

Ocean News

News for the Ocean Industry

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& Technology

September 2012



European Offshore
Wind Industry

**Forecasting Wind Waves and
Boat Wakes to Reduce
Maintenance Dredging Costs**

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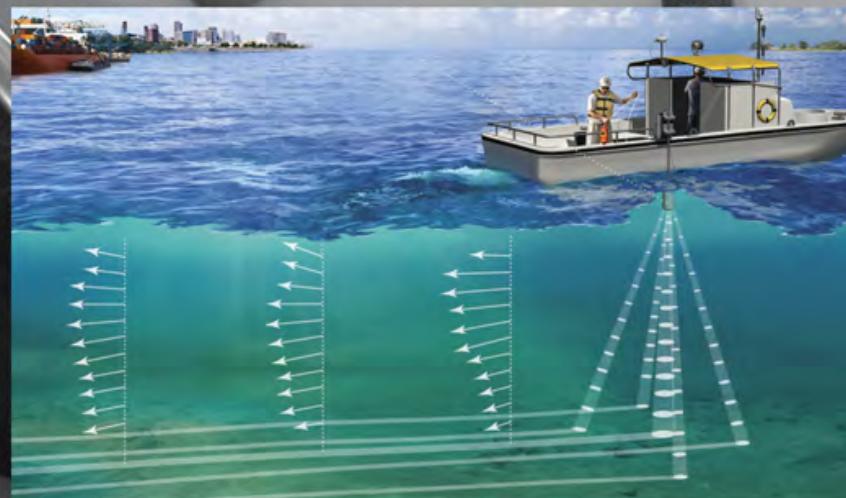
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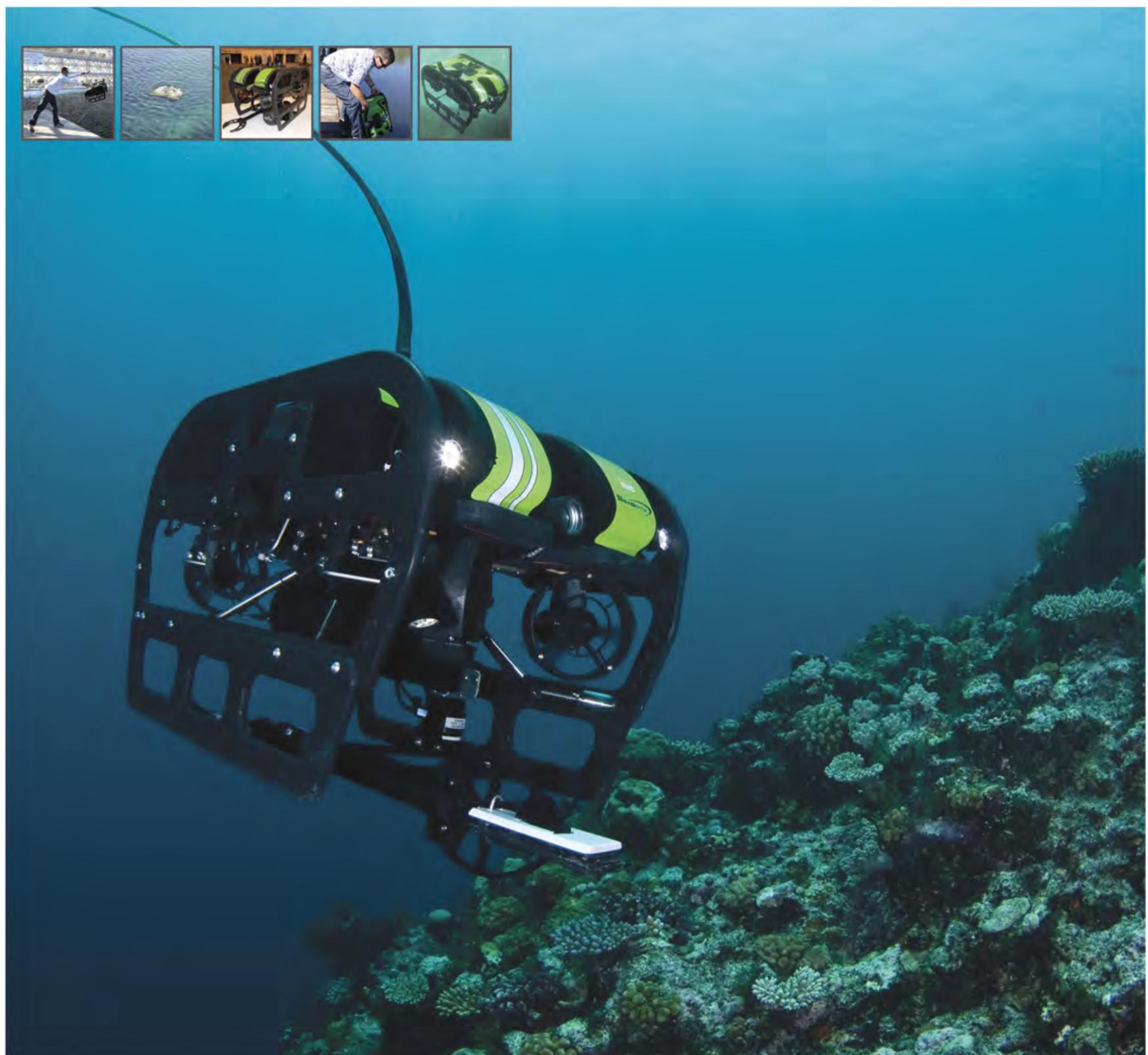
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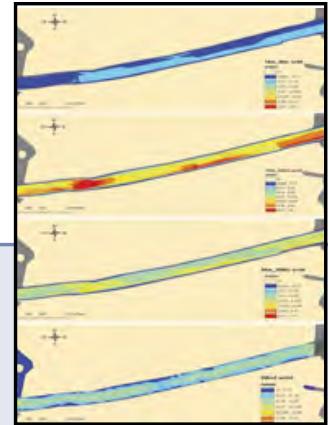
Ocean Industry



Offshore Industry



Feature Story



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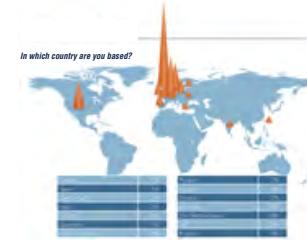
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Thorntonbank Wind Farm,
17mi off the Belgian coast
(photo courtesy EWEA)

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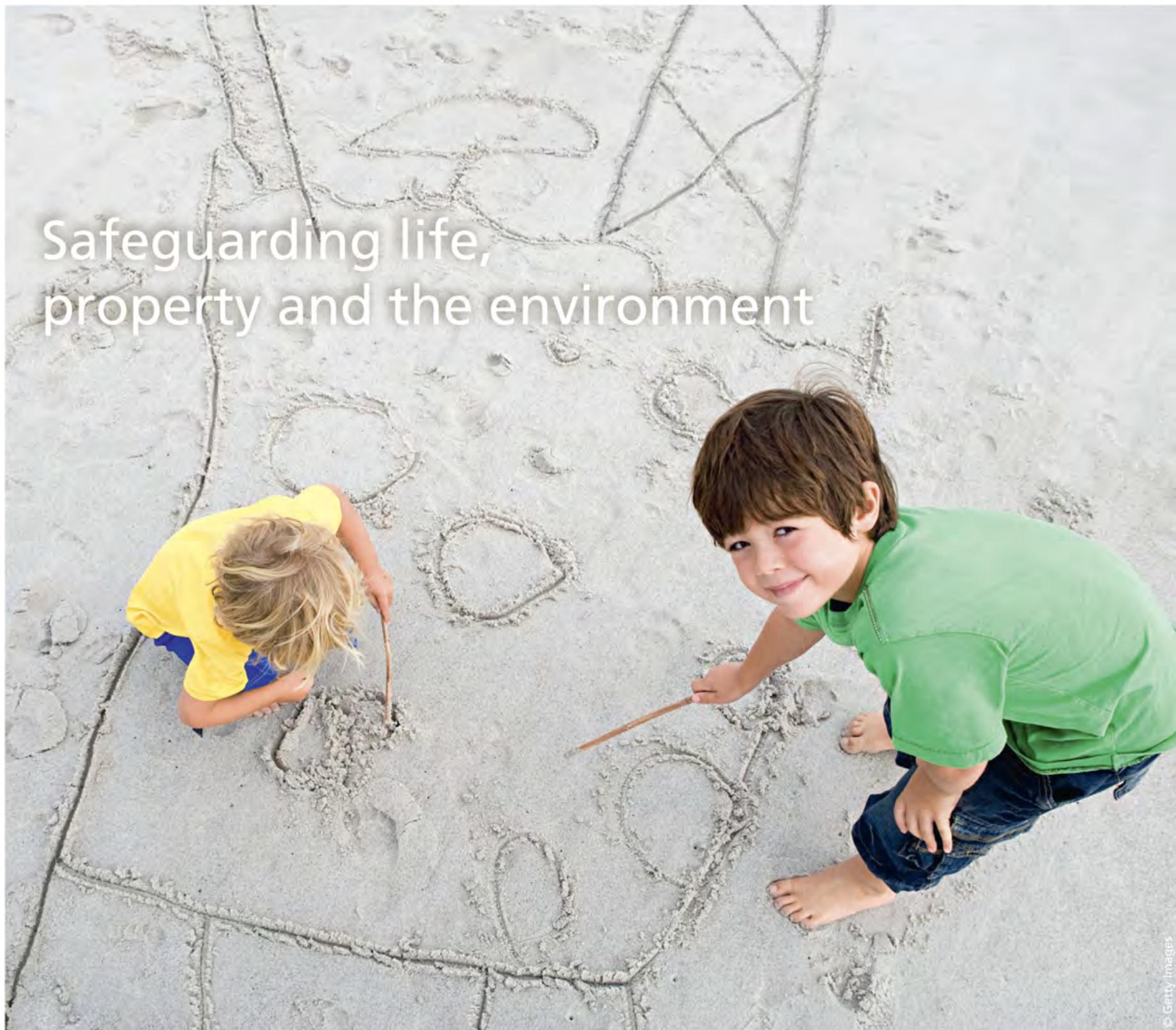
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MANAGING RISK



Editorial

By John Manock



Mega-Projects and the Submarine Telecom Market

Ocean News & Technology

EDITORIAL

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Dan White

EDITOR IN CHIEF
Ladd Borne

OFFSHORE ENERGY EDITOR
Ray Tyson

SUBMARINE CABLE EDITOR
John Manock

SR. V.P./ SALES & MARKETING
MJ McDuffee

PRODUCTION COORDINATOR
Amy Hamm

ART DIRECTOR
Suzanne Short

COPY EDITOR
Robyn Schuricht

CIRCULATION
Samantha Burn
subscription@ocean-news.com

ADVERTISING SALES

SR. V.P./ SALES & MARKETING
Mj McDuffee
Tel: +1 (772) 219 3027
Fax: +1 (772) 221 7715
mjmcduffee@tscpublishing.com

NORTH AMERICAN AD SALES:
Lisa Chilik
Tel: +1 (574) 261 4215
Fax: +1 (574) 255 1006
Lchilik@tscpublishing.com

INTERNATIONAL AD SALES:
Zinat Hassan
Tel/Fax: +44 (0) 845 6522 483
Mobile: +44 (0) 781 1200 483
zhassan@tscpublishing.com

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The submarine telecom market is always challenging to forecast. For a market where demand was once considered predictable for its "boom and bust" cycles, it has in the past 4 years settled into a "steady-state" demand profile. The market is constantly changing, however, even if the final results show an extended period of steady, though unspectacular, growth. Perhaps the most dramatic recent change, as well as the most notable development thus far in 2012, is the return of the "mega-project."

There is no set definition of a mega-project in the submarine fiber optic cable industry, therefore I will define it – a mega-project is any submarine telecom project over 15,000km long. These projects don't just connect continents, they connect three or four continents – nearly spanning the globe.

Mega-projects add all kinds of uncertainty to forecasting demand for submarine fiber optic cable. In an industry that is seeing demand for about 40,000 to 50,000km per year during the current steady growth phase, a single 20,000 or 30,000km project can have a huge impact on the market, not to mention the supplier that wins the contract. On the other hand, if the mega-projects do not raise the billions of dollars needed to be built, they can have an equally huge negative impact on the market and leave investors wary and suppliers struggling to find work.

Mega-projects are not new to the industry. In the late 1990s and first couple of years into this century, globe-spanning cables were built on a regular basis. It is these very cables that are the primary backbone for today's Internet.

The collapse of the submarine telecom market in 2002 and the bankruptcy of many of the owners of mega-projects brought the whole concept into question. Investors shied away from mega-projects after getting burned. Cable projects got smaller and more focused. What large-scale projects that were built were funded by the large, traditional telecom carriers – those with deep pockets and less reliance on private financing – but even these rarely approached 15,000km or connected more than two continents.

Then, suddenly, mega-projects began to re-emerge. This started in late 2011 and has continued into 2012, with at least six mega-projects currently under development. Some focus on the Northern Hemisphere, connecting North America, Europe, and Asia. Others look to the south and link Africa and South America

to the northern continents.

Why are so many mega-projects appearing now? One simple answer is the insatiable demand for Internet bandwidth. Showing no signs of slackening through economic turmoil, demand for Internet services, particularly high-bandwidth video applications, is growing spectacularly in every geographic region and demographic group. Cisco says that annual global IP traffic will pass the zettabyte threshold by the end of 2016. What's a zettabyte? A "1" followed by 21 zeros.

Regardless of what a zettabyte really is, it represents a demand that can't be satisfied by existing cables, even with dramatic new upgrade technologies.

Mega-projects have another major driver that is the most unlikely of all – the need for greater speeds. Considering that data moves through a fiber at the speed of light, why are so many new mega-cables being proposed to shave off a few milliseconds of delay (latency)?

The answer is high-frequency financial trading – a much more complex factor than bandwidth demand. Taking hold over the last decade, high-speed financial trading is computer stock trading done without any human intervention. In fact, humans can't intervene as the process moves too quickly (in milliseconds and even microseconds).

High-frequency trading inputs huge amounts of financial data on a millisecond-by-millisecond basis and determines the best time to buy and sell stocks. As high-speed frequency trading now handles hundreds of billions of dollars a day, cable operators are scrambling to find ways to add new routes that have a few less milliseconds of latency than the old ones. This is driving demand for new cables, even in markets already served by existing cables with plenty of available capacity.

So, what is the real impact of mega-projects? Considering the complexities involved in projects of this scale, not to mention the price tags, it is likely that not all will be built; but, even if only one mega-project is, it can be a huge boost to the industry.

The rise of the mega-project also demonstrates an overall optimism in the submarine cable market. Developers believe the time is right for these huge cable systems and that investors will be willing to jump in. Although some mega-projects will be never reach fruition, the fact that they are being proposed shows an industry that is optimistic about its future.

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Forecasting Wind Waves and Boat Wakes to Reduce Maintenance Dredging Costs

By Ray Dennis, III and Dr. Mark Fonseca
CSA International, Inc.

Waves caused by boats are suspected to be a significant source of shoreline erosion and are widely recognized as a boating safety issue.

Shoreline erosion as well as subtidal mobilization of sediment that occurs with both wind and boat-generated waves causes deposition into maintained channels. Thus, the severity of wave exposure, whether from wind or boat wakes, increases the frequency of maintenance dredging of waterways. Despite the broad, popular perception of the effect of waves on erosion (National Research Council, 2007) and dredging frequency, we have found few easily applied procedures to forecast these waves.

Prior to joining CSA International, Inc. (CSA), staff have been and are currently involved in developing new software applications that can greatly assist the evaluation of wind waves and boat wakes on erosion – and subsequent dredging needs. Here, we describe a novel application of forecasting tools that will provide a quantitative assessment of boat wake scenarios and seafloor erosion to inform dredging strategies.

Snow's Cut, a small section of the Atlantic Intracoastal Waterway (AIWW) (Figure 1) in North Carolina links the Cape Fear River to the continuation of the AIWW behind coastal barrier islands to the north. The Wilmington District of the Corps of Engineers (USACE Wilmington) contributes to frequent maintenance dredging in this area, presumably as the indirect result of the high level of boating activity (whose speed is unregulated in this area) that is thought to exacerbate shoreline erosion. A study was conducted in this area that asked what the boat wake waves might be in comparison to ambient wind waves and

whether boat wake energy would exceed wind wave effects and potentially contribute to erosion and, ultimately, increased frequency of compulsory maintenance dredging.

To determine whether boat waves could be a factor in seafloor and shoreline erosion, it was necessary to first examine the natural, wind wave contribution to erosion in the Snow's Cut area. A recently developed software tool, WEMo (wave exposure model) designed specifically for use in fetch-limited environments (vs. far-field effects such as ocean swells) was employed to forecast the wind wave energy and sediment erosion potential. A high-resolution grid (100ft x 100ft) was created covering the Snow's Cut area and the wind wave model run for each grid point. By convention, the top 5% of wind events or wind events that exceeded 19.9mph (wind data taken from nearby National Data Buoy Center locations) over the last 3 years was used to create the wave height and seafloor shear stress for sediment erosion forecasts.

Because the bathymetry data were coarse and out of date, the USACE Wilmington conducted a new bathymetric survey of the area, which was then fused with local Coastal Relief Model bathymetry to create a seamless topography within which both wind wave and boat wake modeling could be conducted.

The next step was to apply a new, unpublished boat wake model (i.e., BoMo) that produced similar output as the wind wave model, but as the result of boat wakes generated by a boat(s) selected by the user in consideration of

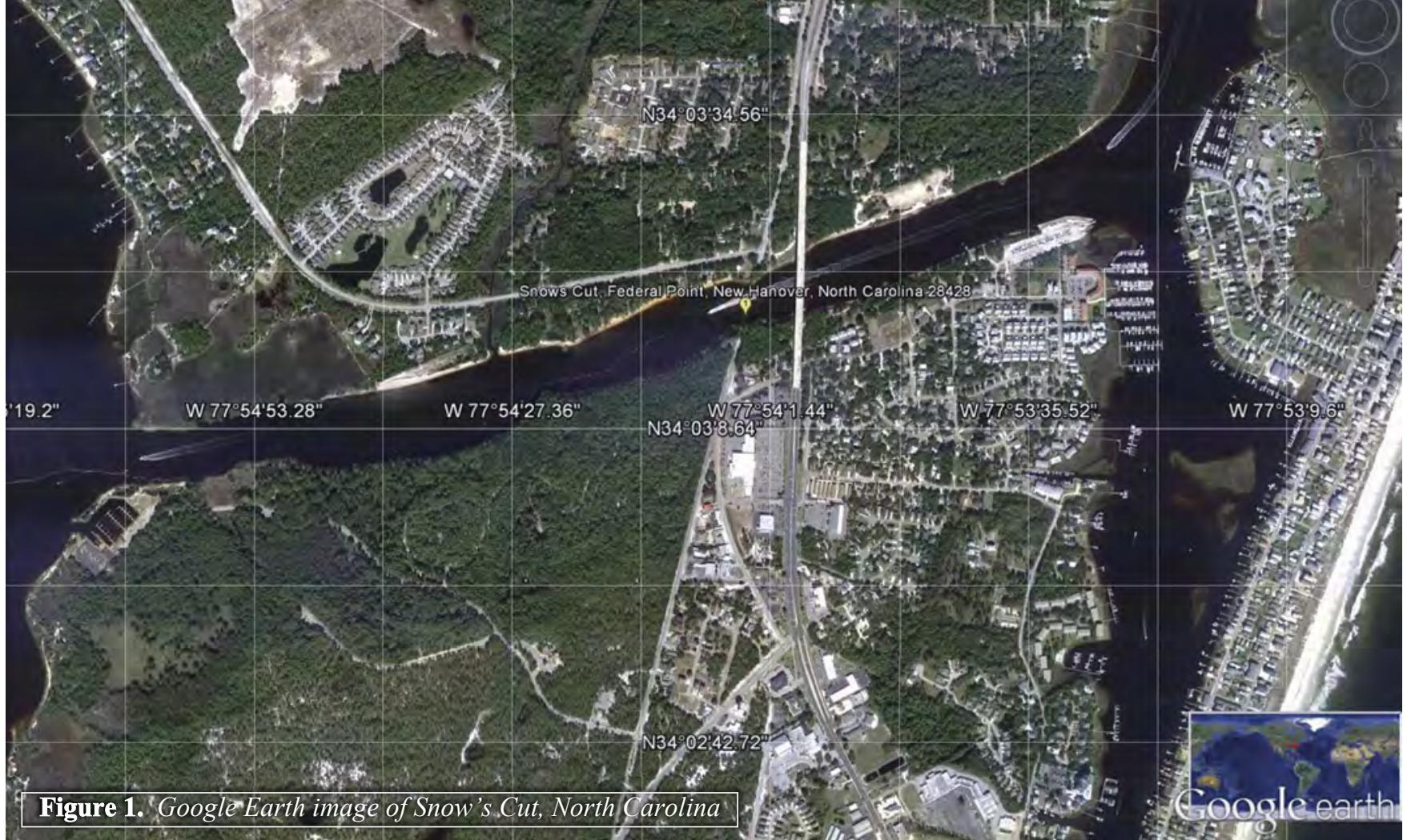


Figure 1. Google Earth image of Snow's Cut, North Carolina

boat hull shape, hull length, travel speed, and path as determined in a geographic information system (GIS).

Stepwise, the process was to first run the wind wave model as a baseline of ambient, wind-generated wave height, wave energy, and seafloor sediment movement (at the seafloor), followed by the boat wake model for different hull types at different travel speeds to determine if and under what conditions boat wake wave energy and seafloor erosion would exceed that of the top 5% of wind wave events. Those areas where boat wakes exceeded wind wave-generated energy and erosion would stand out as potential locations of boat wake-caused sediment erosion.

To determine what types of boats should be simulated, the study utilized information from an extensive survey of boat wake traffic in a nearby, unregulated speed zone of the AIWW. There, wave heights were monitored continuously (6Hz) for 16 months, during which time scores of boats were videotaped in synchrony with their wake (wave height) measurements, using an automated surveillance camera. From those surveys, the waves generated for various hull types, vessel size, and speeds were separated from wind waves and tidal signatures and modeled using a neural network technique to forecast boat wakes for a wide range of boats common to the AIWW. The study found that in a section of the AIWW approximately 80km north of Snow's Cut that does not have vessel speed regulation, ~50% of boat wake heights exceed the largest wind-generated waves in the AIWW.

Table 1. Description of input parameters for BoMo runs. Modified from Fonseca and Malhotra (2012).								
Vessel description	Draft (ft)	Beam (ft)	Vessel displacement (tons)	Speed Description	Speed (kts)	Speed (mph)	Wave height (ft)	Wave period (s)
23' center console runabout	1.2	8.5	2.2	Planing	20	23	0.58	1.8
				Plowing	10	10.4	0.79	1.9
				Slow	3	3.4	0.23	1.6
54' yacht	4.2	17.3	37.5	Planing	20	23	0.95	2.2
				Plowing	10	10.4	1.25	2.3
				Slow	3	3.4	0.30	1.8

The boat wake simulation considered vessel traffic traveling north only and used vessel sizes and speeds based on the previously discussed survey. There, the mean and median hull length was ~42ft and lengths of 23ft and 54ft represented the 25th and 75th percentiles of boat using the AIWW. Six test combinations were chosen: two vessel sizes and three vessel speeds – slow (3kts, making headway), plowing (10kts), and planing (20kts) (Table 1).

The boat wake waves and seafloor shear stress for each combination of length and speed was compared with the top 5% wind events at each sample point (maximum wave heights of ~0.5ft to 0.8ft, with greater heights observed in the middle portion of the cut). Sediment erosion was forecast from those shear values given an assumption of fine sand (0.0006 in grain diameter). Additionally, the change in transit time (minutes) across Snow's Cut as a result of different vessel speeds was compared to evaluate the impact on boating activity (Table 2).

Table 2. Time to travel 2mi at different vessel speeds. Modified from Fonseca and Malhotra (2012).

kts	mph	Transit Time (min)
20	23.0	5.2
10	11.5	10.4
7	8.1	14.9
3	3.5	34.8

At slow speeds, the 23ft boat wake heights were forecast within the range of waves generated by wind, suggesting little additional effects. However, at plowing speeds, wave heights began to match or exceed that of those top 5% wind events. At planing speed, when the boat has lifted onto the water surface and is displacing less water, boat wake heights dropped again to within the range of wind events.

In contrast, the 54ft boat wake heights were dramatically different. At slow speeds, these wakes were, as with the 23ft boats, within the range of wind wave heights. At plowing speed, wave heights were frequently forecast reaching 1.6ft, which significantly exceeds the wind wave heights of

Feature Story

the mid-channel (maximum ~0.8ft) and that of the shoreline (~0.5ft to 0.7ft); specific geographic areas of the cut were also forecast to have high concentration of wave energy (Figure 2) and sediment erosion (Figure 3). However, when operating at planing speeds, wave heights were forecast to reach up to 1ft, which was greater than modeled wind wave heights. It is important to note that most boats of this size, even at these speeds, displace a great deal of water (unlike smaller boats that readily plane up and more onto the water surface) and, thus, generate substantial waves.

