expanding our cooperation into new markets for these types of vessels," says managing director of Ulstein Verft, Kristian Sætre. The vessel is scheduled for delivery in the third quarter of 2015.

Agreement reached in Panama Canal project
In a move expected to impact everything from LNG exports to the shipping of durable goods, the Panama Canal Authority (ACP) announced the end of talks with the new locks project contractor Grupo Unidos por el Canal, S.A. (GUPC), through which a conceptual agreement has been reached subject to documentation, review and final signature by the parties. "We have reached a conceptual agreement that protects the interests of the Panama Canal, within the terms of the contract and respecting our position," said Panama Canal administrator Jorge L. Quijano. "The agreement is under review and pending signature; however, our commitment to Panama and our customers has been to inform these recent developments." The conceptual agreement provides that the construction of the Third Set of Locks is completed by December 2015. The existing locks allow the passage of vessels that can carry up to 5,000 TEUs. After the expansion the Post-Panamax, vessels will be able to transit through the canal, with up to 13,000 TEUs. The locks are part of the largest project at the canal since its original construction. The larger expansion project will create a new lane of traffic along the canal through the construction of a new set of locks, doubling capacity and allowing more traffic. The expansion will double the Canal's capacity, having a direct impact on economies of scale and international maritime trade.

Hoover Container Solutions acquires Container Company Ltd.
Hoover Container Solutions has acquired Container Company Ltd., a leading supplier of cargo carrying units (CCUs) for the offshore oil and gas industry. This acquisition complements Hoover's recent acquisitions of Consult Supply AS and Dolphin Energy Equipment making Hoover one of the largest worldwide suppliers of CCUs. Headquartered in Aberdeen, Scotland, Container Company designs, supplies and services a full range of standard and custom-built CCUs including chemical tanks, baskets, skips, workshops, mini, half height, closed top and freezer containers. Container Company maintains a wide range of CCU sizes with a large, readily-available inventory to meet its customers' requirements while offering a full repair, maintenance and certification program. With a strong focus on quality, Container Company conducts final product inspections through its in-house test engineers to ensure all units exceed required safety and industry standards including BS7072, BS EN 12079 and DNV 2.7-1.

World Sapphire ceremony marks completion of six-vessel order

The official christening of the World Sapphire marks the completion of a six-ship order whereby Damen Shipyards has delivered six platform supply vessels to Norwegian company World Wide Supply AS in just six months.

The Damen PSV 3300 features a radical design rethink, with a wave piercing bow, slender hull lines and diesel electric propulsion with azimuth stern drives, combining to optimise seakeeping and fuel efficiency. The 80.1 m, 1,500-tonne deck capacity vessel also has DP2 capability.

All six vessels will be under contract during the second quarter of 2014, four of them being on long-term charters to Brazilian energy giant Petrobras.

Delivery of the new design involved extensive CAD/CAM modeling by Damen Shipyards own in-house R&D team, as well as model testing at Maritime Research Institute Netherlands (MARIN).

The PSV 3300 is part of an entire new range of Damen PSVs. The new type can be used to transport crew and equipment to and from offshore platforms but it also offers fire-fighting and oil pollution recovery capability.

The series has been designed and built in line with Damen's 'E3' principles—Environmentally friendly, Efficient in operation and Economically viable.

Maersk Training builds cutting-edge helicopter and helideck simulators

Maersk Training announced the launch of two new offshore emergency courses, the OPITO Helideck Emergency Response Team Member Training and the OPITO 6 Day Combined Helideck and Team Member Training. These two OPITO Accredited courses will kick start this month at the company's training center in north-east Scotland and be delivered using a newly built Helicopter simulator and helideck.

Following a significant financial investment last year, Maersk Training in Aberdeen has built a brand new Helicopter Simulator and Helideck fire ground to support its two new courses. The dual helicopter simulator system can simulate two different types of aircraft, a Sikorsky S92 and a Eurocopter 225. The aircraft can simulate engine and rotor

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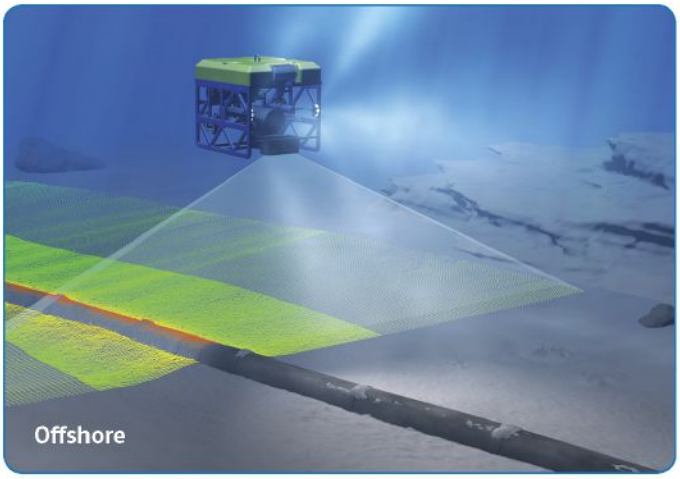

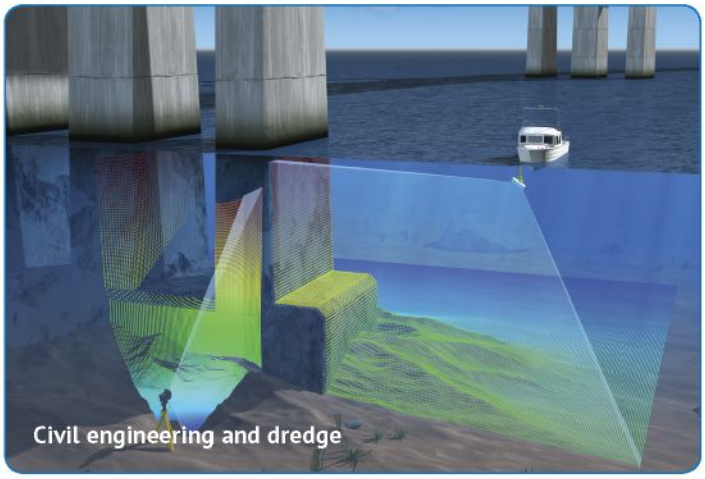

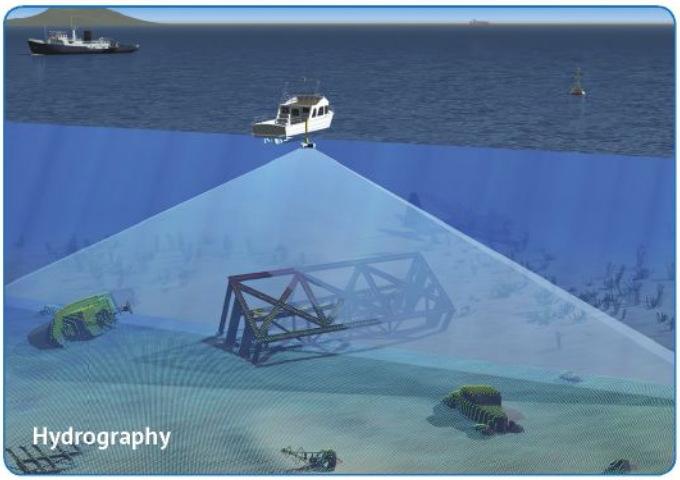

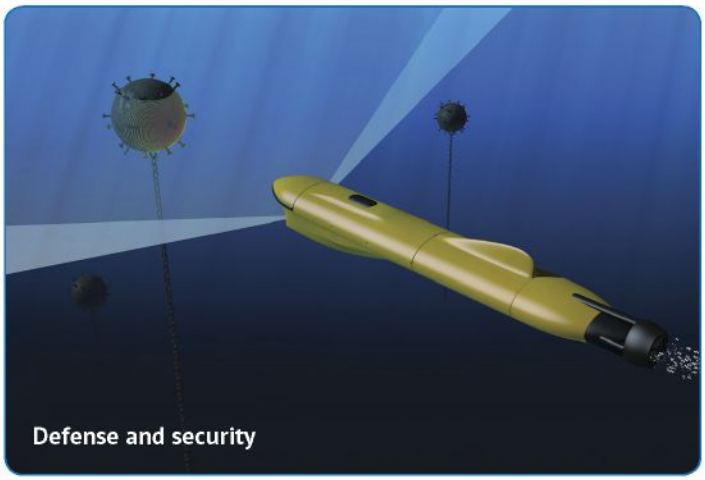

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head fires along with sponson, pressure fuel and running fuel fires. The fixture has the ability to change the inner configuration due to a unique construction system. The 144-m2 Helideck contains two purpose-built heliwells (3x2 m) fitted with monitors and hydrant heads that have the ability to cross ark, providing complete deck coverage of aqueous film forming foam.

Stuart Cameron, managing director commented: "By adding the HERTM to the company's course list, Maersk Training is one step closer to being a one-stop shop for all offshore wind and oil & gas training needs. The simulators will enable us to offer a better offshore emergency response learning experience which is not only realistic but also unique."

The OPITO Helideck Emergency Response Team Member (HERTM) course is taught and assessed by current, fully operational fire-fighters who have worked within the fire and rescue service for over 25 years. It is delivered across 4 days and it includes a combination of theoretical and practical elements, which make for an accurate and

realistic picture of what is expected of emergency response teams.

The OPITO HERTM course provides a solid knowledge of all procedures associated with the helideck and helicopter landing, while also giving delegates the opportunity to gain a more general understanding of emergency response procedures on an offshore installation.

For more information, visit www.maersktraining.com.

UASC completes its largest ever newbuild order

United Arab Shipping Company (UASC) is pleased to announce that the final option for one additional 18,000 TEU vessel has been exercised bringing the total order to 17 ships including 11 14,000 TEU vessels and 6 18,000 TEU vessels. The order has been placed with Hyundai Heavy Industries (HHI) in Korea and is the largest in UASC's history, worth over US$2 billion for all 17 ships. The order features vessels that will be among the largest, most technologically advanced, and most environmentally friendly container vessels ever built.

UASC hosted a signing ceremony in Dubai where the newbuilding contract was signed by His Excellency Salem Ali Al Zaabi, Chairman of the UASC Board of Directors, and by Mr. Y. J. Ji of HHI. The ceremony was also attended by representatives from UASC's executive management and senior management from HHI to mark the auspicious occasion.

The 14,000 TEU and 18,000 TEU newbuildings are scheduled for delivery from late 2014 and from the first half of 2015, respectively.

For more information, visit www.uasc.net.

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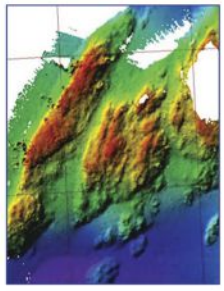
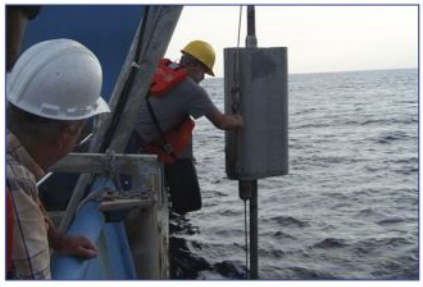

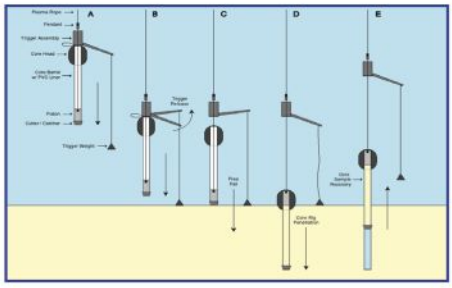

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Two ocean shipping companies to pay $3.4M to settle claims of price fixing

Sea Star Line LLC and Horizon Lines LLC have agreed to resolve allegations that they violated the False Claims Act by fixing the price of government cargo transportation contracts between the continental United States and Puerto Rico, the Department of Justice announced. Under the settlement agreements, Sea Star Line has agreed to pay $1.9 million, and Horizon Lines has agreed to pay $1.5 million.

"Today's civil settlements demonstrate our continuing vigilance to ensure that those doing business with the government do not engage in anticompetitive conduct," said Assistant Attorney General for the Justice Department's Civil Division Stuart F. Delery. "Government contractors who seek to profit at the expense of taxpayers will face serious consequences."

The government alleged that former executives of the defendant ocean shippers used personal email accounts to communicate confidential bidding information, thereby enabling each of the shippers to know the transportation rates that its competitor intended to submit to federal agencies for specific routes. This information allowed the shippers to allocate specific routes between themselves at predetermined rates. Among the contracts affected were U.S. Postal Service contracts to transport mail and Department of Agriculture contracts to ship food. Both Sea Star Line and Horizon Lines previously pleaded guilty, in related criminal proceedings, to anticompetitive conduct in violation of the Sherman Act.

Vessel operators praise strong bipartisan Senate introduction of vessel discharge legislation

The American Waterways Operators, the national trade association representing the tugboat, towboat and barge industry, praised the Senate's introduction of a bill calling for the enactment of a uniform national standard for the regulation of ballast water and other vessel discharges, legislation widely viewed as essential to ending the existing confusing, costly and ineffective patchwork of state and federal rules. AWO specifically called attention to the instrumental leadership of the bill's lead sponsors, Sens. Mark Begich (D-AK) and Marco Rubio (R-FL), who introduced the bill with 20 additional bipartisan cosponsors.

"This significance of this bill, and the strong Senate support behind it, cannot be overstated," said Tom Allegretti, AWO president & CEO. "There is a critical need to enact legislation that protects our nation's waterways while improving the efficiency and effectiveness of marine transportation. This bill accomplishes those objectives."

"Our nation's mariners and vessel operators face an extremely challenging compliance burden with two federal agencies and 25 states all regulating the same vessel discharges in overlapping and inconsistent ways," Mr. Allegretti continued. "Introduction of this bill with more than one-fifth of the Senate as cosponsors is a clear indication that there is a real need for legislation to correct a broken regulatory regime that is just not working."

Mr. Allegretti expressed the industry's gratitude to Sens. Begich and Rubio, stating that "AWO members applaud their leadership in growing such robust, bipartisan support and ensuring that their Senate colleagues understand the bill's importance."

Senators Kelly Ayotte (R-NH), Roy Blunt (R-MO), John Boozman (R-AR), Bob Casey (D-PA), Thad Cochran (R-MS), Susan Collins (R-ME), Mazie Hirono (D-HI), Mary Landrieu (D-LA), Claire McCaskill (D-MO), Edward Markey (D-MA), Lisa Murkowski (R-AK), Bill Nelson (D-FL), Mark Pryor (D-AR), Jay Rockefeller (D-WV), Brian Schatz (D-HI), John Thune (R-SD), Patrick Toomey (R-PA), David Vitter (R-LA), Elizabeth Warren (D-MA) and Roger Wicker (R-MS) have all signed on as original cosponsors of the legislation.

For more information, visit www.americanwaterways.com.

Maritime Administration helping green the Port of Honolulu

The U.S. maritime industry continues to become greener each day as federal agencies, research centers, and ports work to reduce the industry's impact on our environment. Industry stakeholders understand how green business practices can significantly improve their bottom line while also helping ensure healthier waterways and port communities as well as a healthier workplace for maritime workers.

That's why the Maritime Administration is partnering with the Department of Energy (DOE) and Sandia National Laboratories to explore the potential cost savings and emissions reductions through the use of hydrogen fuel cells to provide electrical power to ships at berths. This approach has the potential to offer a double bonus—first, allowing vessel operators to shut down diesel engines while in port, and second, using hydrogen fuel cells instead of carbon-based electrical power sources.

MARAD is providing $700,000 to support the construction of the first of its kind portable power system at the Port of Honolulu to convert hydrogen into electricity. This small fuel-cell system will generate 100 kW of electricity to help power vessel on-board systems pier side for ships, tugs, and barges operating between the Hawaiian Islands.

After initial testing is completed, this unit will be available to all Port of Honolulu tenants when needed. Future testing may involve larger fuel cell units and the use of alternative fuels to provide power for vessels in other ports. And if successful, we could soon see emission-free hydrogen fuel cells replacing diesel power and carbon-generated electricity in lake, river, and ocean ports across the country.

Maersk Supply Service and DeepOcean call for Damen offshore carrier

A charter agreement between expanding subsea contractor DeepOcean and Maersk Supply Service has triggered an order for a Damen Offshore Carrier DOC 8500 - the second order for this new ship design from Damen Shipyards Group.

The DOC 8500 will extend DeepOcean's capabilities in the larger cable laying end of the market, representing a new focus on interconnector projects, in addition to oil & gas sector and renewables work. The specially equipped vessel will be delivered from the Damen Galati yard in Romania.

Owned and operated by Maersk Supply Service, the vessel will become the latest addition to the 60-plus strong Maersk offshore support vessel fleet.

For more information, visit www.damen.com.

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GOING DEEP...
With Fully-Integrated ROV Solutions

BY: Stepinoff And Associates

There is something magical about the mystery of the ocean depths and the sophisticated technology, skill, navigational nuances, and logistical magic that all come into play as ROVs travel under water, often in hostile environments.

Delta SubSea not only embraces these technical underwater challenges, it is mastering a magic all of its own: the company is well on its way to building the world's largest — and best — deepwater ROV fully integrated solutions provider.

Delta SubSea provides a range of ROV services and turnkey integrated solutions that are Best-In-Class for its customers all over the world. The company has three distinct business units — ROV Services, Consulting & Engineering, and Tooling Solutions — and its specialists in the offshore energy industry are successfully tackling deepwater assignments around the world.

"Our philosophy is simple," says Scott Dingman, president and CEO of Delta SubSea. "We treat our clients the way we want to be treated. We make sure we deliver to each and every client our highest level of expertise, cost efficiencies, quality, promptness, and our highly trained global personnel who keep safety a top priority."

Heritage, Vision, Philosophy

Delta Marine Technologies, Inc., founded in 2004 as an international project management and service provider to the world's offshore energy industry, is the predecessor of Delta SubSea.

"Our philosophy today is simple," says Scott Dingman, president and CEO of Delta SubSea. "We treat our customers the way we want to be treated. We make sure we deliver to each and every customer our highest level of expertise, cost efficiencies, quality, promptness, and our highly trained global personnel who keep safety a top priority."

In addition to Scott Dingman, management team members are Matthew Muddiman, chief financial officer; Jim Wagner, executive vice president of consulting and engineering; Michael Herrin, commercial manager; Alessandro Vagata, vice president of tooling solutions; and Pat Gluk, general manager.

Delta SubSea, headquartered in Montgomery, Texas, has global centers in Europe (Belgium), Trinidad & Tobago, and Saudi Arabia to support its customers.

Working with its customers to meet their needs, Delta SubSea puts its vision into practice:

- Our work ethic and reliability;
- Our quality and safety performance;
- Our values of honesty and integrity are hallmarks of our people; and
- Our "can do" attitude.

Assets to Count On

Experienced, seasoned, professional, and responsive crews are the foundation of Delta Subsea's customer commitment. "Many companies like to say that people are their best asset," explains Dingman, "but we are unique because our employees are 'shareholders' so they do indeed have the company and its customers' best interests at heart."

This pride of ownership shows in how employees take care of the equipment, how they work with a customer to find the best solution, and how they adhere to the highest safety standards. "When our ROV operators own a piece of the equipment they are operating and maintaining, we have learned they have a vested interested in ensuring it is in peak condition," he adds.

Manufacturing Partner

Delta SubSea's partnership with FMC Schilling Robotics ensures its ROV division will leverage Best-In-Class equipment, highly trained and experienced personnel, and responsive and reliable technical support to deliver the industry's highest uptime.

The Schilling team strengthens the partnership with Delta SubSea through its equipment, training, and worldwide support. With the quality of the equipment, the spares inventory, distribution centers, training center, and under-one-hour repair philosophy/replacement of most ROV components, the partnership maximizes the customer commitment Delta SubSea embraces.

Delta SubSea also has "key" relationships with Forum Energy Technologies' Dynacon for LARS, TE Connectivity for umbilicals, Nexan for tethers, and Konsberg for cameras and sonars.

ROV Services and Solutions

Delta SubSea's ROV services business unit focuses on the inspection, repair, maintenance, construction, drilling, and decommissioning market segments. These solutions enhance productivity in the most challenging subsea environments.

The HD™ (Heavy Duty) 150-HP vehicle is for a broader range of capabilities, providing a multi-level platform for use in the drill support and IMR segments. Also, it offers heavy-duty capabilities in the construction operations.

The new UHD3 250-HP will maximize offshore productivity with 60-min service and repair, 150-HP fluid intervention, HD video system, tool dynamic positioning, and workflow centric Graphic User Interface (GUI).

Consulting and Engineering Solutions

Delta SubSea's consulting and engineering business unit provides engineering capabilities for custom solutions. The company's knowledgeable personnel expertly perform all phases of a project from design to execution, including project and contract management, pipeline installation lead, umbilical installation lead, manifold/structures installation lead, and pre-commissioning lead. Delta SubSea's consulting and engineering solutions group includes cost tracking on projects, project engineers, field engineers, and fabrication oversight.

Unique Tooling Solutions

Delta SubSea's tooling solutions business unit is emerging as a leading provider of remote technology solutions for conventional offshore subsea and deepwater developments in the oil and gas industry, with expertise in ROV, remote intervention systems, and subsea robotics. Capabilities include engineering, manufacturing, testing, service, and operations of pipeline repair systems, ROV intervention skids, ROV special tooling, and custom equipment designed to perform special subsea operations. Engineering expertise includes subsea

operations, electrical and mechanical engineering, hydraulic design, structural design, FEA, control systems, HMI, and PCB design.

Delta SubSea's unique "Tool Pool" offers a competitive advantage because it enables customers to save money by renting out the equipment they previously purchased. This "value added" service gives Delta SubSea and its customers the opportunity to share a profit with the equipment when they are not using it.

Safety and Training

One of Delta SubSea's core business values is a health, safety, and environment (HSE) philosophy that translates into a commitment to adhere to strong HSE principles.

For the offshore industry in general, and specifically the ROV operational segment, there are regulations, legislation, and standards that are required to be met by all offshore companies. As a leading company, Delta SubSea has its own training centers, ROV pools, ROV simulators, personal development plans, and a competency program to ensure its personnel are prepared to safely work in the challenging offshore environment. The basic offshore training components emphasize safety while to, from, and on a vessel and a platform and specifics such as fire safety, first aid, and helicopter emergency escape.

Because of the evolving technological sophistication of subsea systems, technical training is key to effectively operate ROVs. For example, ROV pilot technicians must develop technical expertise to maintain, inspect, and operate ROV systems and associated equipment. An employee can achieve a Proof of Competency certification, proving the individual has gained knowledge, skills, ability, experience, and training in a particular role.

Delta SubSea provides its ROV pilot technicians with a logbook to record specifics such as operating hours, offshore assessments, and tooling hours. These elements support competency guidelines for pilot technicians as well as supervisors and superintendents. Simulators are used to train pilot technicians on land before they work offshore. This training saves customers time and costs.

Major International Certifications

Delta SubSea has achieved several major certifications: ISO 9001, ISO 14001, and OHSAS 18001. The ISO 9001 group focuses on quality management and contains many of ISO's best-known standards that ensure a company's products and services consistently meet customers' requirements and that quality improvement is ongoing. The ISO 14001 family establishes criteria for an environmental management system that includes assurances that environmental impact is being measured and improved. OHSAS 18001 (Occupational Health and Safety Advisory Services) is a British Standard for occupational health and safety management systems. Delta SubSea also is AMPCO certified, referring to the safety tools that comply with recommended international safety standards.

Range of Global Solutions

Delta SubSea takes pride in meeting the stringent requirements of its customers all over the world. A major E&P client challenge was to have urgent Inspection Maintenance and Repair (IMR) work completed on its deepwater gas production infrastructure off the coast of Trinidad & Tobago. The E&P client immediately needed an ROV and a team to visually inspect the infrastructure as well as implement repair and maintenance. Delta SubSea's team deployed at 12:01 AM, the day after signing the contract, and drew on its long operating history in Trinidad & Tobago to efficiently deploy in-country on an expedited basis.

When BP US needed subject matter experts in diving/ROV/subsea construction to provide oversight on BP-leased IMR vessels in the U.S. Gulf of Mexico, Delta SubSea had the perfect solutions. Successfully meeting all of the complex requirements from logistics to security, Delta Subsea provided qualified, competent, and experienced leadership to the project.

Delta SubSea's expertise in HSE was valued when EMAS AMC required an offshore HSE coordinator/medic. Delta SubSea provided HSE leadership and training on various owned and contracted vessels in the Gulf of Mexico, West Africa, North Sea, and Norway.

As Delta SubSea continues to prove to its global clients that its total integrated turnkey solutions are Best-In-Class, the company weaves its magic to build the world's largest — and best — deepwater ROV fully integrated solutions provider.

Call Delta SubSea to unlock the mystery of how it can provide a world of solutions at all levels for the life of your project (936 582-7237).

Unique Maritime Group
Strength in Depth

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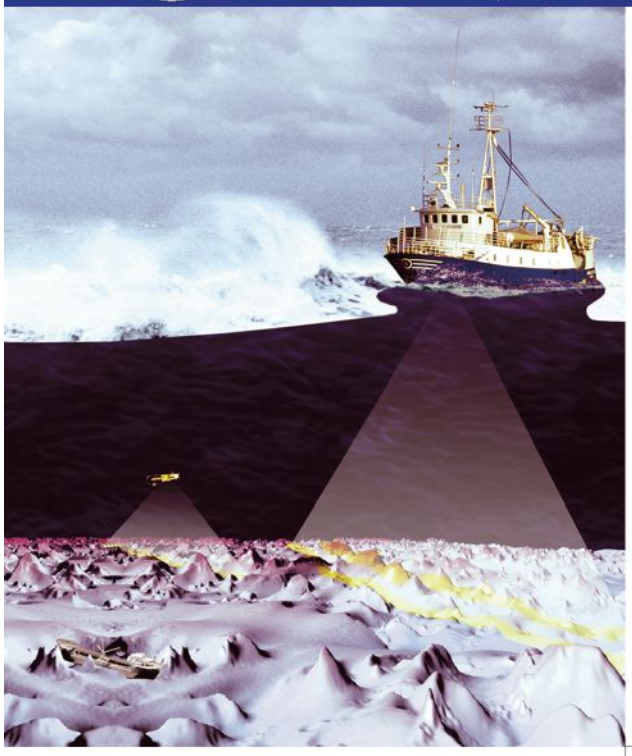

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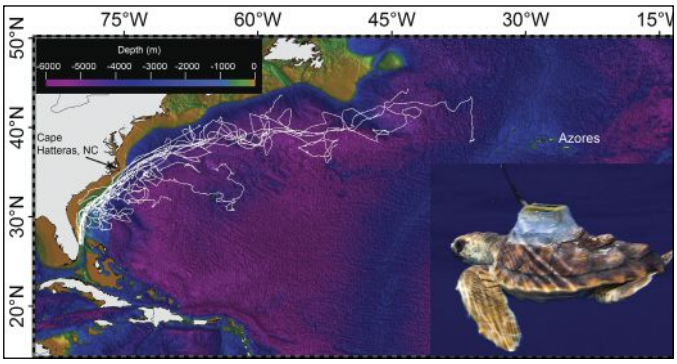
Southern Ocean iron cycle gives new insight into climate change

An international team of researchers analyzed the available data taken from all previous studies of the Southern Ocean, together with satellite images taken of the area, to quantify the amount of iron supplied to the surface waters of the Southern Ocean. They found that deep winter mixing, a seasonal process that carries colder and deeper nutrient-rich water to the surface, plays the most important role in transporting iron to the surface. The iron is then able to stimulate phytoplankton growth, which supports the ocean's carbon cycle and the aquatic food chain. They were also able to determine that following the winter iron surge, a recycling process is necessary to support biological activity during the spring and summer seasons. Oceanographer, Dr. Alessandro Tagliabue, from the University's School of Environmental Sciences, said: "We combined all available iron data, matched them with physical data from autonomous profiling floats and used the latest satellite estimates of biological iron demand to explore how iron is supplied to the phytoplankton in the Southern Ocean. This is important because iron limits biological productivity and air to sea CO_2 exchange in this region. We found unique aspects to the iron cycle and how it is supplied by physical processes, making it distinct to other nutrients. "This means that the Southern Ocean's nutrient supply would be affected by changes to the climate system (such as winds and freshwater input) differently to other areas of the ocean. "We need to understand these unique aspects so that they can be used to better inform global climate predictions." Dr Jean-Baptiste Sallée, from the Centre National de la Recherche Scientifique and the British Antarctic Survey, said: "We are really excited to make this discovery because until now we didn't know the physical processes allowing iron to reach the ocean surface and maintain biological activity. The combination of strong winds and intense heat loss in winter strongly mixes the ocean surface and the mixing reaches deep iron reservoir." The Southern Ocean comprises the southernmost waters of the world oceans that encircle Antarctica. Researchers have long known the region is crucial in the uptake of atmospheric CO2 and that biological processes in the Southern Ocean influence the global ocean system via northward flowing currents.

National Oceanography Centre wins €1.8M grant to explore the deep ocean floor for minerals

The National Oceanography Centre (NOC) has been awarded €1.8 million to study massive sulphide deposits on floor of the Atlantic Ocean, 3 km beneath the surface. The research is part of a wider international program to assess seafloor mineral resources that has received €10 million funding from the European Commission. A new frontier for seafloor mineral resources is opening up due to dramatic growth in demand for metals essential for modern societies. To exploit these resources requires major advances in technology as well as a breakthrough in understanding how and where they form. The €1.8 million research grant is to enable geologist Dr. Bramley Murton from NOC's Marine Geoscience Group to lead an international partnership studying the evolution, preservation and sub-surface expression of massive sulphide deposits on and under the floor of the Atlantic Ocean. The European Commission (EC) aims to use research and innovation to help address the need for a secure and sustainable supply of these raw materials to the EU. In lieu of this, the EC has awarded two multimillion euro program for research into deep sea mineral resources, of which NOC has succeeded in winning significant funds from both. One of these is a €10 million program Blue Mining which, with its scientific and industrial partners, will focus on deep sea resources over the next 4 years. The aims of Blue Mining are to develop new and innovative methods for exploring and assessing ocean floor mineral deposits, as well as developing low carbon, low impact and sustainable extraction technologies. The €1.8 million research grant awarded to NOC is part of this program. The international partnership includes British, German, Portuguese, Dutch, Norwegian and Belgian researchers who will spend several months at sea deploying a variety of instruments including autonomous underwater vehicles (AUVs). These AUVs will be fitted with newly-developed electrical sensors to detect minute fluctuations in electrical current caused by the presence of the mineral deposits on the seafloor.

Study provides new information about sea turtles' "lost years"



A new study satellite tracked 17 young loggerhead turtles in the Atlantic Ocean to better understand sea turtle nursery grounds and early habitat use during the "lost years." The study, conducted by a collaborative research team, including scientists from the University of Miami (UM) Rosenstiel School of Marine and Atmospheric Science, was the first long-term satellite tracking study of young turtles at sea.

"This is the first time we were able to show the maiden voyage of young turtles after they left the beach," said Rosenstiel School scientist Jiangang Luo and co-author of the study. "It's like you want to know how your baby is doing when you drop him or her off at the daycare for the first time."

The turtles' at-sea movements were remotely tracked for 27 to 220 days in the open ocean to better understand their movements, habitat preferences and thermal niche during this early-life stage. The turtles traveled between 200 to 4,300 km (124 to 2,672 miles), mainly traveling off of the continental shelf region and occupying oceanic surface waters, where young turtles likely "receive thermal benefits from solar absorption," according to the study's authors. The study also showed that young sea turtles rarely travel into continental shelf waters and frequently leave the currents of the Gulf Stream and North Atlantic Current within the North Atlantic Subtropical Gyre.

The turtle started by riding in the strongest currents in the Ocean, the Gulf Stream, and then the North Atlantic Current. But many of the turtles took a short cut via eddies that span off from the currents to the Sargassum Sea at the center of the North Atlantic Subtropical Gyre, which provide protection, thermal and food habitat for the young turtles.

The 17 loggerhead turtles were collected from nests along the southeast coast of Florida and reared in Florida Atlantic University's turtle laboratory before being released between 3 and 9 months of age into the Gulf Stream, offshore of their natal beaches. Prior to being released, solar-powered satellite tags were affixed to the turtles' carapace.

Once young turtles leave their nesting beaches they spend an unknown number of years at sea. Called the sea turtles "lost years," little is known about the migration and habitat use of young sea turtles during this period before they return to near-shore habitats as larger juveniles.

The study, titled "First satellite tracks of neonate sea turtles redefine the 'lost years' oceanic niche," was published in the journal Proceedings of the Royal Academy B. The paper's co-authors include Kate Mansfield of the University of Central Florida and the National Marine Fisheries Service, Luo, Jeanette Wyneken of Florida Atlantic University, and Warren P. Porter of the University of Wisconsin.

For more information, visit www.rsmas.miami.edu.

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Alvin takes first science dive since overhaul

Alvin, the nation's only deep-sea research submarine, took its first scientific dive 15 March 2014 after a 39-month hiatus and a major overhaul that dramatically upgraded the sub.

Because the first dive site was only 320 m deep, the sub was on the bottom about 12 min later, and Woods Hole Oceanographic Institution scientist Susan Humphris, Alvin pilot Bob Waters, and pilot-in-training Nathan Brown spent the next 5 hrs doing the undersea equivalent of a road test.

Humphris described the tests of the Alvin's new command-and-control features that automatically maintain the sub's position, attitude, or heading. Previously, pilots could only control these manually, and pilot Bob Waters was feeling out these systems for the first time.

The team tested the sub's navigation system and forward-looking sonar, then did a speed trial. They made a transit along the seafloor at speeds ranging from 0.5 kts to slightly more than 1 kt and recorded the power needed to do both. The dive team tested a new lateral thruster added to Alvin. "We tried a spin maneuver with and without the lateral thruster," Humphris said. "The biggest advantage of the lateral thruster is that it enables Alvin to move sideways like a crab. In the past, pilots had to back up and then go forward to move sideways only a short distance."

Finally, the team tested Alvin's manipulator arms, which were made more flexible to give them greater reach and also to allow them to be moved out of the way of the new forward viewports to improve visibility. Even though a glitch prevented the portside arm's gripper from closing fully, Waters took six cores of seafloor sediments in an efficient 15 min. The arms also passed a test in which they tripped wires on seawater sample bottles.

For more information, visit http://alvinverification.whoi.edu/.

Ocean food web key in global carbon cycle

Nothing dies of old age in the ocean. Everything gets eaten and all that remains of anything is waste. But that waste is pure gold to oceanographer David Siegel, director of the Earth Research Institute at UC Santa Barbara.

In a study of the ocean's role in the global carbon cycle, Siegel and his colleagues used those nuggets to their advantage. They incorporated the life-cycle of phytoplankton and zooplankton — small, often microscopic animals at the bottom of the food chain — into a novel mechanistic model for assessing the global ocean carbon export. Their findings appear online in the journal Global Biogeochemical Cycles.

The researchers used satellite observations including determinations of net primary production (NPP) — the net production of organic matter from aqueous carbon dioxide (CO_2) by phytoplankton — to drive their food-web-based model. The scientists focused on the ocean's biological pump, which exports organic carbon from the euphotic zone — the well-lit, upper ocean — through sinking particulate matter, largely from zooplankton feces and aggregates of algae. Once these leave the euphotic zone, sinking into the ocean depths, the carbon can be sequestered for a season or for centuries.

Carbon is present in the atmosphere and is stored in soils, oceans and the Earth's crust. Any movement of carbon between — or in the case of the ocean, within — these reservoirs is called a flux. According to the researchers, oceans are a central component in the global carbon cycle through their storage, transport and transformations of carbon constituents.