Importantly, both models translate the wave energy forecast to seafloor shear stress, allowing an estimation of whether sediment will be moved. Given the deep, ditch-like nature of the cut, these waves were only forecast to cause erosion at the margins of the water body. However, some of the locations occur on shallow subtidal shoals near the shore and give some appearance of coinciding with irregularities in the channel margins. These features may focus wave energy and, therefore, are particularly vulnerable “hot spots” for erosion potential.

In summary, Snow’s Cut area, which links the Cape Fear River to the AIWW, was identified as having significant ero-

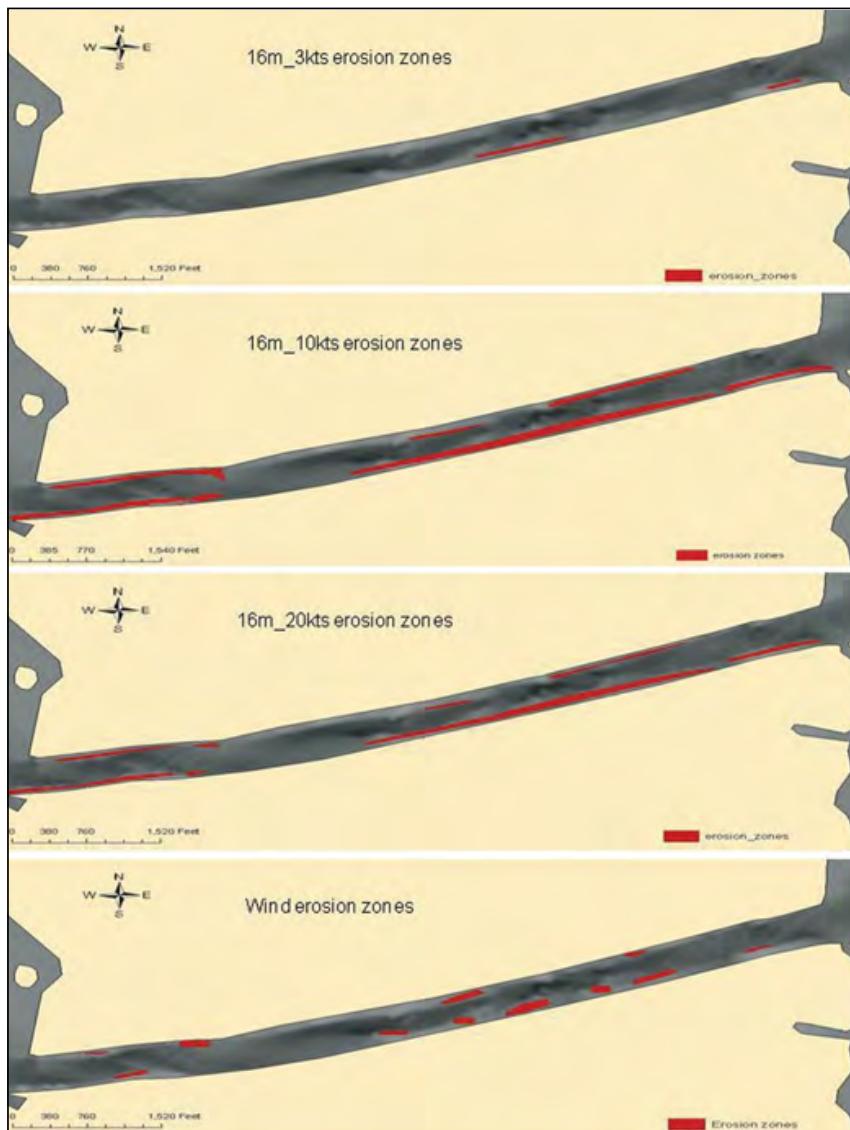


Figure 2. Wave height (m) map of Snow’s Cut showing boat wakes (top 3) for a 16m (52.5ft) vessel at speeds of 3kts (slow), 10kts (plowing), and 20kts (planing). Bottom plate shows wind wave distribution for the top 5% of wind events in this area over a 3-year period (From: Fonseca and Malhotra, 2012).

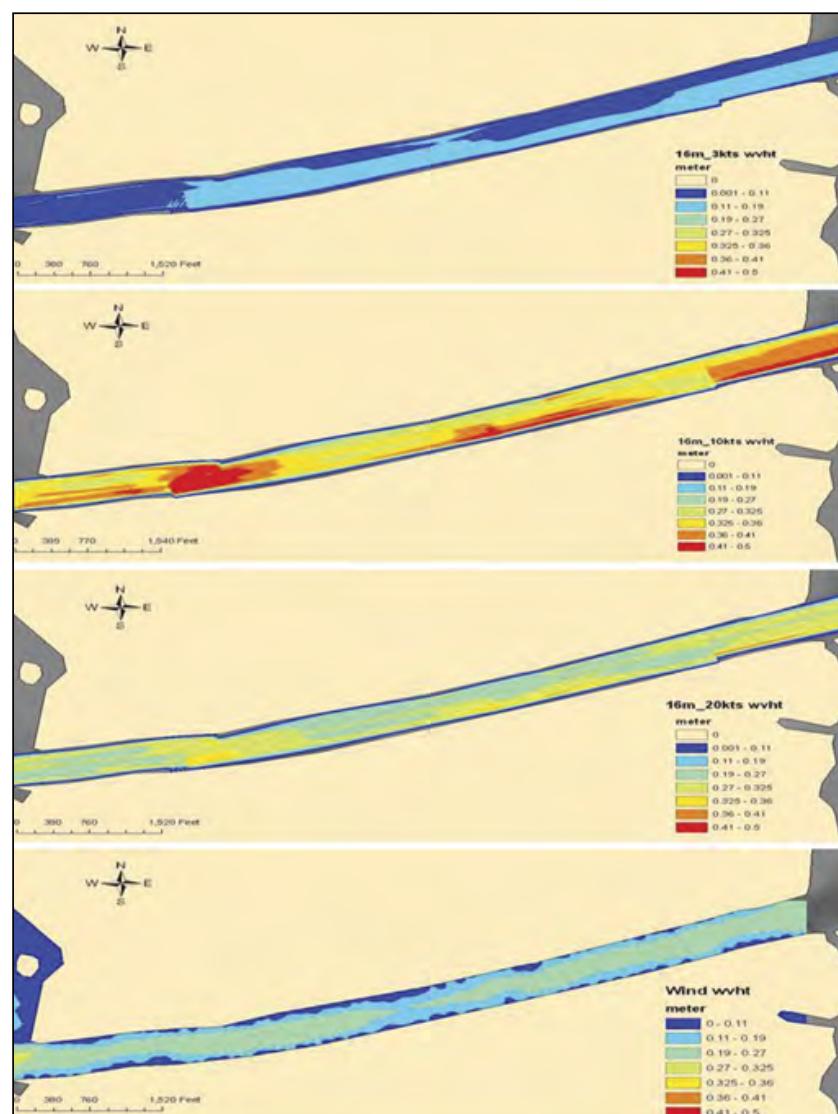


Figure 3. Sediment erosion zone (red) map of Snow’s Cut showing boat wakes (top 3) for a 16m (52.5ft) vessel at speeds of 3kts (slow), 10kts (plowing), and 20kts (planing). (From: Fonseca and Malhotra, 2012).

sion issues, presumably the result of high levels of boating activity and associated wakes. Using new software tools, Fonseca and Malhotra (2012) compared the forecast boat wakes and seafloor shear stress throughout the cut for six combinations of boat length and speed with the top 5% wind events. They also compared the transit time across Snow’s Cut for each speed. Two commonly observed hull types and sizes were simulated; it was found that at 10kts when the boat was plowing and not yet on plane, boat wake height and potential erosion was greatest and was markedly reduced at higher speeds, but only for smaller vessels that can rise up onto the water surface. Displacement hulls, typical of larger vessels, were forecast to generate large wakes, exceeding local wind waves at both plowing and planing speeds. If the speed, particularly of large, V-hulled boats, were reduced to pre-plowing speeds (e.g., from 10mph down to 3mph), transit times for Snow’s Cut would increase approximately 10 min. This change in vessel speed was forecast to dramatically reduce erosion and, ultimately, the need for maintenance dredging frequency. These results are generally applicable to a wide range of inland waters where fetch is restricted but boat speeds are not, and we posit that similar analyses may be useful in identifying management options for these areas.

For more information, visit the CSA International, Inc. website at www.csaintl.com.

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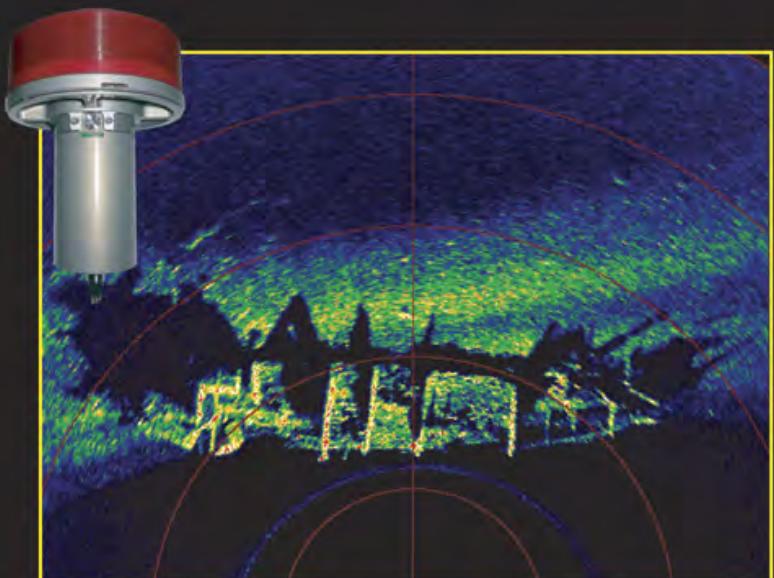


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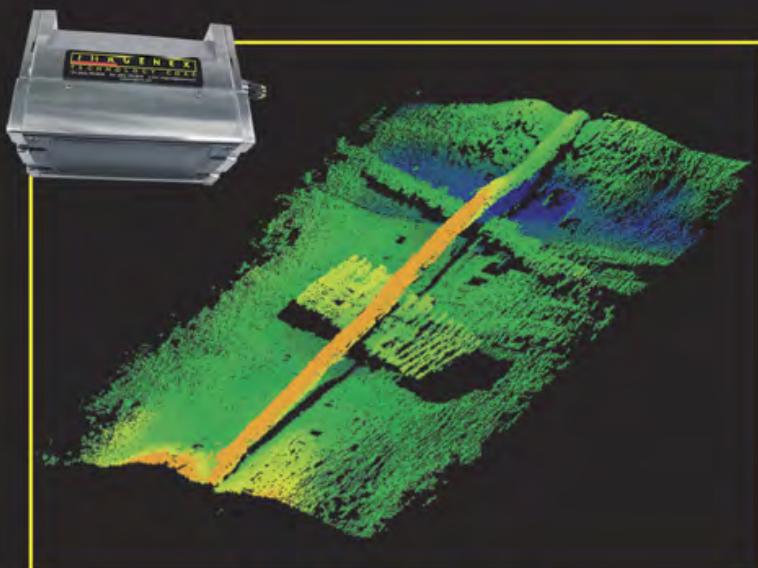
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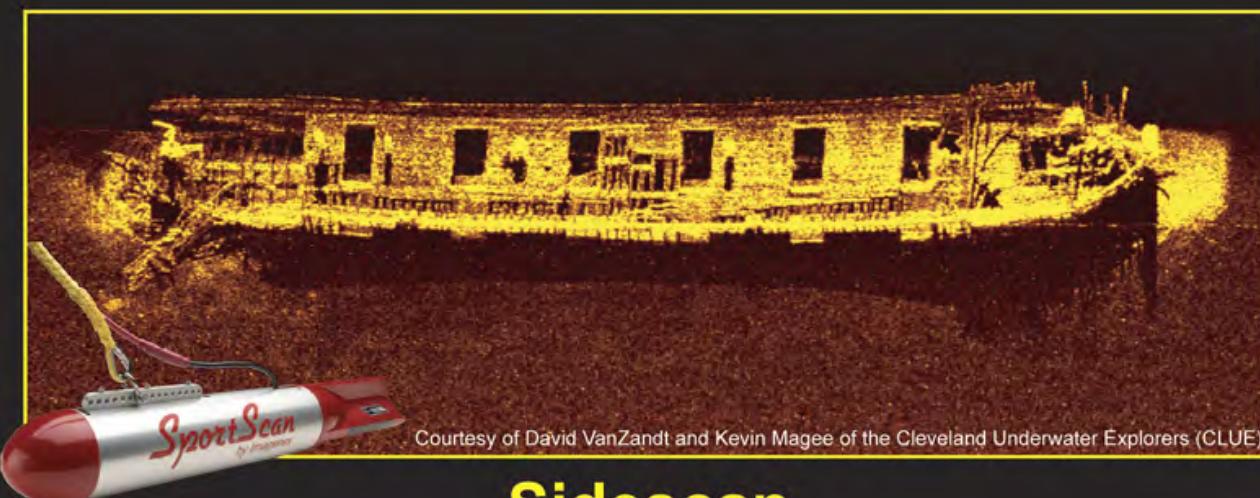
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OCEAN INDUSTRY

HMS Hood's bell to be recovered



An operation to recover the bell of the battle-cruiser HMS Hood, sunk in 1941, has been agreed upon by the UK Government.

If recovered successfully, the bell will form a tangible and fitting memorial to the ship and the 1,415 men who were lost in her when she was sunk by the Bismarck in the North Atlantic. Hood is the largest Royal Navy vessel to have been sunk, causing the greatest loss of life suffered by any single British warship.

The Ministry of Defence (MOD) and the Royal Navy are grateful for the very generous offer by the U.S. philanthropist Paul G. Allen to recover the bell at no cost to the MOD. Mr Allen's yacht, Octopus, is equipped with a remotely operated vehicle (ROV) and will be used for the operation and be supported by Blue Water Recoveries Ltd., which specializes in the search and investigation of shipwrecks.

In a previous expedition that did not disturb the wreck, the bell was discovered and photographed by Blue Water Recoveries. It is lying on the seabed well away from the parts of the battle-cruiser's hull, which will not be disturbed by the recovery operation.

The recovery is fully supported by the HMS Hood Association, whose members include veterans who served in the ship before her final mission in 1941 and relatives of those lost with her.

President of the Association is Rear Admiral Philip Wilcocks, whose uncle was among those who died aboard Hood. Admiral Wilcocks said: "There is no headstone among the flowers for those who perish at sea. For those who lost their lives in HMS Hood, the recovery of her bell and its subsequent place of honour in the Museum will mean that, well after the remains of Hood have gone, future generations will be able to gaze upon her bell and remember with gratitude and thanks the heroism, courage, and personal sacrifice of Hood's ship's company who died in the service of their country."

If the recovery mission is successful, the bell will be put on display by the National Museums of the Royal Navy (NMRN) and form a major feature of a new exhibition hall dedicated to the 20th and 21st century Navy due to open at the Royal Navy Museum in Portsmouth Historic Dockyard in 2014.

For more information, visit www.bluewater.uk.com.

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NAVO awards Teledyne Benthos \$6M

Teledyne Benthos announced that it has received a major contract from the U.S. Naval Oceanographic Office (NAVO). The 5-year indefinite delivery/indefinite quantity (IDIQ) contract has a total potential value of \$6 million. This contract provides NAVO with ready access to many of the industry's leading oceanographic products available from Teledyne Benthos. The award scope includes core acoustic systems such as acoustic releases, deck boxes, and undersea telemetry/positioning systems. Teledyne Benthos is also pleased to support NAVO and represent its sister company, Teledyne RDI, with the provision of acoustic Doppler current profilers (ADCPs) through this contract. "We are pleased to continue our strong relationship with NAVO and look forward to providing field proven products and exceptional customer service for the next 5 years," said Debbie King, product line manager for acoustic and communication systems at Teledyne.

Pirates raid oil barge off Nigerian coast

Two Nigerian navy sailors were killed and four other foreign crew members were kidnapped in an armed pirate boarding of an oil barge off Nigeria's coast. The ship is owned by The Netherlands-based oil service firm, the Sea Trucks Group. Piracy in Western Africa has been increasing in recent years. The International Maritime Bureau has recorded 17 pirate attacks in Nigerian waters this year.

Moog purchases Tritech

Moog Inc. announced that it has acquired Tritech International Limited. The purchase price is approximately £21 million in cash. Tritech, founded in 1991, is a leading designer and manufacturer of high performance acoustic sensors, sonars, video cameras and mechanical tooling equipment. The company had trailing 12 month revenues of \$19 million. Tritech, located in Aberdeenshire, Scotland, is an industry leader known for supplying equipment for the ROV (Remotely Operated Vehicle) and AUV (Autonomous Underwater Vehicle) markets. This acquisition will be reported as part of the Components Group. Moog Components Group supplies motion and fiber optic products and solutions to marine, medical, industrial, aerospace and defense applications.

CSA Awarded Coral Relocation for New Port Project: Doha, Qatar



CSA International, Inc. (CSA) has been awarded the Hard Coral Relocation and Mitigation Works for the New Port Project in Doha, Qatar under a sub-agreement with Middle East Dredging Company (MEDCO). The massive coral relocation project will be managed by a dedicated project management team based out of CSA's Middle East Division in Qatar.

CSA has completed the benthic site survey within the planned dredging and reclamation footprint and coral recipient areas and is currently developing the coral relocation method statement for removal and transportation of approximately 10,000 hard coral colonies. Concurrently, CSA is designing a constructed reef plan using natural limestone materials and fabricated artificial reef units for the creation of new reef habitat and to provide additional substrate for the reattachment of hard coral colonies. The success of the hard coral relocation and constructed reef efforts will be evaluated through a 3-year monitoring program following standard methodologies and guidelines provided by Qatar's Ministry of Environment.

CSA provides professional, experienced services to assess, enhance, rehabilitate, and monitor marine habitats damaged and/or at risk from proposed actions, accidents, and natural events. Primary objectives of restoration activities include accelerating habitat recovery and reducing liability for lost ecological services associated with natural resource damage. Other CSA projects include biological, geological, chemical, and physical oceanographic data collection; reef and hard bottom surveys; environmental assessments and impact statements; biological impact and compliance monitoring; marine habitat mapping; site clearance surveys; hydro-

graphic and bathymetric surveys; data and literature reviews; various types of permitting; and other environmental services associated with beach restoration, borrow areas, ocean dredged material disposal sites, other dredging studies, and marine mining projects.

For more information, visit www.csaintl.com.

L-3 delivers communication solutions for James Cameron's Deepsea Challenge

L-3 Nautronix and L-3 ELAC Nautik announced the use of their maritime systems equipment to provide unprecedented two-way, reliable communications to the deepest point of the ocean, a part of the Mariana Trench called Challenger Deep. The L-3 systems were used in support of a record-breaking dive conducted by James Cameron in his one-man Deepsea Challenger submarine on 26 March 2012.

The dive was the centerpiece of the Deepsea Challenge expedition, a joint scientific project by James Cameron, the National Geographic Society, and Rolex to conduct deep-ocean research and exploration. Mr. Cameron touched bottom at a depth of 10,898m and stayed there for several hours in order to explore, film, and collect scientific samples. The information collected during the expedition will be included in a National Geographic magazine story as well as a 3-D feature documentary film to be released this winter.

"We are extremely proud to have been part of James Cameron's historic expedition and to have assured reliable communications to the bottom of the ocean," said Paul Roberts, L-3 Nautronix project manager and expedition team member. "This project proves that the possibilities for voice and digital data transfer now have few limitations. The L-3 solution guaranteed the continuous flow of information, allowing Mr. Cameron to immediately transmit the news of his landing on the Trench to the expedition's surface vessels, as well as his wife, and to simultaneously receive their congratulations."

The Mariana Trench is the most remote and isolated place on the planet. To meet the extraordinary demands of the expedition, L-3 was tasked with providing a technical solution that would enable Mr. Cameron and his submarine's systems to remain in contact through voice and digital communications to the surface at all times. L-3's underwater communications solution included the MASQ signaling system

from L-3 Nautronix complemented by the UT 3000 underwater telephone system from L-3 ELAC Nautik.

L-3 Nautronix' MASQ signalling system was developed to provide next-generation, reliable Through Water Communications (TWC) as an underwater SMS-style messaging system operating at speed and depth. L-3 ELAC Nautik's UT 3000 is a premier underwater communications system that combines analogue and digital communication in a single unit. In addition to a telephony and telegraphy mode, the UT 3000 provides unique features, such as its own noise measurement, horizontal distance measurement, and transmission of SOS signals.

Aside from underwater communications, the state-of-the-art L-3 systems supported the monitoring of critical data, including Mr. Cameron's vital signs and the submarine's oxygen and battery levels, depth, speed, and range from the support vessels.

For more information, visit www.elac-nautik.de.

James McFarlane receives Queen Elizabeth II diamond jubilee medal

Dr. James R. McFarlane, OC, CD, P.Eng., FCAE, founder and president of International Submarine Engineering Ltd., received the Queen Elizabeth II Diamond Jubilee Medal on 11 April 2012.

Presented by The Honourable Steven Point, Lieutenant Governor of British Columbia, Dr. McFarlane received his medal at a presentation ceremony held at the HMCS Discovery in Vancouver. The Diamond Jubilee Medal was presented to Dr. McFarlane By Command of Her Majesty The Queen in commemoration of the 60th anniversary of Her Majesty's Accession to the Throne and in recognition of his contributions to Canada.



Dr. McFarlane started ISE in 1974 and has been involved with the design, construction, and operation of manned, tethered, and untethered ROVs as well as subsystems of these vehicles, including manipulators and computer control systems. Since 1974, Dr. McFarlane has been a part of engineering teams that have built over 400 robotic manipulators and over 200 vehicles.

In addition to his Officer of the Order of Canada designation in 1989, Dr. McFarlane has received numerous awards, including *inter alia*, the BC Science Council Award for Industrial Innovation, the BC Science and Engineering Gold Medal, the IEEE Engineer of the Year Award, and the MTS Lifetime Compass Distinguished Achievement Award. In October 2011, he received the Diver Certification Board of Canada's Lifetime Achievement Award for his significant contributions to the underwater industry.

Dr. McFarlane is the author of many papers on submarines, manned submersibles, ROVs, and autonomous underwater vehicles (AUVs). He has also made keynote presentations in Europe,

India, Japan, China, Korea, USA, and Canada. Two notable presentations include the inauguration of the India Chapter of IEEE, Oceanic Engineering Society at the National Institute of Ocean Technology (NIOT) in 2008, and the Institute of Industrial Science at The University of Tokyo in 2010.

McFarlane has served on many boards and committees worldwide and has been a guest speaker at many conferences around the globe. Most recently, he lectured to students and faculty at the Indian Institute of Technology in Chennai, India on submarine design and engineering.

For more information, visit www.ise.bc.ca.

Marine Conservation Institute commends House for passage of bipartisan marine debris bill

On 1 August, the House of Representatives passed the Marine Debris Reauthorization Amendments of 2012 (H.R. 1117), a bill that reauthorizes the existing marine debris program of the National Oceanic and Atmospheric Administration (NOAA).

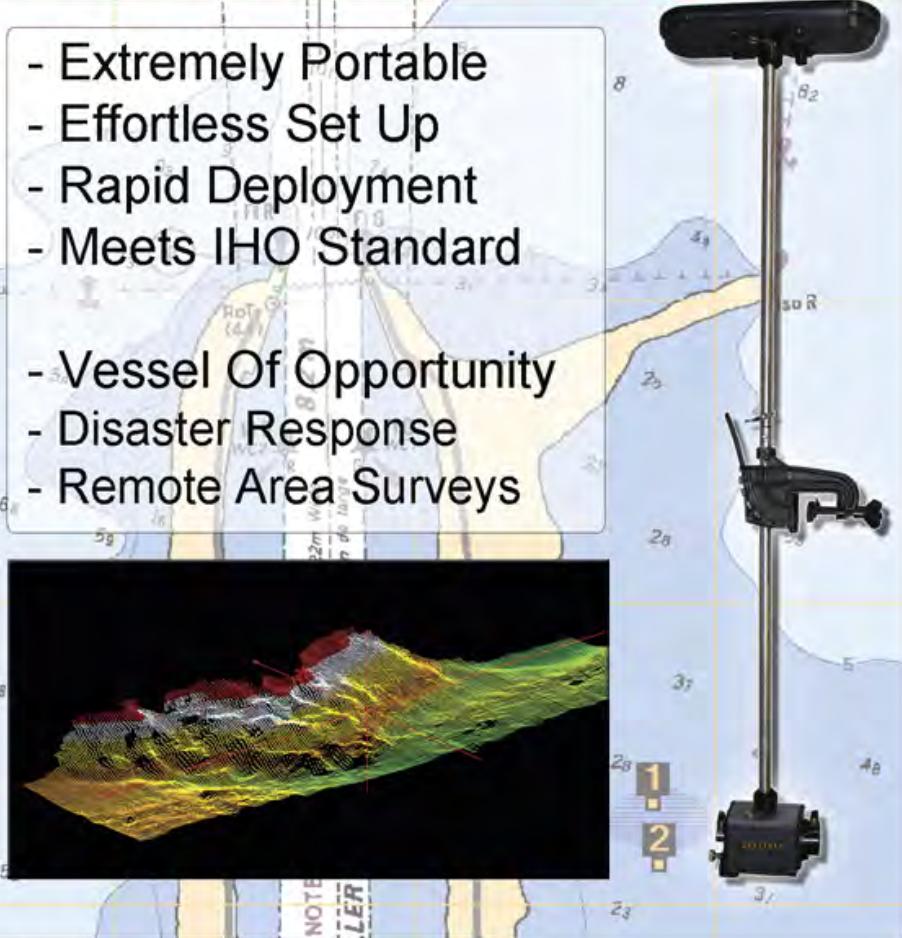
With less than 15 staff, the program seeks to address the adverse impacts of trash in the ocean on marine life, beaches, coastal waterways, and navigation. The bill was introduced by Rep. Sam Farr (D-CA) and initially co-sponsored by Republican Representatives Don Young (R-AK) and Dana Rohrabacher (R-CA). The bill passed the House by a voice vote.

While the bill reauthorizes an existing program, lawmakers, the public, and states have grown increasingly concerned about the daily impact from trash in the ocean and the potential impacts from a pulse of trash swept into the Pacific by the tsunami that hit Japan in 2011. Recently, floatable marine debris from the tsunami has begun to land on American shores, and more is expected. While tsunami debris is a concern, the larger chronic problem is the estimated 14 billion pounds of trash and debris added to the world's oceans each year. The public has become fascinated with stories about the huge garbage gyre in the Pacific near Hawaii that results from this huge input of trash into the oceans.

According to Michael Gravitz, direc-

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tor of policy and legislation at the Marine Conservation Institute, "The House bill is a good small step in dealing with the global marine trash problem that injures and kills sea life, smothers the bottom, litters our beaches, and hurts our economy. The marine debris program can continue to combat ocean trash and study ways to prevent it, but with a small staff and less than \$5 million per year, the program can't produce miracles."

He continued, "Almost every week there is a new scientific report finding bits of plastic somewhere else in our oceans or ingested by sea life. Thousands of marine mammals, including seals, sea birds, and sea turtles, die every year from eating plastic and being entangled in debris. If we want to seriously take on the issue of preventing and reducing marine debris globally and cleaning up from emergencies like the Japanese Tsunami, we'll have to supplement this current bill with a more strategic and well-funded program."

For more information, visit www.marine-conservation.org.

Philip Pilgrim joins Ocean Specialists, Inc.

Ocean Specialists, Inc. (OSI) is pleased to announce the appointment of Philip Pilgrim as Director of Network Systems, Science and Engineering. His expertise will enhance OSI's portfolio of project development and advisory services by strengthening and broadening its array of client services in optical network design; system delivery, system commissioning, and operations; administration and maintenance. In his role, Pilgrim will provide OSI's clients with state-of-the art solutions in submarine cable system networks, adapting the latest technologies that optimize bandwidth, latency, resiliency, and flexibility for our telecom and energy sector customers.

Jim Byous, OSI president, stated, "the submarine network projects we are developing for our customers – particularly in the deepwater oil and gas environment – continue to increase in technical complexity, so the addition of Phil's experience and skill adds considerable strength to our project delivery capabilities. Phil's knowledge of network and equipment solutions will also be a cornerstone for identifying and developing executable business strategies among OSI's commercial telecom networks operator clients."

Prior to joining OSI, Mr. Pilgrim was



employed at Futurewei USA (Huawei) as a Senior Scientific Technologist in their advanced optical networking group where he was responsible for designing advanced terrestrial and submarine optical transport networks. He is a third generation submarine cable system specialist (his great grandfather worked on the cable ship MacKay-Bennett of Titanic fame). He has 21 years of experience in the submarine cable industry, which includes operations of CANTAT-2, TAT-9, CANTAT-3, CANUS, and 360atlantic/Hibernia Atlantic.

For more information, visit www.oceanspecialists.com.

BP-sponsored Gulf of Mexico research initiative awards grants

The Gulf of Mexico Research Initiative, (GoMRI) has announced that it has approved funding for 19 grants that will support studies of the effects of the Deepwater Horizon oil spill on the Gulf of Mexico. Roughly \$20 million will be awarded to these researchers over the next 3 years.

The research proposals being funded were submitted in response to the GoMRI's RFP-II initiative. This program funds research with defined goals within at least one of the following five themes: 1) Physical distribution, dispersion, and dilution of petroleum (oil and gas), its constituents, and associated contaminants under the action of physical oceanographic processes, air-sea interactions, and tropical storms; 2) Chemical evolution and biological degradation of the petroleum/dispersant systems and subsequent interaction with coastal, open-ocean, and deepwater ecosystems; 3) Environmental effects of the petroleum/dispersant system on the seafloor, water column, coastal waters, beach sediments, wetlands, marshes, and organisms and the science of ecosystem recovery; 4) Technology developments for improved response, mitigation, detection, characterization, and remediation associated with oil

spills and gas releases; and 5) Impact of oil spills on public health.

For more information, visit www.gulfresearchinitiative.org.

SeaRobotics teams with private equity group

SeaRobotics Corporation has teamed with a private equity group led by Ocean Investments Capital to fund the expansion of the company's core business, including the production of Unmanned Surface Vessels (USVs), the commercialization of its Robotic Hull Cleaning systems, and the development of new product lines in the ocean sciences and survey markets.

SeaRobotics is a leader in the development and production of USVs, ranging from small river survey systems to 10-m USVs capable of long-duration cruises in the open ocean. "The partnership with the private equity group gives SeaRobotics the capital to further refine our standard product line of USVs, but more importantly, the opportunity to commercialize the development projects we've had in process for years in the area of Ship Hull Cleaning," explained Don Darling, president of SeaRobotics.

SeaRobotics specializes in small, smart vessels that are remotely or autonomously operated. Its clients include major military and commercial organizations, both U.S. and foreign. SeaRobotics' seasoned marine survey software interfaces with most data acquisition hardware, software, and sensing systems to produce multi-spectral, DGPS-stamped data for survey, research, or surveillance efforts. Applications for SeaRobotics vessels range from bathymetric and hydrographic surveys to coastal, harbor, and riverine surveillance.

Many SeaRobotics vessels are small, modular, and man-portable, allowing rapid deployment in remote areas or deployment by larger vessels, and its command and control systems are user-friendly and compact, allowing backpack mobilization.

For more information, visit www.searobotics.com.



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Global freight volumes remain stagnant

The latest global freight data collected by the International Transport Forum at the OECD through March 2012 highlight concerns over possible decline in the EU-27. Total external trade by sea (in tonnes) remains stagnant below pre-crisis levels in the EU-27 and the U.S. (-5% and -6%), according to seasonally adjusted preliminary estimates of goods carried until March 2012. Within the EU-27, the German economy shows resistance towards an otherwise stagnating trend. Total trade by sea grew throughout the crisis and is now 12% above the pre-crisis level. In contrast, trade by sea in France and the UK remain below the pre-crisis peaks. Overall, advanced economies' weak domestic demand is reflected in import figures that have remained below pre-crisis levels, with the exception of Germany.

IMCA's new guidance on mooring practice

Ships enter and leave ports regularly. Tying up a ship when alongside a berth or another vessel is potentially a very hazardous operation, unless simple and effective safety procedures are followed. "Mooring Practice Safety Guidance for Offshore Vessels When Alongside in Ports and Harbours" (IMCA SEL 029/M 214), the latest publication from the International Marine Contractors Association (IMCA), is designed to ensure safe mooring with zero incidents. The new guidance has easy-to-follow sections on the following: planning the operation; who is in charge?; communication; personal protective equipment; danger zones; condition of mooring lines; hazards; environmental conditions; vessels assisting; quay access; and mooring equipment. Like all IMCA guidance, it is available for free downloading from the IMCA website for members and non-members alike.

Ingalls Shipbuilding graduates 295 from its Gulf Coast Apprentice School

Huntington Ingalls Industries held graduation ceremonies for graduates of Ingalls Shipbuilding's Apprentice School. The ceremony, held at the Biloxi Civic Center, included 295 students from crafts representing shipbuilders from Pascagoula, and Gulfport, Mississippi and Avondale, Louisiana sites. Two Outstanding Apprentices of the Year were honored and spoke to the graduating apprentices on behalf of the class: marine electrician Troy Glaviana from Avondale, and carpenter Richard Fairley from Pascagoula. Mississippi Governor Phil Bryant delivered the keynote address and spoke directly to the graduates, saying, "I believe it is the Navy that keeps our country, in fact, the world safe. It is the work you graduates do here at Ingalls that prevents the loss of lives. It is our Navy and those young men and women on those ships you will build that will defend democracy and liberty around the world."

N-Sea expands: Exploring the North Sea with the Toisa Conqueror

Following successful Winter Diving and Spring Survey/IMR campaigns, N-Sea expands its fleet and is proud to announce the inclusion of the ROV survey support vessel Toisa Conqueror. The Toisa Conqueror, built (2001) by Appledore Shipbuilders in the UK, is a 74m DP2 vessel complemented by N-Sea's modular Work & Inspection Class ROV-based IMR and Diving spreads and was deployed on its first project at the end of July. This season, the vessel will conduct diving and ROV-based inspection operations for multiple major clients in both the oil and gas and renewable markets.

Arctic offshore vessel to be delivered from Arctech



Arctech will finalize the Arctic offshore supply vessel Vitus Bering 4 months in advance. The vessel will be delivered 18 December 2012. Initially, the vessel was to be delivered in April 2013.

Arctech Helsinki Shipyard, a joint-venture that is 50/50 owned by STX Finland and United Shipbuilding Corporation, is building two identical offshore ice-breaking supply vessels for Russia's largest shipping group Sovcomflot (SCF Group), the leading company in the world specializing in ice-management and shipping in harsh environments. The vessels will supply Exxon Neftegas Limited's platform in Arkutun-Dagi oil and gas field in Sakhalin area, Far East Russia. The development of the field is proceeding at a good pace, which is why the ice-breaking offshore supply vessels are needed in the area.

The main task of Arctic offshore vessels is to supply the oil and gas production platform and to protect it from the ice. Both vessels measure 99.9m in length and 21.7m in breadth. Their four engines have the total power of 18,000kW and the propulsion power of 13,000kW. These vessels have been designed for extreme environmental conditions, they will be operating in thick drifting ice in temperatures as cold as -35°C. The icebreaking capability of the vessels is extremely high; they are able to operate independently in 1.7m thick ice. As multi-purpose vessels, they are capable of carrying various types of cargo and are equipped for oil combating, fire fighting, and rescue operations.

"Vitus Bering and her sister vessel are great examples of Finnish shipbuilding. Modern design and long-term shipbuilding experience are combined in these projects. The finalizing of the vessels 4 months in advance has required excellent cooperation and team spirit. I'm sure that Vitus Bering and her sister vessel are a good start for prospective projects, with participation of Russian United Shipbuilding Corporation and Sovcomflot for future work in the Russian Arctic," comments Esko Mustamäki, the Managing Director of Arctech Helsinki Shipyard.

For more information, visit www.arctech.fi.

Austal officially opens module manufacturing facility in Mobile

On 6 July, a little more than a year after a memorable groundbreaking ceremony was held for new construction at Austal's Mobile, Alabama shipbuilding facility, over 120 distinguished guests joined Austal in celebrating the official opening of not one but three new buildings – Module Manufacturing Facility (MMF) Phase 2, Assembly Bay 5, and the Office Complex - with a ribbon cutting ceremony.

The ceremony was led by Austal USA's interim president and chief financial officer, Brian Leathers.

Located at the intersection of Dunlap Drive and AddSCO Road, the completed MMF project includes 17 acres of manufacturing space, 85,000sq.ft (7,900sq.m) of drive-through warehouse space for efficient receipt and distribution of materials from Austal's suppliers, and 60,000 sq.ft (5,575sq.m) of office space. The MMF expansion can accommodate a total workforce of up to 1,200 personnel in the new buildings. The completion of MMF Phase 2 now makes the MMF large enough to fit all the football play-

ing fields of the Southeastern Conference (SEC), including end zones, inside. It is a mirror image of Phase 1, but the designers of Phase 2 took into consideration arrangement lessons-learned and included additional cranes for increased lifting capacity and static construction space for longer construction duration items not conforming to standard assembly line times.

For more information, visit www.austal.com.

Island Offshore renews Veripos positioning contract

Island Offshore, leading supplier of ship-borne marine services to the world offshore industry, has awarded Veripos a further 3-year contract for continuing provision of precision GNSS positioning services for 16 DP vessels in addition to another 6 due to begin service in the near future. The new agreement extends the working arrangement between the two companies, which first began in 2007.

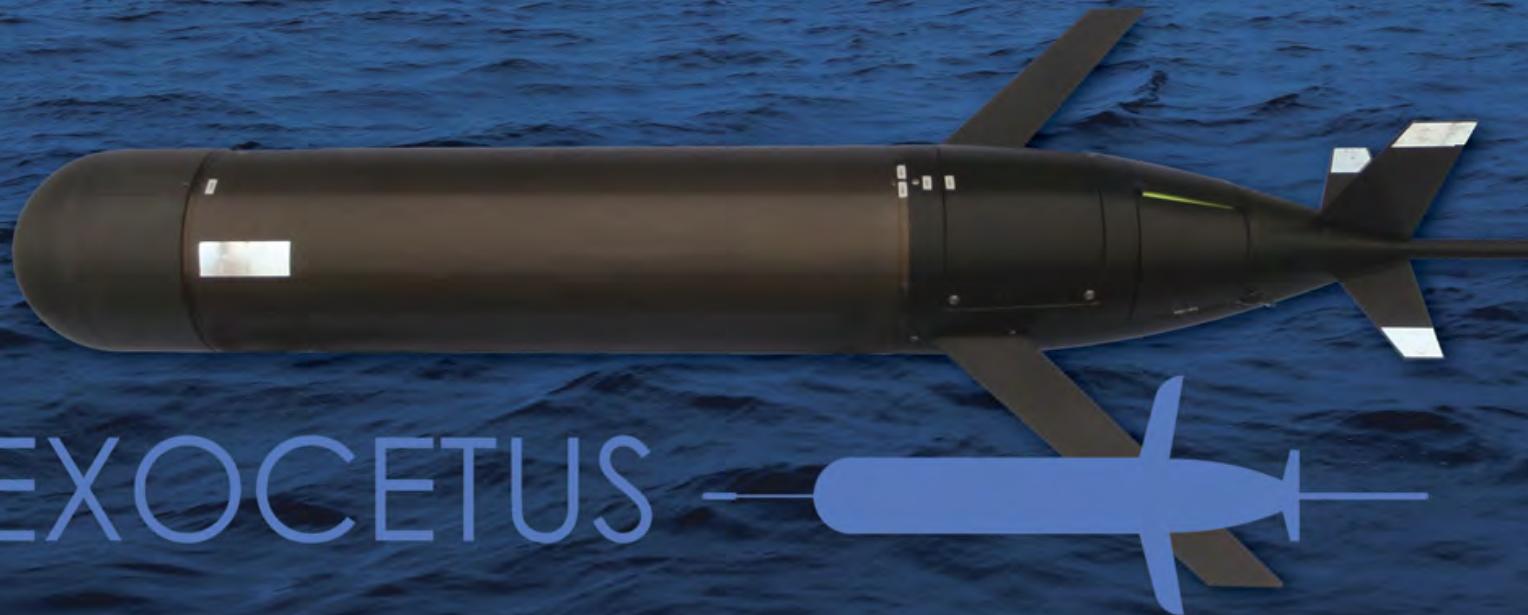
All the vessels are being supplied with Veripos's latest Apex2 precise point positioning service using both

GPS and Glonass networks as well a combination of its Apex, Ultra, and Standard services providing continuous GPS-derived augmentation accuracies of the order of 10cm.

An acknowledged leader in the development and supply of high-precision GNSS positioning facilities and equipment to the global offshore industry, Veripos maintains a worldwide operational presence supported by two fully-redundant network control centres in Aberdeen and Singapore, six regional offices, and over 80 strategically-sited reference stations. It recently acquired independent fiscal status with a listing on Oslo's Stock Exchange, Oslo Børs.

Island Offshore is one of Europe's principal suppliers of marine operations, providing a wide range of services to major offshore operators covering logistics and supply, anchor handling, and subsea and riserless well intervention (RLWI). With bases in Stavanger, Ulsteinvik, and Aberdeen, the company presently maintains a fleet of over 20 specialist support vessels.

For more information, visit www.islandoffshore.com.

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exactEarth announces successful launch of EV-1 satellite with advanced AIS detection payload

exactEarth Ltd., a leading provider of satellite AIS data services, announced the successful launch of the exactView 1 (EV-1) satellite aboard a Soyuz launch vehicle. EV-1 is carrying an advanced, second-generation AIS detection payload that is expected to significantly enhance vessel detection and tracking performance, especially in areas of denser shipping traffic. The satellite and payload will be commissioned over the next 3 months, after which the satellite will be put into operational service. EV-1 will utilize high-speed S-band and C-band communications to frequently downlink information to ground stations in Svalbard, Norway; Guildford, UK; and several other locations around the world.

The polar-orbiting spacecraft was built under contract for exactEarth and is the fifth deployed satellite in the exactView vessel monitoring satellite constellation. COM DEV Canada acted as prime contractor, and COM DEV

Europe (UK) supplied the advanced AIS transceiver payload system for this mission. SSTL(UK) manufactured the satellite bus and brokered the launch arrangements. The planned exactEarth satellite constellation will consist of six polar orbiting satellites designed to provide hourly updates of global vessel positions.

"Today's launch marks another important step in the ongoing expansion of our global vessel monitoring service," said Peter Mabson, president of exactEarth. "This launch helps ensure that exactEarth will continue to provide the world's most comprehensive and high-performance satellite-based AIS service for years to come."

Bordelon Marine announces expected delivery of first of three 252 Stingray class DP2 vessels

Bordelon Marine Inc. announces the expected delivery of the first of three vessels from the new Stingray class series 252ft DP2 PSV and MPSV. All of the vessels will be built at the Bordelon Marine Shipyard in Houma, Louisiana. The expected delivery of the



first vessel, the M/V Connor Bordelon, is January 2013.

"We are very excited to introduce the new Stingray DP-2 PSV and MPSV series. The Stingray is a prototype design that incorporates a number of cutting edge features and capabilities, only commonly found in much larger new generation vessels. The concept here is to give our clients a more affordable MPSV or light IMR/ROV support vessel option," said president / ceo Wes Bordelon.

For more information, visit www.bordelonmarine.com.

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The ORCA KILROY Environmental Observation System

By Ocean Research and Conservation Association

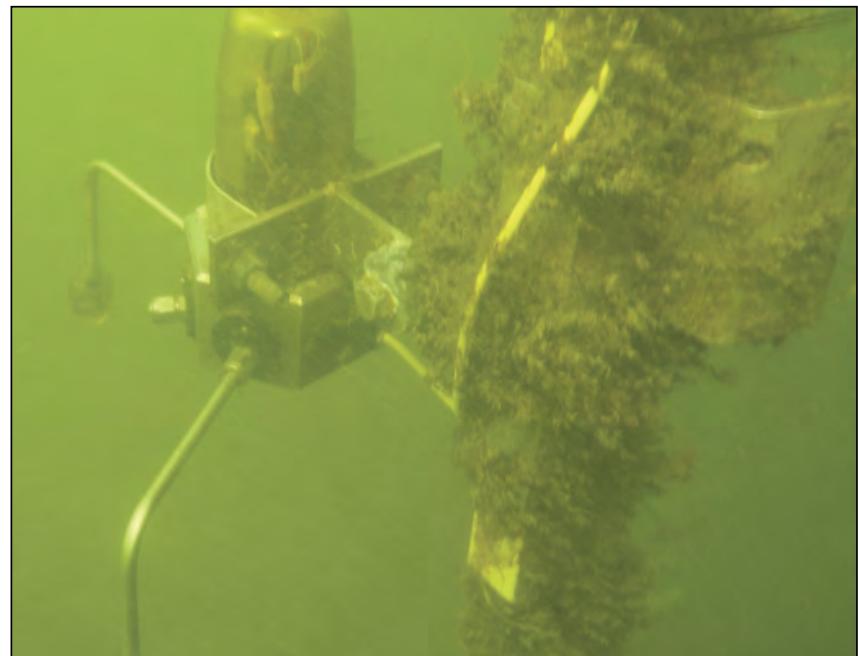
In order to address marine habitat degradation on a national and international scale, we, as a society, need to bring marine ecosystem monitoring into the 21st century with ocean observing systems that supply continuous data rather than depending on sporadic sampling necessitated by hand collections. To address these challenges, the Ocean Research & Conservation Association (ORCA) has developed a wireless network of low-cost sensors, called Kilroys, made accessible via the Internet using recently developed mapping tools designed to make the abstract obvious. Because the Kilroys are low-cost and wireless, we believe they will greatly accelerate coastal monitoring efforts otherwise hindered by the high costs, engineering challenges, and bureaucratic roadblocks associated with cabled systems.

Produced with support from the State of Florida, the Office of Naval Research, and private funding sources, this innovative technology constitutes a new class of instrument, which is integrated at the component level to minimize costs. Each Kilroy network notes GPS position; measures conductivity, temperature, water level, significant wave height, wave period, flow speed and direction, turbidity, and bioluminescence; and can be networked to remote access water samplers programmed for adaptive sampling – all of which allows assessment of marine habitat quality.

The Kilroys utilize sophisticated technology developed for the mass consumer-market (both telecommunications and computer industries) to produce a wireless, temporally synchronous, spatially amorphous network that is accessible, in real time, via the Internet. Kilroy networks are ideally suited to monitoring large, spatially and temporally complex marine ecosystems. Seven Kilroy sensors are currently installed in the Indian River Lagoon on the east coast of Florida and are reporting data in realtime to a web interface.

Data from ORCA's Kilroy network is fed into a remote geospatial database through a SOAP web services interface in near real-time (with up to 1/2 hour latency). An accessible website is driven by the database, with icons representing the locations of the most recent measurements overlaid on a Google Maps satellite image of the region. The latest measurements from the Kilroy network are accessed by moving over or clicking on the corresponding location icon. Quality checked data archives from the database from all of the sensors at requested locations will be made available for purchase by interested parties at as low a price as possible.

ORCA will make the details of the sensor string hardware interface available to collaborating scientists, so that they may make use of the Kilroy network infrastructure for simultaneous deployment of their own sensor systems. To simplify the addition of other commercially available sensors to the network, ORCA engineers have developed a buffered, addressable serial port interface for use on the network. This device will allow any self-powered sensor to function remotely on the Kilroy network, provided the device is tolerant of latencies of several seconds as are common on cellular networks. Collaborating sci-



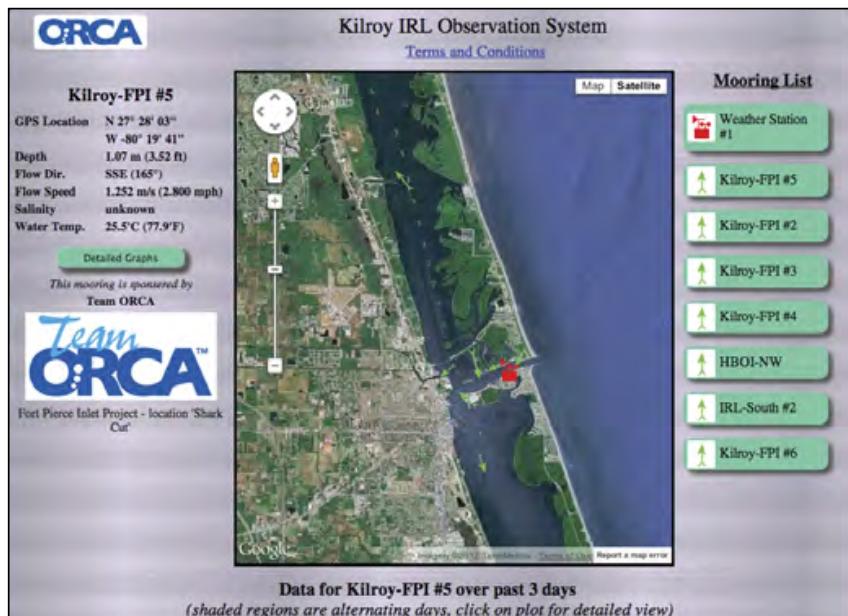
Photograph of a typical remote Kilroy system installation showing the Kilroy sensor suite attached to a dock piling underwater (below), cabled to Kilroy's Voice telemetry/power box above-water (top) and a 20W solar panel (at the top of the piling), which keeps the reserve battery charged.

tists will be expected to make their own most recent measurements freely available over ORCA's web interface.

To provide an intuitive geospatial representation of biological and physical measurements made from multiple sensors in the wireless sensor array, ORCA has developed a database that separates scientific, maintenance/operations, and manufacturing data and in which systems are uniquely identified based on position on named sensor strings, thereby allowing systems to be moved spatially with no affect on web presentation of data and facilitating regional deployments.