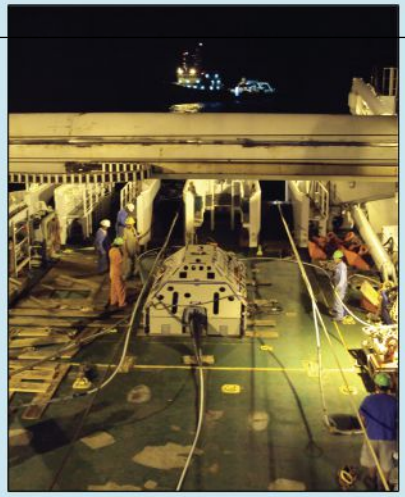
Their results predict a mean global carbon export flux of 6 petagrams (Pg) per year. Also known as a gigaton, a petagram is equal to one quadrillion (1015) grams. This is a huge amount, roughly equivalent to the annual global emissions of fossil fuel. At present, fossil fuel combustion represents a flux to the atmosphere of approximately 9 Pg per year.

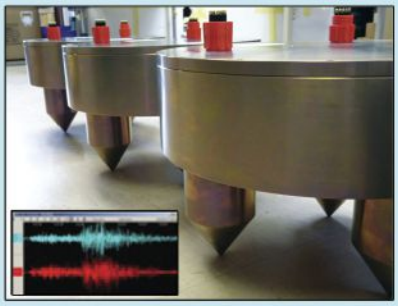
The researchers are taking their model one step further by planning a major field program designed to better understand the states in which the biological pump operates. "Understanding the biological pump is critical," Siegel concluded. "We need to understand where carbon goes, how much of it goes into the organic matter, how that affects the air-sea exchanges of CO_2 and what happens to fossil fuel we have emitted from our tailpipes."

For more information, visit www.ucsb.edu.

Shortfin Mako shark makes a direct bee-line south

Researchers say a juvenile shortfin mako shark tagged more than 8 months





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Offshore Communications Backbone

The OCB is a modular seafloor communications network that is directly connected to the Internet. Clients can provide and control their own sensors and data outputs, or CSnet can provide a suite of sensors from the surface to the seafloor with data directly forwarded to the client's onshore facilities. CSnet's OCB allows for individual component and end to end networked testing of power and communications functionality during the buildup and pre-deployment phases, ensuring a cost effective and successful installation. The OCB represents a proven network module that has been designed, constructed and tested, eliminating upstart time and cost. Each OCB module is expandable and so can be configured to accommodate large or small applications at a predictable cost.

ago off Ocean City Maryland is tracking a highly unusual path directly south in the mid-Atlantic—a fast track to a mystery destination.

"I've never seen one act quite like this one," said Dr. Mahmood Shivji, director of Nova Southeastern University's (NSU) Guy Harvey Research Institute (GHRI) and Save our Seas Research Center. "The mako is displaying an amazingly directed movement – as if this shark has a specific destination it wants to get to in a hurry," he added, pointing to a computer screen showing the nearly straight vertical path of a young male mako dubbed I-NSU.

Shivji and his GHRI team have satellite tagged and tracked several species of sharks. I-NSU is among 16 mako sharks tagged with special satellite-linked devices allowing GHRI researchers to monitor their movements. The research team has a particular interest in mako shark behavior and conservation. In addition to being the NSU athletics mascot, this fast swimming species is also under heavy fishing pressure. In fact, three of the nine mako sharks GHRI started tracking in 2013 were captured in commercial longline fisheries.

The tracking website is an educational outreach component of GHRI's quest to study shark migration patterns, with the ultimate goal being to better understand and protect them, as some species are threatened or endangered.

NSU's GHRI began tagging mako sharks in 2009 to study their migratory patterns and now undertakes expeditions worldwide to study these amazing animals. The school's marine experts have tagged mako sharks as far away as Mexico and New Zealand. In addition to makos, GHRI and Save Our Seas Shark Research Center scientists are also tracking tiger, oceanic

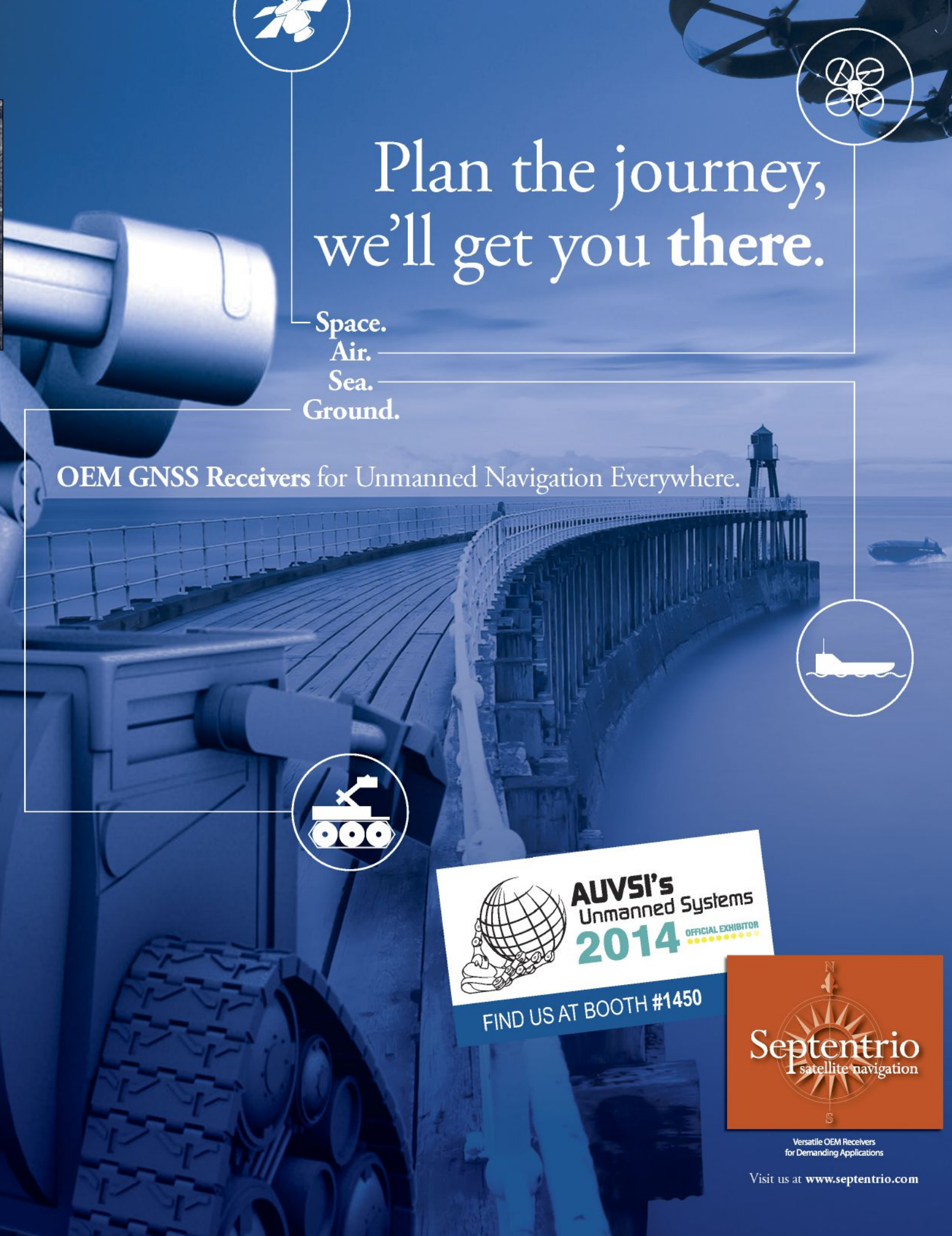
white tip and sand tiger sharks, as well as blue marlin.

Shivji said tagged sharks, though many do traverse thousands of miles, often move in irregular patterns, sometimes even crossing over previous tracks and frequently changing directions.

"I-NSU also showed an irregular and looping pattern for 4 months when it was exploring northern latitudes, but at some point it decided it was time to get somewhere directly south and has been on a virtual straight track for the last nearly 1,100 miles," he said.

Is the shark on a mission to reach a destination? "I guess we will just have to wait and see," said Shivji. "It certainly hasn't been meandering for the past 26 days. It sure looks like it's focused on getting somewhere specific."

To follow I-NSU as well as other tagged sharks in near real-time, visit www.nova.edu/ocean/ghri/tracking.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Europe's seas at risk

Many of Europe's marine species, habitats and ecosystems have been threatened for decades. As maritime economic activities are predicted to increase in coming years, a new briefing from the European Environment Agency (EEA) argues that the cumulative impact of human activity should be better managed to avoid irreversible damage to ecosystems.

Many European industries have growing cumulative impacts on the sea, including transport, fishing, offshore energy and tourism. "Marine messages" highlights the vulnerable nature of Europe's marine ecosystems, which may be irreversibly damaged if they continue to be exploited beyond sustainable limits. European countries need better information to help them understand the nature of these limits, the briefing says.

Approximately two fifths of the EU's population—206 million people—live in a coastal area, and 23 of 28 Member States have a coastline. According to analysis from the European Commission, Member States must make urgent efforts and improve cooperation for the marine environment to reach good status by 2020, a target under the Marine Strategy Framework Directive.

For more information, visit www.eea.europa.eu.

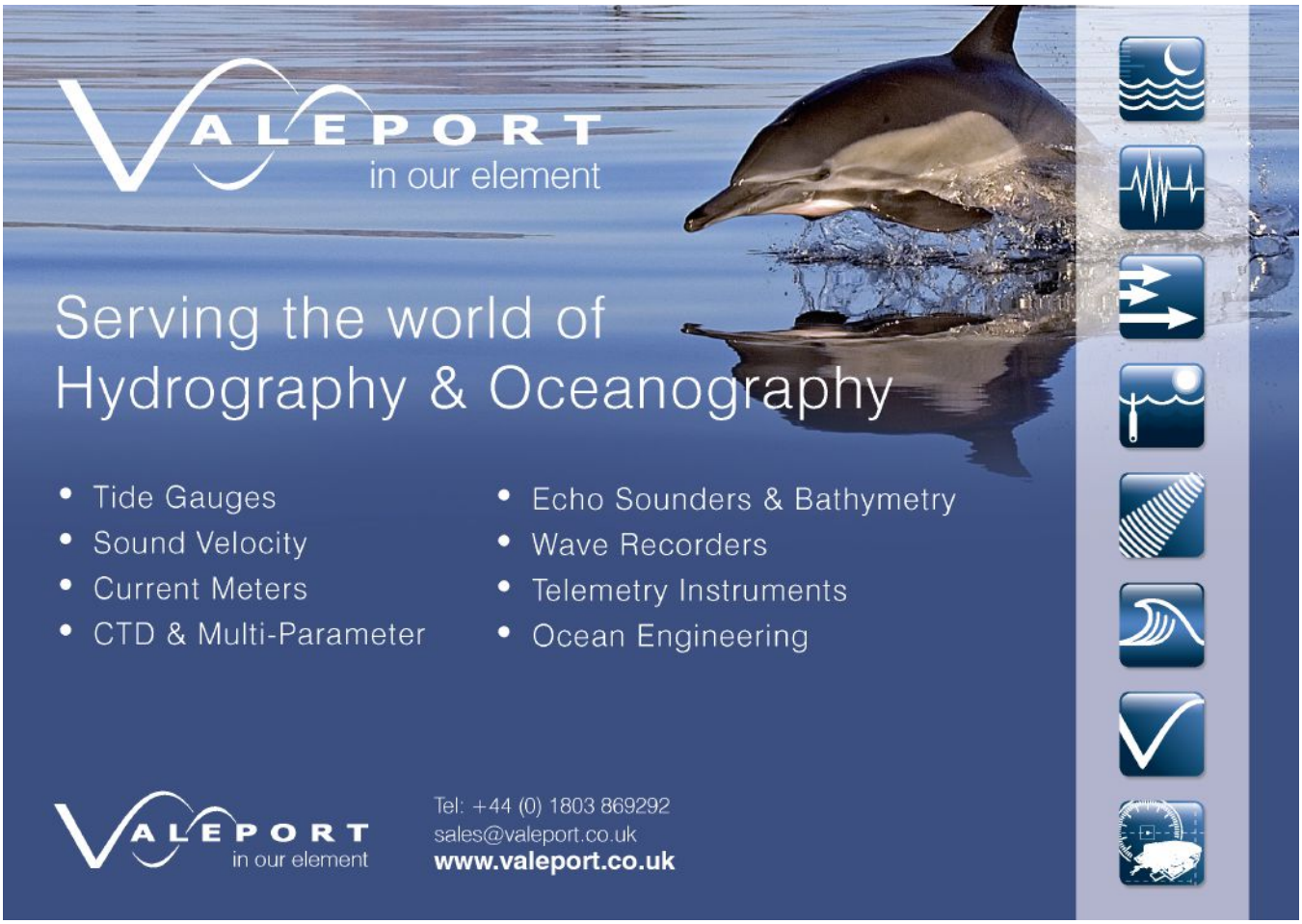
Offshore dispersant data and decisions

Dispersants are often used in oil spill responses because they may mitigate the environmental impacts of the spill by moving the oil from the water surface into the water column enhancing its biodegradation. While this process helps reduce the likelihood of oil exposure to marine wildlife such as seabirds and marine mammals, aquatic toxicity on marine communities from the dispersant and the chemically dispersed oil needs to be considered more carefully.

Scientists at Research Planning, Inc. and HDR Ecosystem Management evaluated the standard toxicity testing data used to inform dispersant decisions and published a critical review of their findings in the scientific journal Environmental Toxicology and Chemistry in March 2014. The authors found issues with the current practices, and lead author Adriana Bejarano notes, "Despite concerted efforts by the spill response community to propose and promote discussions on better laboratory practices, studies are still performed without consideration of such recommendations." Laboratory tests frequently used by decision makers do not adequately replicate the conditions in the field, such as sea state and weather, nor do they necessarily consider exposure durations (short-term vs. standard exposure) and concentrations (steady concentrations vs. spiked concentrations).

Bejarano's goal was to bring to light some of the common misconceptions and challenges in existing data and to encourage decision makers to consider data quality when making decisions on the use of dispersants. "Data comparability is difficult because of the mixed messages coming from the scientific literature. Many believe that dispersants make oil more toxic, when in reality existing data generally do not support these claims. Being critical would be beneficial to the entire decision-making process."

For more information, visit www.setac.org.



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Radoil Constantly Improving with the Changing Oil & Gas Industry

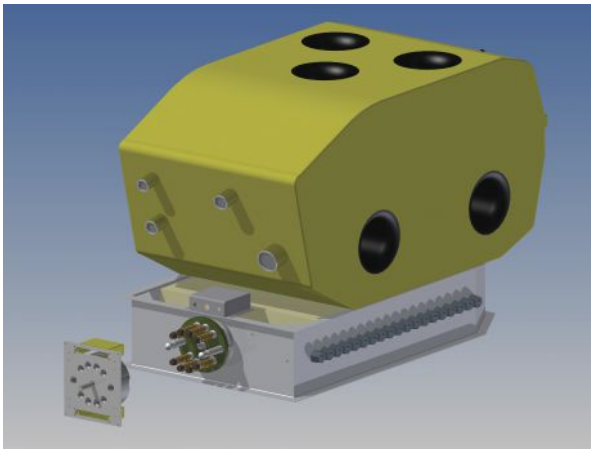
Starting in 1980, early research and development projects prepared Radoil for future opportunities and when Radoil was asked by Hydril to build a set of offshore MUX reels to work with its Blowout Preventer (BOP) control system, we were prepared to be lucky. Radoil built those reels for Hydril, but also improved the design with engineering innovation and expertise that have become its hallmark. The company then began to build umbilical and hose reels for a number of other companies. Radoil has gone on to become the dominant supplier of offshore MUX (Multiplex electro-hydraulic) and hotline reels (approximately 70% of all installed) and has also branched into a wide variety of diversified products to monitor and help control BOP stack functions and other equipment on deepwater rigs.

MUX reels handle and store umbilical cable, which provides electric and fiber optic connections for deepwater BOP systems

IWOCS reels handle, store, and control hydraulic hose that provides multiple hydraulic connections for installation/work-over control systems.

Radoil is utilizing those same characteristics of innovation and engineering to design and manufacture Dual Gradient Reels as well as Riserless Intervention Reel/Winch sets. We have also greatly increased our production of IWOCS Reels. These reels can handle a large number of hydraulic functions and can be used in various applications outside of its traditional Installation, work-over, and completion functions. Recently, several hydraulic reels were manufactured with stab plate connector systems to control 74 separate hydraulic quick disconnect functions from each reel.

Radoil developed the WAEF BOP Intervention System (patent pending) to deal with the potential of losing hydraulic communication with the surface. This system could allow a Remote Operated Vehicle (ROV) utilizing an API standard ROV interface belly skid to gain substantial control over subsea BOPs and completion systems as well as providing deepwater access to the Choke and Kill (C&K) lines. This WAEF system can be placed on new BOP systems or retrofitted to existing BOP systems. The standard interface will offer up to 24 individual hydraulic control signals plus a single torque function capable of 1,000 ft-lbs. Radoil's unique Frictionless Stabs allow for the insertion of up to 24 hydraulic seals with very little insertion force and then set the seals for full engagement. Radoil's Shear Ram Enhancer on the WAEF BOP Intervention System effectively doubles the shearing force available for subsea BOPs, allowing the shearing of a greater range of well bore pipes.



WAEF BOP Intervention System showing ROV belly skid and docking station.

Radoil continues to maintain its ISO 9001:2008 certification to complement other ASME, DNV, and ABS certifications that it has achieved. We also regularly meet all customer HSE and SEMS audit requirements.

"Leading" is a phrase that is often overused or misused. Most of Radoil products, however, have some patented performance and safety benefits, and we have the leading market share of almost all of the major product lines we produce. These facts truly qualify Radoil as a Leader. This is why many deepwater companies turn to Radoil to improve their profitability and reduce their risk.

When you're in deepwater…you need Radoil.

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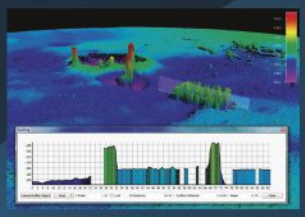

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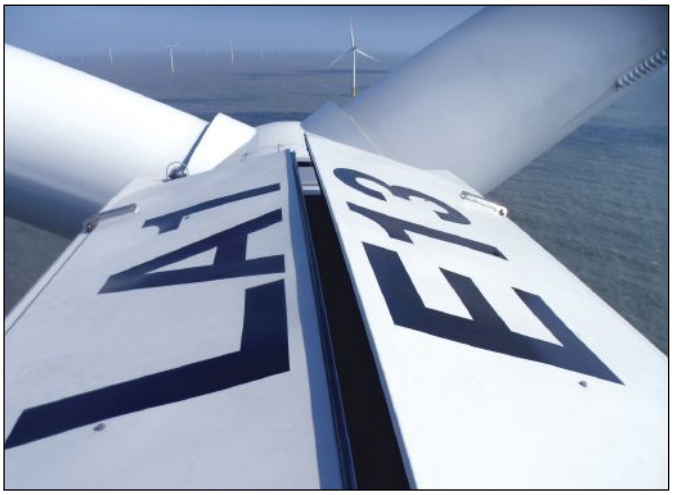
SRP awarded large contract for Rocksteady™ in Australia
Subsea Riser Products (SRP), an Acteon company, has been awarded a large contract with Carnegie Wave Energy to provide subsea foundation connectors, articulating bearings and tether assemblies for Carnegie's Perth Wave Energy Project off Western Australia. This is the first time that a variant of the SRP Rocksteady™ subsea mooring connector will be deployed on such a project, following successful qualification and fatigue testing in 2013. The Carnegie project will be the first wave power application in the world to operate with multiple wave power convertors in an array and the first to produce both clean power and fresh water. The scope of the contract includes three Rocksteady™ mooring or foundation connectors, with a breaking load (MBL) rating of 2,000 tons. They are part of articulated bearing assemblies in a shallow water depth of 30 m, situated off the coast of Western Australia. Manufacturing and assembly work will take place in the UK and mainland Europe, and the first phase of equipment will be delivered in the first quarter of 2014. The project will require skills from a range of departments within SRP, including design, engineering, quality and procurement.

Deepwater Wind selects turbine installation vessel for Block Island wind farm
Deepwater Wind announced the selection of industry leader Fred. Olsen Windcarrier to provide the vessel for the turbine installation at the Block Island Wind Farm, a project that remains on track to be among the nation's first offshore wind farms. Fred. Olsen Windcarrier's self-propelled jack-up vessel Bold Tern is one of the world's most advanced installation vessels. The contract with Fred. Olsen Windcarrier follows Deepwater Wind's signing of turbine supply and long-term maintenance agreements with Alstom, which will supply the Block Island Wind Farm with five of Alstom's 6-MW Haliade 150 offshore wind turbines. Fred. Olsen Windcarrier previously installed Alstom's Haliade 150 turbine in Belgium's Belwind 1 demonstration.

Vestas chosen as preferred provider of turbines for Burbo Bank
DONG Energy has conducted a competitive tender for the supply of turbines, where Vestas Wind Systems as a result of the tender has been chosen as the preferred supplier with a proposal to deliver the V164-8.0 MW turbine for the Burbo Bank Extension Offshore Wind Farm. The choice of Vestas is subject to the wind farm being awarded a Contract for Difference under the EMR FID-enabling regime and to the parties agreeing on a detailed supply agreement which is expected to be signed later this year. With the V164-8.0 MW turbine Vestas Wind Systems has increased the competition in the multi-MW offshore turbine market. DONG Energy welcomes the competition as this will be an important factor in DONG Energy's ambition to reduce the cost of electricity for offshore wind by 35% to 40% for projects sanctioned in 2020. In December 2012 DONG Energy and Vestas Wind Systems entered into an agreement to cooperate on a number of test activities for the prototype of the V164-8.0 MW at the Test Centre in Østerild to accelerate the development of the turbine. The Burbo Bank Extension Offshore Wind Farm has a maximum capacity of 258 MW and is located 7 km off the English west coast besides the existing Burbo Bank Offshore Wind Farm which has a capacity of 90 MW. Based on the formal permits and timetable for the offshore wind farm it could potentially be built from second half of 2016. DONG Energy has not taken a final investment decision to build the offshore wind farm.

London Array to stay at 630 MW



The consortium behind London Array will not proceed with the development of Phase 2 of the offshore wind farm. The decision follows a review by the consortium members of their respective portfolios, the technical challenges and the environmental uncertainties surrounding the site, which require a wait of at least 3 years until Phase 2's potential impact on birds could be completely assessed.

London Array has formally requested The Crown Estate to terminate the agreement for lease for the Phase 2 area and has cancelled the remaining grid capacity it had reserved at the National Grid substation at Cleve Hill, Graveney, Kent.

General Manager Mike O'Hare, said, "Phase 2 has always been subject to a Grampian condition requiring London Array to demonstrate that any change caused by the additional turbines to the habitat of the Red Throated Divers that overwinter in this part of the Thames Estuary would not compromise its status as a designated environmental Special Protection Area. We believe it will take until at least January 2017 for that data to be collected and, although initial findings from the existing Phase 1 site look positive, there is no guarantee at the end of 3 years that we will be able to satisfy the authorities that any impact on the birds would be acceptable."

"In the absence of any certainty that Phase 2 would be able to go ahead, our shareholders have decided to surrender The Crown Estate agreement for lease on the site, terminate the grid connection option, and concentrate on other development projects in their individual portfolios," O'Hare continued. "Our existing operations at Ramsgate and staffing levels are unaffected."

The original consent for London Array was for a wind farm of up to 1,000 MW, with 630 MW in Phase 1 – which is complete, fully operational and the world's largest offshore wind farm. Phase 2 had the potential to provide capacity for a further 370MW although known constraints on site resulted in plans for just 240 MW being drawn up with an expectation that the final capacity would be closer to 200 MW.

Mike O'Hare added: "The Phase 2 site is technically more challenging than Phase 1 with a large area in very shallow water. Additional issues include a difficult and longer route for the export cables and an exclusion zone for aggregates operations. Phase 1 is performing very well with January 2014 London Array's second successive record month for the

amount of electricity generated. Our shareholders remain committed to offshore wind in the UK, however the combination of environmental uncertainties, technical challenges and the option to develop other sites has resulted in their decision not to proceed with Phase 2."

The project consortium has the following shareholdings: DONG Energy owns 50%, E.ON has 30% and Masdar has 20%.

For more information, visit www.londonarray.com.

3U Technologies selected to support NNMREC

3U Technologies, LLC has been selected by The Northwest National Marine Renewable Energy Center (NNMREC) to provide technical and procurement support for establishment of the Pacific Marine Energy Center South Energy Test Site (PMEC-SETS) in Newport, Oregon. As part of the support, 3U is providing transmission cable design and analysis; cable specifications; cable system procurement/delivery; and installation planning and consulting. 3U will provide a desktop study to inform the cable route selection process, cable landing surveys and underwater route alignment to alternative onshore locations. The study also includes refinement of budget estimates, preparation of permitting and environmental documentation, community outreach activities, preparation of the marine survey specifications and technical support for the marine surveys.

Plans are now in place to survey potential terrestrial landfalls and marine routes during spring/summer 2014 based on candidate cable routes and landing sites identified during the initial desktop study. The marine survey will investigate seafloor conditions along potential cable routes in order to select the optimum route. The marine survey will analyze seafloor conditions using high-resolution, multi-beam echo sounder, vibracoring, acoustic and seismic sub-bottom profiler. Marine and terrestrial seismic data will be used to investigate potential HDD landfall alignments. Results of these investigations will be used to define a preferred landfall location and marine route. Terrestrial coring investigations of the preferred route will follow to further define the site geology and geotechnical requirements for HDD installation of a 4,000 to 5,000 ft long underground conduit system for cable landfall installation.

NNMREC, a collaboration between Oregon State University and the University of Washington, is in the process of developing the first utility-scale, grid connected, wave energy test site in the U.S.—PMEC-SETS. Subsea transmission cables will transmit the generated power to the local power grid with empirical data sent to scientists, engineers, and device owners for analysis and evaluation. NNMREC also operates a non-grid connected test site—PMEC North Energy Test Site (NETS)—where developers can test energy generation potential and environmental impacts of wave energy devices, as well as research innovative concepts that will advance the industry. NNMREC is primarily funded through the U.S. Department of Energy.

For more information, visit www.3utech.com.

Tenerife Island council promotes installation of wave energy plants

Tenerife Island Council president, Carlos Alonso, and Langlee Wave Power CEO, Julius Espedal, have signed an agreement to promote the installation of wave energy plants off the island of Tenerife. The aim is to install this type of sustainable energy off Tenerife as a viable, competitive and efficient alternative to other types of energy currently in use.

Norwegian marine energy company Langlee Wave Power has chosen the Canary Islands as the manufacturing site for its generator. This semi-submergible floating converter, known as the Robusto, converts wave movement into electrical energy.

The Island Council intends to take an active part in developing, commissioning and running the wave farms in the northwest of the island. The agreement will help Tenerife adapt to the EU legislative framework that aims to have a minimum share of renewable energies in gross final energy consumption of 20% by 2020.

The Langlee Robusto converter combines cutting edge Norwegian offshore technology with standard, low-maintenance components and materials. Its innovative design means that most components can be manufactured or assembled in the Islands, giving a boost to local industry and creating a skilled workforce in the badly hit Canary Islands economy. The converter has no visual or environmental impact and is compatible with water sports.

The north coast's wave conditions make it an ideal location for Robusto, which will have an output of 132 kW in the first phase. The municipalities of Garachico, Buenavista and Icod de los Vinos are already planning to install wave converters off their coasts. The 30 by 50 m converter is assembled on land and towed to the installation site for mooring. The number of units assembled depends on the energy requirements.

For more information, visit www.langleewavepower.com.

A&P wins major contract with leading wave energy firm

A&P Falmouth has been awarded a landmark contract by leading wave energy firm Seatricity to build a wave energy device to be deployed at Wave Hub, the offshore renewable energy test facility.

The company, which has a growing reputation in the marine renewable energy sector, will manufacture, fabricate and assemble the wave energy converting device, Oceanus 2, which is made from marine grade aluminium.

The last few years have seen rapid growth for A&P in the industry, thanks to the company's focus on meeting the needs of renewable energy firms.

The larger rated capacity Oceanus 2 will be built in the fabrications workshops, assembled on the quayside and deployed from a wharf at A&P's shipyard in Falmouth. It will be deployed in spring 2014 and, if successful, it will pave the way for the manufacture of a further 60 devices.

Seatricity plans to develop a full-scale 10-MW grid-connected array over the next 2 years at Wave Hub, some 10 mi off the coast of Hayle.

In the simplest terms the device, a 10 m in diameter floating ring with cross tubes, travels up and down with the waves and operates a pump to pressurize sea water to drive a hydroelectric turbine to produce electricity.

The float is tethered to blocks on the seabed and the pumps are linked together to generate substantial amounts of highly pressurized water. This pressurized sea water can also be used for directly producing fresh water by the reverse osmosis desalination process. Both fresh water and electricity can be produced simultaneously.

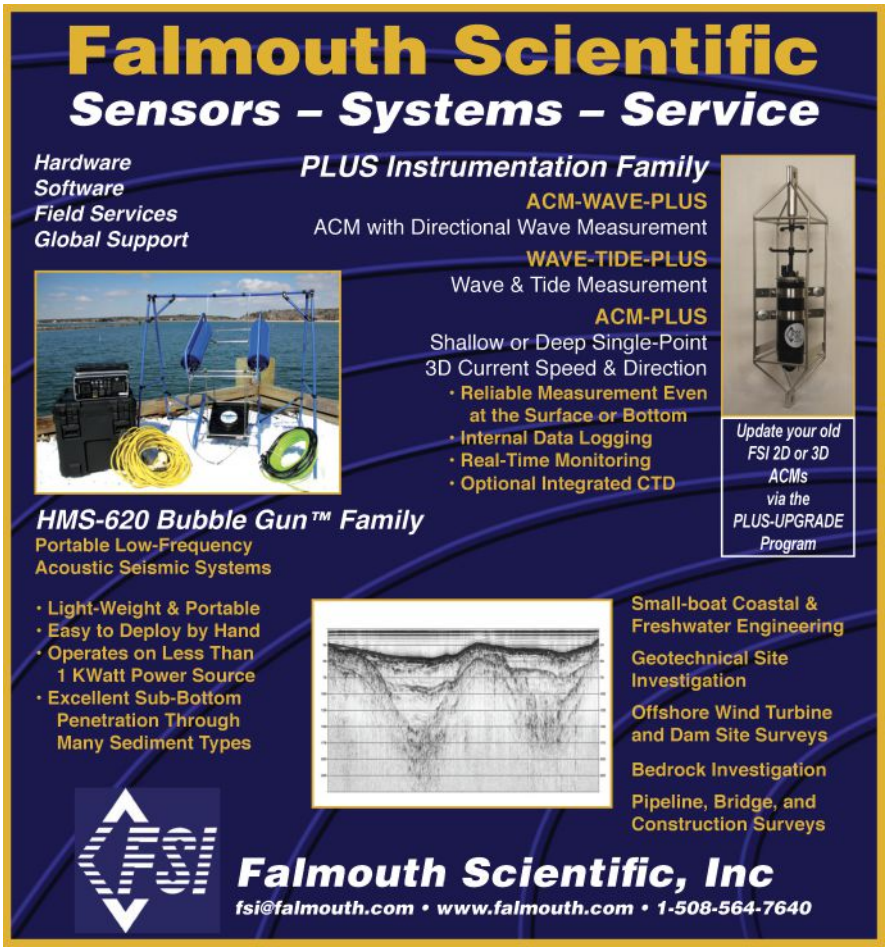
For more information, visit www.ap-group.co.uk.

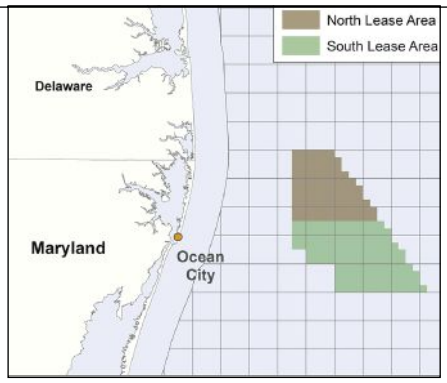
New tests planned for wave energy converter

The second phase of testing of Enel Green Power's (EGP's) R115 marine wave energy converter, developed by 40South Energy and having a nominal capacity of 150 kW, has now been kick-started.

The new converter was designed and built for Enel Green Power, the Enel Group renewables company, by 40South Energy. The R115 ensures full integration into the marine environment and ease of maintenance. Once fully operating, each of the R115 family converters will be able to generate around 220,000 kWh per year, enough power to meet the needs of more than 80 households.

The results of the initial phase of testing confirmed the expected performance of the machine in a marine environment and the extreme ease of its installation. Furthermore, the testing revealed a number of refinements for making the machine more durable in water. Armed with this field experience, the partners are continuing to work on optimizing the materials and structure





of the machine with the goal of soon installing other machines of the same class in the Mediterranean Sea and in an ocean environment, particularly off the coasts of Chile and the United States.

As a result of this successful testing, EGP and 40South Energy further strengthened their technological partnership in order to develop, through 40South Energy, a new wave energy converter with a nominal capacity of 2 MW, building upon the operational systems employed and maintaining the essential features of the model currently being tested. In pursuing such activities, the two companies are relying on the know-how gained through the R115 as well as benefitting from EGP experience on operation and maintenance of renewable generation facilities at the global level.

The installation of this first device to exploit wave motion to generate electricity increases the already broad spectrum of technologies available to Enel Green Power—hydro, solar, wind, geothermal and biomass—a feature that, together with geographical diversification, makes Enel Green Power unique at the global level.

For more information, visit www.enelgreenpower.com.

Dominion plans to join auction for Maryland offshore wind leases

Dominion filed with the Bureau of Ocean Energy Management (BOEM) to be among the bidders seeking to develop wind turbines to generate electricity on nearly 80,000 acres off the coast of Maryland.

The area will be auctioned in two separate leases. The North Lease area totals 32,737 acres and the South Lease Area consists of 46,970 acres.

Dominion was the successful bidder in the bureau's auction in September 2013 for 112,799 acres, 24 mi off the coast of Virginia.

Dominion's filing and those of other interested bidders will be reviewed by the BOEM to determine which are financially qualified to participate in the auction. The auction was announced in a proposed sale notice that the bureau issued in December and the deadline for filing comments and qualification packages was 18 February. A date for the auction has not been set, but is expected in 2014.

Dominion has received two offshore wind energy technology awards from the U.S. Department of Energy. The first is a $500,000 grant with a goal to find innovative ways to reduce the cost of offshore wind generation by 25% and the second is a $4 million cost share for the initial development of an offshore wind turbine demonstration project.

Dominion has completed the initial development of its demonstration project for the Virginia Offshore Wind Technology Advancement Program. The company is one of six firms being considered for a $47 million grant to complete development of their demonstration project.

For more information, visit www.dom.com.