Data are presented using transparent Adobe Flash layers overlaid on Google Maps, which requires no software instal-

Environmental Monitoring



Wireless network data screen showing Google Map satellite view of the Fort Pierce Inlet, which is part of the Indian River Lagoon, Florida. Icons representing Kilroy installations are displayed as arrows in the directions of the most recently measured flow, and arrow length is proportional to flow speed. Clicking on an icon displays data on the left-hand side of the screen, shown as data collection date, latitude, longitude, depth, temperature, inductor counts, wave height, wave period, salinity, turbidity, flow, magnitude, flow direction, battery voltage, and speed of sound.

lation on the user's computer – an important distinction for making the data accessible to a wide range of users. Icons, representing each Kilroy installation, are located based on GPS coordinates telemetered by the communications module. Icons point in the direction of the most recently measured flow. Moving the mouse over an icon retrieves the most recent measurements for the corresponding sensor package from the database. In the next generation of this display software, (currently in development), interpolation between Kilroys will be used to create semi-transparent maps of environmental variables that will be overlaid on the Google Map's satellite imagery. The goal is to eventually create a color-coded water quality index, similar to the synoptic view provided by weather maps.

About ORCA

In 2005, Edie Widder, Ph.D., co-founded ORCA in Fort Pierce, Florida, with a focus on developing innovative technologies to protect and restore aquatic ecosystems and the species they sustain.

Housed in the historic Coast Guard station in Fort Pierce, Florida, ORCA's main campus is home to ORCA's corporate offices and the ORCA FAST and Sentinel offices and laboratory. ORCA's engineering facilities are located in Satellite Beach, Florida and Mansfield, Massachusetts.

Since its inception, Dr. Widder and the ORCA team of engineers, research scientists, and marine biologists have achieved exciting progress in using the latest technologies to develop low-cost solutions for analysis of our polluted waterways.

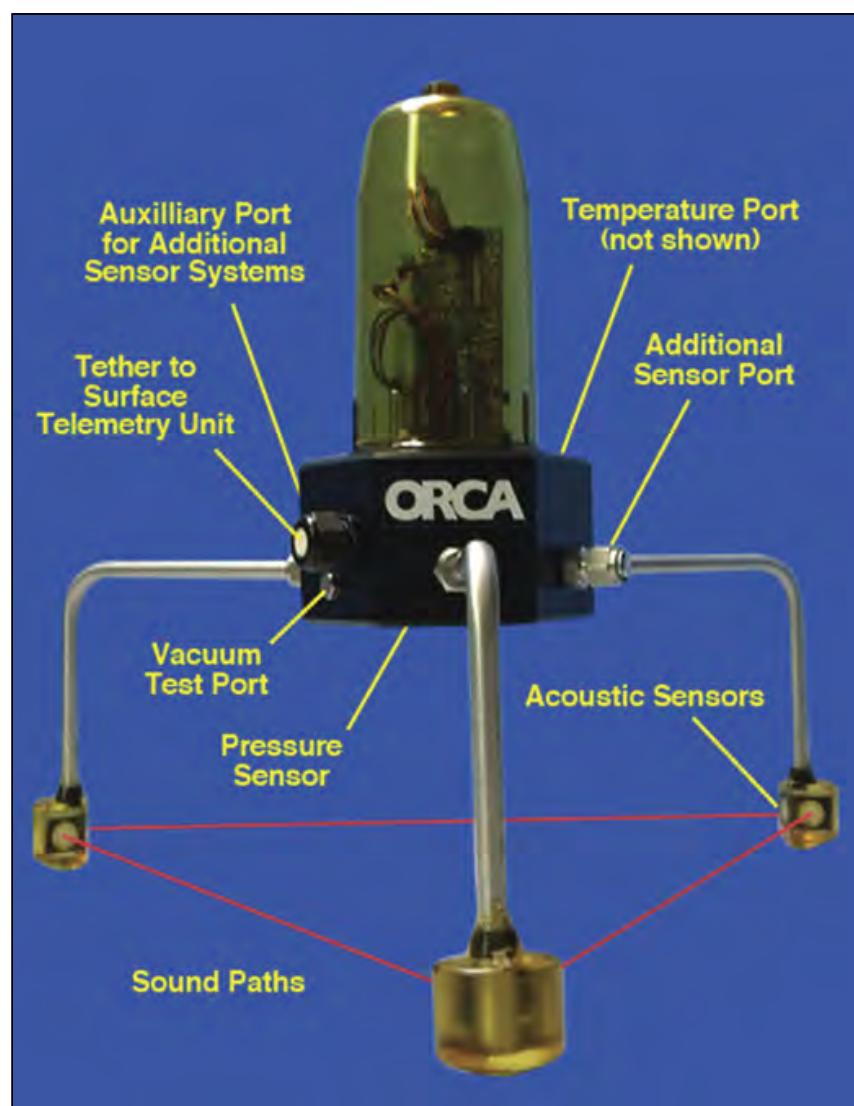
Among the programs currently underway at ORCA, the ORCA Kilroy, the ORCA Fast Assessment of Sediment Toxicity (FAST), and the ORCA Sentinel programs provide

information on water characteristics and toxicity that, when combined, can be used to determine sources of non-point source pollution in coastal and estuary waters.

In addition to coastal and estuary conservation, ORCA's Deep Sea Conservation programs utilize current technology to provide real-time and video footage of deep ocean life and conditions. The ORCA Eye In The Sea is a real-time camera system streaming continuous video to shore for months at a time while the ORCA Medusa is a deployable camera system capable of recording up to 72hrs of continuous video at depths up to 2,000m.

By combining innovative technology and applied science, ORCA is leading the way in protection and conservation of our valuable coast, estuaries, and oceans – saving these precious habitats for the generations of tomorrow.

For more information, visit www.teamorca.org.



Photograph of the Kilroy sensor suite for coastal monitoring. Electronic circuitry is housed in an off-the-shelf filter housing good to a depth of 20m. The cable exiting from the base of the housing is a tether to the surface, which connects to Kilroy's Voice telemetry system. The auxiliary ports, also on the base of the housing, connects to additional sensors such as the bathyphotometer, the turbidity sensor or another Kilroy sensor suite. Sensors can also be connected together as a sensor string. Branching out from the base of the housing are the temperature sensor and an additional sensor port. Beneath these, triangular array of acoustic transmitters and receivers measure flow speed and flow direction.

Federal, State, UAF scientists team up for major marine ecosystem survey in Arctic Seas

A team of marine scientists from the University of Alaska Fairbanks and Federal, and State agencies is heading to the Arctic to begin the first comprehensive oceanographic and fisheries survey of the Chukchi Sea. The first of two vessels being used for the survey departed August 6 from Dutch Harbor, Alaska. It's the first survey that will sample all major components of the marine ecosystem at the same time throughout U.S. waters of the northern Bering Sea and Chukchi Sea. It covers the entire eastern Chukchi Sea shelf, with sampling in offshore waters at least 50ft deep from south of Hooper Bay to north of Barrow (61 to 73 degrees latitude). The primary purpose of the survey is to gather scientific data needed to avoid or mitigate effects of potential future offshore oil and gas development projects on arctic marine life. The information will provide the scientific underpinning to help guide future responsible economic development activities in the Arctic region, including possible transportation and fisheries opportunities. It will also help determine potential impacts of climate change on Arctic marine ecosystems.

Coastline Surveys completes short lead time vibrocoring campaign

Coastline has successfully completed a marine geotechnical sampling campaign on behalf of a major client in the southern North Sea area. The site work was carried out utilising the multirole geotechnical vessel MV FlatHolm and comprised 66 locations. The C-COREHP vibrocoring unit was configured for both 5m and 6m operations. The vibrocoring unit was also equipped with a real-time penetration monitoring system developed in-house to both improve sampling efficiency and minimise sample disturbance, thus improving quality of the core sample obtained. All core recoveries were greater than 90%, with a total of 314m acquired onboard. The work was completed inside 5 days, port-to-port with the vessel remaining on site overnight to maximize a short period of good weather - resulting in no weather downtime costs to the Client. Acquisition to report delivery was completed within 4 weeks.

Kongsberg to head up a major Norwegian consortium with DNV and IBM to develop integrated environmental monitoring system

In order to reduce the environmental risks from oil and gas operations, a consortium consisting of KONGSBERG, IBM, and DNV will now develop a real-time environmental monitoring solution together with their client Statoil. The 150MNOK project is led by KONGSBERG and will use integrated technology to create a step change for the operators' access and operational usage of environmental data. On behalf of the consortium, KONGSBERG has been awarded a contract by the Statoil Research and Development Center in Trondheim for developing an Integrated Environmental Monitoring System. The project value of 150MNOK includes Statoil's project work and cash contribution and the consortium's contribution. The contract period is 3 years ending with a solution ready for pilot implementation at an operational asset. The project is part of Statoil's "New Energy and HSE" R&D program. KONGSBERG has formed a consortium with four members with a unique technology base to fulfil the project scope. The consortium is led by Kongsberg Oil & Gas Technologies and includes Kongsberg Maritime Subsea who provides the sensor and communication technologies, IBM who provides the information integration and business analytics technology, and DNV who provides the marine environmental analytics and risk management practices. Statoil will have an active role in the project contributing with domain knowledge within offshore oil and gas operations.

Joint BOEM, NOAA, USGS mission discovers record depth for *Lophelia* coral on GoM platforms



On a 10-day expedition in the Gulf of Mexico, a team of Federal and university scientists has discovered *Lophelia* coral growing deeper than previously seen anywhere in the Gulf. Newly available information on *Lophelia* growth rate and conditions will inform future environmental review and decision-making for the protection of deep-water coral habitats.

The overall goal of the mission, which left Freeport, Texas on 14 July and returned to Pensacola, Florida on 24 July, was to examine coral ecosystems and related habitats that developed over several decades on or near actively producing deep-ocean oil and gas production platforms. Undersea structures supporting energy production platforms provide some of the scarce hard surfaces in the Gulf where *Lophelia pertusa*, a deep cold-water coral that lives where there is no sunlight, can grow.

Scientists imaged corals in both high-definition video and still photography and also took samples for DNA sequencing to better understand the biology, growth, and distribution of deep-sea corals. Through cameras on a remotely operated vehicle used to survey coral growth on oil and gas platforms, scientists observed *Lophelia* coral at a depth of 2,620ft (799m) on undersea structures supporting the Ram Powell platform, which was built in 1997 and is one of the deepest platforms in the Gulf. The previous record depth for *Lophelia* in the Gulf was about 2,066ft (630m). Scientists also visited four other deepwater platforms.

The expedition included scientists and technicians from BOEM, the National Oceanic and Atmospheric Administration (NOAA) Office of Ocean Exploration and Research, and the U.S. Geological Survey (USGS) operating jointly under the National Oceanographic Partnership Program, which fosters the use of pooled Federal resources such as funding, ships, equipment, and personnel to best meet agency and national priorities in ocean stewardship. Scientists from Temple, Pennsylvania State, and Florida State Universities were an integral part of the team.

For more information, visit www.noaanews.noaa.gov.

Chevron selects BMT for Big Foot EFMS

Chevron U.S.A. Inc. has awarded a contract to BMT Scientific Marine Services Inc (BMT) to provide an Environmental and Facilities Monitoring System (EFMS) for the Chevron-operated Big Foot Tension Leg Platform (TLP) in the Gulf of Mexico.

The EFMS monitors, logs, and displays data in real-time on the local environment and facility motions. It archives the data for assessing the TLP's integrity over time and interfaces with the facility's other platform control systems. The EFMS is comprised of a computer console, topside and subsea remote sensor packages, BMT's proprietary data acquisition system, and custom user display screens.

The Big Foot EFMS will measure factors such as wind speed and direction, platform position, wave frequency and high-frequency platform motions, air gap, surface currents, and draft.

BMT provides innovative integrity monitoring systems for a wide range of floating offshore oil facilities, including their subsea risers and mooring systems.



BMT delivers custom-engineered products from design through procurement, assembly, installation, and aftermarket service. In addition, BMT deploys temporary monitoring systems for performance assessment, acceptance trials, and forensic investigations. In combination with extensive monitoring system experience, BMT provides data management and technical analysis of data acquired by the various permanent and temporary integrated marine and structural integrity systems.

BMT has an excellent track record in supplying more than 60 major Platform Integrity Monitoring Systems to operators in the Gulf of Mexico, off-

shore West Africa, Brazil, and Malaysia. The company has previously provided EFMS to four of Chevron's Gulf of Mexico Floating Production Units (Genesis, Tahiti, Blind Faith, and Jack & St. Malo).

For more information, visit www.bmt.org.

Massive seafloor photograph taken by Autosub6000

The most detailed photographic survey of the abyssal ocean floor has been taken by the National Oceanography Centre's robot submarine, Autosub6000 – some half a million photos that will be stitched together to form a "street view" map of the North Atlantic's Porcupine Abyssal Plain and its inhabitants.

Forward and down-facing cameras mounted on the unmanned robot submarine have provided continuous images of an area some 12mi long by 4mi wide (20km by 7km), covering an area about the size of city such as Southampton, but 3mi underwater (around 4,850m).

The Porcupine Abyssal Plain is just off the coastal shelf some 350mi south-

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Credit: National Oceanography Centre

west of Lands End. Although its name might suggest that it is flat, the plain does have hills. This “landscape scale” photo will give scientists a wealth of information about the communities and how they change with the different terrains. Coupled with advanced acoustic mapping and samples taken of the ocean floor, the team of scientists led by Dr. Henry Ruhl will have a complete picture of what lives at, on, and in the ocean floor.

“We want to learn how communities might differ between abyssal hills and flat areas, which is similar to understanding how communities of animals might change as one moves from a valley to the summit of a mountain. On land, it is easy

to confirm on the ground what we can see from satellite photographs, but this is far harder in the deep-sea because we can’t see through the water using light. Even though it’s difficult to make measurements there, abyssal habitats cover more than half the surface of Earth.

“The benefit of using Autosub6000 for collecting photos of the seafloor is that it can cover vast stretches of the seabed quickly while collecting a huge number of photos, along with other data about the environment.”

For more information, visit noc.ac.uk.

New study helps predict impact of ocean acidification on shellfish

An international study to understand and predict the likely impact of ocean acidification on shellfish and other marine organisms living in seas from the tropics to the poles has been published in the journal *Global Change Biology*.

Ocean acidification is occurring because some of the increased carbon dioxide humans are adding to the atmosphere dissolves in the ocean and reacts with water to produce an acid.

The results suggest that increased acidity is affecting the size and weight of shells and skeletons, and the trend is widespread across marine species. These animals are an important food source for marine predators, such as tropical seabirds and seals, as well as being a valuable ingredient in human food production. Consequently, these changes are likely to affect humans and the ocean’s large animals.

UK scientists from the British Antarctic Survey (BAS) and the National Oceanography Centre (NOC), together with colleagues from Australia’s James Cook and Melbourne Universities and the National University of Singapore, investigated the natural variation in shell thickness and skeletal size in four types of marine creatures living in 12 different environments from the tropics to the Polar regions. Their aim was to get a clearer understanding of similarities and differences between species and to make better predictions of how these animals might respond to increasing acidity in the oceans.

For more information, visit www.nerc.ac.uk.

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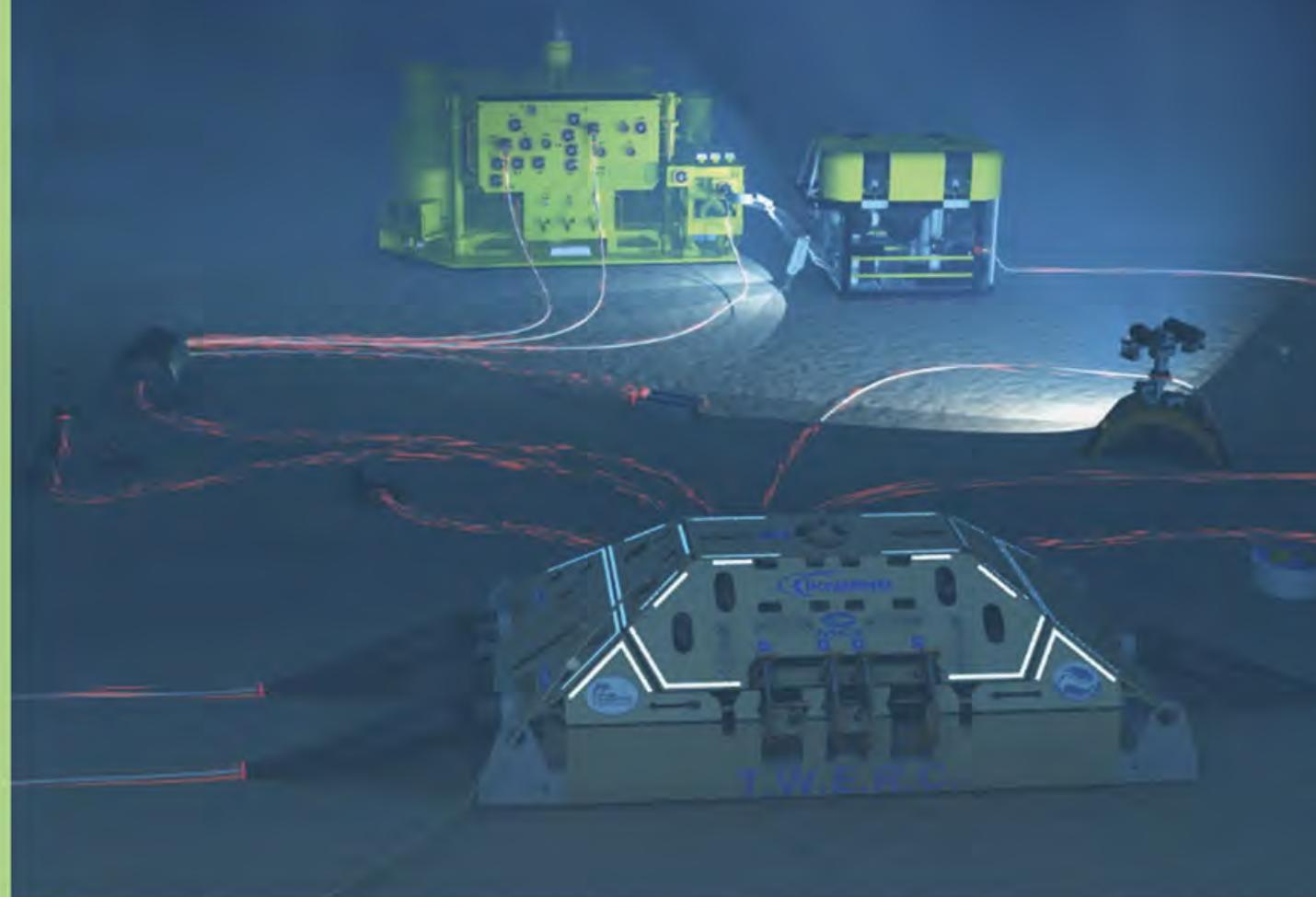
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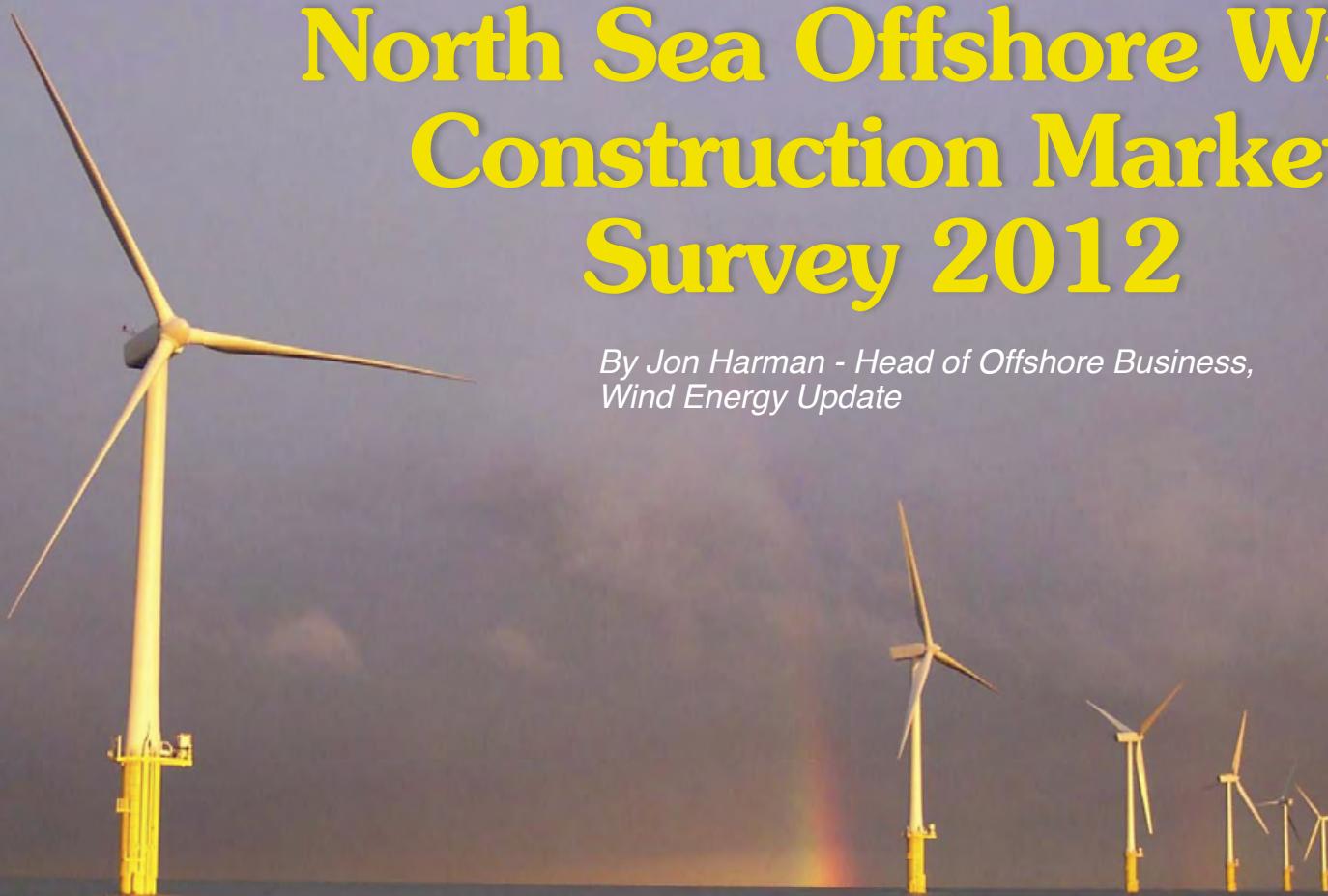
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- Pipeline and infrastructure security monitoring

North Sea Offshore Wind Construction Market Survey 2012

By Jon Harman - Head of Offshore Business,
Wind Energy Update



Roughly 90% of global offshore wind capacity comes from Europe, with the UK, Denmark, the Netherlands, and Germany at the forefront.

Developments progressed slower in 2011 than in 2010, with only 788.1MW of additional offshore wind capacity installed as opposed to 1139.9MW in 2010 – leading to a total capacity of 3820.1MW.

The projects adding to this include the Walney I, Walney II, Ormonde, and Sheringham Shoal Wind Farms all located in UK waters; the German projects Bard 1 and Baltic 1; the Danish Avedore site; and the Portuguese Windfloat floating turbine.

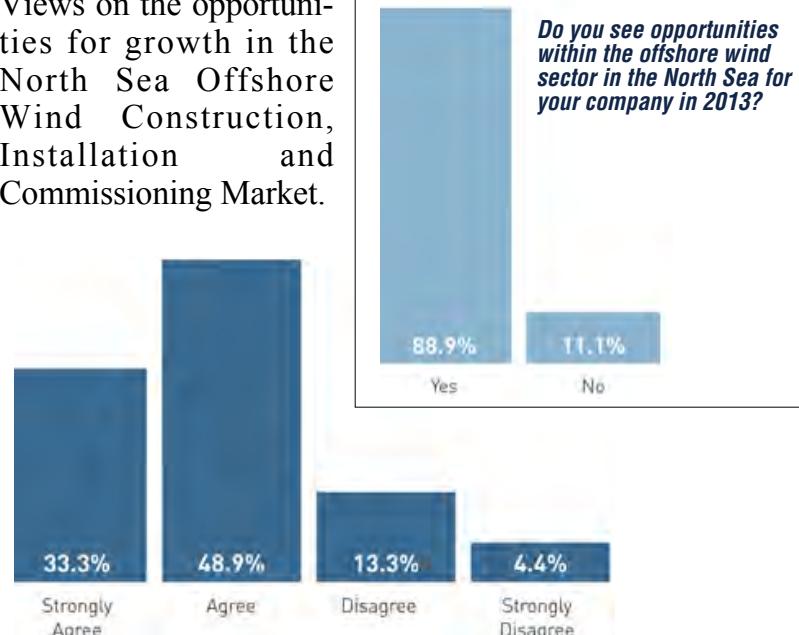
Preparations also began back in 2011 for the construction of nine other wind farms, seven of which are located off Germany and two off the UK coast.

It is well known that the North Sea and the Baltics provide excellent conditions for offshore wind projects, and Europe is far advanced in providing government incentives to the industry. However, with the lack of grid access and projects moving further from shore and into deeper water, the offshore wind market here presents large liabilities for developers but a potentially lucrative market for contractors.

After interviewing over 100 offshore wind experts working in the North Sea and surrounding oceans, Wind Energy Update has collated the results to give the industry the latest market data.

In conjunction with the 4th Annual Offshore Wind Construction, Installation and Commissioning Conference (20 to 22 November, Hamburg), these data, will give you insight from both a utilities' and a contractors perspective to help you to understand the challenges being faced and the potential for growth in this expanding region.

Views on the opportunities for growth in the North Sea Offshore Wind Construction, Installation and Commissioning Market.



I foresee offshore wind as being a large part of my company's business in 5 years time?

The above projections show that in the next 5 years – despite not all of the planned offshore wind projects in the North Sea commencing – companies are gearing up for movement in the region and see it as playing a significant part of their company's business moving forward, including those who are heavily involved in the UK round 2.5 and 3 offshore wind market.

Offshore Wind Survey

Who was surveyed?

Wind Energy Update took a cross section of the industry to ensure a fair forecast of industry movements and developments in the North Sea region. The survey was completed by companies working in key offshore wind hotspots around the globe with developments in the North Sea / European region.

In which country are you based?



Finland	2%
Spain	5%
Switzerland	2%
India	2%
Taiwan	2%
Denmark	5%
USA & Canada	9%

Poland	2%
Ireland	5%
Greece	2%
Germany	16%
The Netherlands	11%
UK	33%
France	4%



Project Management	11.1%
Engineering	15.6%
Operations	4.4%
Business Development/Sales	24.4%
Marketing	4.4%
Insurance	2.2%
Legal	2.2%
Research & Development	13.3%
Strategy	4.4%
Other	17.8%

Utility / Ipp	6.7%
Turbine Manufacturer / OEM	8.9%
Other Manufacturer	4.4%
EPC / Installation Contractor	11.1%
Consultancy	17.8%
Heavy Lift / Vessels / Barges	0.0%
Survey / Inspection	2.2%
Ports & Harbours	0.0%
Shipyard	4.4%
Government / Association	4.4%
Other	40.0%

Geographical growth areas

From the results of the people surveyed, the major growth areas are assumed to be in the U.K. and Germany.

Which country do you see as the biggest growth region within Europe for offshore wind in the next few years?

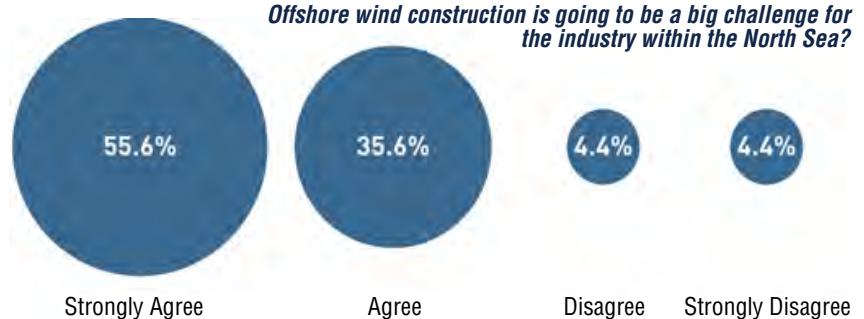


Denmark	4.3%
Ireland	4.4%
UK	8.9%
Netherlands	2.2%
Germany	40.0%
France	0.0%
Spain	0.0%
Portugal	0.0%
Belgium	0.0%
Norway	0.0%

North Sea offshore wind challenges

The results show that many industry experts believe that constructing offshore wind projects in the North Sea is going to be a real challenge for the industry. With company preparations for North Sea offshore wind projects ramping up, the need for answers on the offshore grid, financing and robust training programs in the region are apparent.

Offshore wind construction is going to be a big challenge for the industry within the North Sea?



How well are you prepared for the upcoming farshore, deep water offshore projects within your company?



What do you see as being the biggest challenge when moving forward with offshore projects in the North Sea?



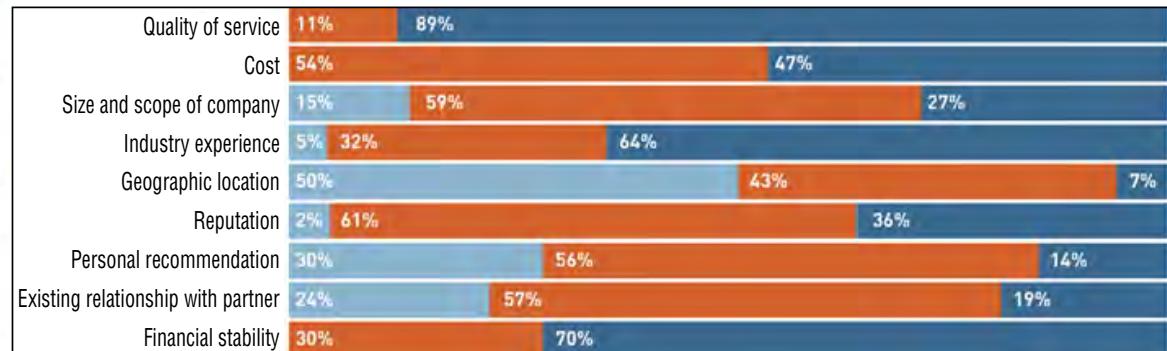
Operator viewpoints for upcoming North Sea offshore wind projects

With challenges arising throughout the North Sea offshore wind market, we asked key developers about the major factors that they will take into consideration when selecting an offshore installation contractor for work on their upcoming projects.

The survey was produced in conjunction with the upcoming Offshore Construction event in Hamburg.
<http://www.windenergyupdate.com/farshore-installation/index.php>



If you were selecting an offshore contractor today, how important would the following factor be?



ABS certifies Portugal's first offshore wind turbine

ABS, the leading provider of classification services to the global offshore industry, has provided certification services for the design, fabrication, and installation for the first WindFloat facility. The WindFloat Aguçadoura unit is a 2MW floating wind turbine moored in slightly less than 50m water depth 4km offshore the northern Portuguese coast. The WindFloat project is the first offshore wind deployment in the world that did not require heavy lift equipment offshore. Final assembly and pre-commissioning took place in a controlled shoreside environment. This installation also is the first deployment of a semisubmersible structure supporting a commercial-size wind turbine. ABS design review engineers in Houston and ABS surveyors on site at the fabrication facilities in Portugal worked together with the developers and builders during the design, fabrication, and installation phases of the project. ABS certification of the semisubmersible and the mooring system was based on the applicable sections of ABS Offshore Rules and Guides and the ABS Guide for Offshore Wind Turbine Installations. The tower and the turbine were not part of the ABS certification.

Interior announces next steps for commercial wind leasing offshore Maine

As part of the Obama Administration's all-of-the-above energy strategy to expand domestic energy development, including renewable energy, the Department of the Interior announced that the BOEM is taking important steps forward in the assessment of a proposed project to demonstrate floating offshore wind technology on the Outer Continental Shelf (OCS) offshore Maine. Statoil North America has requested a commercial wind lease to build a demonstration project of full-scale floating wind turbine technology offshore Maine. The proposed project, located about 12nmi off the coast, would have a 12MW production capacity through four wind turbine generators. The Statoil proposal also responds to a Request for Proposals (RFP) issued by the Maine Public Utilities Commission. The bureau is seeking public comment – through a Notice of Intent to Prepare an Environmental Impact Statement (EIS) – on important environmental issues and reasonable alternatives related to the proposed leasing, site characterization and assessment activities, and construction and operation activities in the offshore area under consideration. BOEM intends to prepare an EIS that will consider the reasonably foreseeable environmental consequences associated with the Statoil Hywind Maine project and will request comments from the public for the purpose of identifying the important issues to be considered in the EIS. The area Statoil North America has requested for a commercial wind lease covers approximately 22sq.mi. The area may be reduced based on the EIS analysis and other factors. BOEM is also asking whether other developers are interested in constructing wind facilities in the same area off the coast of Maine in order to determine whether to proceed with leasing on a competitive or non-competitive basis.

Tidal power project dedication held in Maine



Image Courtesy: Ocean Renewable Power Company

Energy Secretary Steven Chu recognized the nation's first commercial, grid-connected tidal energy project off the coast of Eastport, Maine. Leveraging a \$10 million investment from the Energy Department, Ocean Renewable Power Company (ORPC) will deploy its first commercial tidal energy device into Cobscook Bay this summer. The project, which injected \$14 million into the local economy and has supported more than 100 local and supply chain jobs, represents the first tidal energy project in the United States with long-term contracts to sell electricity – helping to drive American leadership in this innovative clean energy technology and diversify the nation's energy mix.

"Developing America's vast renewable energy resources is an important part of President Obama's all-of-the-above energy strategy to create jobs and strengthen U.S. global competitiveness," said Energy Secretary Steven Chu. "The Eastport tidal energy project represents a critical investment to ensure America leads in this fast-growing global industry, helping to create new manufacturing, construction, and operation jobs across the country while diversifying our energy portfolio and reducing pollution."

Tidal energy is a clean, renewable resource that can be harnessed wherever changing tides move a significant volume of water – including off the coasts of many U.S. cities where there is high electricity demand. Near Maine, the Bay of Fundy is one of the most robust tidal energy resources in the world. Each day, 100 billion tons of water flow in and out of the bay with the force of 8,000 locomotives and tidal ranges of up to 50ft. Tides can also be forecast accurately, making tidal energy one of the most reliable and predictable renewable resources available.

Earlier this year, the Energy Department released a nationwide tidal energy resource assessment identifying about 250TW hours of annual electric generation potential from tidal currents. Tidal power represents a major opportunity for new water power development in the U.S., especially along the East Coast as well as in Alaska and Hawaii. This energy potential could significantly contribute to the United States' total annual electricity production, further diversifying the nation's energy portfolio and providing clean, renewable energy to coastal cities and communities.

For more information, visit www.oceanrenewable.com.

EMU delivers environmental statement for Scottish 450MW offshore wind farm

The Environmental Statement (ES) supporting the development marine license application for the 450MW Neart na Gaoithe Offshore Wind Farm was submitted to Marine Scotland and marked the start of the formal consultation period, which will continue for 6 weeks through mid-September.

Prepared by EMU Limited, working with developer Mainstream Renewable Power, the ES represents the culmination of 3 years worth of assessment and consultation efforts for the project, which is located approximately 15.5km east of Fife Ness and will comprise between 64 and 125 wind turbines.

EMU Limited director, Bruce Tomlinson, said that the marine consultancy team managed the environmental impact assessment (EIA) process, engaged with consultees and stakeholders, and prepared the ES for the Neart na Gaoithe development, which has the potential to produce enough green energy to power a city the size of Edinburgh.

Consultation on the consent application runs from 31 July 2012 until the 10 September 2012, and representations with respect to this project can be made to the Scottish Government.

For more information, visit www.emulimited.com.

All foundations for Anholt offshore windfarm are in place

The last of the 111 transition pieces has now been installed on Monopile No. 111 in Anholt Offshore Wind Farm. This means that all foundations for Anholt Offshore Wind Farm are in place, and DONG Energy is well on its way in the construction of Denmark's largest offshore wind farm. The next step is the installation of 111 wind turbines.

A foundation consists of a monopile, a long cylindrical steel tube driven into the seabed, and a transition piece that connects the monopile and the wind turbine tower.

After having completed the approximately 12hr long sea journey from Aalborg, where they are produced, to the offshore wind farm, it takes about 7 to 8 hours to drive the up to 460tonne monopiles into the seabed. The 170tonne transition piece is then lifted into place and grouted onto the monopile. This exercise has now been performed for the 111th and last time by DONG Energy and MT Højgaard, the foundation supply and installation contractor.

It has not always been easy to prepare the seabed for the driving of the monopiles as the seabed holds a lot of challenges. In the northern part of the wind farm, there are areas with very soft seabed, while there are many large boulders in the seabed in the southern part of the wind farm. DONG Energy has moved a total of 5,000 boulders that have now been placed in 30 artificial reefs.

The installation vessel Svanen, which was originally built to construct large parts of the Great Belt bridge, has driven the foundations into the seabed. Svanen installed the first foundation on 31 December 2011 at 19:00, while the installation vessel Jumbo Javelin started installation of the transition pieces on 16 April 2012 and recently finished the last of the 111 foundations.

The 111 foundations were manufactured in Aalborg by Bladt Industries and installed by MT Højgaard.

DONG Energy expects to start installing the turbines in the beginning of September.

For more information, visit www.dongenergy.com.



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Massachusetts launches regional renewable energy initiative with five other New England states

Governor Deval Patrick today proposed a resolution at the New England Governor's Conference that passed unanimously and will advance the process towards a coordinated regional procurement of renewable energy. Assistant Secretary of Energy Steven Clarke presented the proposal at the Burlington, Vermont conference on the Governor's behalf. The six New England states agreed to release a Request for Proposal (RFP) in 2013 for a significant amount of renewable energy. Taking advantage of economies of scale and market power, a competitive, coordinated regional procurement of renewable energy will help New England develop its vast, homegrown, renewable energy resource more cost effectively, enhance energy supply diversity, reduce greenhouse gas emissions, and stimulate economic development. This resolution charges The New England States Committee on Electricity (NESCOE) with developing and implementing a work plan on behalf of the New England Governors that will result in the release of an RFP for renewable energy in

2013. NESCOE will convene a procurement team of the top energy officials and other representatives from each state that will finalize the details of the competitive, coordinated, regional procurement over the course of the next year.

Governor Patrick has set ambitious goals for renewable energy: 250MW of installed solar power by 2017 and 2,000MW of wind energy by 2020. Governor Patrick also signed into law in 2008 The Green Communities Act, Global Warming Solutions Act, and Green Jobs Act.

For more information, visit www.mass.gov.

Scotland marine energy park designated

The Pentland Firth and Orkney Waters in the North of Scotland will confirm their place on the global marine energy map with the launch of the area as a marine energy park. Energy and Climate Change Minister Greg Barker welcomed the launch of the marine park during a visit to Thurso in Caithness, where he addressed key players from across the marine renewable energy industry.

The Pentland Firth and Orkney Waters Marine Energy Park will incorporate the world-leading European Marine Energy Centre (EMEC), which attracts developers from across the world and where testing of a wide range of wave and tidal energy devices is already under way.

The purpose of the park is to heighten the international profile of the region and its reputation as a world leader in marine energy. The park will build on collaborative partnerships in the region between government on the main land and the Orkney Islands, Highlands and Islands Enterprise (HIE), and a cluster of local expertise and renewable resource in the area to help speed up progress of marine power development.

Energy from waves or tides has the potential to generate 27GW of power in the UK alone by 2050, equivalent to the power generated from eight coal-fired power stations. A move to marine power can also help cut emissions and tackle climate change.

For more information, visit www.decc.gov.uk.

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European Offshore Wind Industry Key Trends and Statistics First Half 2012



EWEA

Special Report by The European Wind Energy Association

In the first six months of 2012, Europe installed and fully grid connected 132 offshore wind turbines, with a combined capacity totalling 523.2MW. Overall, 13 wind farms were under construction. Once completed these wind farms will account for 3,762MW.

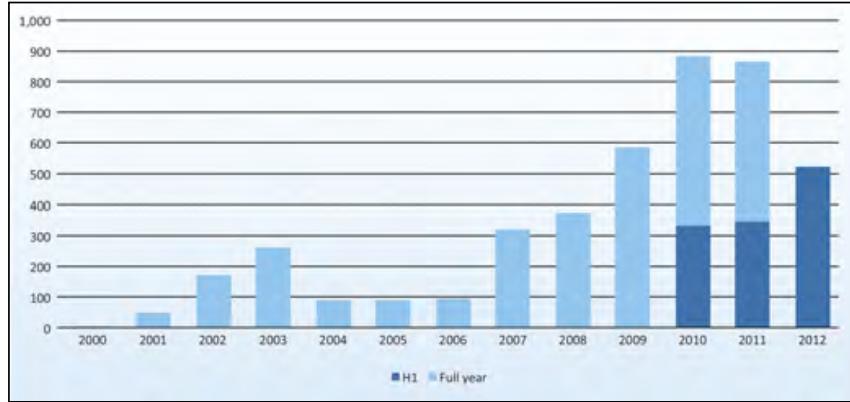


Figure 1. Annual installed offshore wind capacity in Europe (MW)

The work carried out on these wind farms during the first six months of 2012 is detailed below:

- 132 wind turbines were fully grid connected, totalling 523.2MW (up 175MW or 50% from the same period last year) in eight wind farms:

Thornton Bank 2 (BE), Greater Gabbard, Walney 2, Ormonde, London Array, Sheringham Shoal (UK), Avedore 2 (DK), BARD Offshore 1 (DE). A further 160 turbines, totalling 647.4 MW, are installed but awaiting grid connection.

- 270 foundations (141 or 109% more than the same period last year) were installed in 10 wind farms:

Thornton Bank 2 (BE), Lincs, London Array, Sheringham Shoal, Gwynt y Môr, Teeside (UK), Anholt, Avedore 2 (DK), BARD Offshore 1 and Riffgat (DE).

- 211 turbines (103 or 95% more than the same period last year) were erected in five wind farms:

Thornton Bank 2 (BE), Greater Gabbard, London Array, Sheringham Shoal (UK), Avedore (DK), BARD Offshore 1 (DE).

- Preparatory work has begun in the following wind farms:

Rampion, West of Duddon Sands (UK), Nordsee ost, Global Tech 1, Meerwind, Borkum West II and Innogy Nordsee 1 (DE).

1,503 offshore wind turbines are fully grid connected in 56 wind farms across 10 countries, with a total capacity of 4,336MW, as of 30 June 2012.

Developers

During the first six months of 2012 work was carried out on 13 wind farms. Eight of them had turbines connected to the grid, totalling 523.2MW. The majority of these wind farms (six of the eight, totalling 475.4 MW) are developed by consortia. Figure 4 shows the share of connected MW per developer from 1 January 2012 to 30 June 2012 taking into account each company's share in the projects. Utilities account for over 78% of the installed capacity (408.7 MW).

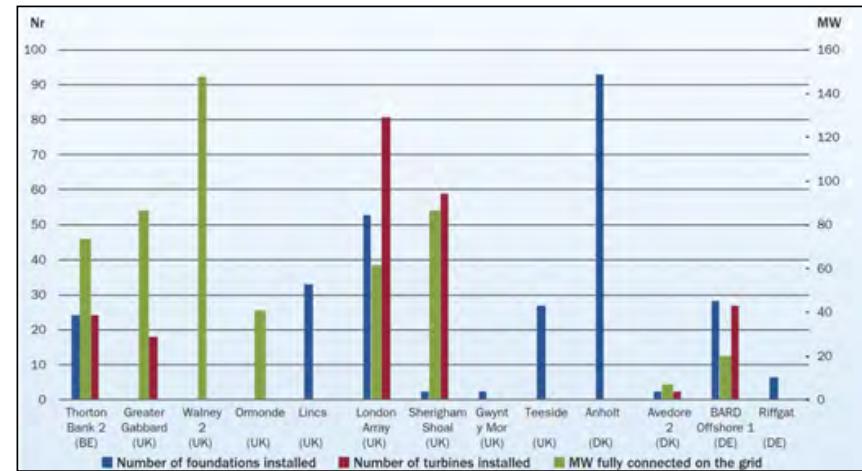


Figure 3. Installation and grid connection of wind turbines in offshore wind farms between 1 January 2012 and 30 June 2012

	BELGIUM	UK	GERMANY	DENMARK	TOTAL
Number of farms	1	8	2	2	13
Number of foundations installed	24	117	34	95	270
Number of turbines installed	24	158	27	2	211
Number of turbines connected	12	114	4	2	132
MW fully connected to the grid	73.8	422.0	20.0	7.2	523.2
Total MW of projects (once completed)	148	2,695	508	411	3,762

Figure 2. Summary of work at offshore wind farms between 1 January 2012 and 30 June 2012

Offshore Wind

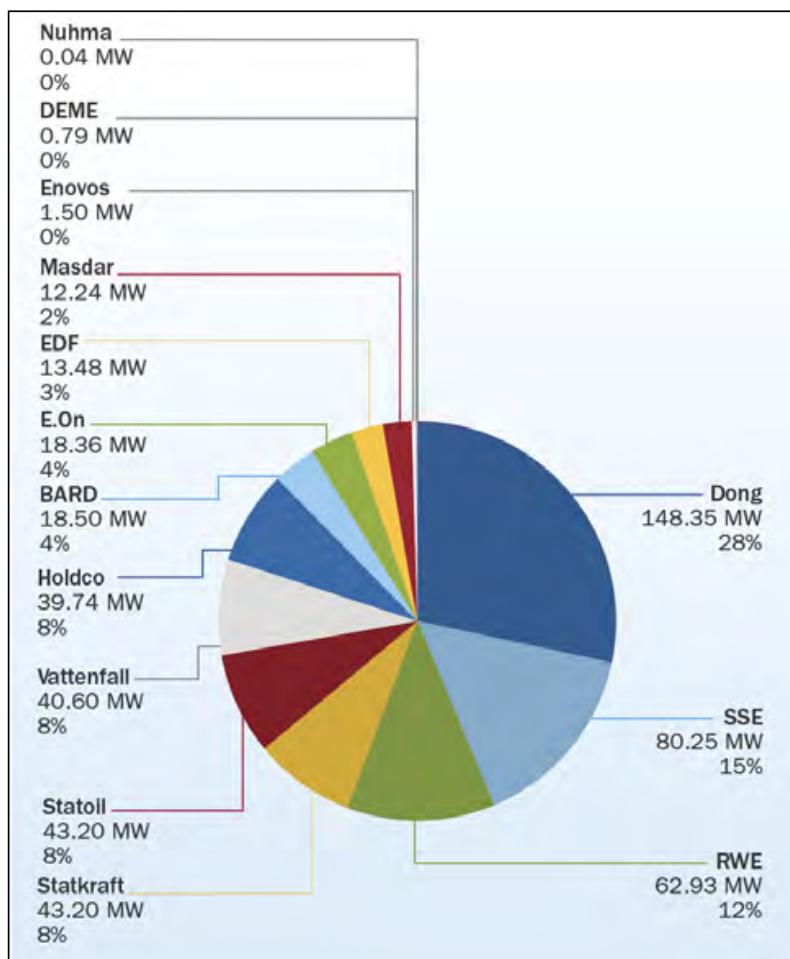


Figure 4. Offshore wind developers' share of grid connected capacity from 1 January 2012 to 30 June 2012

Wind turbines

During the first six months of 2012, the average size of wind turbines installed and connected to the grid reached 4 MW. The average size has increased by 14.2% compared to the same period last year. 30% more wind turbines were grid connected during the first six months of 2012 than during the same period the previous year; 132 units compared to 101.

Units from three turbine manufacturers were connected to the grid over the period: Siemens, REpower and BARD. The former dominates the ranking with 74% of the installed capacity, followed by REpower (22%) and BARD (4%).

In terms of units, Siemens installed 108 (82%), REpower 20 units (15%) and BARD 4 units (3%). As the installed Siemens machines have lower rated capacity to REpower's and BARD's (3.6MW compared to 6.15MW and 5MW), Siemens has a higher share of installed units than installed capacity.

Financing highlights and developments in H1 2012

Financing activity in the offshore wind energy sector remained solid in the first half of 2012 despite the general challenges of the European banking sector, with several landmark transactions closing this spring.

Non-recourse financing was closed for the Gunfleet Sands (172MW, UK), Lincs (270MW, UK) and Northwind (216MW, BE) projects, for a total lending volume of approximately €1.3 billion. Crucially, each deal set new precedents for the industry:

- First financing of a minority stake (Gunfleet Sands);
- First participation of export credit agencies NEXI of Japan (Gunfleet Sands), ONDD of Belgium (Northwind), and GIEK of Norway (Northwind);
- First non-recourse financing including construction risk in the UK (Lincs).