Fiscal year 2014 Navy destroyer contract awards announced

The Navy awarded two separate contract modifications to fund one Fiscal Year (FY) 2014 DDG 51 Arleigh Burke Class destroyer under a previously awarded FY 2013-2017 multi-year procurement (MYP) contract with Huntington Ingalls Industries (HII) and to exercise the option for one DDG 51 Class ship to General Dynamics Bath Iron Works (BIW) under a previously awarded FY 2013-2017 MYP contract. General Dynamics Bath Iron Works (BIW) is being awarded a $642,583,946 modification to their existing fixed-price incentive firm target (FPIF) contract to exercise options for construction of a DDG 51 Class ship. The modification also provides $79,400,000 in advanced procurement funding for the FY 2016-2017 ships. HII is being provided funding of $601,990,190 for the FY2014 DDG 51 class ship and exercised options. The modification also provides $79,400,000 in advanced procurement funding for the FY 2016-2017 ships. These awards bring the total number of awarded ships to ten across the FY2013-2017 MYP contracts, stabilizing the industrial base and increasing Economic Order Quantity (EOQ) savings to the Navy. The Navy successfully worked with Congress to resolve funding shortfalls resulting from sequestration reductions before contracting for the option ship. "These awards demonstrate the Navy's commitment to instilling the tenants of Better Buying power in our acquisition programs," said Sean Stackley, assistant secretary of the Navy for research, development and acquisition. "By successfully leveraging competition throughout the DDG 51 shipbuilding program, the Navy was able to apply the cost savings and procure one additional ship, delivering a vital warfighting asset to the Fleet." A competitive allocation strategy used in the DDG 51 class shipbuilding program since 1996, known as Profit Related to Offers, or PRO, uses FPIF contracts to ensure reasonable prices while maintaining the industrial base. Congressional approval for the use of MYP contracts facilitated program budget savings of more than $2.2 billion while enabling the shipbuilders and equipment manufacturers to more efficiently plan future workloads. "The continued support of Congress for the DDG 51 program, including the appropriation of funding required to resolve sequestration shortfalls and allow funding of the option ship, enables critical industrial base stability while ensuring the most efficient and affordable build plan for these destroyers," said Stackley. The destroyers are being procured in a Flight IIA configuration, relying on a stable and mature infrastructure while increasing the ship's air and missile defense capabilities through spiral upgrades to the weapons and sensor suites.

General Dynamics awarded $36M for submarine development work

General Dynamics Electric Boat has been awarded two contract modifications from the U.S. Navy worth a total value of $35.8 million. Electric Boat is a wholly owned subsidiary of General Dynamics. Under the first contract, valued at $19.8 million, Electric Boat will perform advanced submarine research and development studies in support of a wide range of technology areas including manufacturability, maintainability, survivability, hydrodynamics, acoustics and materials. The company will also conduct research and development work in manning, hull integrity, performance, ship control, logistics, weapons handling and safety. The contract supports near-term Virginia-class technology insertion, future submarine concepts and core technologies. Initially awarded in November 2010, the contract has a potential value of $710.6 million over 5 years. For the second contract, valued at $16 million, Electric Boat will continue development of the Common Missile Compartment for the U.S. Ohio replacement submarine. The company will procure missile tube long-lead-time material and design and manufacture hardware. Initially awarded in December 2012, the 5-year, $1.85 billion contract calls for Electric Boat to perform research and development work for the Navy's next-generation ballistic-missile submarine, which is scheduled to begin construction in 2021. The potential value of the overall contract is $2.3 billion.

RFA Fort Victoria £47M refit

Birkenhead shipyard and engineering service provider Cammell Laird has begun a £47 million refit of the Royal Fleet Auxiliary (RFA) Fort Victoria.

The massive refit will be the biggest ever undertaken by the yard since it began its 25-year through life support cluster contract to maintain 9 of the 13 ships in the RFA flotilla in 2008. The contract was renewed for a further 5 years from 2013 based on key performance indicators and value for money. The RFA Fort Victoria is one of the largest vessels operated by the British Ministry of Defence. She has just completed 3 years of active service where she has been Britain's number one pirate catcher on operations off the coast of Somalia as well as supporting the Royal Navy in traditional roles.

Cammell Laird Project Director Spencer Atkinson, who will be leading the refit for Cammell Laird, said it would be one of the most detailed ever undertaken by the yard employing 200 skilled workers plus sub contractors over nearly a year.

The main jobs on this contract will include an accommodation uplift, the replacement of six diesel generators, with complete new fuel, lub oil, salt water and fresh water systems and new pumps. In addition we are overhauling the engine and main propulsion systems and steering systems. Another big job will be the installation of two ballast water treatment plants using the latest environmentally friendly technology and know how. Elsewhere we are replacing two sewage treatment plants, installing new Reverse Osmosis Plants and a new incinerator and upgrading all crane ammunition handling equipment. We are also replacing the fire detection system throughout the vessel and installing a new local fire suppression system on the main engines and generators. All the weapons and weapon systems will also be overhauled. Meanwhile extensive general dry-docking works will be undertaken including painting and blasting of tanks and underwater hull and painting the superstructure, including all her decks.

For more information, visit www.cammell-laird.com.

Austal commemorates keel laying for Trenton (JHSV 5)

On 10 March 2014, Austal held a keel-laying ceremony for the fifth Joint High Speed Vessel Trenton (JHSV 5), one of 10 Austal-designed 103-m U.S. Navy Joint High Speed Vessels under contract with the U.S. Navy. The ship's sponsor, Ms. Virginia A. Kamsky, was present at the ceremony to authenticate the keel.

A highly distinguished business woman, Ms. Kamsky was chosen to sponsor the ship by Secretary of the Navy Ray Mabus. Ms. Kamsky is serving under a White House appointment as a member of the U.S. Secretary of the Navy Advisory Panel (SNAP), an advisory body that provides the Secretary of the Navy with independent advice and recommendations on critical issues facing the Department of the Navy and the Navy Secretariat. Ms. Kamsky is a recipient of the Navy Distinguished Civilian Service Award, which is the highest honorary award the Secretary of the Navy can confer on a Department of the Navy civilian employee. Ms. Kamsky graduated cum laude from Princeton University in New Jersey, with a B.A. in East Asian Studies and attended the MPA program at Princeton University's Woodrow Wilson School of Public and International Affairs.

A traditional keel-laying ceremony marks the first significant milestone in the construction of the ship. Due to Austal's modular approach to ship manufacturing, all 43 of the modules used to form this 103-m aluminum catamaran design are already being assembled. For Austal, keel-laying marks the beginning of final assembly. Twenty modules have been moved from Austal's Module Manufacturing Facility and erected in the final assembly bay in their pre-launch position, the first having been erected less than 2 months ago on 17 January 2014. The rest will follow over the coming months.

For more information, visit www.austal.com.

Swift and bold: A piracy alert response

On Friday 28 February, at 12:18 pm, lookouts on board the Thailand flagged merchant cargo ship MV Tateyama saw two small motor-powered skiffs carrying several men behaving oddly around a mile away. Suddenly accelerating, the skiffs changed direction and headed straight towards the ship.

The lookouts suspicions were aroused. Knowing that their current position, 60 nmi off the coast of Oman near to the Strait of Hormuz, is a piracy hotspot, the crew wondered if the high-speed maneuvers meant these were pirates, preparing to make an attack.

Sensing the ship's vulnerability due to not having a protective armed security team embarked, the Master broadcast a distress message to other nearby vessels and the Omani Coastguard requesting immediate assistance.

This set in motion a coordinated response between naval ships and aircraft from several nations that ultimately ascertained that the piracy alarm was not an attack. Yet the firm actions reassured the tanker and reaffirmed the message to

would-be pirates that any attempts at illegal activity would receive a swift reaction from international naval forces.

As the skiffs continued to close the distance between themselves and the merchant ship, Tateyama's Master remained concerned they were possibly trying to intercept the tanker.

He put his crew's counter-piracy training into practice by initiating a whole-ship lock-down, increasing vessel speed to maximum, starting fire pumps and overflowing the ballast tanks to make any potential boarding as difficult as possible. Tateyama's 27 crew were mustered and accounted for and waited for the response from local maritime authorities.

Meanwhile, having picked up news from the UK Maritime Trade Organisation in Dubai of the Tateyama's distress signal, Combined Maritime Forces counter piracy task force, CTF 151, scrambled Australian frigate HMAS Darwin to close the Tateyama's location to assess the situation and combat any attack that was in the offing.

A Pakistan Navy maritime patrol aircraft (MPA) also quickly reached the scene and established communications with the Tateyama's Master. Shortly afterwards, a United States MPA joined the coordinated action to support the merchant vessel, making contact on the emergency VHF channel 16.

One of the skiffs stopped in the water and the other shortly slowed to a speed of around 12.5 knts. Any threat to the Tateyama's security now seemed unlikely.

Once the maritime activity entered Oman territorial waters, the Oman Coast Guard authorities efficiently took control of the situation and managed to stop the skiffs and question the men on board.

The MV Tateyama's Master was able to stand down his alerted crew and the tanker continued safely on its passage to the port of Fujairah.

For more information, visit www.combinedmaritimeforces.com.

NATO's counter-piracy flagship De Bazan tests crew readiness at sea

NATO's counter-piracy flagship, the Alvaro De Bazan, participated in an air defense training drill in the Gulf of Aden on 5 March 2014 meant to keep the ship's crew ready for any challenge on the high seas, including their mission to deter Somali pirates.

The Spanish vessel also currently leads the Standing NATO Maritime Group Two (SNMG2), which is one of the Alliance's immediate response forces at sea.

"As the Commander of SNMG2, I am responsible to ensure we are ready for any contingency and while we are currently assigned to NATO's counter piracy mission, Operation Ocean Shield, my force, if ordered, must be capable of responding to any crisis anywhere in the world within 48 hours," said Rear Admiral Eugenio Admiral del Rio.

The Alvaro de Bazan is a modern Aegis air defense frigate. French air force fighters from their base in Djibouti participated in the drill, which tested the ability of the De Bazan to track their movements and lock onto the jets during a simulated attack with its high tech radar and Aegis air defense system. To keep his forces ready for all contingencies the Admiral routinely puts his command ship through its paces, including drills of a high intensity combat nature, even while they are conducting anti-piracy patrols.

NATO ships have been working with vessels from the European Union, as well as other international navies and the commercial shipping industry to fight piracy off the Somali coast. Their actions have reduced the level of piracy from 147 attacks in 2011 to just 5 in 2013.

For more information, visit www.nato.int.

Kongsberg to upgrade Royal Norwegian Navy's PROTEUS simulator infrastructure

KONGSBERG has signed a contract for upgrade of the Royal Norwegian Navy's (RNoN) PROTEUS simulator infrastructure.

The contract scope includes infrastructure upgrades and migration to a common PROTEUS simulation core for all the RNoN's KONGSBERG delivered simulators, new visual image generation, a generic HLA Evolved interface enabling further simulator participation in joint collaborative exercises

and a new PROTEUS map centric instructor station.

The contract has a value of 49 MNOK and will be delivered to the RNoN training establishment KNM Tordenskjold at Haakonsvern naval base in 2016.

"This contract is the result of KONGSBERG's long and proven relationship with RNoN. RNoNs decision to further upgrade and improve its PROTEUS-based simulator infrastructure strengthens our position as supplier of simulator systems, and in this context this is a very important reference contract for KONGSBERG," says executive vice president Leiv Inge Steig in Kongsberg Defence Systems.

For more information, visit www.kongsberg.com.

General Dynamics NASSCO delivers USNS John Glenn

General Dynamics NASSCO delivered the USNS John Glenn (MLP 2), the second ship of the Mobile Landing Platform (MLP) class, to the U.S. Navy. The ship is named after the Honorable John Glenn for his exceptional and decorated service as a U.S. Marine Corps pilot, astronaut and U.S. Senator. Construction of the USNS John Glenn began in April 2012. Throughout the MLP program, NASSCO has incorporated more than 10,000 improvement ideas into its operations, which contributed to controlling costs and delivering the MLP 2 on schedule with no open discrepancies. The 785-ft-long auxiliary ship will serve as a floating base for amphibious operations and operate as a transfer point between large ships and small landing craft.

NASSCO is currently building the third ship of the class, MLP 3, which will be configured as an Afloat Forward Staging Base (AFSB). It is scheduled for undocking in November and delivery in the second quarter of 2015.

For more information, visit www.nassco.com.

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It takes a Unique company to provide in-depth support — offshore and onshore — above and below water. That company is the Unique Maritime Group. Every facet and aspect of the Unique Maritime Group is testament to excellence, all stemming from our philosophy of "Strength In Depth", strength in performance, and depth of capabilities across a full range of services.

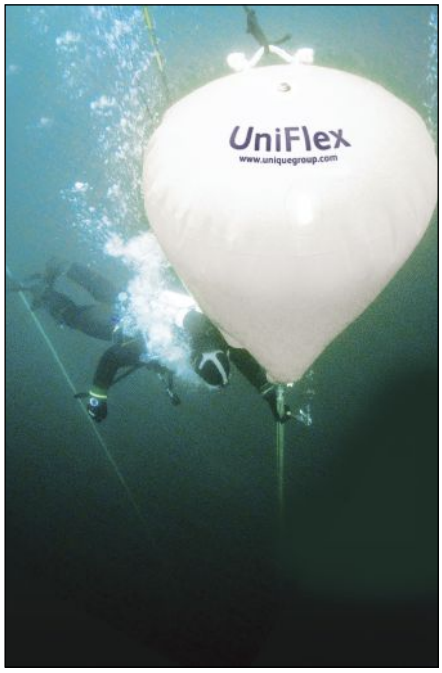
Unique System LLC (USA) is a Unique Maritime Group company that is one of the world's leading integrated turnkey subsea and offshore solutions providers. Established in 2005, Unique System LLC is based in New Iberia, Louisiana and Houston, Texas and offers the services and capabilities of the Unique Maritime Group to customers within the North American subsea oil and gas, mining, and construction sectors.

Unique System LLC has achieved significant success over the years specializing in the supply of equipment for sale and rental to the diving and offshore industries in the Gulf of Mexico region. From New Iberia, Louisiana, the company offers diving equipment rentals and sales, saturation systems, new builds, refurbishments, project management, and mining & construction tunnel boring machine airlocks. From Houston, Texas, its specialization embraces hydrographic survey rentals and sales.

Unique System LLC offers the most comprehensive and up-to-date equipment rental fleet and is one of the leading international subsea equipment specialists. It covers the entire northern coast region of the Gulf of Mexico to serve clients with maximum efficiency.

Unique System LLC designs and builds under the following regulatory Codes and Standards:

- DNV OS E305 & 402 Offshore Standard for Diving Systems
- ABS Underwater Rules
- IMCA
- ADC
- IMO Diving; and
- SOLAS



It has been recognized and accredited by IMCA (The International Marine Contractors Association), DNV and Lloyd's Register. It is also a member of THSOA (The Hydrographic Society of America).

To cater to the North American market and the needs of customers within this region, Unique System LLC has launched a range of air lift bags called "UniFlex."

The UniFlex range covers the most commonly used sizes of air lift bags in the offshore industry (500 kg, 1 ton, 2 ton, 3 ton, and 5 ton) and have been specifically designed to meet the rigorous safety requirements of the now widely recognized IMCA Guidance D016. UniFlex Air Lift Bags have not only been designed with a 5-times working load limit safety factor built in, but each size has been physically overloaded by a water-filled drop test to verify that the minimum requirement is not only met but exceeded. Independent type test certificates are available for all sizes of UniFlex Air Lift Bags. They are also fitted with a robust inverter line attachment point, which, again, has been function tested during full-scale under water trials.

In short, the features can be summarized as follows

- UniFlex is supplied directly from the manufacturer
- It is fully compliant with IMCA D016 Guidance
- It is proven via drop testing to meet required factors of safety
- It is proven via subsea testing to invert as required
- It is fitted with proprietary strop Dee-Tangler™ and strop i/d systems
- It is fully traceable down to component level
- It is delivered ready for immediate use, with product log book and operation manual; and
- It is available for purchase

Unique System LLC strongly believes in providing the best products in the market to their customers. No other manufacturer worldwide has gone to such lengths to ensure their products are fit for purpose, safe in use, made of the highest quality materials while maintaining a competitive price tag. This is what makes the UniFlex range of air lift bags stand out in the crowd — thus very aptly described as "The Best Bag at the Best Price." For more information visit www.uniquegroup.com.

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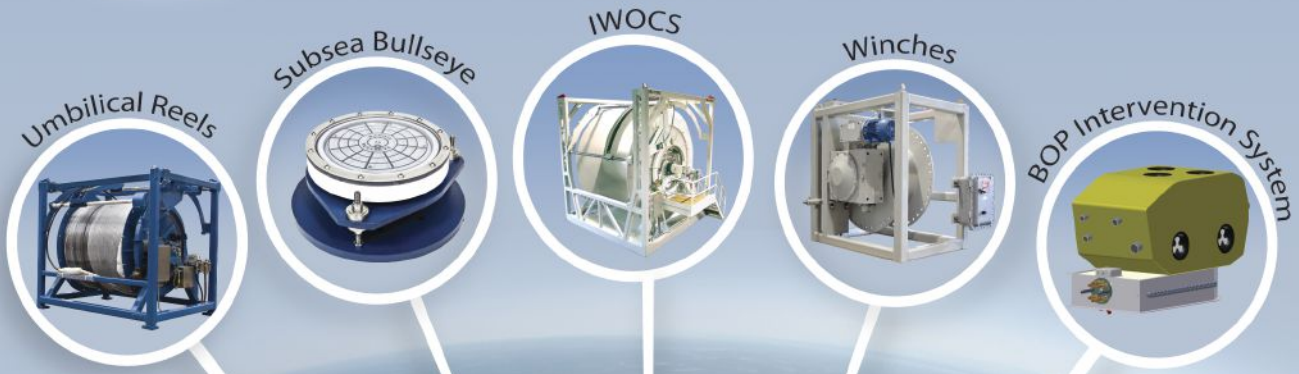

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Strong FPS spending through 2018 forecast by Douglas-Westwood

Douglas-Westwood's new World Floating Production Market Report forecasts that between 2014 and 2018 $99 billion will be spent on floating production systems (FPS), an increase of 138% over the preceding 5 years.

Deepwater FPS deployments are expected to total $68 billion and account for more than two-thirds of the total spend. The long-term growth is underpinned by continuing deepwater developments as well as marginal fields and fast-track-short term deployments.

The FPS sector recovery following the 2008-2009 downturn is steady. A total of 54 units were ordered in 2011-2013 compared to 23 units ordered during 2008-2009. There has been little growth in the annual value of installed units over the last 4 years; however, 2014 is expected to show a significant increase in the value of units deployed.

Utilization of FPSOs owned by leasing contractors has also improved since the last report, up three percentage points to 88%. FPSOs form the largest segment of the market (80%) both in terms of units installed and forecast capital spending over 2014-2018. Latin America accounts for 29% of the 139 installations forecast and 38% of the projected capex.

The failure of Brazilian operator OGX in 2013 and the slowdown in overall upstream expenditure in 2014 is expected to impact the market in the near-term.

UK's offshore oil, gas industry to receive $22B in investments in 2014

The UK's offshore oil and gas exploration, production and investment activities in 2014 forecasts capital expenditure of around $22 billion, representing the second-highest year for investment on record, according to an annual report from trade association Oil & Gas UK.

Based on Oil & Gas UK's Activity Survey 2014, the spending is likely to remain above $17 billion in 2015, following a record $24 billion in 2013.

New developments, along with an increased focus on production efficiency, saw an average of 1.43 mmboe/d produced in 2013, which is said to be 8% lower than 2012.

In 2014, production is expected to pick up further and 25 new fields are expected to come on-stream over the next 2 years. Following this development, by 2018, production is projected to increase gradually to around 1.7 mmboe/d.

According to figures from the Department of Energy & Climate Change, only 15 exploration wells were drilled in 2013, continuing a steep downward trend since 2008 when 44 exploration wells were drilled.

Malcolm Webb

"Even if currently planned wells proceed, the rate of drilling is still too low to recover even a fraction of the estimated six to nine billion barrels yet to be found," Oil & Gas UK chief executive Malcolm Webb said. "Britains waters contain an abundance of oil and gas yet to be found and it is critical we find the means to turn the current state of exploration around."

Further, the report suggests a positive effect of tax allowances in driving investment on the UKCS.

BP eligible for new U.S. contracts after signing agreement with EPA

BP said it entered into an administrative agreement with the U.S. Environmental Protection Agency (EPA), on behalf of the federal government, resolving all matters related to "the suspension, debarment and statutory disqualification" of BP following the Deepwater Horizon accident and oil spill. As a result of the agreement, BP added, it is once again eligible to enter into new contracts with the U.S. government, including new deepwater leases in the Gulf of Mexico.

The administrative agreement applies to all of the suspended and debarred BP entities, including BP Exploration & Production Inc., BP plc, and certain affiliated companies.

Under the terms and conditions of the agreement, which will apply for 5 years, BP agreed to a set of safety and operations, ethics and compliance, and corporate governance requirements.

As part of the administrative agreement, BP will dismiss the lawsuit it filed against the EPA in federal court in Texas for improper statutory disqualification and suspension.

Introducing Tracerco's 'Discovery,' the world's first subsea CT scanner

Johnson Matthey's Tracerco has received the Subsea Technology Award at the 2014 Pipeline Industries Guild Awards for its breakthrough technology "Discovery," which was designed for inspection and flow assurance of subsea coated pipelines.

With the help of Discovery subsea CT scanner, oil companies can scan any subsea pipeline from the outside to gain an exact picture of the pipe condition and its contents- and will be assured of the integrity of unpiggable coated pipelines.

The scanning can be done without removing protective coatings or insulation and without any interference in production, according to the UK-based company said.

"We only officially launched Discovery mid-2013, so to have its ground-breaking technology recognized as the most significant contribution to subsea pipeline technology this year is incredible," Tracerco subsea technology head Lee Robins said.

"As a result we are already in the process of manufacturing a second version of Discovery for ultra-deepwater applications complete with crawler system, as well as rapidly expanding our operations team in order to meet demand."

Discovery uses a radioactive source and an array of detectors to take projections at different angles.

To create a detailed computer generated tomographic image, the technology recombines the projections to produce a 360-degree image of the pipeline's physical conditions to nearly a millimeter resolution.

The technology can inspect any subsea flowline within its diameter range without causing any risk of damage to the pipe.

Discovery also eliminates the pipeline corrosion risk on removing and reapplying coating, while ensuring no build-up or blockages.

BOEM issues programmatic EIS for offshore Atlantic G&G activity

The U.S. Bureau of Ocean Energy Management (BOEM) has moved a step closer to geologic and geophysical (G&G) activity on the southern and mid-Atlantic U.S. Outer Continental Shelf as it released its long-awaited final programmatic environmental impact statement (PEIS) for the area.

The PEIS does not authorize any G&G activities itself. Rather, it establishes a framework for additional mandatory environmental reviews for site-specific actions and identifies broadly applicable measures governing any future G&G activities. BOEM will accept comments on it until 7 April.

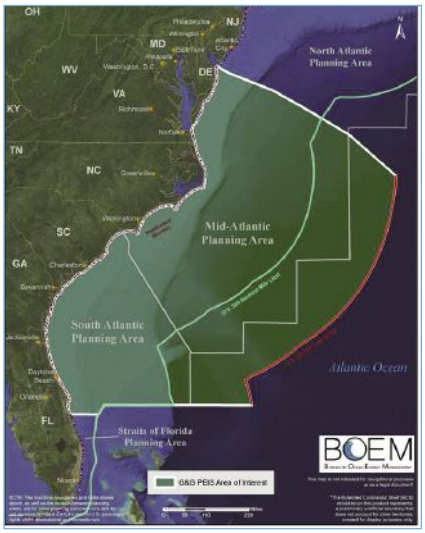
The area is off limits to exploration until 2017, but a future administration could lift that restriction. The BOEM estimates there are 3.3 Bbbl of oil and 31.3 Tcf of gas off the East Coast, but that assessment was done in the early 1980s using technology that is now outdated.

The PEIS' preferred alternative identifies the most protective mitigation measures and the strongest safeguards to reduce or eliminate impacts to marine life. Mitigation efforts include requirements to avoid vessel strikes, special closure areas to protect the main migratory route for the endangered North Atlantic Right Whale, geographic separation of simultaneous seismic air gun surveys, and passive acoustic monitoring to supplement visual observers and improve detection of marine mammals prior to and during seismic air gun surveys.

BOEM's PEIS assesses G&G activities conducted under its oil and gas, renewable energy, and marine minerals programs through 2020, including deep-penetration and high-resolution seismic surveys, electromagnetic surveys, magnetic surveys, gravity surveys, remote-sensing surveys and geological and geochemical sampling. It also evaluates reasonably foreseeable environmental effects in adjacent state waters.

Congress directed the agency to prepare the PEIS in 2010 because there had been no comprehensive review of G&G activities' potential environmental impact off the U.S. Atlantic Coast, where no seismic had been shot for decades since the imposition of congressional moratoriums and presidential withdrawals in the 1980s. Existing resource estimates are believed to be low since they predate the use of 3D seismic mapping and other advanced technologies.

BOEM published the draft PEIS for public comment on 30 March 2012, and received more than 55,000 comments



from a variety of industry, government and non-government stakeholder groups and the general public during the 90-day public comment period. It also held 15 public meetings throughout the South and Mid-Atlantic to discuss the process and hear stakeholders' views.

A recent study by Quest Offshore Resources found that oil and gas development on the U.S. Atlantic OCS between 2017 and 2034 could create nearly 280,000 new jobs along the East Coast and across the country, generate another $195 billion of private investment in oil and gas activity, and contribute up to $23.5 billion a year to the U.S. economy.

Surge in fuel exports boosting U.S. trade balance: EIS report

Growing production of U.S. oil and gas is helping to improve the nation's trade balance, according to a federal report. Dramatic growth in the export of refined petroleum products, such as jet fuel and gasoline, has led the way. The value of net refined exports increased 55% in 2013 over the prior year, reaching $33 billion, according to the U.S. Energy Information Administration.

U.S. refiners are finding cheaper domestic alternatives to overseas oil, causing a rally in the ratio of refined fuel exports to imports. Overall energy export values increased 8% in 2013 over the prior year. Total energy imports to the U.S. fell by 11% for the same time period.

The shifts have helped push down the U.S. trade deficit to its lowest level in 4 years because of the importance of energy imports and exports. Energy accounts for 15% of gross goods imports and 7% of gross goods exports.

The increase in production has also dampened imports. Natural gas imports fell 14% in 2013 over the prior year and net crude imports fell by 16%.

The glut of refined products for export is the result of the boom in tight oil and shale gas that has swept plays from North Dakota's Bakken to the West Texan Permian Basin. The boom has renewed debate over whether to open U.S. crude oil for exports, which largely was banned in the aftermath of the OPEC crisis in the 1970s.

Exxon expects flat output in 2014, spending to drop 6% to $39.8B

ExxonMobil Corp, the world's largest publicly traded energy company, expects its oil and natural gas production to be flat this year as overall spending falls 6% to about $39.8 billion.

The company's current outlook for output, provided at an annual meeting with investors, was adjusted from a year-earlier to exclude some volume from Iraq and Abu Dhabi, the company said.

"We took a set of low margin barrels off the base," Exxon chief executive officer Rex Tillerson told investors.

In recent years, Exxon and other large oil companies have invested record amounts on exploration and production projects to boost oil and gas output. Last year, Exxon spent $42.5 billion, an amount the Irving, Texas company describes as a peak.

For 2014, oil and gas production is expected to be 4 mmboe/d, little changed from last year. Growth is expected to pick up from 2015 to 2017, when production is expected to grow 2% to 3% as major projects add an additional 1 million boe/d, according to the company.

This year, Exxon said it expects to bring 10 major projects into production, most of them targeting more profitable crude oil or other liquids.

Canadian oil exports to U.S. jumped 10% to 2.5 mmbbl in '13

Canada sent an average of more than 2.5 mmbbl of oil per day to the United States in 2013, up 10% from the previous year, government data show. The National Energy Board published crude oil export figures for 2013 that showed nearly 70% of the oil went to the Petroleum Administration for Defense District II, the U.S. Midwest.

Canadian Prime Minister Stephen Harper said he wants to add a layer of diversity to an export market that relies almost exclusively on the United States as its oil export designation.

The NEB said about 82,880 bbl/d were sent to markets other than the United States last year, more than twice sent to non-U.S. markets. The board didn't provide a breakdown of export destinations outside the United States.

UK's oil, gas industry lacks skilled manpower: Guide

A new salary guide produced by recruiting firm Hays Oil & Gas and jobsite Oil and Gas Job Search has revealed that for 2014, the primary challenge facing two-thirds of UK employers in the oil and gas industry is skills scarcity. The latest Oil and Gas Global Salary Guide stated that 68.1% of employers in the industry plan to increase headcount in 2014.

Based on data collected from 24,000 respondents, the increase in headcount is expected to add pressure to increase salaries in order to attract candidates. For 2015, an upturn in salaries is expected as predicted by 83% of employers, as hiring managers vie for top talent and focus on benefits.

Over the last 12 months, the number of employees receiving benefits grew by more than 7% as employers look to bolster compensation packages with incentivized bonuses or attractive pension plans. Respondents in the UK indicated that as part of their remuneration package, 27% of employees are offered bonuses, 25% pension plans and 19% have private health plans.

In 2013, salaries flattened for the first time in 3 years, but the confidence of employers in the market is high, with 72% of hiring managers indicating a positive outlook on the industry.

Skills shortages, which continue to plague the industry, are said to be a concern for employers, and measures are underway to tackle them. The guide reveals that local average salaries in the UK for 2014 have increased by 0.85%, whereas salaries for imported talent declined by 1.4% against 2013.

The global oil and gas industry has seen a fall of 1% in salary levels from 2013, which can be attributed to a market correction after a particularly buoyant 2-year period of increases.

Tighter controls set for UK offshore helicopter flights

Tighter safety controls are to be imposed on helicopter flights in the North Sea, including a ban on flying in the most severe weather, after a string of crashes in recent years, the regulator has announced.

Other measures introduced by the Civil Aviation Authority will require enhanced safety equipment such as extra flotation devices for helicopters and emergency breathing systems for passengers. They will only be allowed to fly if they are seated next to an emergency window exit to make it easier to leave the aircraft in an emergency, unless helicopters are fitted with the extra flotation devices or are provided with the improved emergency breathing systems.

Additionally, the CAA plans changes to the way pilots are trained and checked, and it will take on the role of approving each offshore helideck, ensuring compliance with safety standards. Other recommendations made to EASA, the regulator for helicopter certification and airworthiness, include enhancing the safety of helicopters; establishing a review of offshore helicopter accidents and incidents with national aviation organizations to highlight safety issues and develop solutions; and standardized helicopter operating information for pilots.

CAA also expects helicopter operators to make the following improvements: fitting side floats, implementing automatic flotation equipment, adding hand holds next to push out windows, and alterations to life rafts and lifejackets.

Before the accident last August, helicopters had ditched in the North Sea on four other occasions in 3 years. In the worst incident, 16 people died in April 2009 when a Super Puma plunged into the sea off Aberdeenshire after its gearbox failed.

Tata sees strong year for offshore pipe demand

The European outlook for the offshore pipe industry in 2014 is positive, according to a recent report conducted by Tata Steel, which supplies deepwater pipeline solutions.

The study by Europe's second-largest steel producer points to high energy demand from Africa, Asia, and BRIC nations (Brazil, Russia, India, and China) continuing to drive offshore developments.

The study highlights the growth in deepwater developments in Africa and Europe as signs that the offshore pipe line industry is set to continue its recovery.

Investment in deepwater exploration has increased significantly over the past year and is expected to continue as easy-to-reach reserves continue to be depleted.

"Increased investment from operators will see infrastructure requirements grow," said Richard Broughton, commercial manager for the pipelines division of Tata Steel. "Already, we are beginning to see the signs of this offshore activity in regions like the Gulf of Mexico, where spending will represent a third of all deepwater activity globally and the Middle East, where existing brownfield infrastructure needs to be replaced and new installed. Both represent significant opportunities for the pipeline industry."

Oil industry welcomes Landrieu to Senate energy chair

The American Petroleum Institute said Sen. Mary Landrieu, D-La., will ensure U.S. energy security through "smart policies" as Senate energy committee chair.

Landrieu took the gavel in mid-February from Sen. Ron Wyden, D-Ore., to become chairwoman of the Senate Energy Committee. An advocate for the oil industry, API President Jack Gerard said he looks forward to working with the Louisiana senator.

"We look forward to working with Sen. Landrieu on smart policies that will strengthen American energy security and harness the full economic potential of domestic oil and natural gas production," he said in a statement.

Mary Landrieu

"With her strong support, the people of Louisiana have played a major role in America's energy revolution, and her deep understanding of energy issues will continue to serve her well as chairman."

Landrieu said in a statement that she would help stimulate the U.S. "energy revolution" by encouraging an increase in domestic energy production and expanding infrastructure with the Keystone XL oil pipeline planned from Canada.

Critics of the energy industry cried foul over her appointment. NextGen Climate, an advocate for a low-carbon economy, said Landrieu should check her facts on Keystone XL, describing the pipeline as a "sucker's deal." Oil Change International said her appointment was a "buypartisan" arrangement given the level of campaign contributions she gets from the oil industry.

Noble Energy contracts deepwater umbilical projects
Noble Energy has contracted Aker Solutions to provide umbilicals and subsea equipment for use in the Gulf of Mexico and offshore Israel. In the U.S. Gulf, Aker will provide two electro-hydraulic steel tube umbilicals to control a subsea production system at Gunflint in 6,000 ft of water. Aker also will provide electro-hydraulic steel tube and gas lift umbilicals with subsea controls distribution equipment for the Rio Grande project at 7,200 ft water depth. Offshore Israel at Tamar Southwest, Aker will supply subsea distribution equipment and a 7.5-mi long infield umbilical to be installed in 5,500 ft water depth. The projects are to be completed in 2014 and 2015.

ExxonMobil awards Subsea 7 contract offshore Canada
ExxonMobil Canada Properties has awarded Subsea 7 SA a $75 million 3-year subsea construction services contract supporting the Hebron heavy oil field development in the Jeanne d'Arc basin, located 218 mi southeast of St. John's, Canada. The contract scope includes the project management, engineering, and installation of two offshore loading systems in a water depth of 302 ft. Engineering and project management will begin immediately from Subsea 7's offices in St John's.

Rosenberg to handle Martin Linge hookup contract
Technip has awarded Rosenberg WorleyParsons a hookup and commissioning contract for Total's Martin Linge platform in the Norwegian North Sea. Estimated value of the contract is $92 million. Onshore preparations start with mobilization to France and subsequently South Korea, with a project team to be established at some point at Rosenberg WorleyParsons' facilities in Stavanger. The contractor expects main offshore activity to be executed during mid-2016. Ågotnes-based Atlantic Offshore's newest offshore support vessel Ocean Marlin will operate at the Martin Linge field. The hull was launched last week at the Astilleros Zamakona Pasaia shipyard in San Sebastian, northern Spain. Currently, the vessel is undergoing painting, drydocking and outfitting. It should be delivered by end-July.

Helix secures contracts with Petrobras for two vessels
Helix Energy Solutions Group Inc. has agreed to provide well intervention services offshore Brazil for Petrobras. Helix will use two newbuild chartered monohull vessels, which will be built at the Flensburger shipyard in Germany for Siem Offshore AS. Helix will provide the topsides and manage the integration of the well intervention equipment onto the vessels, while Siem is responsible for the monohull build and will oversee the construction at the shipyard. Siem will own the vessels and will charter both the vessels and marine crew to Helix for an initial period of 7 years. Helix's aggregate investment in the topside equipment for both vessels is expected to be $260 million. The initial term of the contract with Petrobras is for 4 years with options to extend. The first vessel is expected to be in-service for Petrobras mid-2016, with the second vessel to follow later that same year.

Woodside signs frame agreement with OneSubsea
Woodside has signed a 5-year frame agreement with OneSubsea covering subsea equipment and services offshore Australia. Included are subsea engineering services, subsea production systems, and life-of-field services. OneSubsea opened a facility in Perth in 2013 specifically to support the growing business needs in the Australia region and will provide the life-of-field services to Woodside.