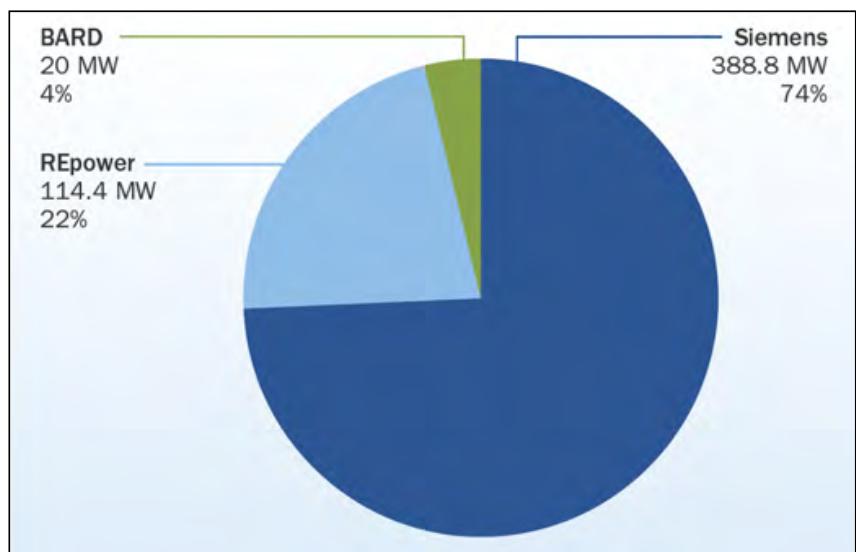


Figure 5. Wind Turbine manufacturers' share of grid connected capacity (in MW) in Europe from 1 January 2012 to 30 June 2012

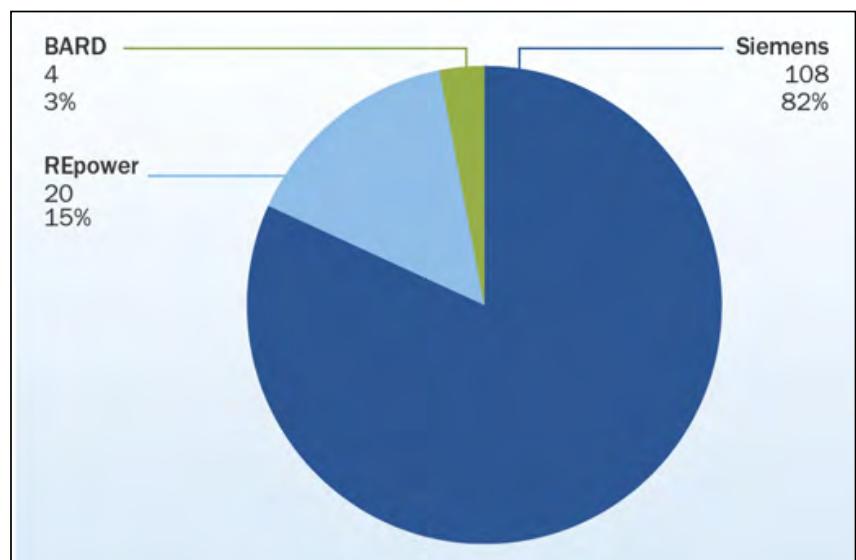


Figure 6. Wind Turbine manufacturers' share of grid connected turbines in Europe from 1 January 2012 to 30 June 2012

Altogether, as many transactions were closed in the past six months as were closed during the whole of 2011. Moreover, an ever-wider variety of financing structures is emerging. In addition, a couple trends with respect to the latter transactions and the market as a whole can be highlighted.

1) The number of financial institutions willing finance offshore wind farms continues to grow, both amongst commercial banks and amongst public financing institutions (such as the EIB and export credit agencies), broadening funding sources and opening the door to increasingly different funding structures. For Lincs, for instance, the transaction was closed without any participation from a multilateral finance institution, whereas Northwind brought in four different ones.

2) Transactions keep taking place under varied regulatory frameworks (with the UK dominating the reporting period after Germany dominated last year) and with different technologies (Northwind was the first non-recourse financing for Vestas' new V112 offshore turbine).

For more information, visit www.ewea.org.

Contributors

Research and analysis: Athanasia Arapogianni (Research Officer, EWEA), Mihaela Dragan (Research Officer, EWEA); Coordinating author: Justin Wilkes (Policy Director, EWEA), Jacopo Moccia (Head of Policy Analysis, EWEA); Financing highlights: Jérôme Guillet (Managing Director, Green Giraffe Energy Bankers).

Navy begins construction on next amphibious assault ship

Huntington Ingalls Industries (HII) started fabrication of the eleventh LPD 17 San Antonio class ship, LPD 27, on 6 August, following the Navy award of the detail design and construction contract on 27 July. The ship will be constructed at HII's Pascagoula facility. "This is an important milestone for the LPD 17 program as we begin construction on the eleventh ship in the class," said Mr. Jay Stefany, LPD 17 class program manager for Program Executive Office, Ships. "We look forward to continued improvements on production progress achieved on the previous ships of the class and delivering this very capable warship to the Fleet." The LPD 17 San Antonio class ships are a key element of the Navy's ability to project power ashore. They are designed to functionally replace more than 41 ships (the LPD 4, LSD 36, LKA 113, and LST 1179 classes of amphibious ships), providing the Navy and Marine Corps with modern, sea-based platforms that are networked, survivable, and built to operate with multiple 21st century platforms.

General Dynamics awarded \$27M Contract

General Dynamics Information Technology, a business unit of General Dynamics, was awarded a contract in March 2012 by the U.S. Department of the Navy to provide information technology and mission sustainment services to the Naval Meteorology and Oceanography Command (NAVMETOCCOM). The 3-year, indefinite delivery, indefinite quantity (IDIQ) contract has a potential value of \$27.1 million if all options are exercised. General Dynamics will provide a full range of information technology (IT) services and support for NAVMETOCCOM systems, software, and infrastructure. As part of this contract, General Dynamics will leverage its expertise in portal design, development, and integration to support the Navy Enterprise Portal – Oceanography, which provides military, scientific, and civilian communities with public access to critical oceanography information. General Dynamics has worked with the NAVMETOCCOM since 1986. Work under this contract will support the Commander, Naval Meteorology and Oceanography Command and its Echelon IV organizations, including The Naval Oceanographic Office, Naval Oceanography Operations Command, Stennis Space Center, Mississippi.; Fleet Numerical Meteorology and Oceanography Center, Monterey, California.; U.S. Naval Observatory, Washington D.C.; and their respective Echelon V subordinate sites.

SAIC awarded contract by U.S. Space and Naval Warfare Systems Center Atlantic

Science Applications International Corporation (SAIC) announced it was awarded a prime contract by the U.S. Space and Naval Warfare Systems Center (SSC) Atlantic to provide security and engineering services in support of operational requirements of the U.S. Navy and various government activities. The multiple-award indefinite-delivery/indefinite-quantity (IDIQ) contract has a one-year base period of performance, four one-year options, and a total contract value of approximately \$224 million for all awardees, if all options are exercised. Work will be performed primarily in the National Capital Region. SSC Atlantic provides knowledge superiority to join warfighters and peacekeepers through development, acquisition, and life-cycle support of effectively integrated command, control, communications, computers, combat systems, intelligence, surveillance, and reconnaissance information technology and space capabilities. Under the contract, SAIC will provide security and engineering support services, including systems engineering, analysis, development, acquisition, integration, installation, testing, software development and maintenance, and integrated logistical support for Anti-Terrorism/Force Protection (AT/FP) Systems. SAIC is one of seven contractors eligible to compete for task orders under the contract.

Coronado (LCS 4) completes combat systems light off



US Senator Jeff Sessions joined Austal, General Dynamics Advanced Information Systems, and General Dynamics Bath Iron Works personnel in completing the Combat Systems Light Off milestone in the second Independence-variant Littoral Combat Ship, Coronado (LCS 4).

Senator Sessions operated the 57mm gun from the bridge of LCS 4, and he was able to demonstrate the gun's ability to target another ship and track its progress. This milestone signifies that Coronado's advanced computer, weapon, and sensor systems are operational and ready for commencement of the formal Combat Systems test and certification process cycle.

Upon completion of this significant milestone, Austal USA Interim President / Chief Financial Officer, Brian Leathers, commented, "I am encouraged to see how smoothly things are moving along on the path to sea trials for this vessel. Austal is proud to be a member of the General Dynamics LCS team and we look forward to celebrating the future successes of this shipbuilding program."

Austal USA is a full-service shipyard, offering design, construction, and high-speed vessel service and repair. As Austal USA continues to expand its service and repair capabilities, the company is well-positioned for new business with engineering, test, and trials capabilities and a new waterfront facility all co-located on the Mobile Bay waterfront.

Austal is currently under contract with the U.S. Navy to build nine 103m Joint High Speed Vessels (JHSV) under a 10-ship, US\$1.6 billion contract and five 127m Independence-variant LCS class ships, four of which are a part of a 10-ship, US\$3.5 billion contract. Austal, prime contractor of the JHSV program and the Independence-variant program for LCS 6 and beyond, is teamed with General Dynamics Advanced Information Systems, a business unit of General Dynamics.

For more information, visit www.austal.com.



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Common USV ushers in new era of Naval mine countermeasure ops

Textron Systems Advanced Systems, an operating unit of Textron Systems, a Textron Inc. company, announced that its Fleet-class Common Unmanned Surface Vessels (CUSV) successfully demonstrated the ability to conduct collaborative unmanned mine-hunting and mine-neutralization operations during the Trident Warrior 2012 U.S. Navy Fleet Experiment, 9 to 20 July, at

Marine Corps Base Camp Pendleton.

The CUSV team executed real-time, mine warfare detect-to-engage scenarios on six separate occasions during which two CUSVs controlled by one operator from a single control station detected and prosecuted “exercise” mines in a minefield laid by the U.S. Navy.

In these scenarios, one CUSV, utilizing the U.S. Navy’s tactical decision aid – called MEDAL – developed by SAIC, moved into the mine danger area



and autonomously deployed an L-3 Klein 5000 V2 side-scan sonar to mine hunt the suspected minefield. Mine hunting was successfully conducted during both day and night operations and in challenging sea state conditions. The CUSVs were outfitted with Harris SeaLancet™ RT-1944/U data links, which relayed all sonar and vehicle control information to a shore-based AAI Universal Command & Control Station (UCCS). When a mine-like object was detected and plotted on the UCCS geographical screen, the position information was sent to a second CUSV. The second CUSV then maneuvered into the mine danger area. Once appropriately positioned, it deployed both a tracking transducer and an ATLAS North America SeaFox™ unmanned vehicle for investigation, identification, and simulated mine neutralization.

For more information, visit www.textron.com.

SAIC to provide mine warfare command and control tool

Science Application International Corporation of McLean, Virginia is being awarded a \$9,686,538 cost-plus-fixed-fee delivery order under previously awarded basic ordering agreement for the mine warfare environmental aids and library, which provides the mine warfare commander and mine warfare forces with a single tool for the effective command and control of mine warfare. The order includes options, which, if exercised, would bring the cumulative value of this contract to \$13,530,185. The Naval Sea Systems Command, Washington D.C., is the contracting activity.

For more information, visit www.saic.com.



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Bottom Boundary Layer Measurement Platform

Innovative Measurement of Sediment Dynamics at the Seabed

By Craig Jones, Sea Engineering, Inc.



Figure 1. Sea Engineering, Inc. bottom boundary layer measurement platform.

Bottom boundary layer turbulent shear stress controls sediment resuspension and deposition. Particle settling rates also vary with particle characteristics such as composition and size distribution. It is, therefore, desirable to quantify turbulence parameters as well as particle characteristics for sediment transport investigations. The advancement of *in-situ* acoustical and optical aquatic sensors enables derivation of shear stress and other turbulence parameters, settling velocity, particle size distribution, and particle compositional characteristics from direct, autonomous, sustained measurements of acoustical and optical properties.

Sea Engineering, Inc. (SEI) has developed an innovative instrumentation platform to investigate the effects of near-bed turbulence and shear stress on sediment particle concentration, size distribution, and composition using *in-situ* acoustical and optical instrumentation deployed in a tidal estuary. Near-bed turbulence parameters and particle settling velocity are computed from acoustical measurements. Particle settling velocity was estimated assuming a sediment concentration balance between gravitational settling and turbulent dispersion; sediment concentration was computed from acoustical and optical backscattering. Information about near-bed particle size distribution and composition, including relative density of particles, was obtained through advanced analysis of the optical properties.

Key findings include the following:

(1) Particle settling rates varied over different phases of the tide due to changes in particle composition and size distribution.

(2) Variability of particle size distribution and composition was strongly dependent on seasonality and channel morphology.

(3) Stronger turbulence at a downstream, channelized portion of the estuary resulted in resuspension of higher density, inorganic particles.

(4) At an upstream, shallower region of the estuary, particles were more organic in nature and less dense; therefore stronger turbulence resulted in particle disaggregation processes.

SEI's near-bed acoustical and optical instrumentation platform and data analysis techniques provide an excellent method for examining the relationships between bottom boundary layer turbulence and particle characteristics, including settling velocity, size distribution, and composition. Importantly, these newly developed measurement techniques capture the range of time and space scales necessary for environmental and engineering sediment transport investigations.

For more information, visit www.seaengineering.com.



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OFFSHORE INDUSTRY

Field equipment and services industry to hit \$613B by 2017

The global oil and gas field equipment and services market is forecast to grow at a compound annual growth rate of 6.9% over the next 5 years to reach a total market value of \$613 billion by 2017, according to a recent report published by Lucintel, a global management consulting and market research firm.

Growth in the market is expected to be fueled by the increasing demand and stronger pricing for pressure pumping services along with the discovery of new resources in addition to ongoing exploration and production activity, according to the report titled "Global Oil & Gas Field Equipment and Services Industry 2012-2017: Trend, Profit and Forecast Analysis."

Challenges facing this industry segment include political instability in many oil-producing regions, government mandates, and environmental regulations.

The oil and gas field equipment and services market in the U.S. includes approximately 500 companies with combined annual revenue of \$16 billion. Major companies include Baker Hughes, Cameron International, FMC Technologies, National Oilwell Varco, and U.S. divisions of Schlumberger.

A healthy demand for oilfield services in North America is expected to continue to lead the industry, while the APAC region is forecast to show the highest growth through to 2017.

Petrobras' oil discovery offshore Brazil 'one of the most significant'

Brazil's state-owned oil company Petrobras has discovered 400m of continuous and connected oil reserves on the Carcara prospect located offshore Brazil.

Located in the BM-S-8 block south of Rio de Janeiro in the Santos Basin, the discovery is said to be "one of the most significant oil discoveries" in the country's offshore sub-salt area, according to a partner in the exploration program.

In 2007, the first oil discovery was found in a nearby block owned by Petrobras, BG Group Plc, and Galp Energia SGPS. The discovery was claimed to be the biggest discovery in the Americas in three decades.

The discovery is now known as the



Lula and Cernambi fields and holds an estimated 8.3Bbbl and natural gas.

Petrobras owns a 66% stake in the block, Portugal's Galp owns 14%, and Barra Energia and Queiroz Galvao Exploracao e Producao SA each own 10% stakes.

Oil and gas discoveries have declined since 2009: GlobalData

Last year, 242 oil and gas discoveries were made globally, 45% less than such discoveries made in 2009, GlobalData reported, adding that factors leading to the decrease include an increase in exploration activities in technically challenging areas, such as deep offshore and ultra-deep offshore areas and the Arctic, as well as a lack of required technical equipment, environmental protests, and government restrictions.

The number of oil and gas discoveries is expected to increase in 2012 because of the large number of companies that invest more than 50% of their capital expenditure in upstream activities. This will lead to more exploration activities, particularly in areas that recorded a high number of discoveries in 2011, such as Brazil and countries in East Africa and Asia Pacific, GlobalData noted.

In 2011, more than half of the oil and gas discoveries made worldwide were located in offshore regions. The number of offshore discoveries has continually been lower than onshore discoveries from 2006 to 2010. However, the recent increase in the discovery of quality reserves in deepwater areas has led to more exploration in offshore regions, particularly in Asia Pacific, and South and Central America.

For any further information or queries about this report, contact Bogdan Petre at +44 (0)207 936 6676 or email reportin fo@progressivemediagroup.com.

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\$15.1B CNOOC-Nexen deal sparks Republican, Democratic concern

Congressional concern about Chinese energy giant's CNOOC Ltd.'s \$15.1 billion deal to buy Nexen Inc. officially has become bipartisan as a key Republican, Sen. James Inhofe of Oklahoma, joined two prominent Democratic critics of the transaction, Sen. Charles Schumer of New York and Rep. Ed Markey of Massachusetts.

"I have serious national security concerns with the Chinese government, acting through one of its corporations, purchasing a company that will give it control over significant U.S. oil and gas resources," Inhofe told MarketWatch.

Schumer and Markey expressed their concern about the transaction in letters to Treasury Secretary Timothy Geithner.

Geithner and the Treasury Department chair the Committee on Foreign Investment in the United States (CFIUS), an interagency board that reviews deals for national security implications. The deal is subject to CFIUS review because Calgary, Canada-based Nexen has substantial drilling operations in the U.S. portion of the Gulf of Mexico.

It was expected that the CNOOC-Nexen deal would be reviewed by CFIUS in Washington and by securities regulators and courts at the Federal level in Ottawa, Canada. Inhofe said that the deal should be heavily scrutinized by CFIUS. In 2005, Inhofe sought unsuccessfully to have Congress approve a provision that would have required the defense secretary to chair CFIUS.

Inhofe, a senior member of the Senate Armed Services Committee, was a lead critic of CNOOC's 2005 \$18.5 billion effort to buy Unocal Corp. of El Segundo, California. The Chinese energy company scrapped that deal after Capitol Hill erupted with bipartisan opposition to it. Unocal was later acquired by Chevron Corp.



James Inhofe

UK provides tax relief to support North Sea gas exploration on shelf

The UK government has imposed a new tax relief to support gas investment in the UK Continental Shelf. A US\$783 million field allowance for large shallow-water gas fields, with water depths of less than 30m will be established with the aim of attracting future investment in North Sea gas.

A new gas strategy will also be published by the government later in 2012 as part of its plan to provide certainty to investors on the UK's long-term commitment towards gas.

Through the 2020s, and beyond if gas proves cheap, the government expects gas to continue to play a key role ensuring that the nation has sufficient capacity to meet everyday demands.

"The government is signaling its long-term commitment to the role it can play in delivering a stable, secure, and lower-carbon energy mix," UK Chancellor of the Exchequer George Osborne said. "At the Budget, we announced an ambitious package of support to stimulate billions of [pounds of] investment in oil and gas production in the North Sea."

A supplementary Charge (SC) tax rate of 32% will not be levied on the qualifying fields, but these fields will still pay 30% Ring Fence Corporation Tax on all income, in addition to SC on all income not protected by the field allowance.

ASCO acquires rest of Scrabster Port Services in northern Scotland

ASCO acquired the remaining 50% stake in Scrabster Port Services in northern Scotland, enhancing its North Sea service offering, particularly in the West of Shetland fields. ASCO acquired the other 50% stake in 2009.

"The acquisition of the remaining 50% stake ... supports ASCO's international growth strategy. Scrabster will be a key logistics hub as the substantial West of Shetland fields come on-stream in the coming years. It offers established quay-side services and a fast, direct shipping route to offshore fields from the UK mainland," said Andrew Macdonald, ASCO's chief executive officer for the firm's European region.

Scrabster Port Services was established in 1997 and has acted as a hub for offshore and production support west of Shetland, on the Atlantic frontier, and in the waters surrounding Faroe. It also handles cargo tonnage and works with cruise ship and research vessel operators.

A development program is currently taking place at Scrabster to expand its



Scrabster will be a key logistics hub

deepwater quay, offering increased berthing capacity. Scrabster Port Service's small team of staff will remain with the business as ASCO employees.

The announcement came following the news that ASCO had acquired international safety training and lifting specialist, North Sea Lifting Ltd (NSL), headquartered in Aberdeen.

Study: \$163B currently invested in U.S. oil and gas projects

More than \$163 billion is currently invested in more than 1,400 active oil and gas projects in the U.S. upstream and mid-stream segments, Sugar Land, Texas-based Industrial Info Resources said in a recent report. It said about \$162 billion of the \$163 billion is invested in 777 capital projects. More than half of the total amount – \$97 billion – is invested in 333 active natural gas-related capital projects.

"With the advent of economical shale gas, natural gas liquid extraction, and improved pipeline access to the Gulf Coast, development in the oil and gas industries in the United States is ramping up," Industrial Info said.

The state of Texas is the leader in NGL-related infrastructure investments and project numbers, while coming in second in total investment value for natural gas projects. The State has 69 natural gas projects costing about \$14 billion.

While Alaska comes in third with the total number of projects at 30, the value of those oil and gas investments is the greatest in the nation at more than \$51 billion, according to the report.

Pennsylvania is second in the nation for the total number of projects, but is fourth in project spending. Industrial Info said there are 41 projects under way in the state, representing nearly \$3 billion in project spending. Louisiana, with 25 projects, comes in third in project spending, at approximately \$12 billion in investments.

U.S. schedules Western Gulf of Mexico oil, gas lease sale Nov. 28

The U.S. Department of the Interior has scheduled an oil and gas lease sale for the Western Gulf of Mexico on 28 November in New Orleans, Louisiana.

The sale, number 229, will include about 3,800 blocks, covering roughly 20.5 million acres. The leases are between 9 and 250mi. offshore, in water depths ranging from 16ft to more than 10,975ft. The lease sale could result in the production of up to 200 million barrels of oil and 538 to 938Bcf of natural gas, Interior's BOEM estimated.

It would be the first offshore sale under the Obama administration's 2012-2017 leasing program, according to the Interior Department.

Qatar Petroleum joins ITF to help solve Middle East challenges

Qatar Petroleum (QP) has joined the global oil and gas technology facilitator ITF to collaborate on finding new solutions to boost oil and gas production in the Middle East.

As a member of ITF, QP will work alongside other major energy players in the region and believes a united approach will help to drive forward new developments, supporting its plans for further exploration and production at onshore and offshore fields.

The corporation joins other ITF members in the region, including, Petroleum Development Oman (PDO), Kuwait Oil Co., and Houston-based Aramco Services Co., a subsidiary of Saudi Aramco. In total, ITF has 30 global oil and gas operator and service company members.

"By acting as the honest broker between end users and technology developers, we can help members share the costs and risks associated with bringing new technology to market," said Ryan McPherson, ITF's regional director in the Middle East and Asia Pacific.

ITF has a base in Abu Dhabi and this year launched a Middle East cluster group to bring together oil and gas companies to collaboratively identify and tackle the specific technological challenges being faced in the region, such as water management, heavy oil, asset integrity, and enhanced oil recovery.

QP said it is interested in ITF's approach both as an end user and as a technology developer.



Ryan McPherson

Despite bad weather, pipeline inspection completed in 23 days

T.D. Williamson (TDW) has successfully completed the inline inspection (ILI) of a key North Sea pipeline on behalf of Perenco UK. The operation was carried out on the 24-in. line that links the Trent Platform with the Bacton Terminal pipeline. TDW conducted the "intelligent" inspection and associated pipeline service operation as part of Perenco's strategic program to ensure the integrity of its pipelines and assets.

In spite of working in high winds, driving rain, sleet, and snow, the offshore phase, during which all site work was carried out, was completed in just 23 days. Support and equipment were supplied by the TDW operations and projects team based at the company's facility in Swindon, England.

The pipeline inspection was carried out to comply with Health, Safety & Environment (HSE) obligations. Perenco selected TDW because of its ability to offer state-of-the-art inspection services, along with the full project management package, which included planning, preparation, and risk assessment.

"We are a solutions provider," said Dean Ellis, senior ILI field technician for TDW. "Our ability to offer the full range of services that Perenco required meant that we could create a custom solution and carry out the kind of efficient and seamless operation that is only possible when all services are concentrated under one roof," he added.

TDW responded by providing a sales, customer services, and project management team tasked with identifying and responding to Perenco's precise needs. Following site visits, a comprehensive plan was devised, which included progressive pigging, KALIPER® 360 geometry inspection, 24-in. gas magnetic flux leakage (GMFL) inspection, ILI reporting, fitness-for-purpose, run comparison, corrosion growth analysis reports, and other services.

"We are very pleased with TDW's ability to successfully deliver the total project, despite the challenges imposed upon them," said Stephen Southgate, integrity and fabric maintenance superintendent for Perenco UK. "TDW's data set on this pipeline, the professionalism with which they examined the lessons learned, and their ability to offer full project management services and ILI technical delivery created a framework for easier communication and made for a quicker and more efficient solution."

The ILI run – from launch to trap – was achieved in less than 21 hrs. No metallic components were brought in, and only a small quantity of viscous black residue was produced. The gauge plate showed no signs of any deflection at any point around its circumference. The tool displaced approximately 100 tons of liquid from the line. Because benzene levels were high, the tool was left by the trap overnight to allow it to disperse. Upon further examination of the tool, the polyurethane components were found to be in a good condition, with only a small amount of wear to the cups.



"Pig" used in pipeline inspection

Shell Oil scales back 2012 Arctic drilling to two exploration wells

Shell Oil Co. is downsizing its plan for offshore drilling in the Arctic this year amid delays completing a spill containment barge required by the Federal government. Shell said it now hopes to complete two wells in 2012 instead of five. One would be in the Beaufort Sea off the northern Alaska coastline and the other in the Chukchi Sea off the northwest coast between Alaska and Russia.

The company's 2-year goal of drilling 10 wells remains in place, the company said, noting that information derived from drilling the two wells still in the works will aid Shell with its drilling in 2013.

Downscaling the plan was attributed to delays in building and gaining certification of the containment barge in Bellingham, Washington. The barge would carry a containment dome that could be lowered to a wellhead in the event of a spill. Oil would then travel

from the dome through an attached hose back to the barge for processing aboard the vessel.

Shell had drilling rigs and support vessels in Dutch Harbor in the Aleutian Islands waiting to travel to the Beaufort and Chukchi Seas. Additionally, the company also was keeping watch on lingering sea ice in the Arctic.

Shell also was working with the U.S. Environmental Protection Agency (EPA) on an air permit needed to drill this year. A problem arose when it was discovered that the generator engines on Shell's drill ship tested slightly above allowable levels for ammonia and nitrous oxide.

71% of voters favor more oil, gas development

Approximately 71% of American voters favor increased access to U.S. oil and natural gas resources, 90% believe more oil and natural gas development could lead to more U.S. jobs, and 87% believe it could lower energy costs for consumers, according to a Harris Interactive poll released in mid-August.

"Strong majorities of voters support more domestic energy development, regardless of party affiliation," said Jack Gerard, president and chief executive officer of the American Petroleum Institute. "And they don't like what they're seeing in Washington where development has been slowed or stopped despite millions of Americans still out of work. Nearly two out of three voters believe the nation is moving in the wrong direction on energy."