BP begins Na Kika Phase 3 in U.S. Gulf

BP's Na Kika platform in the Gulf of Mexico.

BP has launched Na Kika Phase 3, a project supporting the company's strategy of growing high-margin production at four BP-operated hubs in the deepwater Gulf of Mexico. The first Na Kika Phase 3 well began oil production on 19 February with a second well expected to start up in the second quarter.

The project includes the drilling and completion of the two new wells, the addition of subsea infrastructure to tieback to the Na Kika platform and new equipment to allow increased production from an existing well at the site. It will utilize available production capacity at the Na Kika hub.

Na Kika Phase 3 is BP's third new major upstream project to begin production so far in 2014, following the earlier startups of the Chirag Oil project in Azerbaijan and the Mars B project in the U.S. Mexico. BP expects to start up a further three upstream projects through the remainder of 2014.

The Na Kika Phase 3 project demonstrates BP's ongoing commitment to the deepwater Gulf of Mexico and highlights the BP portfolio's ability to unlock value for investors while also delivering energy resources to the United States, said Richard Morrison, regional president of BP's Gulf of Mexico business.

The Na Kika semi-submersible platform is located about 140 mi southeast of New Orleans in over 6,000 ft of water. BP is the operator of Na Kika and holds a 50% working interest, with Shell holding the remaining 50% stake. Production from Na Kika first began in 2003.

BP currently has a multi-billion investment program underway in the deepwater Gulf of Mexico. It plans to concentrate future activity and investment in the Gulf on growth opportunities around its four major operated production hubs -- Thunder Horse, Na Kika, Atlantis and Mad Dog -- as well as on significant exploration and appraisal opportunities within its leading leasehold position in the U.S. offshore region.

BP also plans to continue investment in its non-operated production hubs, including Mars, Ursa and Great White.

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Tui joint venture targets more oil discoveries offshore New Zealand

The semi-submersible Kan Tan IV was to go on contract to the Tui joint venture in the Taranaki basin offshore New Zealand. It will initially drill the Pateke-4H appraisal development well in Tui area license PMP 38158, followed by the Oi exploration well. According to partner PanPacific Petroleum (PPP), successful results could lead to tie-ins to the existing Tui facilities early next year.

Offshore southern Vietnam, PPP is a partner in Block 07/03. The semi-sub Ocean General completed the CRD-3X and side track appraisal program in December. Weather delays prevented the rig from relocating to the west of the block to spud the CD-1X exploration well until earlier this month.

Both the CRD-3X wells encountered hydrocarbon-bearing reservoirs, and CRD-3X flowed more than 8,000 bbl/d from previously untested Miocene sandstones. Reserves and engineering studies will now follow, and the partners will decide whether to enter the front-end engineering detailed design phase around the end of the third quarter.

CD-1X well will evaluate the hydrocarbon potential of the Silver Sillago prospect, a tilted fault trap targeting Miocene clastic reservoirs similar to those encountered 34 mi to the east in the CRD structure.

Semi-submersible rig Kan Tan IV

Deltamarin to provide next-phase design of EnQuest's Kraken FPSO

Malaysian group Bumi Armada has contracted Deltamarin to provide the basic design for EnQuest's Kraken FPSO in the UK northern North Sea.

EnQuest and its partners commissioned the newbuild floater last November. Earlier, Deltamarin had provided Bumi Armada with technical support for the conversion of an existing oil tanker into an FPSO in the front-end engineering design (FEED) phase.

That program included development of an FPSO design to withstand the harsh North Sea environment that fulfils UK rules and regulations.

Deltamarin's present workscope covers naval architecture, structural and strength analysis, steel outfitting, marine/utility and HVAC, accommodation, HSE, and electrical/instrumentation systems. The turret-moored FPSO, measuring 936 ft long and 164 ft broad, will have a 600,000-bbl storage capacity.

Hyundai Heavy Industries delivers offshore Lithuania LNG FSRU

Hyundai Heavy Industries (HHI) has held a naming ceremony for the world's first newbuild LNG floating storage regasification unit, which Hö egh LNG ordered in June 2011.

The 6-mmcf LNG FSRU is 964 ft long, 151 ft wide and 85 ft deep, with storage capacity for 77,162 tons of chilled natural gas. It will be under a long-term charter to Lithuania's Klaipedos Nafta.

The LNG FSRU will receive liquefied natural gas from offloading LNG carriers. Its regasification system provides gas send-out through pipelines to shore.

HHI said the vessel took a year less to complete and cost half the price of an onshore LNG terminal to complete.

The vessel can additionally be relocated to other areas using its own propulsion system.

Keppel to build $500M jack-up rig for TS Offshore

Keppel Offshore & Marine's wholly owned subsidiary Keppel FELS will build a jack-up rig worth about $500 million for TS Offshore. Set to be deployed in the eastern China Sea upon delivery scheduled in the first quarter of 2017, the rig will be the first jack-up built to Keppel's new KFELS N Plus design and is equipped with 72 high-capacity pinion jacks and self-positioning fixation system.

The KFELS N Plus has a leg measuring 678 ft, and a maximum combined drilling load of 3,860 kips with an ability to meet stringent operating requirements for challenging wells. Equipped with a 100-ft cantilever outreach, the jack-up can work at a maximum water depth of 500 ft and drill to depths of 35,000 ft.

"It is one of the world's most advanced rigs of its class with better drilling capabilities, a superior cantilever load performance, a larger deck space, a higher variable load and enhanced accommodations," TS Offshore Chairman Dr Xiong Shaohui said "We are confident it fills the gap for ultra-high specification rigs needed in the eastern China Sea or almost anywhere in the world with a need for high-specification and deepwater jack-up rigs."

Keppel's R&D arm, Offshore Technology Development (OTD), has developed the KFELS N Plus jack-up, which is said to be an enhancement of the company's KFELS N-Class design. The KFELS N Plus design offers better performance during installation, as well as elevated survival and drilling conditions.

"This rig is the combination of Keppel's unique experience in designing and building rigs both for the North Sea as well as other parts of the world," Keppel Offshore & Marine offshore managing director Wong Kok Seng said.

Transocean awards contracts for two $1.24B drillships

Offshore contract drilling services provider Transocean has awarded contracts to Jurong Shipyard in Singapore for construction of two ultra-deepwater drillships, with a combined capital cost of approximately $1.24 billion.

Excluding capitalized interest, the capital cost for the newbuild dynamically positioned drillships includes the shipyard contracts, project management, owner-furnished equipment, inventory and capital spares.

Transocean has also signed an option agreement to order up to three additional drillships of the same design and specifications on similar terms, with the initial option to be exercised within 1 year, the second within 18 months and the third within 24 months.

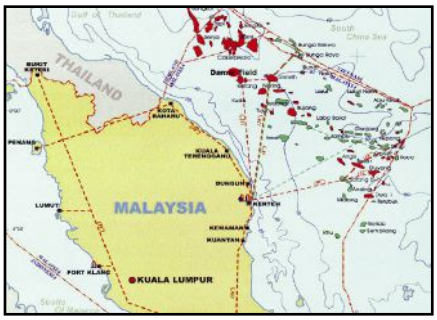
"These newbuild drillship orders highlight continued execution of our long-term asset strategy," said Steven Newman, Transocean president and chief executive officer. "We are committed to reinvesting in our fleet through the addition of differentiated, high-specification and high-return assets that will appeal to a wide spectrum of our customers."

Designed for enhanced drilling operations with drilling facilities, a large moon pool to accommodate a riser angle and a hull designed for better motion characteristics, the drillships will also feature a large deck space with an enclosed riser bay and a flexible mud system for completion operations. With a 1,250 ton load path, the drillships are equipped with dynamic positioning class 3 (DP-3) capabilities and also feature hybrid power systems for lower emissions and improved fuel economy.

The drillships can operate in up to 12,000 ft water depths and 40,000 ft drilling depths, accommodating a crew of 220. Initially, they will be outfitted with one 15,000-psi blowout preventer (BOP) with the ability to add a second. To be built based on Jurong Shipyard's Jurong Espadon III design, the drillships contracted to Sembcorp Marine are expected to be delivered from the shipyard in the second quarter of 2017 and the first quarter of 2018, respectively.

A Jurong Espapon drillship design.

Transocean operates a fleet of 79 mobile offshore drilling units consisting of 46 high-specification floaters, 22 mid-water floaters and 11 high-specification jack-ups. The company also has nine ultra-deepwater drillships and five high-specification jack-ups under construction.



First production from Damar gas development offshore Malaysia

ExxonMobil Corp. reported the start of natural gas production at the Damar field off the east coast of Peninsular Malaysia. The Damar field has a projected capacity of 200 mmcf/d. ExxonMobil and joint-venture partner Petronas Carigali Sdn. Bhd. have planned a total of 16 development wells for the platform.

Damar was developed under a gas production-sharing contract between ExxonMobil, Petronas Carigali, and Petronas. ExxonMobil is the operator of the Damar field, and Petronas Carigali holds a 50% interest.

The Damar startup follows the previously announced Telok gas development in Malaysia, which began production in March 2013. ExxonMobil subsidiary, ExxonMobil Exploration and Production Malaysia Inc., has a 50% interest in the project.

GDF SUEZ sees first oil flow from the Dutch North Sea Amstel field

GDF SUEZ has started oil production from the Amstel field in the Dutch North Sea through its newly installed Q13a-A platform. The company acquired 50% of the surrounding Q13a offshore production license in 2010. Early the following year, it proved that the field was viable with a successful appraisal well.

Amstel's light crude is transported through a new 15.5-mi subsea pipeline to the TAQA-operated P15 platform to the northwest. Following treatment, it is sent through an existing pipeline to a refinery in Rotterdam. At peak, the field is expected to produce 15,000 bbl/d of oil, with an estimated production life of 10 years.

The Q13a-A facility is GDF SUEZ's first oil producing platform in the Dutch sector. Power is supplied through a 8.7-mi high-voltage submarine cable connected to the onshore grid. The platform, which is fixed to the seafloor via suction anchors, has electrically driven submersible pumps in the production wells.

Cobia platform back in service in Bass Strait off southeast Australia

Esso has restarted oil production at its Cobia platform in the Bass Strait off southeast Australia. The platform was shut down in September after a small sheen appeared on the water and originated from its pipeline. Esso removed all oil from the pipeline to leave it in a shut-in and stable state while reviewing options for the repair.

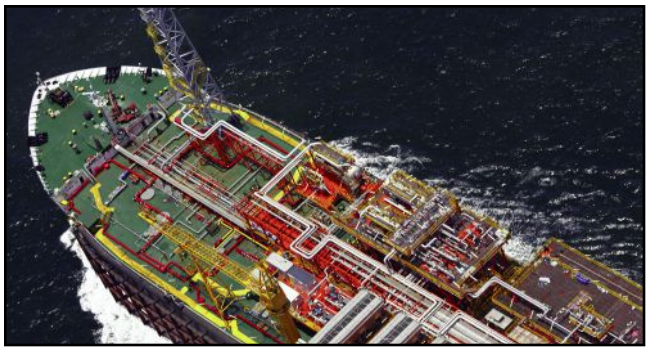
After securing approval from NOPSEMA and NOPTA, the pipeline was repaired and then underwent high-pressure testing with water to ensure it was safe to operate.

Mubadala extends FPSO service on Jasmine field offshore Thailand

Mubadala Petroleum Thailand has opted to extend its lease of Petrofac's Jasmine Venture FPSO for up to 4 more years. The vessel is deployed on the Jasmine field in the Gulf of Thailand. Petrofac will continue to provide operations and maintenance services. The contractor acquired the vessel from Mubadala Petroleum in June 2011. Petrofac said it would continue to work with Mubadala to identify potential areas for further support on projects.

Apache to start Balnaves oil production by end Q2

U.S.-based Apache Corp. says it expects to begin production at a new oilfield offshore northwest Australia by the end of the second quarter. Apache has leased floating production storage and offload unit (FPSO) Armada Claire from Bumi Armada to produce light sweet crude from the Balnaves oilfield. Bumi Armada completed the FPSO's conversion from a large crude carrier in early February and expects it to start production in April. Balnaves has a field life of about 5 years, with production expected to peak at 30,000 bbl/d. It is located in the Northern Carnavon Basin, about 180 km offshore. Apache operates the project with a 65% stake, while Kuwait Foreign Petroleum Exploration Co holds 35%.



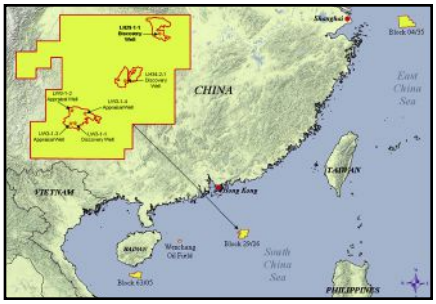
CNOOC-operated Liwan gas field nears startup in South China Sea

Husky Energy said the CNOOC-operated Liwan gas project in the South China Sea is nearing production, with commissioning of the shallow water platform and gas plant under way.

Last year's milestones included installation of the 33,069-ton topsides on the shallow water jacket; construction of the onshore gas terminal; and completion of all nine subsea deepwater production wells, roughly 46.6 mi from the platform.

Final components of the deepwater infrastructure for the Liwan 3-1 field have been installed and commissioning is proceeding.

The Liuhua 34-2 field is due to be tied into the producing Liwan deepwater facilities over a 6- to 8-week period in the second half of 2014. Negotiations continue for a gas sales contract for the Liuhua 29-1 field, where Husky anticipates first production during 2016-2017.



In the Madura Strait block offshore Indonesia, Husky said engineering and procurement has started on the shallow water platform infrastructure at the BD field. A tender for an FPSO is awaiting government approval. Negotiations continue for a gas sales contract for the combined MDA/MBH development on the Madura Strait block, with first production expected in late 2016 or in early 2017.

Additionally, the company is evaluating a recent new natural gas discovery on the block, along with four previous finds from 2012. Husky has a 50% interest in the MBF discovery, west of the MBH field.

Lundin Petroleum commenced drilling on Balqis-01 using the Hakuryu 11 rig.

Lundin Petroleum begins drilling at Baronang PSC in Indonesia

Lundin Petroleum has begun exploration drilling on the wildcat oil exploration well Balqis-01 using the Hakuryu 11 rig in the Baronang PSC, Natuna Sea, Indonesia. Designed to test the hydrocarbon potential of tertiary sands draped over a prominent basement high, the primary objectives of Balqis-01 well include Oligocene fluvial sandstone reservoirs in stacked four-way dip closures.

Lundin noted that the Balqis prospect with a planned total depth of 2,130 m below mean sea level (MSL) is expected to have the potential to contain unrisked, gross, prospective resources of 47 mmboe. The drilling and evaluation is expected to take about 20 days.

Balqis-01 well drilling will be followed with the drilling of Boni-01 designed to test the hydrocarbon potential of early to late Oligocene fluvial sandstone reservoirs in stacked stratigraphic traps against a prominent basement high.

Drilling will be conducted as a side track to the Balqis-01 vertical well with an offset distance from Balqis-01 of 820 m drilled to test a deeper independent stratigraphic play concept.

With the potential to contain unrisked, gross, prospective resources of 55 mmboe, the Boni prospect will have a total vertical depth of 2,300 m below MSL and the drilling was expected to take about 5 days.

Through its wholly-owned subsidiary Lundin Baronang, the company operates and holds a 90% working interest in the Baronang PSC, while other partners include Nido Petroleum with 10% working interest. The company operates five PSCs, namely Baronang, Cakalang, Gurita, South Sokang and Cendrawasih VII in Indonesia.

Statoil discovers gas at Kramsno prospect in the Barents Sea

Statoil has discovered gas at the Kramsno prospect in the Barents Sea. However, the company said that while the exploration program around the Johan Castberg field has been vital in providing area knowledge, it failed to yield expected oil volumes.

In 2011-12, the company made two high-impact oil discoveries in the Barents Sea. Skrugard and Havis provided a total of 400 to 600 mmbbl of recoverable oil.

According to the company, both discoveries opened a new petroleum province in the Barents Sea and created a basis for the development of the Johan Castberg project, which has a range of potential prospects.

In order to clarify additional oil potential in the area and make the development project robust, Statoil launched a targeted exploration campaign around the Johan Castberg field in 2013 comprising five prospects. Kramsnø was said to be the fourth of the five prospects.

Statoil, which is nearing the end of the Johan Castberg program, operates the production licence PL532 with an ownership share of 50%. Other partners include Eni Norge (30%) and Petoro (20%).

Artist rendering of jack-up GSP Saturn.

Gazpromneft gets environmental clearance for Arctic offshore well

Gazpromneft-Sakhalin has approval to drill an exploration well later this year on the Dolginskoye field in the Pechora Sea offshore northern Russia. This follows public consultations held in December 2013 in Naryan-Mar (Nenets Autonomous District). The approval documents include a prevention and response plan for oil spills and an environmental impact assessment.

Additionally, an environmental sensitivity map has been drawn up based on monitoring operations over the license block last year. The jack-up GSP Saturn will drill the well. Technical audits have confirmed that the rig's specifications make it suitable for use on the Russian Arctic shelf during the ice-free months.

It is equipped with a filter device to protect marine life during transport and operation of the rig. An automatic verticality control system (rotary steerable system) will be deployed to optimize drilling time and reduce environmental disturbance where possible. Logging-while-drilling sensors should provide continuous, real-time control during the campaign.

Murphy Oil spuds deepwater well with 13,770 ft TD off Cameroon

The semi-submersible Ocean Confidence has spudded Murphy Oil's deepwater Bamboo-1 on the Ntem concession offshore Cameroon. The location is roughly 35 mi from the coast in 5,249 ft of water, with TD estimated at 13,779 ft. Drilling is expected to take 60 to 70 days.

Murphy will pay Sterling Cameroon's share of the well costs.

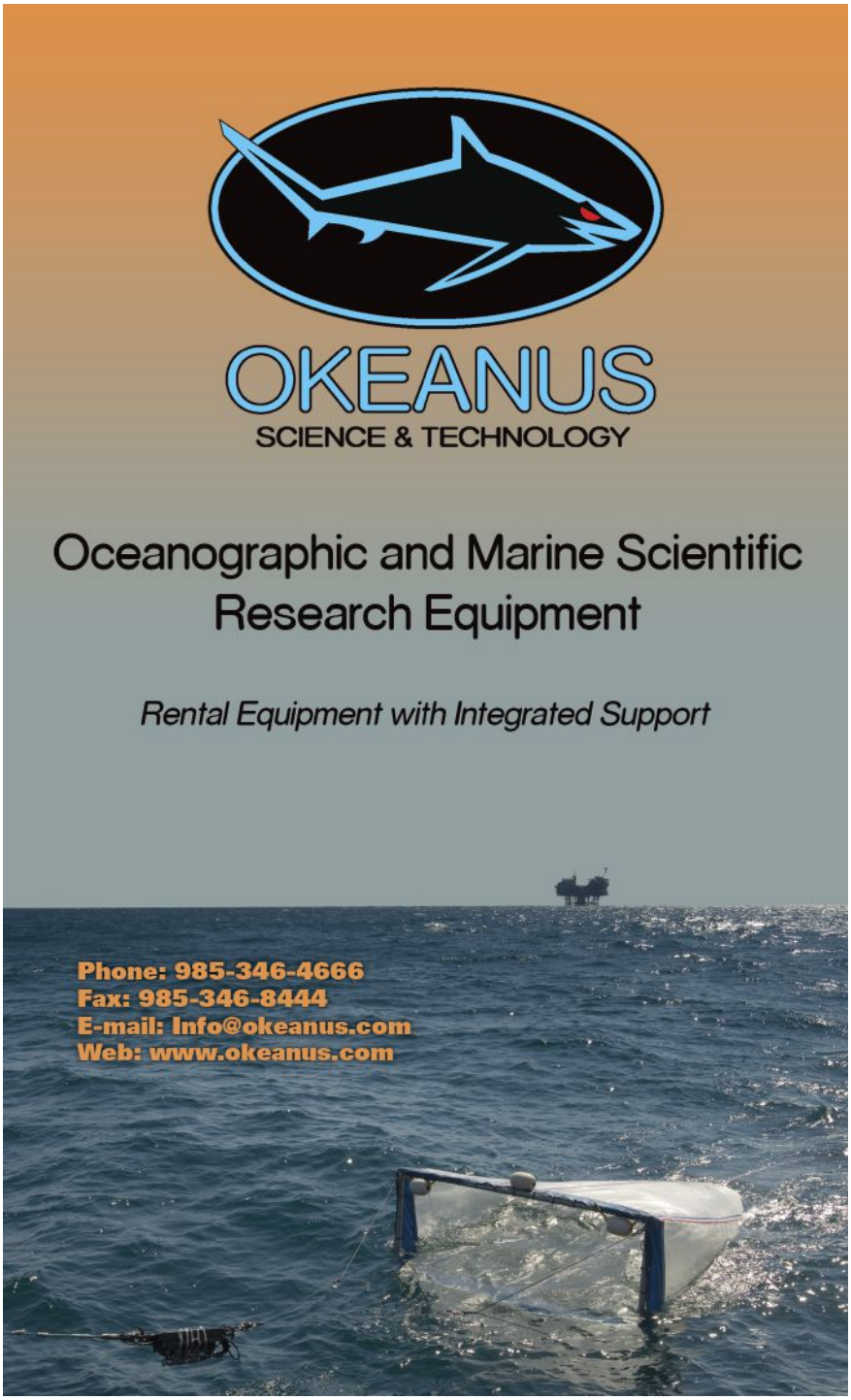
According to parent company Sterling Energy, Bamboo is a basin floor fan target within the prospective upper Cretaceous play. The well will intersect a series of stacked fan targets, with the main objective thought to hold potential resources of 422 mmbbl of oil and 170 bcf of gas.

Cobalt International hits Angola presalt pay at Orca in Block 20

Cobalt International Energy has reported a fifth presalt discovery in the Kwanza basin offshore Angola. Initial results from the Orca 1 exploratory well in Block 20 indicate that the field has a resource potential of 400 to 700 mmbbl of oil, Cobalt said.

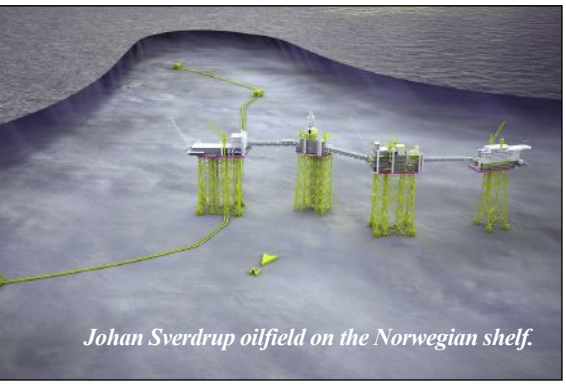
Analysis confirmed the existence of a large light oil reservoir and a thin condensate and gas cap in the upper sag section of the well. Oil was also detected in the deeper syn-rift section of the well, the company said. After casing has been set and the well has been temporarily abandoned, the Petroserv SSV Catarina will move to the Cameia 3 location in Angola's Block 21. Cobalt holds a 40% operated interest in Blocks 20, 21, and 9.

Cobalt recently announced a fourth deepwater presalt discovery offshore Angola. The Bicuar No. 1A well was the first discovery of mobile hydrocarbons in the deeper presalt Syn-rift reservoir. The well was temporarily abandoned.



Statoil to develop offshore Norwegian oil field with first phase investment of $19.6B

Statoil and the partners in the Johan Sverdrup oilfield have decided on a concept for development of the field off Norway, for which investment in the first phase is estimated at up to $19.6 billion.

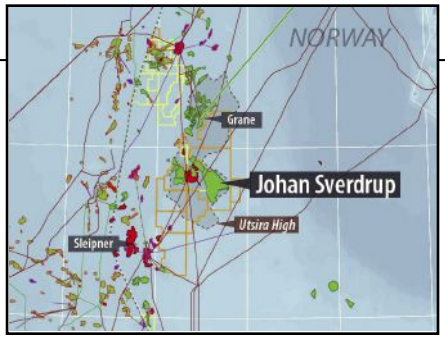


Johan Sverdrup oilfield on the Norwegian shelf.

Johan Sverdrup phase 1 development will involve a field center consisting of four installations and power from shore with a transformer on Kå rstø delivering direct current to the riser platform, ensuring an estimated 80 mw. According to Statoil, the development is expected to reduce total CO_2 emissions from the Utsira High area by 60% to 70%.

The field will be developed in multiple phases and first phase design capacity is said to be 315,000 bbl/d field capacity. Production from the field is expected to commence at the end of 2019 and will be between 315,000 bbl/d and 380,000 bbl/d in the early phase.

"The ambition is a recovery rate of 70% for the full field," said Johan Sverdrup, field senior vice president Øvind Reinertsen.



Investments in the first phase, which will facilitate measures for improved oil recovery, include the field center, wells, export solutions for oil and gas, power supply, contingencies and provisions for market adjustments.

The field center in the first phase has been designed so as to facilitate future development and comprises a process platform, drilling platform, riser platform and living quarter. Water depth of the field is approximately 120 m in the area and the installations have steel jackets that are linked by bridges.

Alternative power solutions for the future phases will be described as part of the plan for development and operations, scheduled to be delivered in early 2015. Power from shore to the whole Utsira High area will serve as one of the alternatives, based on updated power requirements.

The oil will be transported through dedicated pipelines to the Mongstad terminal in Hordaland County and gas through Statpipe to Kå rstø in Rogaland County for processing and transportation.

Ultra-lightweight tripod platform now in place offshore Dubai

Dubai Petroleum has completed installation of an ultra-lightweight conductor-supported tripod platform offshore Dubai. The T-02 platform, designed by 2H Offshore, has been installed on the Fateh field in 164 ft water depth. It comprises a minimal topside and subsea structure and will be used to host an exploration well during an upcoming drilling-well test campaign.

2H Offshore said it investigated a range of development options to facilitate the exploration well before determining that the conductor-supported tripod was the best and most economic solution.

It is designed for installation from a jack-up drilling rig, allowing drilling to start directly after installation. 2H Offshore performed structural design of the subsea template, conductors and topside brace structure while liaising with Dubai Petroleum on the access platform and other structural details.

"We…developed a solution that considered the in-service functional requirements as well as the installation constraints," said Graham Nicholson, 2H lead engineer.

ROC Oil submits long-term plan for Zhao Dong offshore China

ROC Oil has submitted an incremental development plan for the next stage of the Zhao Dong project offshore China. The aim is to maximize oil recovery from the fields between 2018 and 2023. This will require an extension of the production-sharing contract.

ROC adds that its team in China has made progress on exploration block 09/05 in offshore Bohai Bay. A 62.5-sq mi ocean bottom cable seismic survey has been completed ahead of schedule. Results will be used to refine drilling location(s) for at least one exploration well during 2H 2014.

Offshore Malaysia, the company and its partners submitted a field development for the Bentara oil field in December 2013. Following approval, they plan to start final field testing and move into production, using the existing pre-development facilities.

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Meanwhile, RH Petrogas said testing was successfully completed on the Koi-2 oil field appraisal well offshore Indonesia. The well was drilled in 105 ft water depth in the Salawati Kepala Burung production-sharing contract, operated by JOB Pertamina-PetroChina Salawati, a venture between Pertamina and PetroChina. The partners have agreed to conduct a preliminary front-end engineering and design (pre-FEED) study.

Shell plans to sell Anasuria, Nelson, Sean platforms

Royal Dutch Shell plc plans to sell the Anasuria, Nelson and Sean installations in the UK zone of the North Sea, after UK newspapers reported it had briefed staff that it would sell the three assets, according to news accounts.

The move comes after Shell announced a profit warning in mid-January followed by its final results for 2013, in which it said it would be making "hard choices" about new projects and reducing capital spending. The firm said it would budget $37 billion for capital spending in 2014 compared to the $46 billion in spent in 2013, along with plans to accelerate asset sales.

Anasuria is a manned floating production, storage and offloading (FPSO) installation that handles production from four subsea fields: Teal, Teal South, Guillemot A and Cook. Nelson is a platform located some 124 mi from Aberdeen, Scotland that includes subsea tiebacks to the Howe and Bardolino fields. Sean is a bridge-linked platform installation, located in the southern North Sea, that produces gas that is exported to Bacton, England.

Bids under review for Banda field offshore Mauritania

Premier said the execution phase is under way for the Banda field project offshore Mauritania after the government approved the development plan. Bids are under evaluation for the subsea production system, umbilical, pipeline, and process plant. The partners have started gas sales negotiations and arrangement of payment guarantees with prospective buyers. Premier expects sanction for the project by the second quarter of 2014. Following completion of subsurface studies for the 69 bcf Tevet gas field, the partners submitted a conditional declaration of commerciality to Mauritania's government.

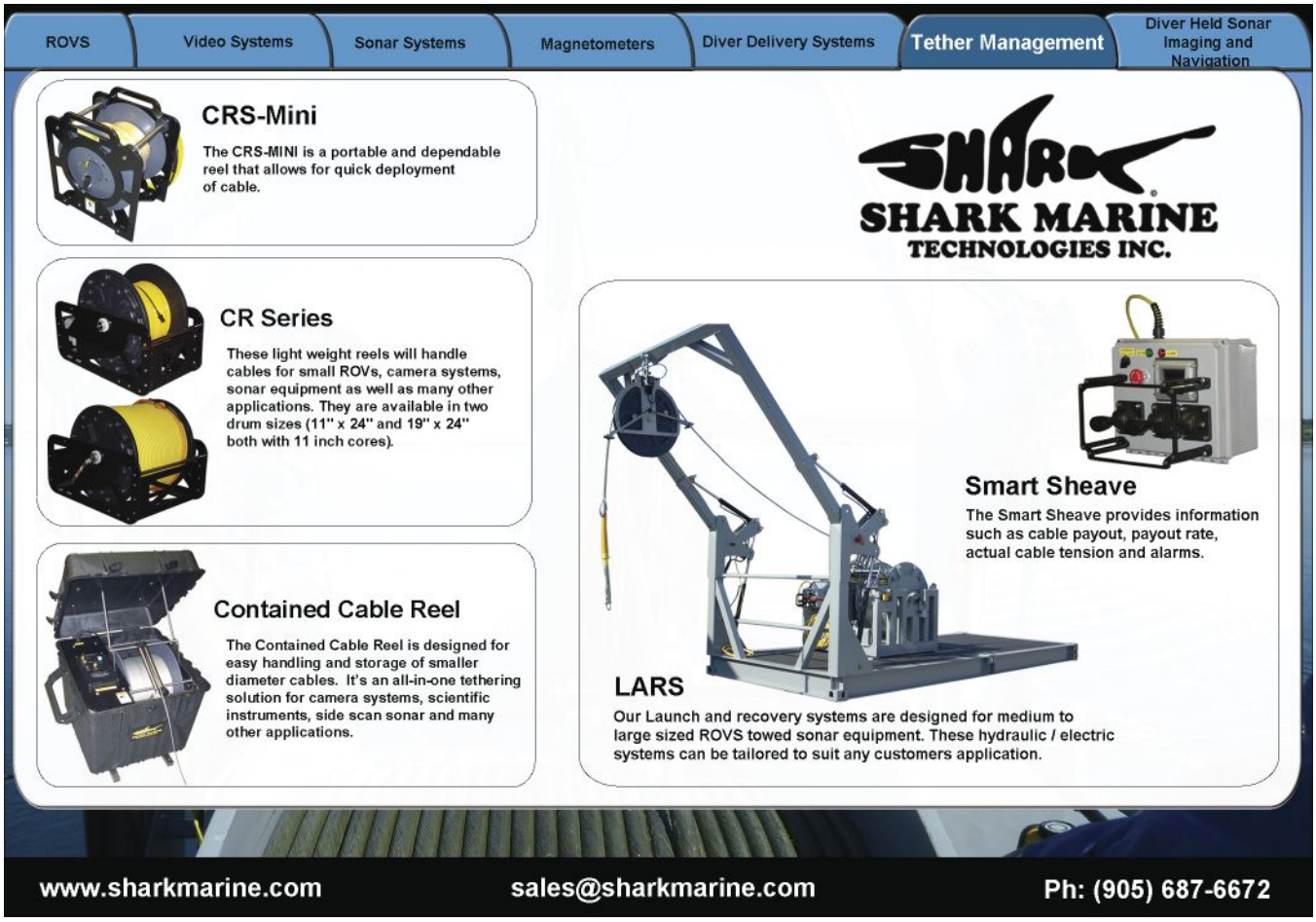
Hallin Marine finishes FPSO services at Bualuang field

Superior Energy Services company Hallin Marine has concluded a project in the Bualuang oil field off the coast of Thailand following damage to subsea structures. As part of the project, which commenced in early January, the company inspected and repaired the mooring and riser system at the FPSO facility of an undisclosed client.

Hallin's subsea operations vessel Windermere.

The company managed the project from its subsea operations vessel (SOV) Windermere, which used its moonpool-launched, 15-man built-in saturation diving system and ROVs for inspection before repairs. The work involved the unraveling of flexible risers, control umbilical and mooring wire.

The oil production riser assembly and other subsea structures were also removed and replaced subsequently, resulting in a safe return to production.



Ocean rig Poseidon and support vessel.

Test may remove uncertainties over future LNG project

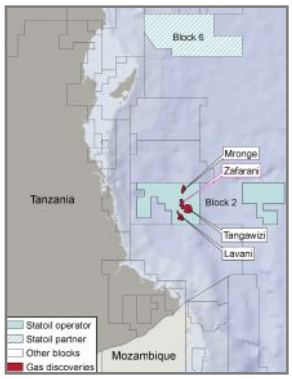
Statoil and co-venturer ExxonMobil said the Zafarani-2 operation tested two separate intervals and flowed at a maximum of 66 mmscf/d of gas per day as part of a first drill stem test conducted in the Tanzania Block 2 offshore discoveries.

In 2012 and 2013, the companies made the significant Zafarani, Lavani, Tangawizi and Mronge discoveries in Block 2, which covers an area of approximately 5,500 sq km and lies in water depths between 1,500 to 3,000 m.

The Zafarani-2 operation was constrained by equipment and confirmed good reservoir quality and connectivity. According to Statoil, the acquired data will help reduce technical uncertainties in a possible future Tanzania offshore and LNG development.

The drill stem test operation has been performed by the companies through a re-entry in the Zafarani-2 well, in water depth of 2,400 m and about 80 km off the coast of southern Tanzania.

"The ongoing appraisal programme is crucial to firm up the design and development basis for bringing gas to shore and a first phase onshore LNG project in Tanzania," said Øystein Michelsen, Statoil's Tanzania country manager. "We are now working constructively with our co-venturer ExxonMobil, Blocks 1, 3 and 4, and the Tanzanian authorities to progress the plans for a joint LNG plant development."



"Compared to the equipment-constrained rates obtained during the test, the production well rate potentials are estimated to be higher," Michelsen said.

The Zafarani-2 operation will be followed by the appraisal well Zafarani-3, which concludes the planned appraisal in the Zafarani reservoir. The Zafarani-2 well test announcement follows the Mronge-1 discovery made in December 2013.

Together with the other discoveries, Mronge-1 brought the natural gas in place volumes up to 17 to 20 tcf.

On behalf of Tanzania Petroleum Development (TPDC), Statoil operates the licence on block 2 with a 65% working interest, while ExxonMobil Exploration and Production Tanzania holds the remaining 35%.

Tullow confirms new deepwater oil play offshore Mauritania

Tullow Oil has discovered hydrocarbons with the first well in an exploration drilling campaign targeting deeper-lying plays offshore Mauritania. Fré gate-1 was drilled to a depth of 17,802 ft in the C-7 license. It encountered up to 98.4 ft of net gas-condensate and oil in multiple sands.

Tullow said the well represents a technical breakthrough by establishing a new oil play in deepwater late cretaceous turbidites. The company plans to integrate the results with its regional 3D seismic surveys. The rig will next drill the Tapendar prospect in Block C-10.

Mauritania's government has approved the development plan for the Banda offshore gas field, which will involve a gas-to-power development.

Tullow and its partners have received bids for engineering, procurement, and construction and are in pre-award negotiations with contractors. Commercial discussions continue on the gas sales agreement and associated power purchase agreements.

Eni discovers wet gas, light oil at Marine XII block offshore Congo

Italy's Eni said it found significant wet gas at Nene Marine 3 exploration well in the Marine XII block located about 17 km offshore Congo. The Nene Marine 3 well was drilled in 28 m of water and encountered gas and light oil in the pre-salt clastic sequence.

Located 2 km from the discovery well Nene Marine 1 and 4 km from Nene Marine 2, the well flowed more than 5,000 bbl/d at 36 degrees API gravity during the production test in the oil interval.

Following the well's successful results, the company estimates that the discovery of Nene Marine field contains 1.2 Bbbl of oil and 30 Bcm of gas. The Nene Marine and the neighboring Litchjendilj Marine fields are claimed to have overall potential of approximately 2.5 Bboe in place.

The next exploratory and delineation campaign by the company will determine the significant additional exploration upside of the block.

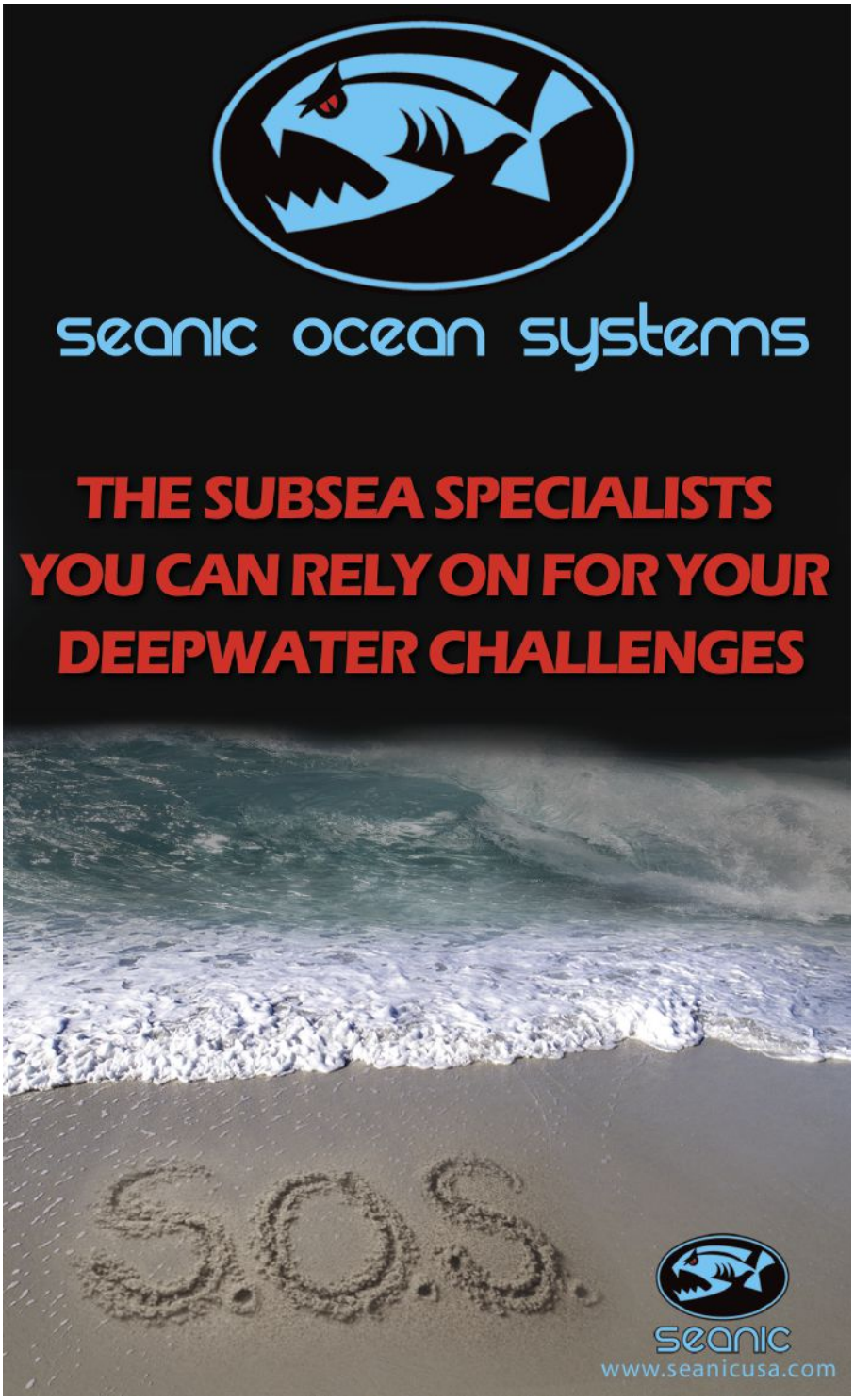
Petrel wins exploration licenses in Irish Atlantic Porcupine basin

Petrel Resources has been awarded frontier exploration licenses 3/14 and 4/14 in the Irish Atlantic's Porcupine basin by the Department of Communications, Energy and Natural Resources. The acreage licensed covers collectively about 1,050 sq km or 75% of the 1,400 sq km held under licensing options 11/4 and 11/6.

Petrel farmed out 85% of its interest in, and operatorship of, the licensing options to Ireland's Woodside Energy in August 2013. Valid for 15 years with an initial 3-year phase, the frontier exploration licenses are split into logical phases under best international practice, facilitating orderly permitting and progress, followed by three phases of 4 years each.

In the initial phase, the main elements include reprocessing of historic 3D seismic and environmental studies, and may cover the acquisition of new 3D seismic subject to regulatory rules and permits. If the parties elect to enter the second phase, the main element would be the drilling of a well on each license.

The farm-out process was launched by the company to find partners with technical and financial resources and strategic intent to pioneer new hydrocarbon plays in an under-explored, deepwater frontier basin.



Wärtsilä to supply pumping solutions for Samsung

Wä rtsilä is set to supply a range of pumping solutions for a new floating storage unit (FSU), as part of a contract signed with Samsung Heavy Industries (SHI).

The FSU, which will be built by SHI in South Korea on behalf of the Norway-based international energy company Statoil, will operate on the Mariner oilfield in the North Sea and is expected to have a capacity of 850,000 bbl.

Claimed to be the largest offshore development in UK waters, Statoil's Mariner field located on the East Shetland platform of the UK North Sea is estimated to produce an average of 55,000 bbl/d for some 30 years.

In 2007, Statoil acquired 44.44% of the operatorship for the field from Chevron and later in 2010 acquired an additional 20.66% from Nautical Petroleum. According to Wä rtsilä , the equipment is scheduled for delivery during spring 2015, and the FSU is expected to start-up in 2017.

Under the terms of the contract, Wä rtsilä will supply 45 deepwell process and cargo offloading pumps with electric motors and variable speed drive (VSD) panels, three fire water pump skids and two ballast pumps.

"Wä rtsilä has extensive experience in this market area, particularly with our electrically driven deepwell pumps," said Timo Koponen, Wä rtsilä flow and gas solutions vice president.

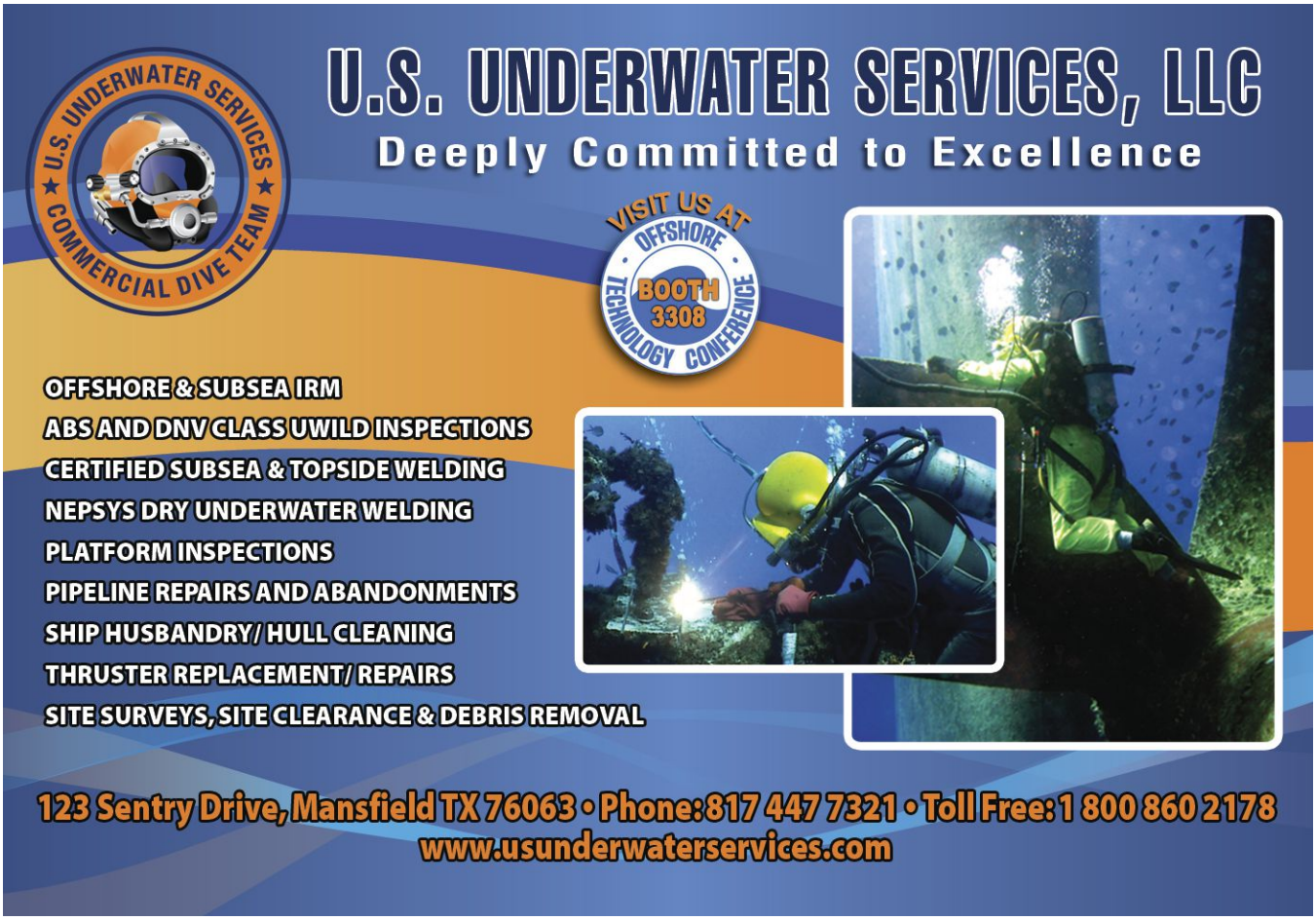
New Industries, Inc. completes 173-ton manifold

New Industries, Inc. announced today the completed fabrication, inspection, coating, testing, delivery, and installation of the 173-ton Big Foot Intermediate Manifold. This manifold has been installed at the Green Canyon 597 location in a water depth of approximately 4,200 ft. for Enbridge Offshore Facilities, LLC.

"The manifold consists of four 20 inch subsea connector assemblies and three 20 inch subsea valve assemblies as well as additional small-bore piping. Two of the 20 inch hubs will be used in the near future for connecting the 20 inch PLET (pipe line end termination) at the Big Foot Export Lateral Pipeline to an existing tie-in on the Amberjack Tahiti pipeline," stated New Industries' Project Manager Chad Paradee.

Specific testing activities for the manifold included gauging of all four primary piping assemblies and corresponding hubs, hydrostatic pressure testing, continuity verification between all anodes and the structural assembly, and weight and center-of-gravity measurements.

Bill New, President of New Industries, noted that "The Big Foot Intermediate Manifold was the first manifold of this size and complexity that New Industries, Inc. has fabricated. All of our personnel worked diligently to ensure the fabrication was completed correctly and in time for meeting the offshore installation schedule.



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First 'Made-in-America' FPS spar takes shape

The Allison Companies, LLC, a provider of lifecycle services and major fabrication for production platforms, said its AMC division has brought the Williams' Gulfstar 1 project (GS1) to completion. It's the first spar-based floating production system (FPS) being built entirely with major components in the United States, according to the company.

The four-pile deck will be placed on the Gulfstar spar in 4,300 ft of water at the Tubular Bells field on Mississippi Canyon Block 768 in the Gulf of Mexico. The facility is designed to process 60,000 bbl/d of oil and 200 mmscf/d of gas. The temporary work deck (TWD) is a four-legged structure that measures 90 ft by 120 ft and weighs an estimated 1,500 tons. It includes a heliport, utility piping, electrical receptacles, lighting and a hydraulic pedestal-mounted deck crane.

At the center of the work deck is a 30 ft by 30 ft area that consists of four separate 15 ft by 15 ft removable hatches. The TWD will be installed on top of the GS1 spar after upending operations and be used to facilitate installation of the mooring lines, production-export risers and minimal in-hull hook-up operations.

AMC's scope of work for the GS1 includes the fabrication, weighing, seafastening, loadout and tie-down of the TWD. The Gulfstar FPS is configured to support production from remotely operated subsea wells; oil, gas and water processing capacity; sea water injection capacity; steel catenary risers (SCRs) for owner's oil-gas export pipelines; steel catenary risers (SCRs) for the client's production-water injection flowlines; and I-tubes for electro hydraulic umbilicals.

"We are honored that Williams has chosen us to take part in the development of the Gulf Star 1 project," said Hank Robards, Allison's president and chief executive officer. "The Allison project

team and craftsmen worked over 50,000 man-hours to build this new 1500-ton temporary work deck on time."

Williams' master limited partnership, Williams Partners, has already signed multiple agreements with field owners Hess Corp. (operator) and Chevron to provide production handling, export pipeline, oil and gas gathering and gas processing services in the Tubular Bells field development.

"These agreements demonstrate the value that deepwater producers place on reducing cycle time and costs," said Rory Miller, president of Williams' midstream business. "

The Gulfstar FPS is creating 1,000 jobs in 20 states, with fabrication of the hull taking place in Aransas Pass, Texas, and the topsides fabrication occurring in Houma, Louisiana.

"The Gulfstar FPS approach to field development has certainly created a buzz in the industry," said Stafford Menard, Williams' manager of Gulfstar development. "Most of the people I have talked to have really jumped on the concept, particularly the focus on 'Made in America.' They're glad to see the work is being done in the United States."

Williams said its engineers designed Gulfstar to provide the flexibility producers need and the safety and reliability they expect. Gulfstar's standardized core design ensures speed to market, while plug-and-play options allow customization to meet specific needs. The classic spar hull with traditional three-level topsides can reach water depths of 3,000 to 8,500 ft. Anchoring the facility requires robotic technology, similar to what NASA does in space.

Alliance Engineering, a subsidiary of Wood Group, was awarded the detailed engineering and design of the topside facilities and deck for the Gulfstar FPS spar production platform.

McDermott International, Inc. was awarded a contract by Williams Partners for transportation and installation services for the spar hull. McDermott's recently improved DB50 vessel was to install the moorings.

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Fugro acquires innovative company specialized in 3D mapping solutions
Fugro has completed the acquisition of Roames Asset Services Pty Limited, based in Brisbane, Australia, from Ergon Energy Corporation Limited. Roames (previously a services unit within Ergon) specializes in high-resolution mapping services and solutions for the electricity distribution sector. Roames uses airborne sensors to generate accurate 3D models of electric power transmission networks and surrounding vegetation. The data collected through LiDAR (a measuring system based on laser technology) and digital imagery are processed in a highly automated way. This enables electric utility companies to take preventative measures to cost effectively review and maintain their infrastructure and to manage vegetation growth. The current annual revenue of Roames is around EUR 7 million. The 19 employees, including technology development staff, will transfer to Fugro. Fugro's agreement with Ergon includes a 5-year service contract (plus a 5-year option). Ergon has a distribution network of 150,000 km of overhead power lines in Queensland. With this acquisition, Fugro acquires advanced technology that can be used more broadly to build improved, cost efficient 3D mapping solutions for additional business areas, also internationally. This supports the further strengthening of Fugro's geospatial activities (part of the survey division). Fugro's survey division provides on- and offshore services to map and inspect the earth's surface, seabed and manmade structures. In addition, it provides a range of positioning, oceanographic and environmental services. Geospatial services encompass a complete range of survey and mapping capabilities using satellite, aerial and terrestrial based sensors.

DOF Subsea Norway AS awarded call-off for Statoil in 2015
DOF Subsea Norway AS has been awarded a call-off on an existing Survey Frame Agreement with Statoil Petroleum AS for 2015 in a contract estimated at more than NOK 200 million. The call-off has a firm period of 8 months and includes seabed mapping, pipeline inspection, lay support and light construction services. Project execution will be handled by DOF Subsea's operating centre in Bergen, Norway. Jan-Kristian Haukeland, executive vice president of DOF Subsea, said: "DOF Subsea is a leading supplier of survey services in the North Sea. With the fifth call-off in 4 years on the existing frame agreement for Statoil, we are well positioned to further develop our strong position in the region. Our professional team of survey personnel has been successful in delivering excellent subsea services, and we are pleased to see that this results in strong relationships with our clients." The specialized RSV Geosund will carry out the operations that are primarily located in Norwegian areas of the North Sea.

Statoil: United industry behind joint seismic acquisition
The project for joint seismic acquisition in the southeastern Barents Sea has been joined by 16 new companies. A total of 33 companies are now part of this project, which will secure good data quality and low acquisition costs. A joint acquisition of data will also limit any possible negative consequences for the fishing industry. The recently opened southeastern Barents Sea is part of the 23rd licensing round on the Norwegian continental shelf in 2014. At the request of the Norwegian Ministry of Petroleum and Energy (OED), the Norwegian Oil and Gas Association launched an initiative for a joint project relating to acquiring 3D seismic data from blocks in this area. Statoil took on the operator role for the acquisition. On 10 December last year, 17 companies joined the project as early participants. A further 16 companies followed suit after the OED on 14 February circulated a proposal regarding block announcements for public consultation. A doubling of the number of companies in the project shows that the initiative enjoys solid industry support. It is a project that will further reduce costs while ensuring good quality data by utilizing the companies' concerted competencies.

SMD to supply Bibby Remote Intervention with further Quasar MkII ROVs

SMD is very pleased to announce an order from Aberdeen based Bibby Remote Intervention Limited (BRIL), part of Bibby Offshore, to supply a further two Quasar MkII 150 hp 3,000 m rated work-class ROVs complete with launch and recovery systems. The ROV systems will be delivered during the first and second quarters of this year.

Bibby is a rapidly growing service provider to the construction and Inspection, Maintenance, and Repair (IMR) markets and Bibby Offshore was recently recognized with a prestigious industry award, winning Company of the Year at the 2014 Subsea Expo Awards.

"SMD is delighted to have been awarded this order from BRIL," said Mark Collins, SMD's RAS deputy managing director. "The new vehicles will complement the other latest generation SMD ROVs currently operated by BRIL. These systems have received very good feedback, particularly with regard to reliability and performance. BRIL have reported zero down time on Quasars 14, 20 and 21, the fleet of ROVs which were delivered in September 2013."

Bibby require the latest technology on their ROVs to provide the market with efficient and high performance operations. The new Quasars will be supplied with SMD's Dynamic Positioning Control System DVECS-S, the most advanced DP system on the market. DVECS-S can be mated to a Multi-Beam Imaging Sonar, DVL and INS to allow a choice of object relative positioning. These backs up SMD's approach of providing ROV systems that are robust, user friendly and easy to maintain while providing leading technological solutions.

Commenting on the award, Mark Wood, operations director for BRIL, said: "The vehicle systems are a great addition to our existing fleet, and further enhances our capabilities as we look towards our planned global expansion. To date we have developed a strong working relationship with SMD, and we look forward to building upon this for the future."

SMD is one of the world's leading subsea engineering companies designing and manufacturing Work Class ROVs, trenching systems, and subsea mining machines. They have a worldwide customer base operating in oil and gas, telecoms, mining, salvage, renewables, defence and scientific markets. SMD has offices in UK, U.S., Singapore and Brazil.

For more information, visit www.smd.co.uk.

Dutch Government picks Panther from Bluestream

For wreck removal, security and waterway maintenance, the Dutch Government chose the Saab Seaeye Panther XT Plus as the best ROV on the market.

This followed a year-long evaluation of all key ROV manufacturers using European Union tendering rules.

Subsea operator Bluestream drove the bid and have gone on to boost their existing fleet to 16 Saab Seaeye vehicles with the purchase of their own two Panther XT Plus, along with three additional Tigers, in an ROV investment plan for 2014 worth over £4 million.

Speaking of the Dutch Government's decision Bluestream's managing director, Rolf de Vries says the Government was impressed by the Panther's ability to handle heavy payloads and cope with strong currents.

They also saw Bluestream's advanced maintenance philosophy - linked to Saab Seaeye's training program - as the best on offer in the industry and a vital component of the 5-year maintenance contract.

Rolf de Vries says that in more than 14 years' experience with Saab Seaeye, the company has proven the performance capability of their vehicles and their commitment to support and training.

The scope of this fleet of 16 Saab Seaeye's ROV's now extends from general inspection Tigers up to the work class Panther XT Plus.

Commenting on building a 10-strong Tiger fleet, de Vries believes the Tiger is an ideal design for general inspection tasks and drill support in the North Sea, in terms of size and observation capability.

He concludes by saying that the enhancement of his fleet demonstrates Bluestream's commitment to growing its ROV resources and investment in advanced remote technology, "to serve the growing demand of our valued customers."

For more information, visit www.seaeye.com.

MacArtney delivers ROV system for DBB

MacArtney has delivered a powerful and versatile Sperre SUB-fighter 7500 ROV system for DBB ROV Services A/S, a major Danish ROV contractor for offshore drill support, inspection, survey and support jobs in connection with installation of offshore wind turbines. The new ROV is bound to join DBB's modern fleet of underwater vehicles and is the fourth Sperre SUB-

fighter system in operation for DBB ROV Services. Along with DBB Salvage and DBB Jack-Up, DBB ROV Services A/S is part of the DBB Group.

Besides work performed on offshore drilling rigs, the sub-fighter ROVs are also engaged in supporting the other two DBB companies—in particular on the offshore wind turbine market. Here, this type of ROV has become one of the most used vehicles with a reputation and track record as an extremely robust and easy to maintain ROV, designed and built for the harsh North Sea environment.

The sub-fighter ROV can also be delivered as a crawler with caterpillar tracks for tasks where most of the work takes place on the seabed—for instance with jetting systems and cable trackers.

For more information, visit www.macartney.com.

Sonardyne Solstice side scan sonar for Bluefin Robotics

Sonardyne International Ltd. and Bluefin Robotics, developers of AUVs, have announced at Oceanology International in London a collaboration to integrate Sonardyne's Solstice Side Scan Sonar with a Bluefin 12 AUV. A modular vehicle that allows for swappable payloads, Bluefin 12 is most commonly used for offshore survey, search and salvage, environmental monitoring and unexploded ordnance survey operations.

A new generation of search and classify sonar with integrated swath bathymetry, Solstice produces imagery of the highest possible quality from a conventional (non-SAS) sonar. It is designed to produce wide swath coverage (±100 m) while consuming only 18 W of power, increasing the operational and cost effectiveness of the AUV.

"Bluefin Robotics and Sonardyne have a long partnership; we already use products from their acoustic positioning and wireless communications technology ranges which are installed on some of our other AUV models," said David Kelly, president & CEO for Bluefin Robotics.

"Solstice has been specifically designed for AUV integration with its low power consumption and wide swath for increasing operational capability," commented Nick Swift, business manager for Sonardyne Maritime Security. "This collaboration further shows the commitment of both companies to providing industry-leading solutions that deliver real benefits to customers."

For more information, visit www.sonardyne.com.

Ashtead Technology donates equipment to search, rescue and recovery charity

A leading global subsea equipment solutions specialist has donated nearly £20,000 of specialist kit to SARbot, the UK's only underwater search, rescue and recovery charity.

Ashtead Technology, which is headquartered in Aberdeen and delivers state-of-the-art subsea products and support across the globe, has donated a CDL minivision long-rage, full-color video telemetry system, a Bowtech near SIT aluminium camera designed for use in low light level conditions, and a powerful underwater lamp.

SARbot's small volunteer rescue team operates across the UK, searching for missing people on any inland waterway or out at sea, using sophisticated sonar that has been specially developed to identify human forms under water and quickly locate victims.

Allan Pirie, CEO of Ashtead Technology, said: "SARbot is an exceptional charity, offering vital 90-min rescue to those in peril in waters across the UK but also peace-of-mind and closure to families of missing persons. We are delighted to be able to support it and hope that our donation will allow the charity to continue its crucial work."

Christian Cooper, director and trustee of SARbot, said: "The equipment from Ashtead Technology will make a huge difference to the way we view and review live footage from a search."

"The camera will be a valuable tool for searching confined spaces such as wells. There have been occasions this year when the emergency services have struggled to search a well used to discard the remains of murder suspects. We can use the camera to locate people before deploying an ROV for rescue or recovery."

SARbot's response team searches using powerful sonar, lights, cameras and a specifically designed robot with a grab arm that can cut through wire and attach to a body allowing recovery to the surface without the need for a diver.

The charity also has two trained water search dogs, Max and Vitton, who are capable of identifying human scent on water.

More than 700 drownings occur in the UK each year but medical evidence shows that people can survive near drowning in water below 21°C without permanent damage if they are recovered from the water in less than 90 minutes.

SARbot's aim is to have at least one fully trained team in every county or region of the UK, which can work alongside the emergency services.

Mr Cooper said: "We are a unique charity that offers a wide range of underwater search, rescue and recovery solutions. Sadly, we lack the funding we need to move forward and develop. We feel we can work with the subsea industry to do this and the generous donation of equipment from Ashtead Technology takes us another step forward."

For more information, visit www.ashtead-technology.com.

C-Enduro completes Scotland trials

ASV's C-Enduro demonstrates endurance and payload capability in Scotland trials.

The trials took place off the west coast of Scotland and marked the next stage in a project initiated by the National Oceanography Centre (NOC) in their search for long endurance USVs with greater payload capacity and speed than existing systems for environmental research.

Initial trials in December 2013 saw ASV's C-Enduro operate autonomously in a protected harbor. This second set of trials put the vehicle to the test in the challenging waters off west Scotland. The selected payload sensors fitted to C-Enduro were a winched Conductivity Temperature Depth (CTD) sensor, a Wetlab Triplet Puck and an Airmar Meteorological Sensor. ASV worked alongside Planet Ocean Ltd on the sensor and tracking package.

On these trials C-Enduro was fitted with its wind turbine, completing the three pillar power structure, also comprising solar panels and a lightweight diesel generator. Controlled via Iridium™ satellite link, C-Enduro was able to complete multiple remote CTD casts and gather data from the triplet puck and Met sensor during both day and night operations.

The C-Enduro concept was developed under a Small Business Research Initiative (SBRI) led by NOC and co-funded by National Environment Research Council (NERC), NOC's parent body, with the Technology Strategy

Board (TSB) and the Defence, Science and Technology Laboratories (DSTL).

The team behind the development led by ASV includes Hyperdrive Ltd who investigated motor options and power management systems and Cranfield University who conducted research into collision avoidance technologies.

The vessel is now ready for order and ASV is currently working with several lead customers on a variety of exciting applications.

For more information, visit www.asvglobal.com.

Special metal detector adds capability to ROVs

A number of marine service companies and manufacturers are adding a metal detector to their ROVs to increase the vehicle's capabilities. Magnetometers, super sensitive metal detectors, have been used with ROVs for many years, but these instruments only detect iron and steel. If the target of interest is made of nonferrous metal such as gold, silver, aluminum, brass or bronze, a magnetometer is useless. A conventional underwater metal detector can not be attached to an

ROV because the electrical noise generated by the vehicle and all of its metal parts interfere with the detector's operation. To overcome these problems, JW Fishers Mfg developed the RMD-1 remote metal detector. The unique dual coil design almost completely eliminates the effects of electrical noise and cancel the effect of the ROV's metal structure. Not only is the RMD-1 unaffected by the vehicle's noise and metal, it will detect both ferrous and nonferrous metal buried up to 1.5 m in the bottom.

Eriksson Diving AB in Sweden has been offering subsea services to their customers since 1984. Their divers do inspections of ships, harbors, dams, ultrasonic thickness measurements, salvage work, underwater cutting and welding, concrete repairs, and cable laying. In addition to the commercial diving operations, Eriksson also performs ROV inspections and sonar surveys. The company acquired a RMD-1, which they've attached to a Seaeye Falcon. Owner Arne Eriksson reports, "We used the system to do a job for Gardline Environmental Ltd at the Sheringham shoal windfarm. The objective was to locate UXO targets (unexploded ordnance) acquired by towed magnetometers. We ran a search pattern over the area with the ROV and metal detector to determine the precise location of each target. The detector's readouts were logged along with subsea position coordinates. Divers were then deployed to examine the objects found. The work was done over a 2-month period and we had great results."

The remote metal detector is also being used by one of the largest and most successful treasure salvage companies, Oddysey Marine Exploration. According to the company, "No one knows shipwrecks better than our world-class team of researchers, scientists, technicians, and archaeologists."

For more information, visit www.jwfishers.com.

SMSGlobal launches onboard social media portal

Hong Kong's SMSGlobal has announced the launch of Se@MeNow, a maritime social networking portal where seafarers can stay in touch with their loved ones through social walls, photo sharing, video and voice chat and web mail. In addition, users can shop with worldwide delivery, play online games and follow live updates on their favorite sports events. Approximately 3,200 deep sea vessels are currently equipped with SMSGlobal's CrewCommCenter system—having 125,000 seafarers exchanging 2,250,000 messages monthly with over 1,300,000 friends and loved ones onshore. Se@MeNow functions as the web mail service for all of SMSGlobal's subscribers using the CrewCommCenter system. "Social networking has become one of the most important parts of our daily life. With internet connectivity becoming more prevalent onboard merchant vessels, a clear trend in communication is access to social networking sites and online chat. These ways of keeping contact with home adds significant value to the onboard communication services," said Jan Andre Heggem, managing director of SMSGlobal. SMSGlobal was founded in 2003 when the company introduced the first universal 2-way SMS text messaging and crew email service for seafarers.

Comtech completes purchasing agreement with Harris CapRock

Comtech Telecommunications Corp. announced that its Tempe, Arizona-based subsidiary, Comtech EF Data Corp., received a purchasing agreement from Harris CapRock Communications for satellite communications infrastructure equipment. Under the terms of the agreement, Harris CapRock will procure Advanced VSAT Solutions and RF products. The first $5.4 million equipment order as part of the purchasing agreement was received by Comtech EF Data during Comtech's quarter ended 31 January 31 2014. Harris CapRock's customers in the energy, maritime and government sectors are experiencing ever-increasing demand for bandwidth, higher link availability and improved connection quality. After extensive evaluations of industry offerings, Harris CapRock teamed with Comtech because its Advanced VSAT technologies offered the best solution to support customers' dynamic operations. Designed to deliver Premium Enterprise services, the Advanced VSAT Solution leverages the versatility of the Vipersat Management System to dynamically reassign satellite capacity on demand subject to the remote site's traffic profile. Utilizing DVB-S2 on the shared outbound channel, the patented VersaFEC® Forward Error Correction on the dynamic SCPC return channels and multi-level optimization provides industry-leading bandwidth efficiencies and performance enabling users to achieve information rates exceeding 160 Mbps per outbound and 15 Mbps per return. Bi-directional adaptive coding and modulation assures connectivity even in the harshest conditions, while potentially doubling throughput during optimal periods. Multi-level Quality of Service (QoS) ensures the highest service quality with minimal jitter and latency and priority treatment of mission-critical applications while maximizing bandwidth utilization. Advanced VSAT simplifies network deployment with seamless layer 2 operation supporting VLANs and jumbo frames. As a leading buyer of satellite infrastructure equipment, Harris CapRock is dedicated to making the right technology investments to support dynamic customer operations and help create more cost-effective solutions for those customers. In collaboration with Comtech, Harris CapRock has worked to influence and shape the design of Comtech EF Data's Ku- and C-band LPOD Block Up Converters (BUCs). Harris CapRock will standardize and deploy these rugged and weatherproof BUCs, which are designed to withstand harsh environments.

Inmarsat Maritime opens Smart Operations dialogue

Inmarsat has staged the inaugural "Smart Operations" conference, the first in a series of events seeking an open debate in the maritime industry over the operational benefits of integrated thinking on shore and ship communications.

With the first of the three new Global Xpress® satellites already in orbit—a prelude to the global launch of the world's first high-speed mobile broadband satellite service to the maritime industry, scheduled for early 2015—the "Smart Operations" conference took place at Inmarsat headquarters in London attended by leading figures in the maritime communications industry. Event organizer Fathom has already set 2014 dates for further conferences in Hamburg, Hong Kong and Athens.

"Ship to shore connectivity has not kept pace with the unprecedented data access available ashore after the internet revolution, but things are changing fast," Inmarsat Maritime president Frank Coles told an audience including key end-users. "The industrial internet is here and shipping will have to accept it. With ships already featuring ever increasing numbers of sensors, smart operational decision-making is available through advanced analytics. Inmarsat is developing the platform that will enable the Maritime Industrial Internet age."

"The shipping industry is innovative, but in its own way," said Mr. Coles. "Today, we send data in 2 Mbps bundles, but tomorrow it will be 15 to 20 Mbps. The point is it is no longer about getting data ashore, but about analyzing it and sifting it to ensure smart operations."

David Balston, UK chamber of shipping director – safety and environment, outlined the commercial and regulatory pressures facing owners in 2014. High fuel prices and disastrous charter rates persisted while regulatory restrictions could cost shipping half a trillion dollars between 2015 and 2025, he said.

Quoting a McKinsey projection that 50 billion devices will be Internet-connected by 2020, Mr. Coles also cited an Engineering Software Reliability Group estimate to argue that $20 billion could be captured across 100,000 ships through smart decisions on energy efficiency, predictive maintenance and downtime avoidance. Again, the future of compliance

with environmental rules lay in collecting, analyzing and acting on real time data.

Many are keen to fill expanded communications capacity. Introducing the ShipServ Match offer to save buyers money by analyzing and rating the performance of 53,000 ship suppliers, Shipserv Chief Executive Paul Ostergaard envisioned a time when some purchasing decisions could devolve to crew. Meanwhile, Lloyd's Register Lead Environmental Specialist Paul McStay said owners were seeking urgent guidance on which technologies would yield efficiency gains.

Lawrence Poynter, product management director from software developer iOra cautioned the industry that effective communications relied more on data management than data transfer speeds. Despite operating dedicated satellites, for example, the U.S. Navy has a strict three tier data transfer regime: general; vessel type data; and ship specific information.

"Critical in all of this is reliable, fit-for-purpose communications," said Mr. Coles. "I believe ship owners cannot be expected to manage the data available alone and it is the engine and other equipment manufacturers and software developers who are taking the lead in developing the large network centers to help manage this. Vendors will drive change. They are doing it already."

For more information, visit www.inmarsat.com.

SkyFile Mail reaches record growth with VSAT and MSS users

Dedicated software for maritime email and IT security solutions for VSAT and MSS users increased by more than 25 % in 2013 over 2012, with an excess of 50 million emails sent.