The telephone poll, conducted by Harris Interactive among 1,016 registered voters, also found that nearly two-thirds (65%) feel that an increase in taxes on oil and natural gas companies could hurt consumers, 3 out of 4 (75%) support building the Keystone XL pipeline, and more than 7 in 10 (73%) support a change in policy to allow more offshore drilling.

More than 9 in 10 (92%) say energy security and producing more oil and natural gas at home is an important issue this election. Strong majorities of Republicans, Democrats, and Independents believe increased access to domestic oil and natural gas could lead to more American jobs.

The study was conducted August 9 to 12 with a sampling error of $\pm 3\%$. Harris Interactive is one of the world's leading custom market research firms, known widely for the Harris Poll. The American Petroleum Institute (API) represents more than 500 oil and natural gas companies.

GE bags \$600M service contract for Gorgon

Australia's GE Oil and Gas was awarded a \$600 million service contract to maintain the compressor trains and associated equipment at Chevron's Gorgon liquefied natural gas (LNG) project off the northwestern coast of Australia. Under the 22-year agreement, GE will provide Chevron with scheduled maintenance, monitoring, and diagnostics of the installed equipment and access to local engineers. GE will also manage inventory and supply initial spare components. GE's first contract performance manager will start working in Perth this October.

ABB wins \$80M order from Samsung

ABB recently won an order worth \$80 million from Samsung Heavy Industries to supply energy efficient drives, motors, and electrical power systems for five drilling vessels and two LNG carriers to be built at Samsung's shipyard in Korea. The vessels will be used to extract, process, and transport oil and gas. Samsung is building three drillships for Seadrill Ltd. in Norway, one for Pacific Drilling S.A in Brazil, and one for Ensco plc in the UK in addition to two LNG carrier vessels for Golar LNG Ltd. in the UK. The vessels will be used for oil and gas exploration and the transportation of LNG. The project will be commissioned between 2014 and 2015.

Aker gets drilling riser contract from Atwood

Aker Solutions was awarded a contract to provide a deepwater drilling riser system to Atwood Oceanics, an oil and gas explorer based in Texas. The system will be manufactured from Aker's manufacturing facility in Port Klang, Malaysia and be ready for delivery in 2013. The value of the contract has not been disclosed. The firm has previously delivered risers to the Atwood Osprey and Atwood Condor drilling units, and another two drilling riser systems are currently being produced for the Atwood Advantage and Atwood Achiever units. "We are very pleased to be delivering an Aker Solutions CLIP riser system to Atwood for the fifth time," said Thor Arne Haverstad, Aker Solutions drilling technologies business head.

Technip awarded UK North Sea contract

Technip was awarded an EPIC subsea contract by Ithaca Energy (UK) Ltd. for the Greater Stella Area (GSA) development, located 280km east-southeast of Aberdeen, Scotland at a water depth of approximately 90m. Ithaca Energy (UK) Ltd. is developing the GSA, centered on the Stella and Harrier fields as a stand-alone development, utilizing its own floating production vessel. The contract includes detailed design and pipelay of a 33km, 10in. oil export and 63km, 10in. gas export pipeline to the production platform.



InterMoor completes ESP conductor installation for Shell BC-10 Phase Two



Loading ESP conductors for Shell BC-10 Pase Two project

InterMoor, an Acteon company, has completed the installation of the electrical submersible pump (ESP) conductors for the artificial lift manifold as part of the Shell BC-10 Phase 2 project. InterMoor was responsible for the fabrication and installation of four conductors in addition to one spare conductor for the project. Weighing in at more than 70mt, the conductors measured 48in. diameter and 60m long with a 1.5in. wall.

Fabricated at InterMoor's 24acre Morgan City, Louisiana facility, the conductors were installed in water depths up to 5,600ft off the coast of Brazil in the northern Campos Basin. The installation took place the last week of May utilizing DOF Subsea's anchor handling vessel Skandi Skolten under charter to Shell Brasil Ltda.

InterMoor provided an installation barge with a customized launch system to install the conductors through four corner holes in a template by self-penetration. InterMoor's patented suction to stability (STS) operations and driving via MENCK's deepwater spread (DWS) subsea hammer and power pack were also utilized.

InterMoor used MENCK's MHU-270t DWS, which included a deepwater hydraulic hammer capable of providing a driving energy of 270kJ at a water depth of 3,281ft combined with MENCK's girdle-type electro-hydraulic power pack and umbilical support system. Generating hydraulic power at depth rather than at the surface means no hydraulic hose, therefore, minimal energy loss at depth and minimization environmental impact.

The tolerance requirements of less than 1.0 degree verticality and within 6in. relative elevation were critical and could not be achieved by traditional jetting methods from a semi-submersible. These tolerances were successfully respected utilizing InterMoor's installation methodology in Phase 2, as they were for Phase 1.

"It was a tremendous advantage having personnel on the job associated with the previous BC-10 Phase 1 to ensure lessons learned were carried out successfully," said Tom Fulton, InterMoor's global president. "This factor was key to executing the project safely, on schedule, and on budget. We have demonstrated a capability which is valid across a number of deepwater projects in the industry."

Gulf of Mexico

Helix Energy hits oil at deepwater Danny II prospect in Gulf of Mexico

Helix Energy Solutions Group disclosed an oil discovery at the Danny II exploration well at the Bushwood field located in Garden Banks Block 506, about 145mi offshore Galveston, Texas. The Danny II exploration well is said to have encountered more than 70ft of high-quality net pay.

"Preliminary data from down-hole test tools confirmed oil in the Danny II well, with over 9,500psi of bottom-hole pressure," Johnny Edwards, president of Helix subsidiary Energy Resource Technology GOM, said, adding that additional testing to determine the composition of the reservoir fluids is ongoing.

"We will provide an update on Danny II after completion," Edwards said.

The Danny II exploration well was drilled to a total depth of about 14,750ft, in water depths of around 2,800ft.

The well is currently being completed and most likely will be developed via a subsea tie back system to the company's 70% owned-and-operated East Cameron Block 381 platform located approximately 31mi to the north in 370ft of water. First production from Danny II is expected in the fourth quarter of 2012, according to the company.

Helix holds a 50% working interest in the exploration well jointly with Deep Gulf Energy LP, the operator, and Deep Gulf Energy II, LLC, both First Reserve Corp. and Quintana Capital-backed entities, who own the remaining 50% working interest.

LLOG, partners score discoveries at Son of Pluto 2 and Marmalard

LLOG Exploration Co., LLC along with its partners Ridgewood Energy, Red Willow Offshore, LLC, Calypso Exploration LLC, Deep Gulf Energy, and Houston Energy announced two discoveries at wells drilled earlier this year.

Son of Pluto 2, located on Mississippi Canyon Block 431, was drilled to a total depth of 18,500ft and encountered an oil-bearing zone and a separate gas-bearing zone. The well was suspended pending completion in the first quarter.

Marmalard, located on Mississippi Canyon Block 300, was drilled to a total depth of 18,100ft and encountered two oil-bearing zones. The well was suspended pending completion in the second quarter. A development plan for the discoveries is actively being worked by the partnership.

Son of Pluto 2 and Marmalard are LLOG's first two exploration wells since the Gulf of Mexico 2010 drilling morato-

rium. Meanwhile, LLOG said leases it acquired at the June Gulf of Mexico lease sale will add to its inventory of high-quality amplitude prospects in its deepwater core areas, expand the company's activities into the Norphlet play, and provide additional high-value shelf prospects.

Pemex has new deepwater GoM gas discovery near other finds

Pemex has confirmed the production potential of the offshore Gulf of Mexico

deepwater Catemaco Fold Belt with the drilling of the Kunah 1 well. The new 3P gas reserves are between 1.5 and 2tcf and include some liquids.

Kunah 1 is 78mi northeast of Veracruz in 7,077ft water depth and was drilled by the Centennial semi-submersible rig. The well tested at 34Mmcf/d of gas and 100b/d of liquids, the company said. This well joins previous discoveries by Pemex in wells Lakach 1 and Piklis 1.

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Enesco takes delivery of the final 8500 Series ultra-deepwater rig

Enesco plc has taken delivery of the seventh and final rig in the ENSCO 8500 Series at the Keppel FELS shipyard in Singapore, where all the rigs in the series have been built. The rig is contracted to Anadarko Petroleum for work in the U.S. Gulf of Mexico starting in December.

"We undertook this series in 2005 based on our reading of the market and of our customers' needs, and time has proven us right on both counts. It's a dependable, efficient workhorse rig and customers keep coming back," said Dan Rabun, Enesco's chairman, president, and chief executive officer.

The ENSCO 8500 Series rigs were the first to be recertified by regulators for work in the U.S. Gulf following the Macondo incident and achieved 97% utilization worldwide in 2011. These rigs have also helped Enesco achieve the number one customer rating in deepwater drilling in the annual EnergyPoint survey for the past 2 years.

"The cost-efficient proprietary design and standardized approach to the series have paid off for both Enesco and our customers," said John Knowlton, an Enesco



One of Enesco's 8500 Series drilling rigs

senior vice president. "As a result, we have made standardization one of the elements that sets our fleet apart, not just in this series but in our high-spec jack-ups and our drillships as well."

GPS Jupiter jack-up secured to drill offshore Tunisia in December

Cooper Energy Ltd. and the Bargou Joint Venture have signed a letter of intent with Grup Servicii Petroliere SA to contract the GPS Jupiter jack-up rig to drill offshore Tunisia. The Hammamet West 3 well is scheduled to spud this December, depending on completion of prior rig commitments.

The Hammamet West oil find is on an anticline in the Bargou Exploration

Permit, Gulf of Hammamet in 164ft water depth. Two wells drilled to date indicate a gross oil column of at least 623ft in the Abiod formation.

Participants in the Bargou Joint Venture are Cooper Energy Bargou Ltd. (30% and operator), Dragon Oil plc (55%), and Jacka Tunisia Bargou Pty Ltd. (15%).

CX-15 buoyant tower on its way to Peru's Corvina for installation

The world's first buoyant tower drilling and production platform was loaded in early August and on its way to Corvina field offshore Peru, according to Wilson Offshore & Marine Ltd. and BPZ Energy. Both hull and topsides were loaded onboard a single heavy lift transport vessel, the Osprey, which was sailing to Peru for the installation operation.

When installed, the buoyant tower will support the three-level topsides facility designed by Audubon Engineering and GMC Ltd. and equipped to produce 12,200b/d of oil, 12.8Mmcf/d of gas, and to inject 3,500b/d of water.

Additionally, the facility will be able to support a drilling rig with 24 well slots.

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Partners Rosneft, ExxonMobil open bidding for Arctic rigs

Russian State oil major Rosneft and ExxonMobil have set up a tender for the design and construction of oil rigs that would facilitate their exploration of the Arctic shelf, Rosneft said in a statement.

The move is the latest development in the strategic cooperation between the two energy giants, which signed an agreement last April to develop offshore hydrocarbon deposits in the Kara and Black seas.

The two companies estimate that, in the Kara Sea alone, there is a deposit of around 85Bbbl, scattered throughout some 23 different areas. Drilling is expected to start in 2015.

QGOG expands services with operation of three drilling rigs

Queiroz Galvão Óleo e Gás (QGOG), in partnership with Sete Brasil, signed charter and services agreements for three semi-submersible ultra-deepwater drilling rigs, named Urca, Bracuhy, and Mangaratiba. QGOG will operate the rigs; QGOG Constellation, through one of its subsidiaries, holds a 15% equity stake in each rig.

The drilling rigs will be built at the BrasFels shipyard in Angra dos Reis, Rio de Janeiro, Brazil, with local content above 55%. They are expected to begin operating in 2016, 2018, and 2019, respectively, and are part of the package of 21 drilling rigs

negotiated between Sete Brasil and Petrobras. The charter and services agreements with Petrobras have a 15-year term on each rig, with a renewal option of an additional 5 years.

Once constructed, the rigs will operate in the Brazilian pre-salt layer in water depths of up to 3,000m, with the ability to reach up to 10,000m of drilling depth capacity.

Technip charters newbuild vessel for North Sea construction work

Technip has entered a long-term charter agreement for a newbuild offshore construction vessel with North Sea Shipping. The charter will be for a period of 5 or 7 years commitment plus a 5-year extension option, with a further option to purchase the vessel.

The vessel is specially designed and equipped to suit the Norwegian installation market. This advanced subsea construction vessel has a length of 142m and width of 27m and is equipped with a 400t crane and a 2,000t carousel for storage of flexible pipe below deck. The vessel will be built at Bergen Group BMV AS in Bergen, Norway and delivered in 2014.

The new vessel's design specification meets the highest requirements for subsea work and, although it will work predominantly in the North Sea, it is also suitable for deepwater operations worldwide.



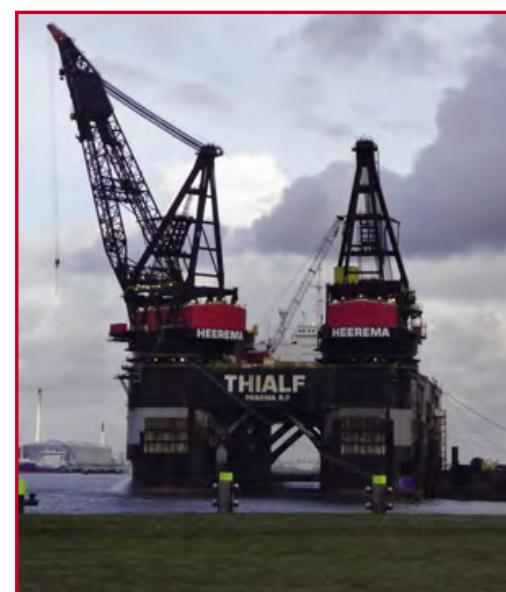
Endeavour jack-up to work in Cook Inlet

Buccaneer's Endeavour jack-up loaded on boat headed to Alaska

The jack-up rig Endeavour – Spirit of Independence was loaded onto the Kang Sheng Kou heavy-lift vessel and was in route to Alaska's Cook Inlet, said joint venture partner Buccaneer Energy Ltd. The delivery will complete the first phase of Buccaneer's business plan started nearly 2 years ago. That plan included the acquisition of the jack-up and the modification and repairs in Keppel FEL shipyard, which was managed by Buccaneer's internal management team.

The Endeavour project was financed through joint venture company Kenai Offshore Ventures, LLC (KOV). With Buccaneer in the joint venture are Singapore-listed Ezion Holdings Ltd. which specializes in the development, ownership, and chartering of strategic offshore assets and the provision of offshore marine logistics and support services to the offshore oil and gas industries, and the Alaska Industrial Development and Export Authority (AIDEA). AIDEA will be investing a total of \$23.65 million into KOV on completion of the mobilization phase.

The Endeavour was expected to arrive in the Cook Inlet by the end of August. It's a Marathon LeTourneau 116-C. First constructed in 1982, it was upgraded in 2004 and selected following a rigorous global search process, Buccaneer said. The rig has the ability to operate in water depths up to 300ft and is capable of drilling to 25,000ft. Buccaneer said it has three offshore projects planned for the Cook Inlet.



The heavy-lift vessel Thialf

development projects in the Norwegian sector over the next few years, harnessing estimated recoverable reserves of 206Mmboe: 918bcf of gas, 31.4Mmbbl of condensate, and 6.3Mmbbl of natural gas liquids (NGLs).

Licensees are Statoil (53.775%), Petoro (30%), Centrica (13%), and Enterprise Oil (3.225%).

Heavy-lift vessel Thialf installs steel jacket on North Sea Valemon field

The heavy-lift vessel Thialf has lifted the 9,920t steel jacket into position on the North Sea Valemon field. The 525ft high construction is the biggest steel jacket installed in one lift on the Norwegian continental shelf and the first major part-delivery on the Valemon development project.

The jacket, built by the Heerema Fabrication Group BV in Vlissingen, The Netherlands, was transported from the shipyard to the field by the crane barge.

Development involves a fixed steel-jacket platform to separate gas, condensate, and water. The normally unmanned facility will be controlled remotely from the Kvitebjørn platform after drilling operations have been completed in 2016/17.

Last year, Norway's parliament approved operator Statoil's \$3.7 billion plan for development and operation of the Valemon gas-condensate field. Start-up is due in the fourth quarter of 2014.

This is one of the company's largest

Important new natural gas find for Italy's Eni offshore Mozambique

Eni said it has a new giant natural gas discovery in the eastern part of Area 4, offshore Mozambique, at the Mamba North East 2 exploration prospect. This is the fifth exploration well successfully drilled in the area. The new discovery adds at least 10tcf of gas in place to Area 4, confirming at least 62tcf in place already discovered.

The resources exclusively located in Area 4 are at least 20tcf plus of gas in place. This result further increases the total potential of the discoveries of Area 4, which is now estimated at 70tcf in place. Mamba North East 2, where Eni will conduct a production test, was drilled in 1,994m of water and reached a total depth of 5,365m.

The well is located about 9km east of Mamba North East 1 and approximately 23km from Mamba South off the Capo Delgado coast. The well encountered 200m of gas pay in stacked multiple high-quality Oligocene, Eocene, and Paleocene sands, the company said.

Stena Drillmax ICE rig begins work on well off French Guiana

The Stena Drillmax ICE drillship has started drilling GM-ES-2, the second well on the Guyane Maritime permit offshore French Guiana, according to partner Northern Petroleum.

This is a follow-up to last year's Zaedyus oil discovery, which encountered 236ft of net oil pay in two turbidite sand systems; the partners contend that this proves that the Jubilee play offshore Ghana continues across the Atlantic.

Northern quoted a Dow Jones Newswires report in which Shell France CEO Patrick Romeo stated that "drilling should last 3 months, and Shell hopes to discover a reserve of at least 300Mbbl of oil." It also reported a quote in the New York Times by partner Tullow Oil's Exploration Director Angus McCoss that Zaedyus could be larger than Jubilee, with 1Bbbl or more of recoverable oil.

Philippines opens bidding for prospects in South China Sea

The Philippines has opened the bidding process for three oil and gas exploration areas in the South China Sea, two of which are located in waters claimed by China. China claims to own waters that lie near the Philippines, including one area 79km northwest of Palawan province, while the Philippines, Vietnam, Taiwan, Brunei, and Malaysia also claim various parts of the South China Sea.



The jack-up rig Kantan 6

Rosneft, Sinopec resume appraisal drilling offshore eastern Russia

The jack-up rig Kantan 6 has started drilling appraisal well No. 3 on the North Veninskaya formation in the Veninsky license block, offshore Sakhalin.

Venineft, a joint venture between Rosneft and China Petrochemical Corp. (Sinopec), operates the block as part of the Sakhalin-3 project.

At the end of June, the transportation vessel Trustee delivered the rig for unloading in Aniva Bay, from where it was mobilized to the well location.

Planned measured depth of the well is 12,566ft, with a vertical deviation of 2,460ft. The drilling site is 4.3mi offshore in a water depth of 82ft. Drilling and subsequent geological and geophysical surveys will run through the end of September.

Commissioned in December 2010, Kantan 6 is said to be equipped for operation in Arctic conditions and was built in full compliance with Russian legal environmental requirements and regulations. Its helipad can accommodate Mi-8 helicopters.

Venineft's team of Russian and Chinese specialists is managing drilling operations, with Russian contractors operating on Sakhalin providing supply, transport, communication, and environmental monitoring services.

But, Manila Department of Energy undersecretary Jose Layug has dismissed these claims, saying that the offshore areas lie within the Philippines's internationally recognized 200nmi exclusive economic zone, where it has

"sole right to exploit resources under a U.N. convention."

Fifteen firms, including Australia's Nido Petroleum, Spain-based energy company Repsol, French gas and power firm GDF Suez, and Italy's Eni, are pre-qualified for the bids, Reuters reported. Bids for 12 of the 15 sites were opened in April, attracting mainly local firms.

Petrobras finds oil in post-salt Espírito Santo basin off Brazil

Petrobras has discovered a new heavy oil accumulation (15 degrees API) in the post-salt layer of the Espírito Santo basin. The well was drilled on the Grana Padano structure in 3,963ft of water in the BM-ES-24 concession (Block ES-M-661), 36mi offshore Vitória and 40mi from the Golfinho field.

According to Petrobras, the discovery was confirmed by the gas detector response and profiling data for reservoirs at a subsurface depth of 6,588ft.

The company operates the concession (40%) in partnership with IBV Brasil (30%) and Anadarko (30%). The partners plan to continue exploring the block and submit a proposed assessment plan to Brazil's National Petroleum Agency. The partners aim to delimit the discovery and assess reservoir volumes and productivity.

Cubapetroleo reports second dry well in the Gulf of Mexico

Cuban State oil company Cubapetroleo reported a second dry well in the Gulf of Mexico following drilling operations in July. PC Gulf, a subsidiary of Malaysia's Petronas and Russia's State-owned Gazpromneft, concluded its drilling program on 31 July off the western province of Pinar del Rio, Cuba.

Analysis of the findings revealed an "active petroleum system," but rocks were too compact and did not have the capacity to deliver significant quantities of petroleum and gas, Cubapetroleo said in a statement was published by Communist Party newspaper Granma.

The news follows Spanish firm Repsol's failed attempt in May to find a viable oil field offshore Cuba's capital city of Havana. PC Gulf and Gazpromneft will now study the geologic information of the well in a bid to evaluate the potential of other parts of the four blocks they have contracted.

Previous geologic surveys have estimated 5Bbbl to 9Bbbl of crude off Cuba. A total of 22 of the 59 blocks present in Cuba's 112,000sq.km of territorial waters have been contracted for exploratory drilling by companies from various countries.

Production

Apache well brings production at Bacchus field to 12,900b/d

Apache Corp. said a second successful horizontal well has increased production at the Bacchus field in the UK sector of the North Sea to 12,900b/d.

The latest horizontal well, Bacchus West, penetrated Jurassic-aged Fulmar reservoir sandstones and logged 889ft (measured depth) of net pay in three sections. The well is currently producing about 8,500b/d.

The first well on the field, Bacchus South, commenced production in May at approximately 6,000b/d; it currently is producing approximately 4,400b/d. Apache has a 50% working interest in Bacchus, which is a subsea tie-back to Apache's Forties Alpha platform.

Taranaki oil, gas fields offshore New Zealand 'perform strongly'

The offshore Taranaki Kupe gas and Tui oil fields continued to "perform strongly" in the June quarter, according to one of the partners in the fields, New Zealand Oil & Gas (NZOG).

Daily production from the Kupe gas and oil field was up slightly in the quarter, with total revenue in 3 months hitting \$20.8 million from gas, LPG, and light

oil. NZOG's share of the oil sold from the Tui field was just shy of 50,000bbl in the quarter, worth \$6.5 million. Kupe's ultimate recoverable reserves are now more than 25% higher than estimates before the field came into production. The latest addition was an increase of 13.4%, adding to a previous upgrade.

DNO progressing West Bukha development offshore Oman

DNO International has completed drilling of the West Bukha-5 development well in Block 8 offshore Oman. Results from the initial flow test confirm the presence of oil in the Thamama reservoir, with an estimated flow capacity of 1,500bbl/d to 2,000bbl/d. Samples and measurements indicated an oil gravity of 35 degrees API and a gas-oil ratio of 5,000cf/bbl.

These readings are not definitive, DNO said, as the well cleanup process had not been completed, and only around a third of the cumulative spent acid had been recovered. However, they are consistent with the values observed in neighboring wells.

Cleanup operations were to resume and the well put on production later this summer once normal offshore pipeline

operations were restored.

West Bukha-5 was drilled to a TD of 17,060ft, including a 2,296ft horizontal section with good fracture indications. Three intervals in the horizontal section were acidized and stimulated. However, the shallower Wasia interval had not been perforated at this stage.

The company was preparing to resume work on West Bukha-4, where the top hole section was previously drilled. The Noble Roy Rhodes rig was to then drill a third well on the nearby Bukha gas condensate field.

Lundin Petroleum receives mixed performance from North Sea fields

Lundin Petroleum said reservoir performance at the BG-operated Gaupe field, which came onstream earlier this year in the North Sea, is below expectations. Initial analysis suggests that the two production wells are connected to lower hydrocarbon volumes than predicted. Monitoring continues, as do technical studies to determine potential remedial action. Lundin is also a partner in the Marathon-operated Volund field, where production is above expectations due to strong reservoir performance and improved uptime at the Alvheim FPSO.

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Chevron sanctions Lianzi offshore Angola and the Republic of Congo

Chevron Corp. said its subsidiary will proceed with the development of the Lianzi field located in a unitized offshore zone between the Republic of Congo and the Republic of Angola. Located 65mi offshore in approximately 3,000ft of water, the Lianzi field will be developed via a tieback to the existing Benguela Belize Lobito Tomboco (BBLT) platform located in Angola Block 14.

Lianzi is Chevron's first operated asset in the Republic of Congo and builds on Chevron's strong position in West Africa.

"As the first cross-border development in the region, Lianzi represents a unique cooperative approach to

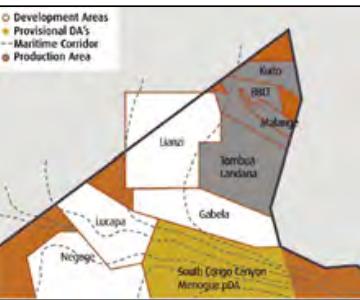
shared offshore resources and may serve as a model for the development of similar cross-border fields between the two countries," said Ali Moshiri, president of Chevron Africa and Latin America Exploration and Production Co.