Airbus Defence and Space reached a fresh record for its dedicated SkyFile Mail software in 2013, with more than 50 million emails sent by some 40,000 mariners worldwide—a 25 % growth in email volume over the previous year.

SkyFile Mail is an intuitive email solution for business and crew working for some of the world's largest shipping companies. It is a leading messaging application optimized for satcom and the perfect partner for Pharostar, Sealink and WaveCall VSAT services from Airbus Defence and Space.

The increased use of SkyFile in 2013 was similar for both VSAT and MSS, reflecting the ease of migration to SkyFile from other email platforms and from L-band satcom, as users do not need to be retrained when a vessel upgrades its satcom from MSS to VSAT.

Skyfile optimizes bandwidth efficiency on board through sophisticated data compression, which further reduces the size of emails sent. The remaining VSAT bandwidth can be put to use for other operational or crew applications. Further efficiencies come from enhanced remote management features.

SkyFile Anti-Virus also saw growth, with the amount of licenses in operation nearly doubling throughout 2013. New over-the-air updates attracted more users, who recognize that up-to-date anti-virus software is important for security and efficiency.

Airbus Defence and Space is a division of Airbus Group formed by combining the business activities of Cassidian, Astrium and Airbus Military. The new division is Europe's number one defense and space enterprise, the second largest space business worldwide and among the top 10 global defense enterprises. It employs some 40,000 employees, generating revenues of approximately €14 billion per year.

For more information, visit www.airbusdefenceandspace.com.

Caldwell

Marine International, LLC

Caldwell Marine International is a heavy marine construction firm specializing in the installation of submarine power and fiber cables.

Caldwell Marine International, LLC is seeking applicants for the following positions:

SUBSEA ENGINEERING MANAGER (FULL TIME)

The Subsea Engineering Manager will be responsible for maintaining, repairing, and operating subsea and cable installation equipment including:

- Subsea Jet Sleds and Plows
- Hydraulic Machinery - Hydraulic, Electrical, and Mechanical Control Systems
- Linear Cable Engines
- Dynamic Positioning System Controls
- Various Tension Measurement Systems
- Cable Coiling Arms

The applicant shall have experience in both electrical and hydraulic machinery maintenance and repair, and experience working with high voltage and low voltage control interfaces.

The applicant should show a high level of proficiency in working with hydraulic and electrical schematics and block diagrams with a working level proficiency in AutoCAD applications, and have the ability to assist in system design. Ideally, the candidate for this position should have an engineering background with marine experience.

Work is divided between the field and the office. Successful candidate must be a team player, able to work with people in a wide variety of circumstances.

For a confidential evaluation, please email resume along with salary requirements to: marc.dodeman@caldwellmarine.com

FIELD ENGINEER / PROJECT COORDINATOR FOR THE MARINE CONSTRUCTION INDUSTRY

Caldwell Marine International, a leader in the submarine cable installation industry is currently seeking a field engineer / project coordinator.

Primary duties include set up and operation of surface and subsurface navigation equipment, specialized plow monitoring systems, computer systems, and management of our Dynamic Positioning system. Additional duties include report and as-built drawing preparation, proposal writing, and hydrographic surveys. Special consideration for submarine cable laying experience, software development, electronic systems development, hydrographic surveying, cable route engineering, and project management. Candidates should have a minimum of an Associate's Degree in Engineering along with 3+ years of marine related experience.

Work is divided between the field and the office. Successful candidates must be a team player, able to work with people in a wide variety of circumstances.

For a confidential evaluation, please email or mail resume along with salary requirements to:

CALDWELL MARINE INTERNATIONAL, LLC
1433 Highway 34, South
Farmingdale, New Jersey 07727
marc.dodeman@caldwellmarine.com

Kongsberg information management system for world's largest cruise ship

The new Kongsberg Information Management System (K-IMS) has been installed on Royal Caribbean Cruise Line's mega cruise ship the "Allure of the Seas." K-IMS is a state-of-the-art, customized data management system that operates over a global, secure and highly scalable infrastructure.

K-IMS features a suite of applications within a single web portal providing high level vessel data access to engineers and management. The user interface, known as the IMS Portal, is available on board and on the RCCL office network in Miramar, Florida. K-IMS data is also accessed on board using tablets and is displayed on a large screen in the Engine Control Room on Allure.

K-IMS was installed during a significant upgrade to the existing Kongsberg Maritime K-Chief automation system on board. The new K-Chief on Allure is one of the most extensive ever installed by Kongsberg Maritime, consisting 76 Remote Control Units (RCUs) controlling over 40,000 Input/Output (IO) points. K-IMS replaces the exiting K-Chief History Station and, as the data logging system of choice on board, will provide data from 21,000 I/O points (up from 14,500) and data storage for 7 years (up from 1 year). This provides RCCL with extensive data and statistics with which to improve vessel operational performance.

K-IMS provides the ability to review statistical data, condition-based monitoring, alarms and events, and ship performance monitoring data. Condition-based maintenance on Allure provides a long-term overview of the equipment performance and mechanical degradation, which supports preventative maintenance. Alarms and events reporting provide the ability to review the most commonly repeating alarms and fix issues with equipment before they become emergencies.

The K-IMS solution on Allure is a triple redundant data access and storage system with servers located in three zones – two on board and one in a hosted cloud service. This configuration enables RCCL management to access the vessel's data without having to use satellite communications, thereby saving on communication costs. A malware protection system to filter out any malicious attacks from the web or via USB on board is included while an admin server allows secure remote access to the vessel from authorized locations including the Kongsberg Maritime customer support team.

For more information, visit www.km.kongsberg.com.

RedPort launches Optimizer Crew satellite router with Wi-Fi

RedPort Global announced the Optimizer Crew satellite broadband Wi-Fi router. Optimizer Crew lets users easily share and control access to a satellite broadband or GSM data service via a Wi-Fi or Ethernet network. Optimizer Crew replaces standard routers and can help users save money on satellite airtime bills while increasing operational efficiency and providing controlled access to email and the Internet.

Optimizer Crew provides unlimited firewall, filtering, routing, PIN-code and local GPS repeating. It also works with RedPort Mail service for premium access to accelerated email and web compression service, as well as GPS tracking via RedPort tracking or any GsatTrack-based service. Optimizer Crew users can also access GSM service via an optional GSM modem and their own SIM card. This allows users access to GSM service in areas where it is available at a lower cost than satellite, for example while a marine vessel is in port in its home country.

Features and services of Optimizer Crew include:
• Captive Portal for Operations or Crew Internet Access
• Satellite Connection Control
• GSM Connectivity
• Firewall
• Wi-Fi
• GPS Tracking
• NMEA GPS Repeater

Optimizer Crew runs RedPort Mail, a multi-user version of XGate, the world's most widely-used independent satellite data optimization service. RedPort Mail works as a full POP and SMTP server to provide complete email integration. It also allows for simple webmail access on a local network, making access quick and easy, and providing for a complete onboard email system, as well other services, such as:

• Email – RedPort email service offers up to 20 times acceleration versus uncompressed speeds, saving up to 85% on satellite airtime; crew accounts provide local access.

• Shared web compression – RedPort Compression uses a web proxy service to provide all users on board with 3 to 5 times average web acceleration, all transparently. No special software is required, the router simply directs all web traffic through satellite compression servers.

• Weather – RedPort Mail lets users easily get free GRIB files via email from many online services, showing weather and oceanographic data with their compatible GRIB file viewer.

It works with all standard satellite broadband equipment including:
• Inmarsat BGAN; Inmarsat FleetBroadband
• Iridium OpenPort/Iridium Pilot
• Thuraya IP
• VSAT systems

For more information, visit www.redportglobal.com.

Inmarsat Fleet One terminal on the way from Cobham

Cobham SATCOM has signed a contract with Inmarsat, the leading provider of global mobile satellite communications services, to manufacture a used low cost terminal for the Fleet One satcoms service, due to be launched in the second quarter of 2014.

Available in April 2014, the SAILOR Fleet One terminal will be the first available for Inmarsat's used Fleet One service, which is the ideal communication solution for yachts, motorboats and small fishing vessels. SAILOR Fleet One enables data connectivity up to 100 kbps and a single voice line. Its capabilities offer significant communications functionality for recreational and fishing users.

The Fleet One service, accessed utilizing the low cost SAILOR Fleet One terminal, will be provided through the Inmarsat-4 satellite constellation, the same award-winning network used by the world's leading ship operators. SAILOR Fleet One is designed to the same high quality standard as the existing SAILOR FleetBroadband product line – a fact more than 35,000 end-users have experienced so far. The antenna is light and easy to install, even on small boats, and connecting to the below deck equipment is simple enough that keen owners can handle the installation and maintenance themselves.

For more information, visit www.cobham.com

Telstra partners with Infinera to upgrading Pacific cables
Infinera and Telstra announced the upgrade of multiple ultra-long haul submarine cable routes, optimizing capacity and providing scalability and reliability on key routes of Telstra's network. The Infinera Intelligent Transport Network will enable Telstra to quickly deploy 10G, 40G and 100G Ethernet and OTN services on:

- Telstra Endeavour—a 9,124-km submarine cable connecting Sydney and Hawaii;
- Telstra's Designated Fiber Pair on the Asia America Gateway (AAG) submarine cable connecting Hawaii and California; and
- Reach North Asia Loop (RNAL), which spans 9,000 km to connect Hong Kong, Taiwan, Japan and South Korea.

The Infinera DTN-X is designed to scale without compromise to enable future upgrades to terabit super-channels and Terabit Ethernet. The DTN-X converges five Tb of non-blocking OTN switching into the same platform, resulting in more efficient network utilization when compared to conventional WDM architectures. Intelligent software combined with this converged platform automates manual operations to lower operational costs and enable faster service delivery.

MENA Cables signs agreement to complete Med-Indian Ocean connection
Orascom Telecom Media and Technology Holding S.A.E (OTMT) announced that its subsidiary MENA Cables has signed an IRU (Indefeasible Right of Use) Agreement with Telecom Egypt for a diversified dark fiber pair between Zaafarana and Abu-Talat after acquiring the mandatory permits, thereby completing the terrestrial infrastructure of its MENA submarine cable system extending across Egypt. The term of the IRU Agreement is 20 years. As a result of using Telecom Egypt's crossing-Egypt infrastructure, MENA is expected to successfully complete and launch MENA Submarine Cable, its first fiber optic submarine cable system, within 1 year. The system spans three continents (Europe, Africa and Asia), two seas (Mediterranean and Red) and one ocean (Indian Ocean), initially landing in five countries (Italy, Egypt, Saudi Arabia, Oman and India), with potential expansion phases to land in Greece and Djibouti. The MENA Submarine Cable System was pending only the infrastructure crossing Egypt as all marine construction works had been completed and the landing stations and network operating center (NOC) have been fully operational since the first half of 2012. Additionally, OTMT has signed another agreement with Telecom Egypt to acquire different local and international capacity and services from Telecom Egypt.

PLDT completes Palawan cable project
Philippines Long Distance Telephone (PLDT) has completed the rollout of nearly 300 km of state-of-the-art submarine fiber optic cables linking Palawan province in western Philippines to the rest of the PLDT network to meet the rapidly increasing demand for robust and reliable telecoms and data services in one of the country's top tourist destinations. PLDT spent P861 million for the undersea fiber optic cable project that extends from Taytay in Palawan to San Jose de Buenavista in Iloilo, which is one of PLDT's major hubs within its domestic fiber optic network (DFON). PLDT earlier completed the installation of over 150 km of submarine fiber optic cables amounting to over P400 million that will link the island of Bohol with the major network centers in Visayas and Mindanao, boosting the telco's services in the fast growing tourism and BPO hubs in central Philippines. Aside from the undersea cable link, the Palawan-Iloilo DFON network will be supported with inland transport facilities that run from Puerto Princesa to Taytay in Palawan and San Jose de Buenavista to La Paz, Iloilo City. The DFON Palawan network is equipped with a 40 Gb capacity that can easily expandable to 100 Gb to support the ever-increasing demand for greater bandwidth by corporate and individual subscribers.

NKT Cables announces involvement in Gemini

NKT Cables announced that it is involved in a prospective offshore wind farm project named Gemini developed by Typhoon Offshore B.V. and owned by a consortium of investors.

In a press release issued on 30 January 2014, the consortium has confirmed that they have received the financing commitments required for the start-up of the project.

As a consequence, NKT Cables and Typhoon Offshore B.V. have entered into a 'Preparatory Works Agreement,' which is the first phase towards a final order that is expected to be signed within the next few months when all financing aspects have been concluded by the consortium. The agreement allows NKT Cables to commence the production of the cable in February 2014 and ensures payment for realized costs.

Project Gemini consists of the Buitengaats and ZeeEnergie wind farms to be situated in the Dutch zone of the North Sea, 55 km northeast of the island of Schiermonnikoog and will have a capacity of 600 MW. With 150 turbines, the wind farms will produce electricity for more than 1.5 million inhabitants per annum.

For NKT Cables, the final order will have a contract value of approximately 165 million euros, measured in standard metal prices, and comprise supply of more than 200 km of 220 kV high voltage submarine cables to be manufactured in Cologne, Germany and delivered ready for installation starting early 2015.

Gemini represents the company's 10th offshore wind farm project since 2010 when the submarine cable factory in Cologne first started the production of submarine cables.

For more information, visit www.nktcables.com.

Maritime Link Project selects Nexans' HVDC cable
NSP Maritime Link Inc., a subsidiary of Emera Inc., has awarded Nexans with a turnkey project to create a high-voltage direct current (HVDC) cable connection between the island of Newfoundland and Nova Scotia in Canada. As part of the contract, worth approximately 175 million Euros, Nexans will design, manufacture and install two 200-kV HVDC power

cables that will span a subsea distance of approximately 170 km.

Nexans will supply approximately of 340 km of mass impregnated (MI) HVDC subsea and land cables together with fiber optic elements, transition joints for the sea and land cables, joints and terminations.

The Maritime Link is a 500-MW HVDC that will transport clean, renewable and reliable electricity from Newfoundland and Labrador to Nova Scotia and other energy markets in Canada and the North-eastern United States. For the first time in its history, the island of Newfoundland will be connected to the North American transmission system. The Maritime Link will also provide Nova Scotia with new access to clean renewable energy to offset coal-fired generation and meet more stringent Canadian emissions requirements.

The project will include two 170-km subsea cables across the Cabot Strait, with almost 50 km of overland transmission in Nova Scotia and close to another 300 km of overland transmission on the island of Newfoundland.

With an impressive portfolio of HVDC cable connections completed in Europe, this will be Nexans most significant project in North American to date. To cross the Cabot Strait between the island of Newfoundland and Nova Scotia, the HVDC subsea cables will be installed at sea depths up to 470 m by Nexans' own cable ship, the C/S Nexans Skagerrak. The cables will be protected on the seabed by trenching using Nexans' own CapJet system and rock installation.

For more information, visit www.nexans.com.

Tekmar seals deal on major Dutch offshore wind farm project

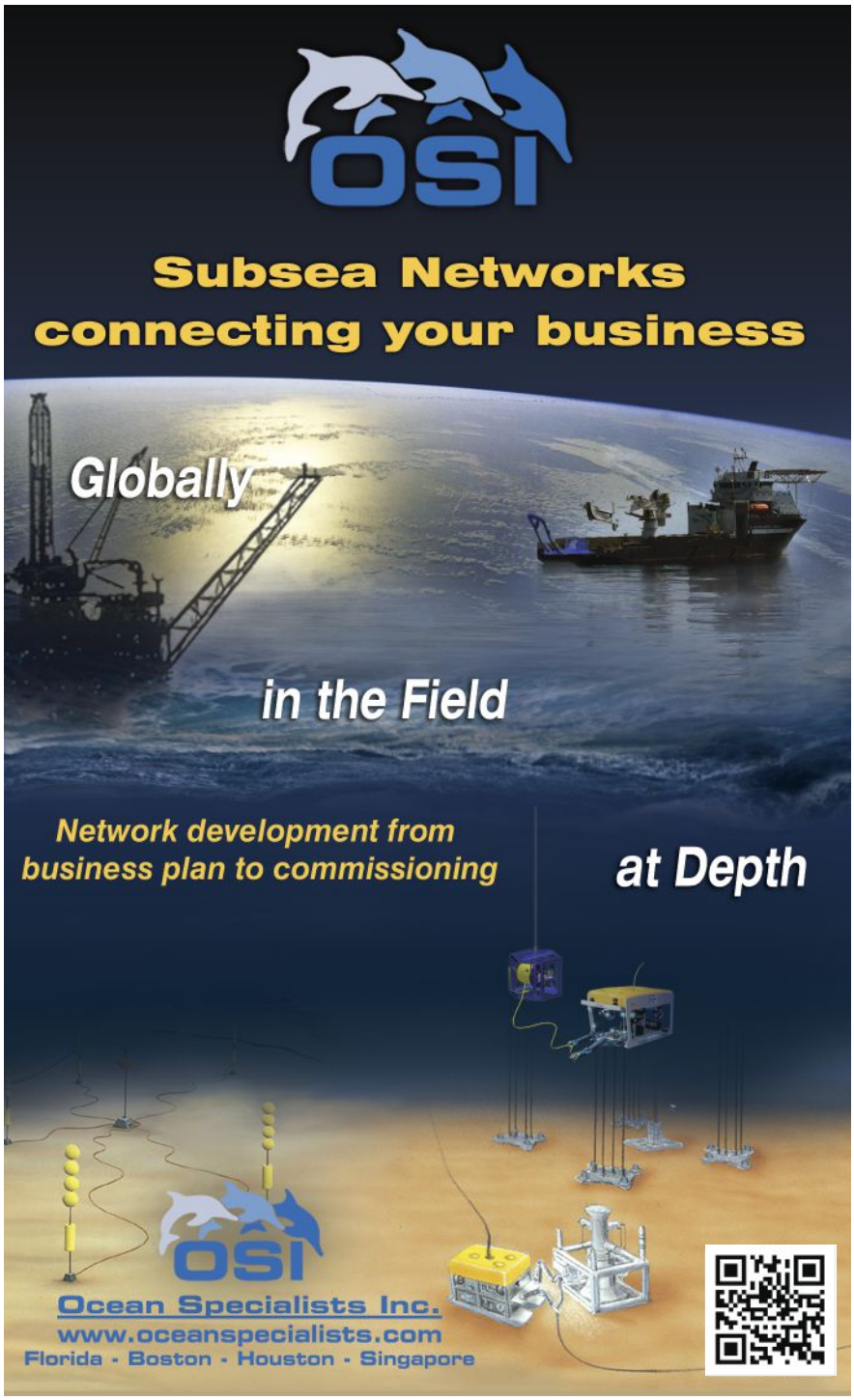
Tekmar Energy has marked a hat trick of contract wins with leading international EPC contractor Van Oord Offshore Wind Projects BV after being awarded work on the Eneco Luchterduinen offshore wind farm development in Holland.

The contract reinforces Tekmar´ s market-leading track record in delivering bespoke cable protections systems. Tekmar has been involved in more than 25 high-profile offshore wind projects and supplied over 3,000 systems since its entry into the market.

Tekmar´ s latest contract win will see the company supply its cable protection systems to Van Oord, which is responsible for the construction of the Eneco Luchterduinen wind farm, located about 23 km from the Dutch coast in Block Q10 of the North Sea.

It is the third contract of its kind that Tekmar has been awarded by Van Oord. The company has also been involved in supporting Van Oord with the Eneco Luchterduinen project at an early stage by providing support on the design of the J-tubes for the Offshore High Voltage Substation and cable entry interface on the foundations and will provide offshore support for the project during start up.

The scope of work for the latest contract will see Tekmar work with NKT Cables and LS Cable as the cable suppliers and Van Oord as the installer for a total of 87 cable protection systems, including seven bellmouths of which six



are for array cables and one is for the export cable. Tekmar will also provide full engineering of its systems to protect the power cables for their 25-year service life. It will be the sixth project for which Tekmar provides protection for NKT Cables.

Eneco Luchterduinen is a joint venture between Eneco and Mitsubishi Corporation. The development, numbering 43 wind turbines, will have a combined capacity of 129 MW and generate green electricity for nearly 150,000 households. Tekmar, which provides bespoke cable protection systems to both the global oil & gas and offshore renewables industries, further underpinned its commitment to cost reduction and innovation in the offshore wind industry last month when it launched a new innovation.

The TekTube cable protection system reduces installation time and costs and minimizes associated cable risks.

TekTube was developed utilizing the same protection methodology as the market-leading, proven industry standard TekLink system. The TekLink system, which is designed for a 30-year lifetime, revolutionizes the connection of subsea power cables into monopile foundations. TekTube offers an alternative to TekLink for jacket, gravity-base and floating foundations.

For more information, visit www.tekmar.co.uk.

Transpower says protection of Cook Strait Cable critical

Transpower, the power utility for New Zealand, said that the importance of the High Voltage Direct Current (HVDC) Cook Strait Cable was highlighted recently when the master of a ship was prosecuted for anchoring in the Cook Strait Cable Protection Zone (CPZ).

The CPZ protects vital submarine electricity and telecommunication cable links between the North and South Islands. The cables form part of the HVDC inter-island link, which transfers power between the North and South Island.

To protect the cables, there are important restrictions on the activities that can be carried out in the CPZ. Activities such as fishing and anchoring are in violation of the Submarine Cables and Pipelines Protection Act 1996. Penalties for breaching the Act can result in fines of up to $250,000 as well as the forfeiture of the vessel.

Corporate communications manager Rebecca Wilson said that the protection of the submarine cables of the HVDC inter-island link is critical to ensuring a secure supply of electricity in both the North and South Islands.

"The HVDC link can at times provide up to 40% of the North Island electricity load, or an even greater amount of the South Island load, especially in dry years when the hydro lakes are low and North Island generation is needed to cover South Island demand," Wilson said. "There have been previous incidents where trawling equipment, other fishing gear and anchors have caught on the undersea cables and caused damage. The repair of these cables can cost up to $60 million, and damage to the cables can put the security of electricity supply to the country at risk."

For more information, visit www.transpower.co.nz.

Prysmian Group boosts expansion in the oil & gas industry

Prysmian Group aims at accelerating expansion in the business of Subsea Umbilicals, Risers and Flowlines (SURF) by establishing new headquarters in Houston, Texas, under the responsibility of Robert Conners who joins the Group.

With the strengthening of its operations in Houston and with such an experienced professional as Robert Conners joining the Group, Prysmian aims at developing a new business strategy by expanding the global growth of the business unit and by improving market penetration for niche products in the Oil & Gas industry.

Special attention to Brazil and long-standing partnership with Petrobras will still be within Prysmian's focus, with production of umbilicals and flexible pipes in the state-of-the-art plants in Vila Velha on the Vitoria channel (Espirito Santo State). Josè Luiz Dacal Castro will temporarily support the business handover and the development of the new initiatives before taking the lead of the Brazilian operations of the business unit.

Over the past years Prysmian has been investing in the development of umbilicals, both steel tube and thermoplastic, and flexible pipes with the aim of diversifying and further expanding its activities in the market of technology and products for the OG&P industry. The flexible pipes plant has complemented the umbilical plant, opened in 2007, and the addition of flexible pipes to its product range has enabled Prysmian to offer the OG&P industry a comprehensive range of SURF products.

Thanks to the merger between Prysmian and Draka in 2010, the Group can now rely also on two plants in North America, thus broadening the available range of products technology to special Down Hole Technology (DHT) systems (manufactured in Massachusetts and New Jersey) and creating interesting cross-selling opportunities.

Recently the Group has been awarded by Petrobras a new major contract related to a frame agreement for umbilical products worth approximately $260 million with 50% minimum purchasing commitment and call-off orders to be placed within a 2-year period. Prysmian has also been awarded by Petrobras the extension to 2016 of the existing frame agreement for flexible pipes, worth a total of $95 million of which $20 million have already been called off for the Macabu, Jubarte and Marlim Leste fields.

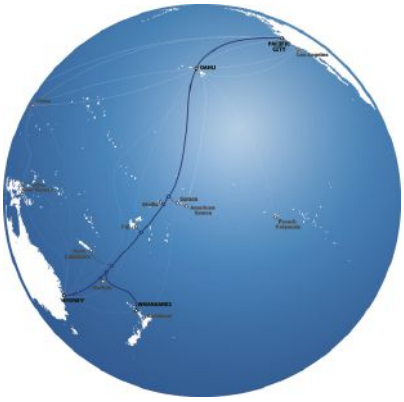
For more information, visit www.prysmian.com.

Hawaiki Cable signs up Solarix

Hawaiki Cable, the New Zealand registered company planning to build a 14,000-km cable system between New Zealand, Australia, Hawaii and the U.S. west coast, has signed up another customer. Auckland-based trans-Tasman WAN provider Solarix Networks Limited has agreed to buy capacity on the New Zealand, Australia and U.S. segments of Hawaiki's cable.

The 10-year, multi-million dollar deal with Hawaiki would improve Solarix's trans-Tasman service resiliency and introduce price.

Solarix uses three carriers for its trans-Tasman workflow, and all three carriers touch the Southern Cross cable, currently the only cable serving New Zealand. The partnership with Hawaiki will strengthen its market position.



Last September, Hawaiki signed a deal with TE SubCom, who will design and lay the planned cable. Hawaiki has secured capacity deals with a number of telecommunications service providers on both sides of the Tasman, including TPG Telecom Limited and iiNet, as well as local New Zealand ISPs.

For more information, visit www.hawaikicable.co.nz.

Palau Telecoms selects Xtera for cable to Guam

Palau Telecoms has signed a Letter of Intent with Xtera Communications, Inc. for the turnkey supply and installation of the submarine cable system that will connect Palau to Guam.

This agreement is a key milestone for Palau Telecoms' strategy. Under the terms of the agreement, Xtera will design and install the Palau Telecoms system using their innovative subsea optical plant and submarine line terminal equipment. The system will provide high-capacity fiber optic connectivity to Guam, enabling connectivity to the US Mainland, the Asia Pacific region, Australia and New Zealand via interconnects with existing and planned submarine cable systems.

The objective of the investment in this optical communication infrastructure is to supplement the satellite infrastructure that currently serves Palau. Switching from satellite to optical infrastructure will increase the capacity, enhance the availability and reduce the latency of the network, improving the quality and stability of services. Also, the new optical transmission infrastructure will make it possible to offer fixed-line and wireless data services to consumers in the region at more competitive prices.

Palau Telecoms is currently in discussions with the Government of Palau to invite the State of Yap, Federated States of Micronesia to consider connecting into this project. The Palau Telecoms cable system is planned for completion in mid-2015.

"The Palau Telecoms system will be our country's first optical submarine cable system," said Alan Seid, executive vice president of Palau Telecoms. "This new subsea link will deliver faster, more efficient and cost-effective broadband Internet connectivity to our nation, while removing the current dependence on satellite and strengthening Palau's competitive position as a business hub and tourist destination."

For more information, visit www.xtera.com.

Alcatel-Lucent, Libya's LITC to deploy new cable system

Alcatel-Lucent has signed a turnkey contract with the Libyan International Telecommunication Company (LITC) to build a new 1,000 km submarine fiber optic cable system linking the country's capital, Tripoli, to Benghazi and providing the broadband connectivity needed in support of ongoing efforts to revive the Libyan economy.

The system will play a critical role in the reconstruction Libya's telecom infrastructure, improving the levels of connectivity and communication reliability needed for business, public sector and consumer applications, particularly at a time when global demand for broadband services continues to grow. Based on Alcatel-Lucent's 100G technology and a cable optimized with coherent submarine fiber, the system will ultimately carry capacity in excess of 10 Tbps per fiber pair and is expected to be ready for completion by the middle of 2015.

Dr. Mohmoud Aujali, Chairman of LITC, said, "Broadband connectivity is a major growth opportunity for the foreseeable future and the development of a robust telecommunication infrastructure is vital. With the help of Alcatel-Lucent, our new submarine cable system promises a significant contribution the overall developments that are being undertaken to improve standard of living for Libyans."

For more information, visit www.alcatel-lucent.com.

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Omantel takes part in one of the largest cable systems in the world

Omantel, the provider of total communications solutions in the Sultanate of Oman, has teamed up with 16 prominent service providers around the world to construct a new and unique high capacity system: the Asia Africa Europe-1 (AAE-1) cable system. The Construction and Maintenance Agreement (C&MA) was inked in Hong Kong to officially mark the commencement of this massive infrastructure project.

Spanning approximately 25,000 km, the AAE-1 submarine fiber optic cable will connect Hong Kong to Singapore, Thailand, Africa and Europe via Oman and provide an alternative and low-latency short route between Hong Kong/Singapore and Europe.

Omantel's extensive international network will provide additional protection and diversity to the AAE-1 cable system through other systems like EPEG, which is a recently launched major high-capacity system consisting of redundant submarine fiber optic cables to Iran and onwards terrestrial cable all the way via Azerbaijan and Russia to Frankfurt, avoiding existing heavily congested cable systems and crowded bottlenecks on the route between Asia and Europe.

AAE-1 will employ 100 Gbps technology with wavelength add/drop branching units along the route with a designed capacity of more than 40 Tbps. One of the unique features of the submarine system is that it ends in Singapore but continues further into Asia through terrestrial routes via Thailand connecting Cambodia, Vietnam and then Hong Kong.

Additionally, having two diversified Point of Presence (PoP) in Asia (Hong Kong and Singapore), the landing at Omantel's Middle East hub and three onward connectivity options to Europe (via France, Italy and Greece) will provide the requisite flexibility for the participating carriers and its customers.

The target completion date for the AAE-1 cable is in 2016. Once completed, it will connect countries such as Hong Kong, Vietnam, Cambodia, Malaysia, Singapore, Thailand, India, Pakistan & Oman in Asia; Djibouti and Egypt in Africa; and Greece, Italy and France in Europe.

For more information, visit www.omantel.om.

Telebras, IslaLink plan Brazil-Europe cable

Telebras and Spain's IslaLink are moving forward with plans to build and operate a submarine fiber optic cable system linking Brazil and Europe. Telebras received authorization to sign a shareholders' pre-agreement by its board of directors on 14 January.

The cable will connect Fortaleza, Brazil with Spain. The planned investment in the project is $US185 million. Telebras expects to complete the joint venture arrangements by June, with the commencement of works later in 2014. The cable is expected to enter service 18 months later.

Telebras is building its international network in preparation for the 2014 World Cup and the 2016 Summer Olympics. Besides the agreement with IslaLink, Telebras is working with Angola Cable to connect Brazil and West Africa.

In a separate announcement, Telebras has signed amemorandum of understanding with Argentina's Silica Networks SA and Silica Networks Chile SA to establish a partnership to build, operate and maintain a terrestrial fiber optic network between Brazil and Argentina, with continuing link to Chile, making it possible for Telebras to access submarine cable networks on the Pacific coast.

For more information, visit www.telebras.com.br.

Fugro advances cable route design and data management

Fugro Pelagos has introduced Cable Analyst II, a smart and robust software solution for designing, engineering and managing submarine cable routes. Cable Analyst II is an extension to Esri's ArcGIS for desktop and takes advantage of its rich geospatial functionalities. With a logical data model and intuitive, process-oriented tools, Cable Analyst II streamlines the workflow for performing analysis and providing the information needed for designing a submarine cable route. It is equipped with capabilities to efficiently populate, manage and track cable databases.

The ArcGIS platform opens the door to numerous possibilities for implementing design criteria such as creating custom models and scripts and assessing various layers to study risk, cost and environment. Satellite imagery, electronic nautical charts, web mapping services and marine data obtained from public and private sources are also readily accessible.

Fugro Pelagos is offering Cable Analyst II in three tiers to allow customers to match functionality to their needs. Each successive tier includes the previous tier(s): Tier 1 provides wizards for importing and exporting Route Position Lists and Straight Line Diagrams; Tier 2 provides functionalities for creating, populating and managing cable databases; and Tier 3 provides essential analytical tools to help with the design and engineering of submarine cable routes.

For more information, visit www.fugro-pelagos.com.

Kerite announces underwater specialty cable

Kerite, a leading manufacturer of high-quality insulated utility and industrial power cable, announced their upgraded Underwater Specialty Cable, custom built for a broad range of applications that require direct contact with water. Kerite's EPR insulation formula enables the cables to operate underwater without the need for an impervious barrier such as a lead sheath-making installation easier and cost-efficient.

In addition to the discharge-resistant EPR insulation, the Underwater Specialty Cable offers numerous other features including an additional polyethylene jacket. The cables feature stranded, filled 5kV to 35kV copper conductors, shielded by a non-conducting Permashield® stress control layer and a copper tape or concentric wire metallic shield. Galvanized steel armor wires with individual HDPE jacketing offer additional protection.

Kerite also offers a variety of options for custom builds. Optional 10 mil Bronze Tape for teredo protection,

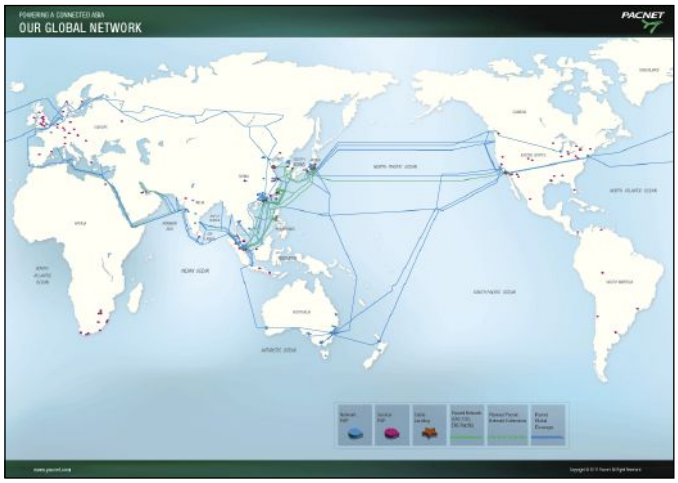
an optional separate copper grounding wire, and an optional fiber optic member are available. The cable can also be customized to meet the needs of the specific application.

For more information, visit www.kerite.com.

Pacnet upgrades transpacific cable with Ciena

Ciena® Corporation and Pacnet announced the completion of an upgrade to the company's trans-Pacific link connecting the U.S. West Coast to Japan. Faced with an exploding market for bandwidth-intensive applications and data center services, Pacnet expanded its network to offer a suite of high-capacity OTN and Ethernet services to meet customer demand while reducing cost-per-bit. In addition, the enhanced programmable 100G network solution allows for bandwidth agility to deliver scalable capacity that is configurable by both enterprise and carrier customers for a high-performance and cloud-ready network.

Ciena's 6500 Packet-Optical Platform, powered by WaveLogic 3 coherent optical processors, combines advanced digital signal processing with soft-decision forward error correction to achieve reliable performance across long distances. The flexibility of Ciena's WaveLogic 3 technology gives Pacnet the ability to extend its network reach without straining performance.



In addition, Ciena's WaveLogic 3-based submarine solution is equipped with integrated test capabilities that provide Pacnet with critical information about its network health, capacity and resilience, allowing it to leverage network resources efficiently and proactively without complex and expensive external testing gear.

With Ciena's OneControl Unified Management System, Pacnet has a complete view of its network performance and can provide streamlined service activation, fault management and remote troubleshooting. OneControl's ability to isolate the precise location of a fiber fault is significant, especially with the complexity of repairing a network disruption on cables in the extreme conditions of the Pacific Ocean.

For more information, visit www.pacnet.com or www.ciena.com.

Aquatic enhances health and safety training for offshore personnel

Aquatic Engineering & Construction Ltd, an Acteon company, has worked with specialist health and safety training provider Survivex to create a bespoke course for its offshore teams who work at height using harnesses.

Aquatic's modular reel drive systems can stand up to 7 m high when assembled, and the company's offshore teams must use harnesses and ladders to complete the assembly. In addition to teaching best practice during normal operations, the course will also show personnel how to secure and rescue a colleague who has fallen in the harness or become unconscious.

Aquatic's commitment to excellence in health and safety training and practice prompted the company to commission a customized course to improve body positioning and establish good practice for personnel assembling the AQPR-02 modular drive system. The course also covers the introduction of new work positioning harnesses that give technicians a higher degree of comfort and mobility while allowing them to use both hands for working.

Aquatic chose Aberdeen-based Survivex because it delivers realistic survival and industrial skills training and is renowned across the offshore industry for high-quality courses. The first training course was held in January 2014, and the content will be rolled out to all offshore personnel during the first quarter.

Aquatic's offshore training supervisor, Sandy Roberts, said, "We have worked with Survivex before. Their knowledge and reputation meant they were the company of choice when we recognized the need to design a course for working at height training."

John Spellman, HSEQ manager at Aquatic said, "HSEQ is a vital part of our contract wins. We pay attention to the views and information contained in our internal observation card system, which encourages employees to report any

HSEQ issues of concern. This training course will empower and enable our personnel to familiarize themselves with the new equipment in a low-pressure environment before they use it on a project out on a vessel at sea. As a responsible employer working in a high-risk industry, we cannot afford to be complacent about the health and safety of our people."

Chris Bews, account manager at Survivex, said, "Creating a course that is designed specifically for the needs of Aquatic employees helps to ensure that the issues we cover are relevant to the reality of the company's working environment and that the training outcome is of direct benefit to Aquatic offshore personnel."

For more information, visit www.aquaticsubsea.com.

Fast growing eLearning is part of major U.S oil companies

The practice in oil & gas eLearning in the U.S. is growing rapidly, with many oil companies now using eLearning as part of their competence management programs.

Several oil giants in the U.S. such as Shell, Exxon and Chevron are keen on competence-based management because it is an effective way for managers to ensure their workers are capable of making the workplace decisions they need to make. Although companies have focused on competences for some time, the practice is growing in eLearning, and more companies are making formal attempts to tie eLearning to competence management.

Because the oil and gas business is so competitive, senior executives realize that knowledge, and the application of knowledge, is key to business success. Oil and gas executives therefore tend to see learning as a strategic priority. And because the major oil companies have a variety of proprietary processes and technologies that require bespoke learning solutions, it often commissions third-party vendors, such as British company, Maritime Training & Competence Solutions (MTCS Ltd), to develop bespoke content. Both Shell, Exxon and Chevron use competence management within learning and training, and this process plays a role in defining the need for eLearning content.

MTCS Ltd is currently working with Team Trident, a private staffing firm based in Houston, Texas, with a niche focus on skilled trades for the offshore energy industry, to ensure Team Trident customers have excellent competence certification opportunities available to them.

Looking at reactions in the U.S. Rod Long, Team Trident, Houston, explains: "After Macondo, the U.S. authorities have been emphasizing the skills and experience expected from personnel in the Gulf of Mexico. This is being handed down by the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) through its Safety and Environmental Management Systems (SEMS) requirements and is a very good thing for our industry. Team Trident is working with MTCS to clarify what skills and experience should be expected and how it should be demonstrated in our sector by using the MTCS, IMCA aligned, competence material. With competence certification, it will ensure Team Trident can connect great technical personnel with great employment opportunities on land and offshore. Finally, because many of the personnel Team Trident selects are prior military, they are very used to proving they are competent at their trade prior to advancement to the next level so they accept the MTCS competence scheme readily."

Competence programs run by Maritime Training & Competence Solutions (MTCS Ltd), Windermere, UK, currently manage the largest independent assessment and certification program for people involved in Subsea Operations

such as ROV, Diving and Hydrographic Survey.

Providing a full IMCA-aligned Competence Scheme Management service, MTCS Ltd ensures personnel are demonstrating competence in the offshore workplace. In addition, MTCS Ltd provides a spectrum of operational, technical and supervisory training, with the majority of the courses focussing on subsea technology, remotely operated vehicles, as used in the oil and gas industry and in renewables.

Richard Warburton, managing director for MTCS Ltd, says: "The oil and gas industry is a global, highly competitive, and knowledge-intensive business with a high demand for eLearning and the use of competence management in eLearning continues to be popular. The global nature of the oil and gas industry also creates demand for network-based tools, such as eLearning, that can deal with highly distributed workforces. MTCS is delighted to be working with Team Trident, where we can offer their customers who are looking for work the added benefit of fully accredited Competence Management frameworks that allow their customers to continue their professional development and gain certification. No matter where in the U.S, or indeed the rest of the world they are, candidates can use distance learning methods (eLearning) most appropriate to their needs, whether it is through the internet or the office intranet."

Competence programs for the offshore oil & gas, wind and marine energy sector are well underway both in the U.S and in the UK, with further plans for MTCS Ltd to rollout training and competence services worldwide. Currently delivering ROV induction training in Nigeria and in Singapore, with new ROV Induction Courses shortly to commence in the U.S. MTCS Ltd aims to show the industry how a fully accredited, dedicated Subsea Competence Management Program should work.

For more information, visit www.mtcs.info.

EnQuest pioneers game-changing approach to incident management in the North Sea

A new, fully-integrated incident investigation, reporting and management tool being implemented by EnQuest is believed to be an industry first for the North Sea.

The innovation integrates two well-established market-leading systems for the first time, which together enable seamless incident investigation, reporting and management from start to finish, unlike many standalone, off-the-shelf solutions.

EnQuest, the largest UK independent producer in the UK North Sea, was the driving force behind the development of the tool, which involved embedding Kelvin TOP-SET's specialist investigation software with DNV GL's Synergi™ Life tool, which is dedicated to capturing, categorizing and recording incidents.

Barry Quinn, senior health, safety, environment and assurance advisor at EnQuest, who led the development of the integrated system, said: "At EnQuest our top priority is to achieve and maintain excellence in health, safety and environmental performance, which means we are always looking at ways in which we can learn lessons and continually improve the way we operate."

"We wanted to create a tool that would give us a complete, end-to-end process from incident identification, recording and investigation through to cause analysis and effective corrective action, and while there are many great solutions on the market we were unable to identify any that fully incorporated incident management and investigation capabilities.

"In bringing the two systems together we have created a tool that standardises our approach to incident investigation and gives us a complete and accurate picture of all incidents across our assets, which will be extremely valuable in helping us to learn lessons and ensure we continue to deliver safe results. It is also time and cost effective because it removes the need to manually cross-reference or transfer information from one system to another."

Mr. Quinn added: "More than 100 people in our offshore and onshore teams have already been trained in the system and the feedback has been extremely positive. We've also had a lot of interest from other operators, particularly from those in the Norwegian sector, who are keen to see the work we have done."

George Dyer-Wilson, global business development manager at Kelvin TOP-SET, said: "The benefits of merging the Synergi Life and TOP-SET systems have been well recognised for some time but EnQuest was instrumental in bringing all parties together and making it happen.

"Although relatively young, EnQuest is a very dynamic, agile and visionary company. They know what they want and they get it done. As a result, DNV GL and Kelvin TOP-SET were able to get all the key people around a table and work collaboratively to deliver a solution that we believe has the potential to change the way the oil and gas industry looks at incident management."

Mr. Dyer-Wilson believes the integrated software system is also likely to receive widespread interest on a global scale from a number of other industries.

Paul Stanfield from DNV GL Software said: "EnQuest is a long-standing and valued customer for our Synergi Life solution, and we are delighted that this integration with Kelvin TOP-SET is adding real value to their system. I am sure that many other organisations in the oil and gas sector anywhere in the world will be interested in this best-practice collaboration."

For more information, visit www.enquest.com.

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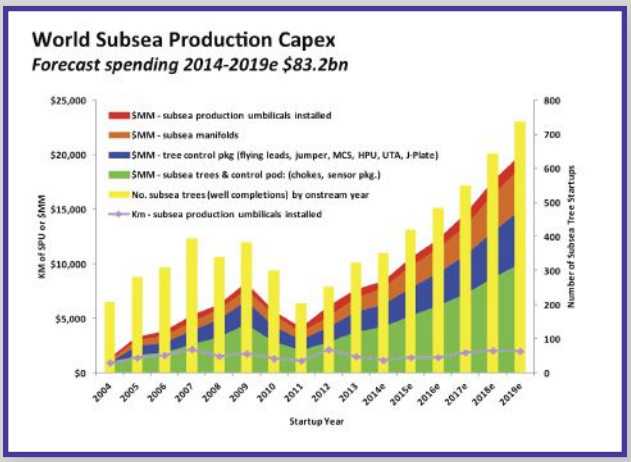
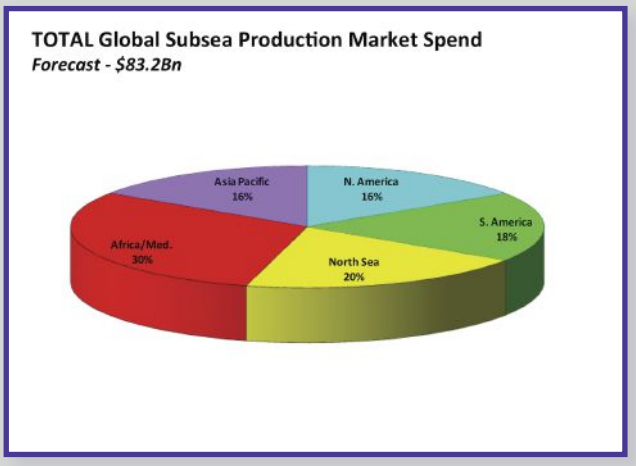
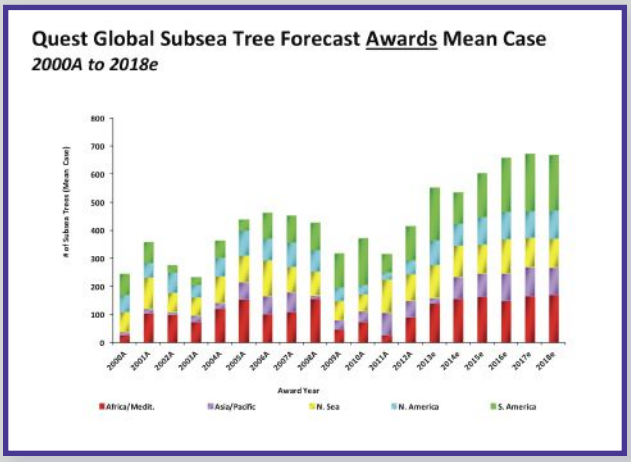
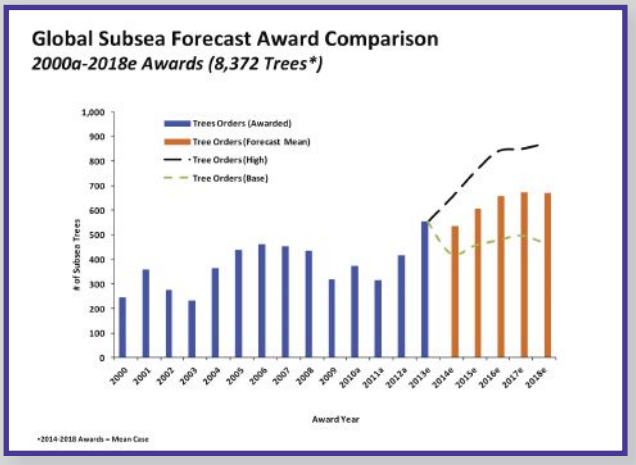
Offshore At-A-Glance

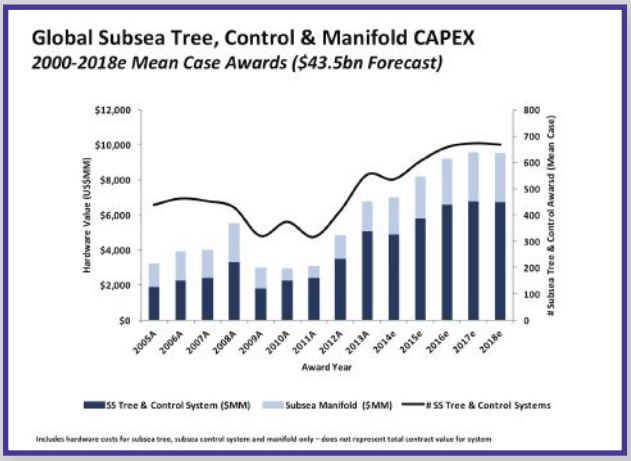
Quest Offshore Activity Report

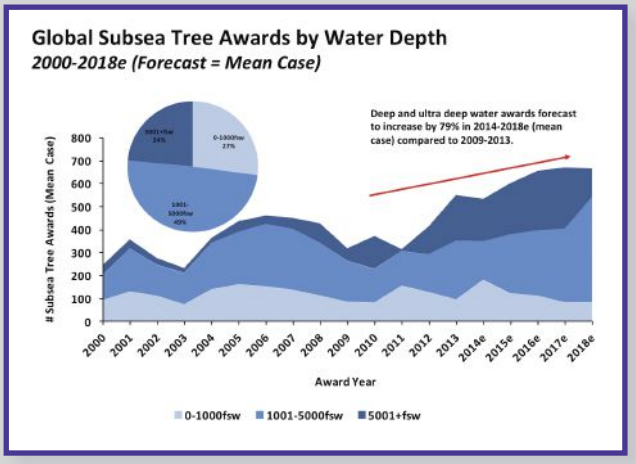












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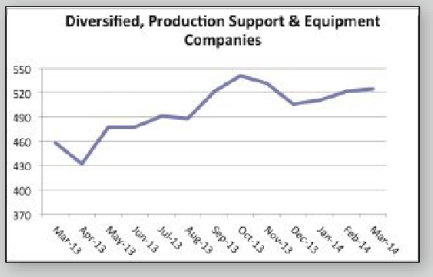
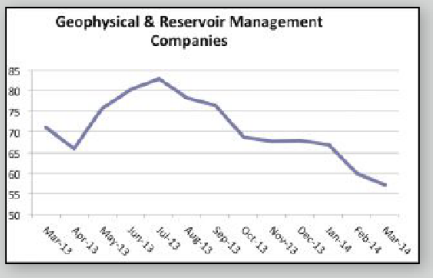
Monthly Stock Figures & Composite Index

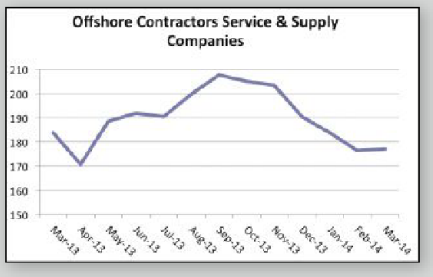
Industry Company Name	Symbol	Close(*Mid*) *March*	Close(*Mid*) *February*	Change	Change %	High 52 week	Low
Diversified, Production Support and Equipment Companies							
Baker Hughes, Inc.	BHI	62.86	59.90	2.96	4.9%	64.20	42.60
Cameron Intl. Corp.	CAM	63.34	61.21	2.13	3.5%	66.15	52.50
Drill-Quip, Inc.	DRQ	101.23	102.51	-1.28	-1.2%	121.07	76.44
Halliburton Company	HAL	56.48	53.74	2.74	5.1%	57.42	36.77
Tenaris SA	TS	42.26	47.15	-4.89	-10.4%	49.87	38.47
Newpark Resources, Inc.	NR	11.00	11.88	-0.88	-7.4%	13.64	8.17
Schlumberger Ltd.	SLB	89.04	90.68	-1.64	-1.8%	94.91	69.08
Superior Energy Services, Inc.	SPN	28.76	26.48	2.28	8.6%	29.95	22.85
Weatherford International, Inc.	WFT	16.45	14.87	1.58	10.6%	17.53	11.11
Deep Down, Inc.	DPDW	1.85	1.89	(0.04)	-2.1%	2.70	1.17
FMC Technologies	FTI	51.11	51.23	(0.12)	-0.2%	59.79	47.58
Total Diversified, Production, Support and Equipment.....		**524.38**	**521.54**	**2.84**	**0.5%**	**577.23**	**406.74**
Geophysical / Reservoir Management							
Dawson Geophysical Company	DWSN						
Mitcham Industries, Inc.	MIND	28.23	29.29	-1.06	-3.6%	40.86	26.88
Compagnie Gnrale de Gophysique-Veritas	CGV	14.04	14.75	-0.71	-4.8%	18.41	13.58
		14.92	15.90	-0.98	4.50%	26.09	14.53
Total Geophysical / Reservoir Management..…….....		**57.19**	**59.94**	**-2.75**	**-4.6%**	**85.36**	**54.99**
Offshore Drilling Companies							
Atwood Oceanics, Inc.	ATW	45.59	47.56	-1.97	-4.1%	59.49	43.91
Diamond Offshore Drilling, Inc.	DO	43.89	46.83	-2.94	-6.3%	73.19	43.82
ENSCO International, Inc.	ESV	47.90	51.21	-3.31	-6.5%	64.14	47.88
Nabors Industries, Inc.	NBR	22.40	18.21	4.19	23.0%	23.40	14.34
Noble Drilling Corp.	NE	28.93	31.23	-2.30	-7.4%	42.34	28.67
Parker Drilling Company	PKD	7.16	7.29	-0.13	-1.8%	8.67	3.75
Rowan Companies, Inc.	RDC	31.40	32.16	-0.76	-2.4%	38.65	30.21
Transocean Offshore, Inc.	RIG	38.63	43.13	-4.50	-10.4%	55.79	38.55
Total Offshore Drilling..…….....		**265.90**	**277.62**	**-11.72**	**-4.2%**	**365.67**	**251.13**
Offshore Contractors, Services, and Support Companies							
Helix Energy Solutions Group, Inc.	HLX	23.16	22.26	0.90	4.0%	27.58	19.44
Gulf Island Frabrication	GIFI	20.98	20.86	0.12	0.6%	26.82	18.06
McDermott International, Inc.	MDR	7.86	8.57	-0.71	-8.3%	11.29	6.68
Oceaneering International	OII	70.34	71.27	-0.93	-1.3%	87.64	58.08
Subsea 7 SA	SUBCY.PK	17.55	17.98	-0.43	-2.4%	24.45	17.05
Technip ADS	TKPPY.PK	23.6	22.44	1.16	5.2%	31.32	21.08
Tetra Technologies, Inc.	TTI	11.97	11.21	0.76	6.8%	13.41	8.15
Cal Dive International, Inc.	DVR	1.71	1.79	-0.08	-4.5%	2.38	1.51
Total Offshore Contractors, Service, and Support..…….....		**177.17**	**176.38**	**0.79**	**0.4%**	**224.89**	**150.05**
Offshore Transportation and Boat Companies							
Seacor Holdings, Inc.	CKH	82.61	86.06	-3.45	-4.0%	99.00	69.78
Gulfmark Offshore, Inc.	GLF	44.27	42.70	1.57	3.7%	53.89	35.75
Bristow Group	BRS	74.88	71.28	3.60	5.1%	85.70	59.21
PHI, Inc.	PHII	41.91	37.62	4.29	11.4%	41.10	23.43
Tidewater, Inc.	TDW	45.99	48.38	-2.39	-4.9%	63.22	45.51
Trico Marine Services, Inc.	TRMAQ.PK	0.04	0.04	0.00	0.0%	0.11	0.01
Hornbeck Offshore	HOS	38.50	43.59	-5.09	-11.7%	59.93	38.17
Total Offshore Transportation and Boat ……....		**328.20**	**329.67**	**-1.47**	**-0.4%**	**402.95**	**271.86**

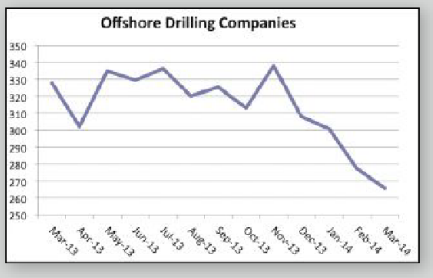
Monthly Stock Figures & Composite Index

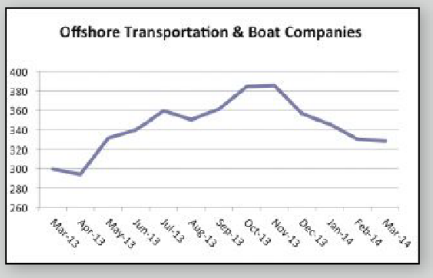
Industry	Close(*Mid*) *March*	Close(*Mid*) *February*	Change	Change %	High 52 week	Low 52 week
Total Diversified, Production, Support and Equipment	524.38	521.54	2.84	0.5%	577.23	406.74
Total Geophysical / Reservoir Management	57.19	59.94	-2.75	-4.6%	85.36	54.99
Total Offshore Drilling	265.90	277.62	-11.72	-4.2%	365.67	251.13
Total Offshore Contractors, Service and Support	177.17	176.38	0.79	0.4%	224.89	150.05
Total Offshore Transportation and Boat	328.20	329.67	-1.47	-0.4%	402.95	271.86
Total Offshore Source Index	1,352.84	1,365.15	-12.31	-0.9%	1,656.10	1,134.77

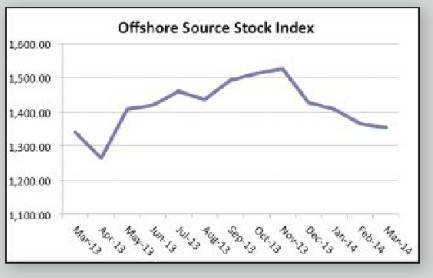










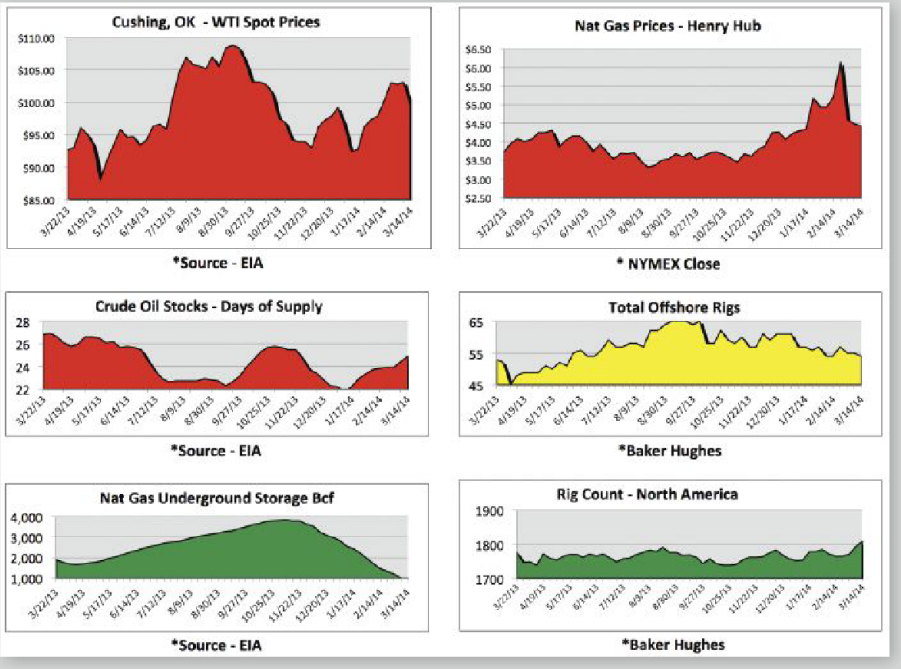


DISCLAIMER

The information on this page is provided for information and comparison purposes only and should not be used to make financial and business decisions and is accurate to the best of our knowledge for the period indicated.

Oil & Gas Industry Trends

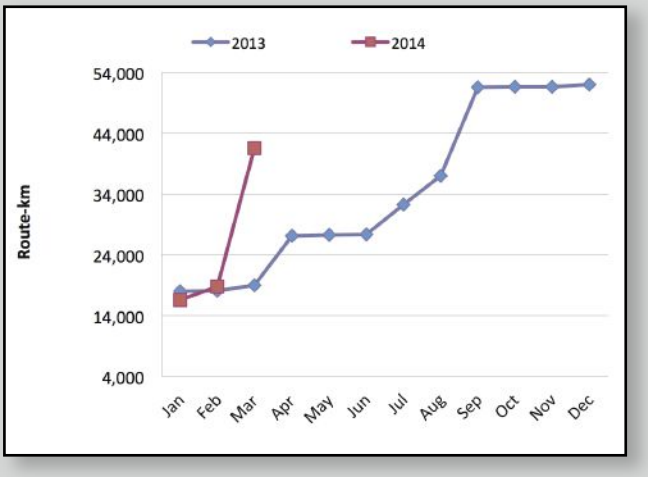
Monitoring the Pulse of the U.S. Offshore Oil & Gas Industry



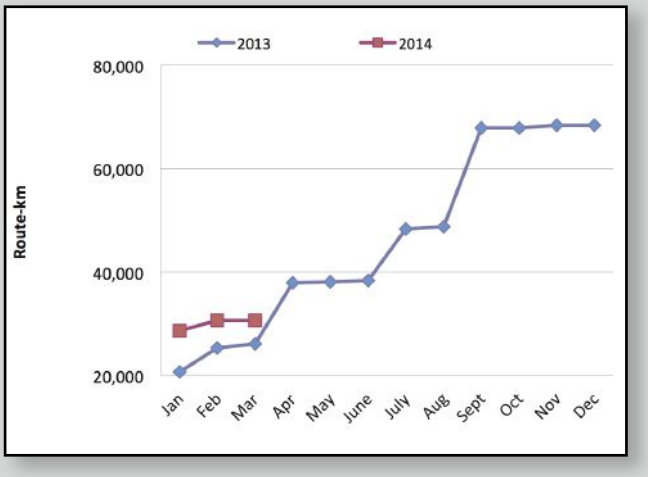
Positive trend, at least 3 weeks
Changing trend, less than 3 weeks
Negative trend, at least 3 weeks

Subsea Telecom & Power Cable Data

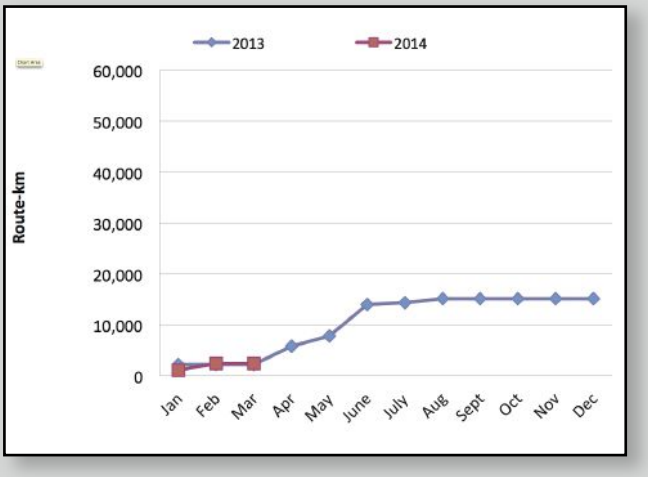
FO Cable Awards by Month



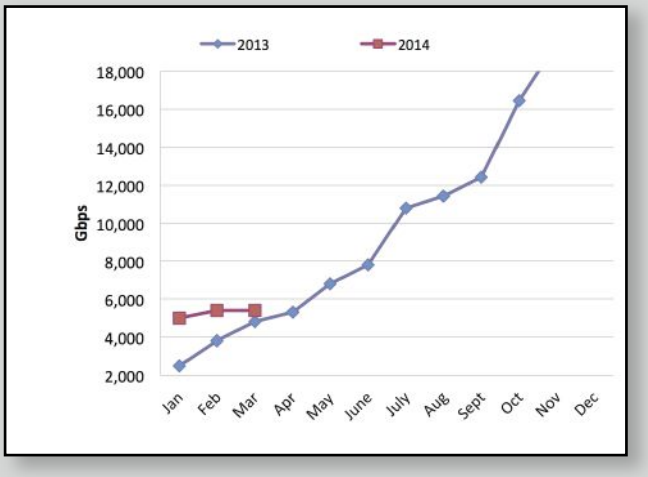
FO Cable Announcements



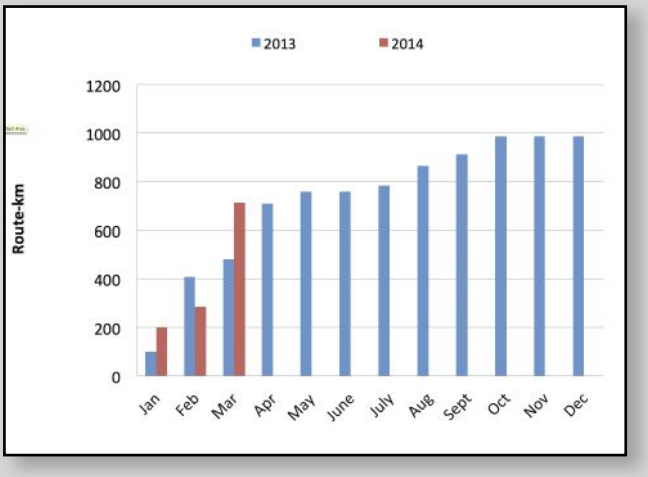
Submarine FO Cables Entering Service in Route-km



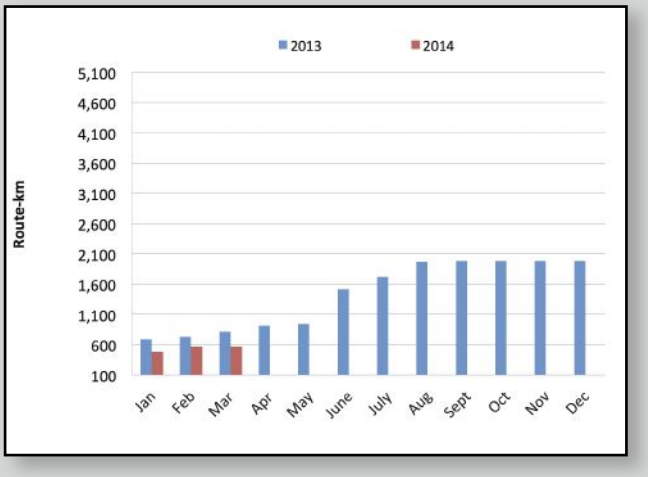
Upgrades of Existing Cable Systems in Gbps



Submarine Power Cable Awards in Route-km



Submarine Power Cable Announcements in Route-km



Gulf of Mexico Data

Current Deepwater Activity

Operator	Area	Block	OCS Lease	Rig Name	Prospect Name	Water Depth (ft)
Shell Offshore Inc.	WR	508	G17001	NOBLE JIM DAY	Stones	9,556
Anadarko Petroleum Corp.	LL	317	G31834	T.O. DISCOVERER SPIRIT		9,313
Statoil USA E&P Inc.	MC	961	G26281	MAERSK DEVELOPER	Q	7,925
Shell Offshore Inc.	AC	857	G17565	H&P 205	Great White	7,818
Exxon Mobil Corp.	KC	964	G21451	T.O. DEEPWATER CHAMPION	Hadrian South	7,667
Shell Offshore Inc	MC	525	G31507	NOBLE GLOBETROTTER		7,458
Noble Energy, Inc.	MC	698	G28022	ENSCO 8501	Rio Grande	7,221
BP Exploration & Production, Inc.	GC	743	G15607	T.O. DEVELOPMENT DRILLER II	Atlantis	6,824
Chevron USA, Inc.	KC	829	G25814	T.O. DISCOVERER CLEAR LEADER	Buckskin	6,428
Repsol E&P USA Inc.	KC	642	G33335	ENSCO DS-5		6,124
BP Exploration & Production, Inc.	MC	778	G14658	THUNDER HORSE PDQ	Thunder Horse North	6,035
BP Exploration & Production Inc.	KC	292	G25792	SEADRILL WEST VELA	Kaskida	6,031
Shell Offshore, Inc.	WR	95	G25234	STENA ICEMAX	Yucatan North	5,860
Murphy Exploration & Production Co.	DC	4	G10437	T.O. DISCOVERER DEEP SEAS	Dalmatian Oil	5,822
Union Oil Co. of California	WR	143	G21849	T.O. DISCOVERER INDIA	Coronado	5,764
BP Exploration & Production, Inc.	MC	776	G09866	SEADRILL WEST AURIGA	Thunder Horse North	5,742
BP Exploration & Production, Inc.	MC	777	G09867	SEADRILL WEST CAPRICORN	Thunder Horse South	5,719
BP Exploration & Production, Inc.	MC	777	G09867	T.O. DISCOVERER ENTERPRISE	Thunder Horse South	5,610
Eni US Operating Co. Inc.	MC	773	G19996	NABORS POOL 140	Devil's Tower	5,610
BP Exploration & Production, Inc.	GC	743	G15604	T.O. DEVELOPMENT III	Atlantis	5,414
Shell Offshore, Inc.	MC	687	G05863	CAL-DIVE Q-4000	Mensa	5,292
Hess Corp.	MC	726	G24101	STENA FORTH	Tubular Bells	4,610
Anadarko Petroleum Corp.	GC	683	G18421	ENSCO 8505	Caesar	4,457
Anadarko Petroleum Corp.	GC	683	G18421	WIRELINE UNIT (HOUMA #4)	Caesar	4,457
Freeport-McMoRan Oil & Gas LLC	GC	645	G11081	HOLSTEIN SPAR RIG	Holstein	4,344
Anadarko Petroleum Corp.	GC	608	G18402	WIRELINE UNIT (HOUMA #3)	Genghis Khan	4,320
Chevron USA, Inc.	GC	640	G20082	T.O. DISCOVERER INSPIRATION	Tahiti 2	4,297
Anadarko Petroleum Corp.	GC	608	G18402	NABORS SUPER SUNDOWNER XXI	Genghis Khan	4,287
BHP Billton Petroleum (GOM) Inc.	GC	653	G20084	GSF C.R. LUIGS	Shenzi development	4,235
BP Exploration & Production, Inc.	KC	57	G25777	SEADRILL WEST SIRIUS		4,065
Chevron USA, Inc.	GB	973	G32911	PACIFIC SANTA ANA		3,960
Shell Offshore, Inc.	MC	809	G09873	NOBLE DON TAYLOR	Princess	3,853
Eni US Operating Co. Inc.	GC	516	G20074	T.O. DEEPWATER 534	Yosemite	3,839
Anadarko Petroleum Corp.	EB	645	G32822	ENSCO 8506	Deep Nansen	3,798
Shell Offshore, Inc.	MC	809	G05871	H&P 204	Princess	3,797
Shell Offshore, Inc.	MC	894	G24122			3,787
Anadarko Petroleum Corp.	EB	646	G20725	ENSCO 8500	Eriksson	3,637
Eni US Operating Co. Inc.	GC	385	G25142	T.O. DEEPWATER PATHFINDER	Pegasus	3,489
Shell Offshore, Inc.	GC	248	G15565	T.O. DEEPWATER NAUTILUS	Glider	3,233
Shell Offshore, Inc.	VK	956	G06896	NABORS 202	Ram-Powell	3,214
Shell Offshore, Inc.	MC	762	G24112	NOBLE BULLY 1	Deimos	3,144
Shell Offshore, Inc.	GC	158	G07995	H&P 202	Brutus	2,985
Shell Offshore, Inc.	MC	807	G07963	H&P 201	Mars (Ursa/Princess)	2,945
Shell Offshore, Inc.	GB	427	G07493	NOBLE JIM THOMPSON	Cardamom	2,719
LLOG Exploration Offshore, LLC	MC	503	G27277	NOBLE AMOS RUNNER	WhoDat	2,647
Chevron USA, Inc.	GC	205	G05911	NABORS 85 (MAYRONNE 162)	Genesis	2,590
Stone Energy Corp.	MC	29	G13997	ENSCO 8502	Cardona	2,123
Marubeni Oil & Gas (USA) Inc.	GC	113	G15546	NOBLE DRILLER	Angus	2,045
Chevron USA, Inc.	VK	786	G12119	NABORS 87	Petronius	1,754
Hess Corp.	GB	260	G07461	HYDRAULIC WORKOVER UNIT	Baldpate	1,648
EnVen Energy Ventures, LLC	EW	1003	G06921	NABORS S.D. XIV	Prince	1,483
SandRidge Offshore, LLC	GC	65	G05889	H&P 206	Bullwinkle	1,353
Walter Oil & Gas Corp.	VK	821	G27243	CAL-DIVE UNCLE JOHN		1,030
Apache Deepwater LLC	GB	169	G31613	DIAMOND OCEAN ONYX		919
LLOG Exploration Offshore, LLC	MC	705	G31521	DIAMOND OCEAN SARATOGA		849
Chevron USA, Inc.	GB	189	G06358	HYDRAULIC WORKOVER UNIT (L)	Tick	718
SandRidge Offshore, LLC	EB	110	G02650	NABORS S.D. IV	Tequila	660

Deepwater prospects with drilling and workover activity: 57

Current Deepwater Activity as of Monday, 10 March 2014

Activity by Water Depth

Water Depth (m)	Active Leases	Approved Applications	Active
0 to 200	1,495	35,429	2,519
201 to 400	109	1,121	20
401 to 800	271	869	10
801 to 1,000	364	579	9
1,000 & above	3,374	1,905	26

Rig Activity Report 14 March 2014

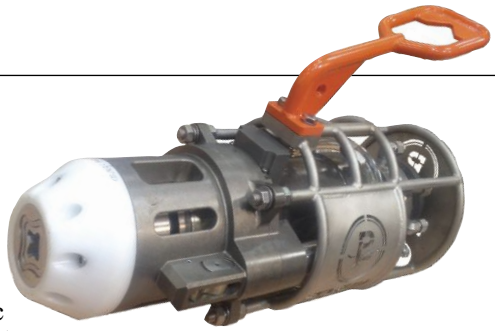
Location	Week of 3/14	+/-	Week Ago	+/-	Year Ago
Land	1737	+18	1719	+36	1701
Inland Waters	18	0	18	-4	22
Offshore	54	-1	55	+1	53
U.S. Total	1809	+17	1792	+33	1776
Gulf of Mexico	52	-1	53	+1	51
Canada	522	-65	587	+19	503
N. America	2331	-48	2379	+52	2279

Activity by Water Depth Information current as of Monday, 10 March 2014

Maximum number of rigs operating in the deepwater Gulf of Mexico. The rig unit includes platform rigs operating on deepwater production facilities in addition to the MODU's. The numbers do not distinguish between rigs drilling and those in service for completion and workover operations.

Information provided courtesy of the U.S. Bureau of Ocean Energy Management

Forum third generation torque tool



Technology within the ROV tooling world is constantly evolving. The first generation of torque tools used by ROV operators were simple hydraulically operated tools; the second generation added sensors that provided detailed operating information back to the operator on the surface. Forum Subsea Technologies have pushed the technology forward and have developed a third generation (3G) torque tool. This tool not only has the ability to feedback information to the operator on the surface, but in addition it can reconfigure subsea to cover a range of operations that would previously require a number of tools to be deployed with the ROV or costly trips to the surface to reconfigure the tool.

A key stage of the development was to add functionality to enhance the operating software. The two key features are the simplification of the user's interaction with the software and closed loop feedback of the tool to improve control and accuracy. The tool addresses two of the key driving factors in the industry moving forward. Firstly the requirement for improved productivity and efficiency, the tool offers this by providing the ability to do a range of tasks once deployed to the subsea worksite. The second driving factor is the increasing demand for personnel within a rapidly growing industry; to address this, it is essential that tools are straightforward and intuitive to use.

In addition to the improvements made with the software control algorithms and GUI, there are a number of innovative mechanical developments on the tool. Torque tools require a range of torques when deployed subsea; this was previously achieved by returning to the surface to change out a gearbox or motor. Competitors have developed products that use a hydraulically switched gearbox; this is an acceptable solution, but the gearboxes have a tendency to lock up during operations, necessitating a return to the surface to remedy. To meet the requirements Forum Engineers designed a new hydraulic motor; this motor is effectively two hydraulic motors combined into a space envelope no larger than the existing hydraulic motor. One motor is operated for low torque, a second for medium, and both can be combined for high torque. During testing it was discovered that super low torques could be achieved by driving one motor against the other; this gives an unprecedented operating range and absolutely no risk of locking up during operations.

For torque tool operations different torque ranges require different socket sizes. In the past cumbersome external change out modules have been used or a spring loaded "nested socket." Spring loaded sockets are a reasonable solution, but when docking onto a tree it is not clear which socket is being used, this could result in a high torque being applied to a value only intended for low torques, subsequently causing costly damage to a subsea structure. To overcome these deficiencies Forum Engineers developed a innovative mechanism that changes socket by simply rotating the nose of the tool. There are clear markings on the outside of the tool that can be seen by the operator when using the tool to clearly identify the torque range being operated. To change the range subsea, the torque tool is returned to its deployment storage housing and a function activated from the topside control software.

Forum Engineers are currently putting the prototype tool through a gruelling qualification program and are aiming to have production units for sale Q2 2014.

For more information, visit www.f-e-t.com.

Aquabotix announces upgraded ROV–HydroView Pro

Aquabotix has announced the immediate availability of its HydroView Professional Series. The HydroView Pro is a second-generation upgrade to Aquabotix's successful HydroView Sport ROV, which premiered in 2012.

Designed to be affordable and easy to use, the HydroView remote-operated underwater vehicle carries an onboard HD video camera and is controlled by intuitive iPad and laptop driving applications. The new professional series prepares the HydroView to meet more robust demands of commercial users. Building upon its predecessor's proven platform, the HydroView Pro series includes new features such as:

- A variety of motor configurations providing complete movement control forward/backward, left/right, up/down as well as roll, pitch and yaw.
- Standard Sensor package including depth, temperature and orientation. Additional sensors available: oxygen, turbidity, fluoride, and pH.
- Depth rating of 330 ft.
- 2 lbs of payload capacity for customer specific applications.
- Optional second HD camera on the HydroView Inspector. This external camera is manually positionable enabling the operator to see in any direction, not just directly in front of the ROV.

HydroView Professional series is the ultimate mini ROV for underwater inspections and observations. Controlled wirelessly with an iPad or any laptop, the HydroView Pro shoots full 1080p HD video and still images, while users navigate intuitively without any formal training. All media is viewed instantly and can be recorded onboard for future reporting (no separate recording devices required). The innovative user interface application also supplies on-demand readings from the depth, temperature and orientation sensors in the ROV.

For more information, visit www.aquabotix.com.

Hydro Group showcases subsea connector to U.S. market

Hydro Group Plc, a global design and manufacturer of underwater cables and connectors for subsea, underwater, topside and onshore applications, took a technological lead when it launched the 36KV Dry Mate connector into the offshore energy systems market last year.

Doug Whyte, Hydro Group managing director, said: "The new connector is a significant advance on our previous product with an impressive reduction in installation time from 24 hr to less than 12 hr, and its ability to carry three times more power."

"Originally developed for the UK renewable market, the connector was showcased at the Subsea Tieback to offer exhibition goers an insight into the heritage, expertise and technical innovation the team at Hydro Group possess and an opportunity to explore the many ways Hydro Group's technological innovations can be adapted for the U.S. market."

Hydro Group's cable and connectivity solutions are developed to withstand the harshest environmental conditions, including salt water, solar effects, storm force winds and dynamic tidal and wave motion. These factors place extreme loads on the subsea systems, connectors and cables, resulting in the company's connectors being designed and manufactured for flexibility and environmental endurance.

With an extensive product range, Hydro Group takes the raw materials and manufactures products from start to finish in Scotland, before exporting globally.

Hydro Group's current pioneering R&D program, includes trialling various low smoke flame retardant materials to address single cable designs capable of operating between separate boundaries from topside to subsea.

For more information, visit www.hydrogroupplc.com.

New SEACON® EX-MATE connector available soon

With ever increasing requirements for connectors to operate in harzardous environments and many applications now requiring quick and safe disconnection of connectors to be

used in these environments SEACON® has developed a new robust range of Exd connectors due to be released soon.

The EX-MATE is based around SEA CONÆ s existing and successful SEA-MATE connector range and is therefore fully wet-mateable in addition to its suitability for use in explosive environments. This new range will be available in 4 shell sizes (G, K, L, M) with between 2 & 37 contact configurations, however like the SEA-MATE range this series has interchangeable inserts so can be adapted to a number of pin configurations.

In addition, the EX-MATE incorporates an Atex approved gland system for the cable which is encapsulated within the overmold, making it suitable for a number of applications including Topside FPSO, Drilling Vessels or where any potentially explosive environment exists.

For more information, visit www.seaconworldwide.com.

New acoustic release from Teledyne Benthos

Teledyne Benthos announced the launch of its new R12K Acoustic Release. The advanced functionality of the new R12K is a direct result of customer interest. The development and design process included an in-depth needs assessment across a broad spectrum of the user base. The resulting new product, the R12K, combines the proven reliability of the Teledyne Benthos acoustic release mechanical design with new electronic systems that improve the functional aspects of the product.

The Model R12K Deep Sea Acoustic Transponding release is the first product in the Benthos release line to benefit from this new electronics architecture. The new units are digital signal processor (DSP)-based, allowing the move from audible status confirmations to visual signal confirmations. Performance enhancements for the R12K units include:

• Battery voltage indication on command, including percentage remaining.

• Unit tilt measurement, 0-180 degrees (+/- 1%), available on command.

• Positive confirmation of release status on command.

The R12K is designed for full ocean depth mooring recovery applications with a rugged stainless steel package and a 5,000-kg load rating. Every release is functionally tested to full ocean depth pressures.

For more information, visit www.benthos.com.

EdgeTech introduces the 6205, next generation bathymetry system

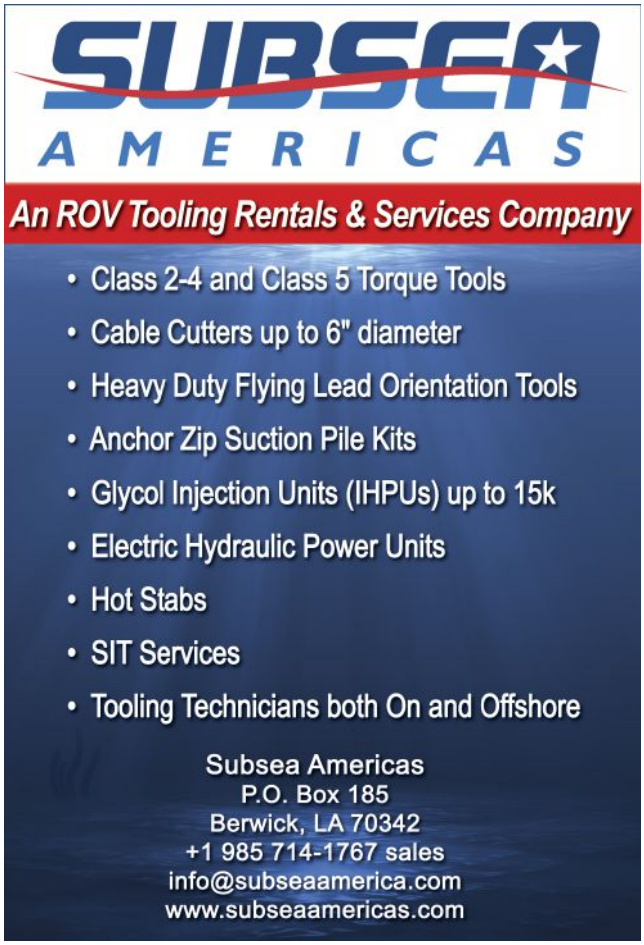
EdgeTech, the leader in underwater technology, launched the 6205 Combined Bathymetry and Simultaneous Dual-Frequency Side Scan Sonar at Ocean International. The new product offering is the next generation of bathymetric technology for shallow water hydrography and benthic mapping. With EdgeTech's enhanced bathymetry capability and the latest lightweight packaging, the 6205 offers unprecedented resolution and precision measurement of the seafloor with co-registered, simultaneous dual-frequency side scan imagery. Multiple frequency options are available to address all coverage requirements from 0 to 200 m of water depth. The 6205 is the only combined bathymetry and dual-frequency side scan system with no nadir gap. The EdgeTech 6205 incorporates a 10-element receiver and unique technology and software to enable 200° swath coverage and superior multi-path rejection.

For more information, visit www.edgetech.com.

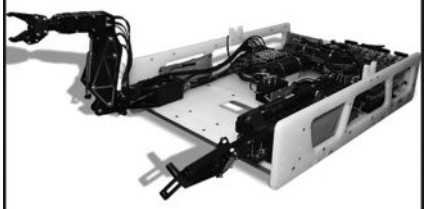
Fluid Imaging Technologies reveals FlowCAM® with auto focus

Laboratory instrumentation manufacturer Fluid Imaging Technologies is pleased to announce its imaging particle analysis system, the FlowCAM®, is now available with an auto focus feature. This latest upgrade makes the system easier to use and provides a consistent and repeatable fine focus with minimal user interaction.

Auto focus features include a web-based assistant that provides on-screen, step-by-step instructions to walk users



EMPOWER
your small
ROV



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"At Fluid Imaging Technologies, we're dedicated to constant product improvement to meet the needs of our customers," said Bruce Dalton, VP of engineering and product development.

For more information, visit www.fluidimaging.com.

DeepWater Buoyancy delivers legacy Flotation Technologies products

DeepWater Buoyancy, Inc. has relaunched the reliable, time-tested oceanography/marine measurements line of syntactic foam ADCP buoys, StableMoor™ floats and trawl resistant bottom mounts (TRBMs) formerly manufactured by Flotation Technologies (Flotec).

DeepWater Buoyancy opened their doors on 1 January 2014 after securing the designs and manufacturing rights to the Flotation Technologies line of oceanographic products. This month, the company is shipping StableMoor™ buoys, ADCP buoys and a wide range of cable floats and custom parts. Loyal customers have embraced the Flotation Technologies designs and DeepWater Buoyancy's ongoing investment in the manufacture and growth of these product lines.

"Teledyne RD Instruments and Flotation Technologies worked as industry partners for many years to ensure that the flotation products designed and manufactured by Flotation Technologies met or exceeded the demands of Teledyne RDI's ADCP customers," remarked Darryl Symonds, director of marine measurements product lines for Teledyne RD Instruments. "When Flotation Technologies' parent company chose to discontinue the manufacture of this line of oceanographic flotation, Teledyne RDI was pleased to learn that DeepWater Buoyancy had stepped in to take it over, continuing to supply flotation products to the oceanographic community. We look forward to working with DeepWater Buoyancy as we strive to meet the needs of our collective customers."

DeepWater Buoyancy's reliable ADCP deployment products (former Flotation Technologies designs) have supported Teledyne instruments for survey and research clients around the world. These syntactic foam buoys are now leaving the production line at DeepWater Buoyancy, manufactured to the same rigid standards and tested with the rigorous discipline customers have counted on for decades. At extreme depths, valuable undersea data must be supported, protected and successfully retrieved.

For more information, visit www.deepwaterbuoyancy.com.

Falmouth Scientific announces new low frequency addition to Bubble Gun seismic system

Falmouth Scientific, Inc. (FSI), a global leader in oceanographic instrumentation and marine systems integration, is very excited to present the HMS-620LF Low Frequency Bubble GunTM Seismic System at Oceanology International 2014.

FSI's Bubble Gun Systems are perfect for small boat shallow water geophysical surveys. Bubble Gun systems utilize a contained air volume to generate narrow band, low frequency acoustic signals. The data collected with HMS-620 systems rivals that of much larger, heavier, and more expensive air-gun, boomer, and sparker systems without the need for large power sources or air compressors. This proven technology provides superior signal penetration through coarse sand, gravel tills, and other difficult to penetrate sediments.

With some new technology developments and increases in the physical dimensions of the acoustic transducer, FSI can now offer a much lower bandwidth system that gives even deeper signal penetration. Previous Bubble Gun systems demonstrated frequency characteristics in the low-hundreds of hertz, but the new HMS-620LF shifts the spectrum downward such that it

produces substantial energy components below 100 hertz. And the new system only needs a small 2 KW generator as its power source.

For more information, visit www.falmouth.com.

OSIL to offer European calibrations for AML Xchange™ sensors

Ocean Scientific International Ltd (OSIL) has partnered with AML Oceanographic (AML) to offer Xchange™ sensor recalibration services at OSIL's facilities in the UK. With a European recalibration center, field-swappable sensor-heads become even more convenient for European users of oceanographic instrumentation. OSIL is expected to begin accepting Xchange™ sensor-heads for recalibration by 1 March 2014.

AML's Xchange™ line is the industry's only series of field-swappable sensor-heads. Each sensor-head contains its own embedded calibration, allowing the sensor to work with any AML instrument. Field-swappable sensors also streamline recalibration; instead of sending the entire instrument back to a calibration center, a recalibrated sensor-head can be delivered to the instrument

in the field and instrument downtime is dramatically reduced.

For more information, visit www.amloceanographic.com.

Ixblue launches Octans Nano

iXBlue, a leading provider of navigation, positioning, and mapping solutions, recently launched Octans Nano, a compact FOG-based (fiber optic gyroscope) gyrocompass and attitude sensor system for subsea use. Octans Nano fills a clear gap in the market, being a compact high-performance product optimized for lower total cost of ownership and ease of export (no ITAR components). It addresses closely the critical needs of market segments in ROV navigation and attitude monitoring of subsea structures. Providing class-leading performance, Octans Nano is not only extremely robust but significantly smaller and lighter than any available product of its type. It is low maintenance and delivers fast, reliable, navigation-grade heading, roll, and pitch information in the harshest subsea environments.

An order for OCTANS NANO has already raised by Ashtead Technology, one of the world's leading offshore integrated equipment solution and rental companies. Allan Pirie, Ashtead Technology CEO, said, "Based on extremely positive customer feedback on reliability and performance of iXBlue inertial and navigation products, we were pleased to learn of the new Octans Nano system. With confidence in market demand and appreciating the advantage of the lower total cost of ownership of the new Octans Nano, we were keen to include the system in our product catalogue." Octans Nano's titanium housing is rated for operation down to 4,000 m and shares the same connector and versatile interface as other iXBlue inertial and navigation products. Octans Nano has been designed with the user very much in mind: it is very easy to set up for quick navigation, with fast full-accuracy settling time. Ethernet, serial and pulse ports are standard, as are a sensor-input rebroadcast capability. Cabling can be kept to a minimum and the unit is highly compatible with less up-to-date instrumentation systems.

For more information, visit www.ixblue.com.

From sensor to desktop with Sonardyne's new SensorView software

Sonardyne International Ltd. announced the launch of its new SensorView monitoring software designed to provide a user-friendly interface to access raw sensor data direct from subsea acoustic instrumentation.

SensorView has been developed in response to customer demand to stream sensor data directly from subsea transponders, either in parallel with a Sonardyne 6G (sixth generation) USBL and LBL acoustic positioning system or completely independently of it. Applications include monitoring the deployment of subsea structures as they are lowered to the seabed and remote environmental monitoring.

The high speed data telemetry capabilities of Sonardyne's 6G instruments ensure that sensor data can be streamed to a user's desktop in real-time. SensorView continually adjusts power and gain levels to ensure the two-way acoustic telemetry data link is optimized for any given operating environment. Graphical time-plots, bubble and heading displays offer visual representation of all available data including depth, heading, sound velocity and inclination. Data can be output via industry standard serial telegrams or custom telegram created by the user to meet their desired format.

"Fast and easy to use, SensorView is perfect for all sorts of subsea data gathering applications," said Edd Moller, Sonardyne's global business manager for construction and survey. "Its development is another good example of how Sonardyne's custom engineering capabilities can be applied to creating hardware and software products that unlock new operational capabilities for our clients."

For more information, visit www.sonardyne.com.

Newly released fluid mud density probe

Stema-Systems is proud to announce the new DensiTune Portable, an easy to use system for rapid fluid mud assessment. This is the latest descendant of the Tune family of in-situ density and viscosity probes. The new DensiTune P system only weighs in total 15 kg and suited for hand carried transport. Together with the integrated WiFi option and low power consumption the DensiTune P can easily be deployed on any vessel of opportunity for sediment density measurements.

The DensiTune provides nautical organizations and companies the tool to better manage their siltation issues within river, harbor and coastal environments. Truly calibration free, a vertical density profile over the fluid mud column can be obtained within minutes. The retrieved density information allows organizations for assurance of nautical accessibility in harbors, analyses of water bottom stability assessment, managing quantities in disposal area's and the monitoring of siltation quantities.

The in-situ density measurements can optionally be accompanied with yield-strength data and dry solids calculation functionality. The DensiTune can be used in combination with any echosounder. However the combination with the Silas EBP echosounders adds another dimension to the mapping of the nautical bottom. The acoustic data of Silas sub-bottom mapping system is calibrated with the DensiTune information. The nautical bottom can now be mapped in free sailing mode efficient with the real-time density output of a pre-calibrated system.

For more information, visit www.stema-systems.nl.

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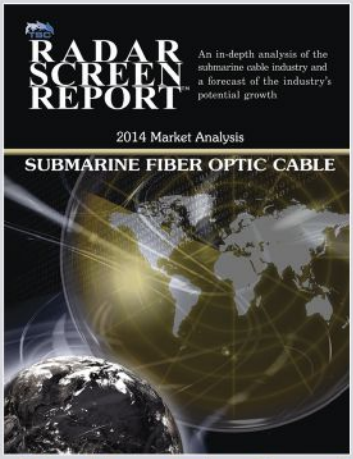

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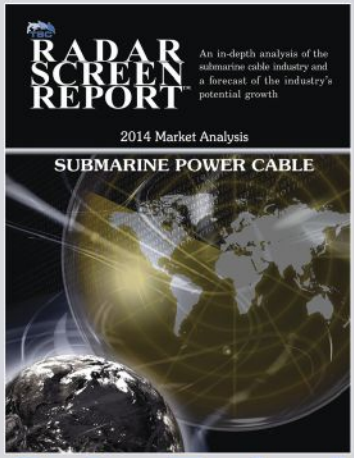

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Air and steam equipment rental specialist Airpac Bukom Oilfield Services appointed director for Australia **Graham Pemberton**. He will initially be working alongside Chris Wootton who was to retire as director Asia Pacific in March. In his new role, Pemberton is expected to build upon the strong work already accomplished by Wootton and the Airpac Bukom team in Australia. Pemberton has a wealth of experience both in the industry as well as within the region. He joins from Atlas Copco Rental, with whom he was working in Western Australia as a business manager, prior to which he spent 2 years with Coates Offshore as regional director for Asia Pacific. Before immigrating to Australia from the UK in 1999, Pemberton worked with Vp plc for almost 20 years in a number of roles, the last of which saw him heading up the group's successful groundforce division. A second regional appointment sees **Guy Lodge** assume the role of commercial director for Australia.

Wood Group Mustang appointed **Christopher M. Barton** as senior vice president, global offshore business development. He will lead the offshore division's global business development team in implementing a strategic growth plan.

Barton's 30-plus years of industry expertise include business development, marketing and engineering, procurement and construction (EPC) project execution and management. His roles have encompassed both onshore and offshore facilities, ranging from subsea systems, fixed platforms and deepwater floating production facilities. Barton holds a bachelor of science degree in civil engineering from Texas A&M University and serves on a number of industry conference boards, including the executive committee of the American Society of Mechanical Engineers (ASME) petroleum division.

Barton

Cobalt International Energy, Inc. disclosed the resignation of **Kenneth A. Pontarelli** and **Peter R. Coneway** from its board of directors, each effective immediately. Pontarelli is a managing director in the merchant banking division of Goldman, Sachs & Co. and has been a director of Cobalt since its inception in November 2005. Coneway is a managing director of Riverstone LLC and has been a director of Cobalt since October 2009. As a result of these resignations, the size of the board has been reduced from 11 to 9 directors. The two founding sponsors who remain represented on Cobalt's board control a combined total of about 10% of Cobalt's outstanding shares.

Worldwide growth and development of Aberdeen-based specialist safety and lifting training company, NSL is the primary goal of newly appointed managing director, **Duncan Bonner**. He joined NSL from his position as managing director at Maersk Training Ltd. and is looking to utilize the network of operations available through parent company, international oilfield support services company ASCO Group, to bring NSL's expertise to the global energy markets. With 25 years of operational and HSE experience in the global energy market, Bonner already has a track record of successful growth of small and medium size companies. His focus over the last decade has been on developing and implementing strategic, largely organic growth in a variety of safety training and operational support companies. Bonner also has experience of successful start-up operations, having opened training centers in the UK and Middle East. The work involved gaining accreditation.

Falmouth Scientific, Inc. (FSI), a Cataumet, Massachusetts-based designer and manufacturer of precision oceanographic instrumentation and systems, has announced the appointment of **Mr. Brian Wilson** to the position of sales & applications engineer. Wilson has over 25 years of experience in the oceanographic instrumentation industry. He is returning to FSI where he was the customer service manager from 2002 to 2006. His skills and knowledge base range from the design and production of the FSI products, to the direct involvement in the applications, sales, and customer service needs for a very diverse customer base.

Wilson

Unique Maritime Group has announced the joining of **Scott Jamieson** as the group business development manager for its diving division. He will be based at UMG's head office in Sharjah, UAE. His main responsibilities will focus on developing Unique's relationships with key clients in the diving industry and seeking new business opportunities to support our diving division. Before taking up his role of a BDM at Unique, he served as area director at Divex, Dubai UAE for the last 10 years, taking care of various geographical locations, providing valuable technical and engineering solutions to clients within the region.

Oceaneering International, Inc. announced the promotion of **David K. Lawrence** to senior vice president, general counsel and secretary. Lawrence joined Oceaneering in June 2005 as assistant general counsel and has served as vice president, general counsel and secretary since November 2011. He has extensive experience as an attorney, including over 20 years as in-house counsel in the oilfield products and services industry and manufacturing.

Oceaneering International, Inc. announced the appointment of **Knut Eriksen** to senior vice president, business development. In this new role, Eriksen will be responsible for leading Oceaneering's worldwide business development efforts focused on customers' evolving and growing deepwater operations. Eriksen joined Oceaneering in 2010 as senior vice president, subsea products. His career spans over 35 years in the oil and gas industry, the majority of which has been in deepwater engineering and offshore projects. Prior to joining Oceaneering he served as senior vice president, global execution with Natco Group, Inc. He previously held numerous management positions in engineering, operations, and business development at Aker Kvaerner, Inc. and Aker Maritime ASA, and was the vice president of worldwide deepwater development at Unocal Corporation. He has Masters Degrees in engineering and business administration.

Oceaneering International, Inc. announced the promotion of **Charles "Chuck" W. Davison, Jr.** to senior vice president, subsea products. Davison joined Oceaneering in 2007 as vice president, umbilical solutions. He previously spent 8 years with the General Electric Company, holding various roles in operational excellence, global operations and supply chain, and general management. Davison holds an MBA from the University of Tennessee and a Bachelor's degree in Industrial Engineering, is a certified Six-Sigma black belt, and has extensive international training and experience in lean manufacturing and the theory of constraints. He is a member of the Institute of Industrial Engineering, Petroleum Equipment Suppliers Association, and American Society for Quality.

Colfax Fluid Handling, a business of Colfax Corporation and a global leader in fluid-handling solutions for critical applications, has named **Carl-Henrik Bramstå ng** sales director, shipowner sales. His new role will include the sales efforts for the company's latest technology breakthrough, the Smart Technology CM-1000 Series, an intelligent controller for sea water cooling systems. Bramstå ng is a seasoned sales professional with almost 30 years of experience, including 22 years in various sales positions of increasing responsibility with Colfax Fluid Handling. He will help drive the sale of a complete spectrum of pumps and controllers to the maritime community internationally and will be based in Sweden.

Bramstång

UTEC has announced significant expansion of the U.S. team serving Gulf Coast clients. The Houma-based Industrial Measurement/Dimensional Control (IMDC) group has benefited from the addition of three dimensional control surveyors, led by IMDC supervisor **Greg Carlos**. The experienced team provides IMDC, metrology and 3D laser scanning to UTEC's Gulf Coast clients.

Communications and safety at sea specialist **Ocean Signal** has appointed True Heading Nederland BV as its new distributor for the Netherlands. Ocean Signal's SafeSea® portfolio of GMDSS products and its innovative rescueME PLB1 are suitable for a range of applications in the marine sector, with True Heading able to support all markets from commercial shipping to leisure boating. Global leaders in providing AIS solutions, True Heading is perfectly positioned to strengthen Ocean Signal's presence in the Netherlands using its experience in the industry spanning 30 years, plus an extensive network and a wide range of technical expertise.

Herbert-ABS Software Solutions LLC, a leader in marine regulatory, load management, salvage and ship design software, continues to grow in Asia and has opened an office in Busan to reinforce support for Korean-based shipyards as well as improve the quality of service to this key market. Herbert-ABS also has an office in Shanghai and earlier this year expanded into Singapore. The Busan office will be led by Arnold (Woo-Sung) Cho, marketing and sales manager, whose primary focus will be to strengthen relationships with the Korean yards. Cho's activities will also consist of representing Herbert-ABS at industry conferences and to include Gastech, 24-27 March in South Korea at stand G360.

BMT ARGOSS, a subsidiary of BMT Group Ltd, has announced a joint initiative with the Met Office, the UK's national weather service, and Oceanweather Inc. to help support oil and gas majors with offshore engineering design and operational planning in the mid-Atlantic region. The main deliverable of this project, entitled the Mid-Atlantic Current Hindcast (MACH), is a 20-year high quality ocean current reanalysis for the mid-Atlantic region, with nested high resolution grids covering principal oil and gas concession areas.

Imtech Marine has expanded its training facilities in the Middle East with a new training center in Sharjah, U.A.E. The training center, hosted by Imtech Marine's company Radio Holland Middle East, has started with a type-specific ECDIS Training Course for Navigators and Masters to meet the high demands for ECDIS familiarization. The Imtech Marine Training Centre offers this type-specific training course as a turnkey solution for safe maritime purposes to the global shipping industry, upgrading Navigators and Masters with specific knowledge of the functionality and effective use of ECDIS.

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www.oceans14mtsieeetaipei.org

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www.energyocean.com

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www.deepwaterintervention.com

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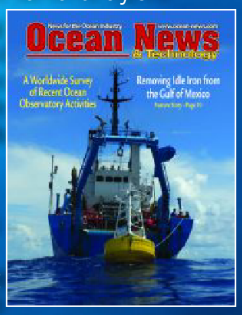

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Manufacturer of fully integrated USBL acoustic tracking systems, both portable and vessel based, high quality multi-system compatible beacons for acoustic positioning and release, and seismic sub-bottom profiling systems for coastal, offshore or geohazard surveys. All products are supported by a network of overseas representatives providing a first class service on a global scale.

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Contact: Dr. Raymond B. Sepe, Jr.

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Fax: (951) 659-3958
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Since 1957, South Bay Cable Corp has designed and manufactured specialized electrical, electro-mechanical and electro-optical-mechanical cables for use in demanding marine environments. Cables are designed to meet customer requirements and include tether and umbilical cables for ROVs, tow cables, video inspection, faired cables and a host of other customer specific applications.

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AK Industries is an agile high tech manufacturer of rugged low cost underwater electrical connectors. The HydroVolt line of connectors is the most rugged and reliable low cost connector available. AK Industries is also ideally suited to provide unique solutions engineered to customer requirements.

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Contact: Eli Bar-Hai

Birns Aquamate design and manufacture underwater electrical connectors, cable assemblies, and cable terminations. The company produces a wide range of standard industry connectors such as the 5500 Series, SC, MC, LP, FAWL/FAWM, Rubber Molded, etc. BIRNS Aquamate is the only underwater connector producer that guarantees compatibility with other manufacturers. Birns also specializes in fast turn-around for custom design of special connector solutions. Stocking dealers in the UK (Scorpion Oceanics) South Africa (Marine Solutions) Holland (Seascape) as well as dealers in Canada, Italy, Russia, China, and Brazil.

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Contact: Ross Johnson

Geometrics, a member of OYO Corporation, manufactures, sells, and services portable geophysical instruments for land, marine, and air investigations of the subsurface. Geometrics' product line includes proton precession and cesium magnetometers, high-resolution seismographs, and electrical conductivity imaging and resistivity systems. Geometrics' instruments are used around the world for natural resource exploration, geotechnical and environmental assessments, ordnance detection, locating archeological and treasure sites, teaching and research.

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E-mail: sales@bgbtechnology.com
Website: www.bgbtechnology.com
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MANUFACTURERS' REPRESENTATIVE

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Ocean Marine Industries (OMI) specializes in strategic product distribution and sales representation with special emphasis on working with U.S. Federal and State Government Agencies, Scientific Research Institutes, Academia and commercial organizations. OMI's primary product line is multi-beam imaging sonars made by Sound Metrics of Bellevue, WA www.soundmetrics.com

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ASRC Energy Services provides marine environmental consulting services and compliance support for offshore projects. RTS has experience in public and private sectors and takes a multidisciplinary and strategic approach to regulatory permitting, environmental assessment, and integrated stakeholder engagement to support a complete range of projects.

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Kongsberg Seatex is a leading international marine electronics manufacturer specializing in the development and production of precision positioning and motion sensing systems. Our commitment is to provide quality products and solutions for safe navigation and operations at sea in the commercial offshore, maritime, hydrographics and defence industries

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ASL provides physical oceanographic consulting services and instruments. Services: flow measurement, ice studies, wave measurement and analysis, numerical modeling, and remote sensing. Products: Ice Profiler- measures ice-keel depths; Acoustic Zooplankton Fish Profiler- monitors the presence and location of zooplankton, fish or sediments; and the WERA NorthernRadar – measures surface currents and waves from shore up to 200km. ASL has a large lease pool of oceanographic instruments.

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Nortek's products span from single point turbulence sensors to long range current profilers. Our customers are scientists, consulting engineers and professionals working in the offshore oil and gas industry. Nortek provides solutions measuring surface waves to currents 6,000 m deep. Nortek is global, positioned to help you wherever your solution is needed.

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Website: www.tinitron.com
Contact: Tinny Srinivasan, President & CEO,
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Contact: Karen North

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P.O. Box 185
Berwick, LA 70342
Tel: +1 985 714 1767 or 985 518-0055
E-mail: charles@subseaamerica.com
Website: www.subseaamericas.com
Contact: Charles Mayea

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UNDERWATER VEHICLES/AUVS

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Fax: 907-569-0268
Contact Ray Mahr
Email: sales@exocetus.com
Website: www.exocetus.com

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Website: www.hydroid.com
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Fax: +1 508 678 0552
E-mail: sales@ocean-server.com
Website: www.iver-auv.com
Contact: Jim Kirk

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UNDERWATER VEHICLES/ROVS

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Fax: +1 408 436 1108
E-mail: sales@deepocean.com
Website: www.deepocean.com
Contact: Bill Charbonneau

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Tel: +1 936 582 7237
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E-mail: sdingman@deltasubsea-rov.com
Website: www.DeltaSubSea-ROV.com
Contact: Scott Dingman, President / CEO

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10344 Sam Houston Park Drive
Suite 300
Houston, TX 77064
Tel: +1 713 329 8730
Fax: +1 713 329 8299
E-mail: subsea.sales@f-e-t.com
Website: www.f-e-t.com/Subsea

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UNDERWATER VIDEO EQUIPMENT

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