The \$2 billion development will include a subsea production system and a 27mi electrically heated flowline -- the first of its kind at this water depth -- to transport the oil from the field to the BBLT platform. First oil is expected in 2015. Once completed, the project is expected to produce a maximum of 46,000boe/d.

Helicopters NZ wins support services contract with Shell

Helicopters NZ (HNZ), a subsidiary of Canadian Helicopters Group, has secured a \$40 million contract from Shell Global Solutions International to provide support services for its oil and gas operations in the Philippines.

Under the terms of the contract, the company will provide one AgustaWestland AW 139 helicopter for crew change operations from Manila to Shell's offshore petroleum platforms starting from September 2013. In the second



AgustaWestland AW 139 helicopter

GAC completes installation of Conwy platform off Liverpool

GAC Shipping UK has completed the successful installation of the Conwy platform 40 miles off the port of Liverpool, only two months after a tug carrying the rig's jacket and topside -- each weighing in at over 700mt -- set off from Rotterdam.

GAC's Liverpool office was appointed by Dutch heavy civil engineering company HSM Offshore BV to provide an integrated package of support services to construct and hook-up the platform. The journey from the Netherlands took two-and-a-half weeks due to bad weather resulting in ships having to seek shelter in Plymouth and Falmouth. They were eventually discharged at Seaforth Docks for modifications before being towed to the rig site around SEAFOX 1 so that construction could start.

Stephen Deakin at GAC Liverpool said that in addition to handling the ship agency for all the craft involved, his team was also involved in the procurement of plant and materials and arranging the construction of a quayside mattress to help spread the weight of the loads.

"It took an enormous amount of planning and coordination between the various parties involved -- the client, engineers, pilots, the harbor master, a plethora of maritime experts, the crews of all the different craft and everyone involved in getting the HSM team out to the rig location to construct the Conwy platform," he added. "Pulling all the strands together was a real test of our capabilities -- and we passed with flying colors."

Koos Krispijn, transport and installation manager for HSM Offshore BV, said that it was Deakin's understanding of their business, as well as GAC's back-up organization and commercial approach, that made the company the obvious choice of the four agencies vying for the project.

"I knew I could contact GAC at any time to arrange meetings with the authorities, get assistance from GAC's offices on the south coast when the shipments were forced to take shelter, organize civil contracting services, oversee vessel movements, provide all logistics services, make travel arrangements for personnel and help ensure their wellbeing throughout the project," he added.



quarter of 2014, the company will also provide another AgustaWestland AW 139 helicopter, which will be deployed for offshore oil and gas operations.

The company said the contract has an initial term of 4 years with potential five 1-year option periods.

"This is not only a win in terms of building on the strong relationship we have built with Shell in New Zealand, but it is also consistent with our strategy to grow the business and expand from our historical areas of strength in Australia and New Zealand deeper into the Asian market," said Don Wall, Helicopters (NZ) president and chief executive officer.

Bentley pre-production flow test under way in UK North Sea

Xcite Energy has completed the final part of the Bentley 9/03b-7 well and 7z lateral well construction program in the UK northern North Sea.

Work included installation of smart

completions equipment to enable individual laterals to be flowed, co-mingled, or shut-in; twin electrical submersible pumps to provide full redundancy; and a down-hole safety valve.

On-rig process and control packages are now fully commissioned and linked to the pipeline and in-field DP shuttle tanker Scott Spirit.

Pre-production flow test operations for data-gathering purposes have started on the 9/03b-7 (B6) lateral well, which is being cleaned up. The 9/03b-7 lateral well is designed to recover at least 45,000bbl of oil during the flow test period.

The test is expected to last up to 90 days and will be conducted at different flow rates; the aim being to compile additional reservoir and production data, including data for enhanced oil recovery. These will be used to firm up the longer term oil, gas, and water production profiles and recoverable reserves from the Bentley field.

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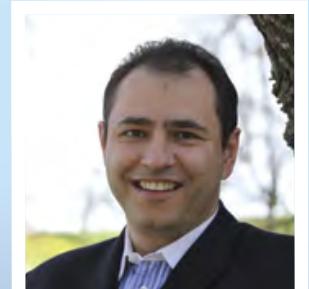
IRM

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KEYNOTE SPEAKER

"Deepstar A Global Deepwater Technology Development"

Greg Kusinski is Managing Director of DeepStar, a Global Deepwater Technology Development Consortium managed by Chevron, which represents 11 Operators and 60+ Contributor Member Companies. He is responsible for executing DeepStar program and for representing Chevron's deep water technology needs. DeepStar funds R&D and accelerates technologies in the areas of Geosciences, Reservoir Engineering, Flow Assurance, Drilling Completion and Intervention, Met-Ocean, SubSea Systems, Floating Systems and Systems Engineering.



Greg Kusinski
DeepStar Director

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Subsea Survey offers full conference delegates a new approach to the 3-day Technical Program consisting of Free Workshops, Case Studies, Panel discussions and technical presentations with plenty of Q&A time after each. Each day begins with an industry expert Keynote (speakers from companies like Chevron, Statoil, ConocoPhillips, Shell, BP and others invited). The Technical program covers 4 main themes – Subsea Survey, IRM, Metocean and Decommissioning and Abandonment Surveys. Interested presenters of papers, case study and workshops should contact Dan White or Ladd Borne immediately as presentation time is limited.

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5. **VIP INVITATIONS** - In addition, Subsea Survey IRM offers Oil & Gas operators free invitation-only full conference passes to attend the technical sessions, exhibits, luncheons and networking events. Operators wishing to attend may contact Dan White for an invitation.
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MPO expands delivery of NSD continuous circulation system

Managed Pressure Operations International Ltd. (MPO), a provider of technologically advanced managed pressure drilling systems, is expanding its delivery of the Non-Stop Driller (NSD) Continuous Circulation system, said Charles Orbell, MPO's president and chief executive officer.

By maintaining constant bottom hole pressure (BHP) and enabling continuous hole cleaning during connections, the NSD continuous circulation system prevents well bore ballooning, stuck pipe incidents, and connection gas buildup, significantly reducing non-productive time. The NSD is now being utilized successfully in operations from the U.S. to the Middle East and Asia.

The NSD sub consists of a ball valve and custom-designed, high-pressure side entry connection valve and can be rapidly prepared to accommodate all drilling pipe connection sizes and types.

As a cost-effective continuous circulation system, the NSD system can be used in a wide range of applications, including conventional overbalanced drilling; deep-water operations; extended reach drilling of long high angle or horizontal sections; high pressure, high temperature (HP/HT) wells; air and foam drilling; managed pressure drilling (MPD) operations; and underbalanced drilling (UBD) operations.

For more information, contact Charles Orbell, managed pressure operations, phone 832-448-1251, or e-mail Orbell at c.orbell@managed-pressure.com.

Deep Casing Tools awarded first order for tools in challenging field

Deep Casing Tools, a casing and completion technology specialist, announced its first order of tools for the challenging Oseberg field in the Norwegian sector of the North Sea. Statoil has ordered 7in. Turbocaser

Express tools to support the Oseberg East development. The Statoil application follows other international successes with the technology this year. Deep Casing Tools' breakthrough Turbocaser™ Express delivers a step change in the well construction process. It is a high-speed drillable reaming system that enables casings and intermediate liners to be landed at target depth the first time. After normal cementation, the internal assembly can be drilled through in minutes in one cost-effective operation.

The Turbocaser Express is an enabling technology for all wells to ensure casing is set at the planned depth, a fundamental building block of improved well integrity. The Turbocaser Express has particular application where hole conditions can deteriorate with time and where wiper trips can be eliminated.

"We are pleased that our unique technology has been selected for use in this important and challenging well. We greatly appreciate the confidence that Statoil has demonstrated by placing this first order with us," said Lance Davis, Deep Casing Tools' chief executive officer.

High performance rod guides feature hydrodynamic design

Robbins & Myers Energy Services Group has introduced its latest high performance rod guide for progressing cavity downhole pumping applications. The New Era® CrossOver™ High Performance Rod Guides can effectively increase production and decrease workover costs by extending the rod and tubing service life in standard and high temperature applications. These rod guides deliver maximum performance, even in well conditions that reach up to 500°F.

The New Era CrossOver rod guide has a hydrodynamic design manufactured from engineered plastics enhanced with



performance additives specifically tailored to withstand high-temperature well conditions. This design helps keep fluid closer to laminar flow around the guide and decreases the chance of gas breakout.

The concave body channel allows wider vanes, more erodible material than other designs, and low fluid drag. Additional features and benefits include

reduced hydraulic drag force that maximizes carrier bar loads on the down-stroke; wider vanes for a maximum surface bearing area; custom design for each rod and tubing size to allow maximum vane width and optimum bypass area; nominal tubing sizes of 2in., 2.5in. and 3in.; and dura Guide™ wear indicators provide easy visual confirmation of remaining erodible material on guides.

For more information, visit the company website at www.rmenenergy.com.

Math-powered leak test for oil, gas industry announced by USON

Manufacturers of vessels, pipelines, and other equipment for the oil and gas industry that require leak testing may be seeking continuous quality improvements and faster leak test cycle times while maintaining. Gage R&R can now schedule customized videoconference demonstrations of the mathematical functions built into USON's recently unveiled Optima vT Leak and Flow Tester.

These one-on-one, no-cost video consultations will include an application-specific demonstration of how Optima's built-in mathematical tools could improve yields and quality.

In addition to the built-in math functions, features include capabilities for vacuum decay tests, gauge pressure decay leak testing, differential pressure decay leak tests, mass flow leak detection (including back pressure and differential), upstream and downstream cracking pressure, pressure rise tests, burst tests, laminar flow tests, force decay testing, and occlusion testing; state-of-the-art microcontrollers comparable to those used in the most sophisticated and demanding consumer electronics applications; channels with up to four sensors-channel, totaling up to eight sensor inputs; simultaneous testing on all sensor inputs; fully customizable pneumatic controls; and large, easy-to-read full-color touch screen display with intuitive user interface.

Appointments can be scheduled by writing to OptimaMath@uson.com or calling Gene Grilli at 281-671-2000.

Prior to the video conference consultation, a USON leak testing specialist will review current leak test methods in place so that a succinct demonstration of the relevant math functions of Optima that will have greatest impact are highlighted in the demonstration.



FPSO Usan gets environmental and marine monitoring system

A new environmental and marine monitoring system has been designed and commissioned by Fugro GEOS for Total's newbuild Usan FPSO. The real-time meteorological and marine data essential for safe offshore operations are provided by sensors located on a surface Wavescan buoy together with a range of instrumentation onboard the facility.

Built at the Hyundai Heavy Industries Shipyard in South Korea, the 320m Usan FPSO is a critical component in Total's second biggest project offshore Port Harcourt, Nigeria. Prior to its 3-month voyage to the Usan oilfield, Fugro GEOS' environmental and marine monitoring system was installed onboard in South Korea.

Fugro's system acquires and processes data and distributes them in real-time via displays in both the radio room and the central control room onboard; it is also interfaced with the FPSO's distributed control system (DCS).

The provision of real-time meteorological and oceanographic (metocean) data is essential for safe helicopter operations and also ensures safe tanker move-



Total's newbuild FPSO vessel Usan

ments, assists berthing and general offshore operations, provides vessel performance and response monitoring, and improves weather forecasting. The data provided by the system includes wind, temperature, humidity, pressure, cloud, visibility, precipitation, and vessel motion; sensors on the Wavescan buoy, located 2km from the FPSO, provide marine parameters such as waves, current profiles, and sea temperature. This real-time information is accessible from Total's onshore base and is also to be made available to Météo-France.

"Fugro's Wavescan buoys have been in continuous use for 20 years. This low-maintenance data collection buoy is considered to be the industry standard for the sea conditions at Usan and for the range

of marine measurements necessary for safe offshore operations," said Steven Hamilton, operations manager of Fugro GEOS' offshore systems division. "All sensors have a strong track record, and we have successfully designed and installed metocean packages similar to this one on numerous FPSOs, rigs, platforms, TLPs, jack-ups, and other vessels around the world."

dGB Earth Sciences debuts new OpendTect 4.4 software program

New OpendTect 4.4 software is now available from dGB Earth Sciences. The program includes three new plugins and improvements in interpretation, editing, and visualization. The new plugins are Seismic Net Pay, Seismic Feature Enhancement, and Computer Log Analysis Software (CLAS). dGB's HorizonCube and Sequence Stratigraphic Interpretation System (SSIS) plugins also have been enhanced and extended within OpendTect 4.4. A new 3D slider allows the easy extraction of 3D bodies from the HorizonCubes generated, and the new HorizonCube editor also supports manual updates of HorizonCubes, as and where needed.

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Tritech: Outstanding Performance in Subsea Imaging

As an industry leader in acoustic imaging and complementary subsea equipment, Tritech continues to enjoy global successes as it celebrates its first international office in North America.

Tritech International Limited (Tritech) is headquartered in Westhill, Aberdeenshire, on the outskirts of Aberdeen, the European energy capital. The company began 21 years ago and today encompasses three UK sites, a global distributor network, and its first international office on the outskirts of Houston, Texas, the American energy capital.

Through a continued global focus in the international supply of its subsea products, Tritech has built key international relationships, including unrivalled Original Equipment Manufacturer (OEM) partnerships. As an innovative Scottish company, Tritech continues to grow its international presence and is committed to establishing a direct presence in key hydrocarbon markets, as demonstrated in the North American region and an imminent office opening in Brazil.

Outstanding Performance in Underwater Imaging

Tritech's first and foremost expertise is in the design, manufacture, and supply of ROV and AUV sonars and associated sensors. Tritech's first sonar revolutionized the industry, challenging traditional builds, which were bulky and expensive. This quickly

established Tritech as a key supplier for ROV sensors, and, today, Tritech's Super SeaKing is recognized as the industry-standard sonar for ROV obstacle avoidance.

Tritech's portfolio offers an extensive range of high-performance acoustic imaging products and a range of complementary equipment such as cameras, positioning systems, and hydraulic tooling. As it continues to develop its product offerings to meet ever-changing

market needs, Tritech recognizes that its customers are working in deeper, harsher conditions offshore and strives to ensure that its products are designed to reflect these tough working conditions, offering unrivalled reliability in the field.

Through early engagement with its customers, Tritech can address the many requirements and expectations they have for products that can overcome offshore operation challenges.

Developing Key International Markets

By far, Tritech's largest market outside of Europe is North America. Undoubtedly, a major OEM contributor in this market is the US Navy to whom Tritech is a respected provider of sonars for mine neutralization systems. A recent contract with German-based Atlas Elektronik GmbH (for an urgent U.S. Naval requirement) demonstrates Tritech's expertise in developing transatlantic relationships.

Tritech has established OEM partnerships with all of the major ROV and AUV manufacturers, and it is these close relationships that ensure Tritech products are available to operators in new and emerging markets as well as those in established markets.

Through such close engagement, Tritech has launched a packaged survey sonar system. Developed in conjunction with U.S. law enforcement groups, this system addresses a critical need for a Search and Rescue (SAR) tool. The system utilizes Tritech's 360° SeaKing Hammerhead sonar alongside the high-resolution side-scan StarFish 990F and the real-time multibeam imager Gemini 720i which provides rescuers with a 120° field of view



Image 1: "Beer can" sonar, Tritech's first product design, offered the ROV industry a high-quality compact sonar, dubbed the "beer-can" sonar due to its size.



Image 2: Gemini 720i "real-time" Multibeam Imaging Sonar

of the underwater scene. The Gemini 720i has received a strong evaluation in the U.S. Department of Homeland Security's System Assessment Validation for Emergency Responders (SAVER) program, whose evaluations assist emergency responders in making procurement decisions.

Building the International Profile

As an ambitious company with a substantial track record, Tritech's international footprint is growing, with an increased international presence elevated by the opening of Tritech North America (TNA).

Led by Maurice Fraser, former Sales & Marketing Director with Tritech, TNA will seek to develop and grow the company's North American business, providing a greater connection and deeper engagement with its customers in the region.

Furthermore, to facilitate the company's impetus for growth and continued business successes, Tritech is currently finalising its office opening in Brazil to service the increasing demands for its products in the emergent South American market.

Reader Enquiries:

Maurice Fraser
Tritech North America
1323 Price Plaza Drive
Katy, TX 77449
Tel: +1 281-398-5600
Fax: +1 281-754-4401
E-mail: info-usa@tritech.co.uk
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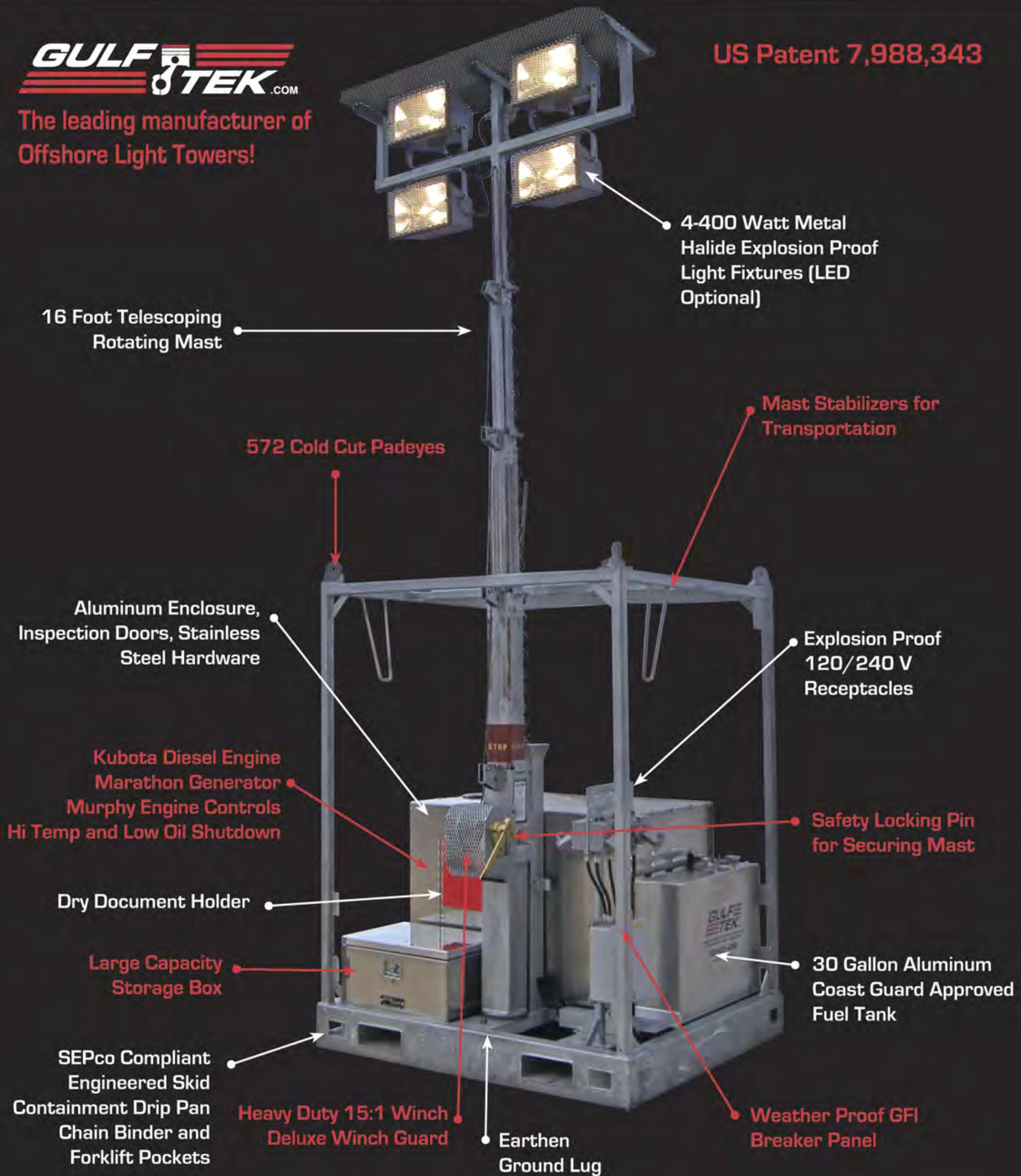


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Forum Subsea Technologies announces the deployment of the Perry™ T-1200 Trencher

Forum Subsea Technologies, a business line of Forum Energy Technologies, Inc., is pleased to announce the completed deployment and successful operation of the new Perry T-1200 Trencher for Canyon Offshore, a subsidiary of Helix Energy Solutions Group.

The T-1200 is mobilized to bury power cables at Sheringham Shoals, an offshore wind farm in the UK that is owned equally by Statoil and Statkraft through joint-venture company Scira Offshore Energy Limited. The wind farm, which is currently under construction, has 88 wind turbine generators and is located 17 to 23km offshore the coastal town of Sheringham, North Norfolk.

Perry trenching systems are recognized by many clients as a market leader in this technology due to their design, reliability, and capability and have been successfully utilized in challenging trenching environments throughout the world. The T-1200 Trencher is an update of the successful T-750



trencher also owned and operated by Canyon Offshore since 2004.

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

DeepOcean completes pre-cut trenching workscope

DeepOcean announces the successful project completion of a recent pre-cut trenching contract with Statnett & Energinet.dk. The pre-cut trenching workscope on the Skagerrak 4 HVDC Submarine

Interconnector project was completed on time, on budget, and with a successful HSE record.

DeepOcean provided the engineering and project management for the project in Denmark, including pre-trench survey and pre-cut trenching of 23km of the Skagerrak 4 route. Using the sophisticated APP pre-cut trenching plough, DeepOcean executed the project with zero plough downtime, cementing the company's position as a leader in pre-cut trenching solutions.

As an independent contractor with advanced pre-cut ploughing capability, DeepOcean offers a number of ploughs for this solution and has a proven track record in the operation of these. Its specialist ploughs offer a high level of control and precision, capable of navigating along pre-determined cable routes and transitioning in and out of the seabed as required. These solutions eliminate any risk of product damage and provide a high-quality trench for the protection of HVAC and HVDC submarine cables.

Senior project manager, David Brown, comments on the project completion, "We are very pleased with the outcome of the recent Skagerrak 4 trenching scope of work. Having been using pre-cut trenching as the technique of choice in the Oil & Gas market for many years, our knowledge and experience of working with the ploughing tools has enabled us to complete this project on budget and with zero plough downtime."

For more information, visit www.deepoceangroup.com.



Wave Glider deployed to help track white sharks

A sleek, unmanned Wave Glider robot has been deployed off the U.S. coast near San Francisco – the latest addition to an arsenal of ocean observing technologies revealing in real time the mysterious travels of great white sharks and other magnificent marine creatures.

The self-propelled wave and solar-power glider is part of a new network that includes data receivers on fixed buoys that will pick up signals from acoustic tags on animals passing within 1,000ft and transmit the data to a research team onshore led by Stanford University Marine Sciences Prof. Barbara Block.

The long-lasting, relatively inexpensive acoustic tags and the local array of both fixed and mobile ocean transmitters will fine-tune 12 years of insights gleaned from satellite-connected tags used to follow thousands of animals throughout their entire Pacific journeys.

Dr. Block and her team are on a mission to create a “wired ocean” where

live feeds of predator movements are relayed by a series of “ocean WiFi hotspots” on moored buoys and self-propelled Wave Gliders carrying acoustic receivers.

The bright yellow, 7ft long Wave Glider and fixed buoys will transmit data this summer and fall from animals off the California coast near San Francisco, between Monterey Bay and Tomales Point. In time, Dr. Block hopes to extend this ocean observing network down the entire west coast of North America, tracking animals that range in size from salmon smolts to large ocean-going predators such as white, mako, and salmon sharks.

Promare sends first robot to the bottom of the Puerto Rico Trench

The culmination of a 2.5 year robotic underwater vehicle development effort took place on 1 to 2 August resulting in 3hrs of video recording and the recovery of the deepest marine life ever found.

Biologists will now study in detail the high definition video and examine the retrieved samples of what appear to



be a form of shrimp. The video also shows fish and what appear to be other life forms on the seabed; all evidence of highly developed and rich bio-diversity at the bottom of the trench.

The Puerto Rico Trench, the deepest part of the Atlantic Ocean, is about 500mi long and some 50 to 125mi north of Puerto Rico, and is more than 26,000ft deep.

Gregg Cook, Chairman of PROMARE, is thrilled that “we were the first to send a robot to the bottom of the Puerto Rico Trench and recover images and actual marine life specimens.”

For more information, visit www.promare.org.

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Phoenix-built 1000ft saturation diving system passes U.S. Navy at-sea test

Phoenix International Holdings, Inc. (Phoenix) is pleased to report that the one-of-a-kind Saturation Fly Away Diving System (SATFADS), designed and built by Phoenix for the U.S. Navy, recently completed manned at-sea testing to a depth of 1,000ft in the Gulf of Mexico. The trials were led by the Naval Sea Systems Command (NAVSEA) Supervisor of Salvage and Diving (SUPSALV) and executed by Navy divers from the U.S. Navy's Experimental Diving Unit (NEDU). In addition to designing and building the SATFADS, Phoenix also played a key role in supporting various aspects of the

at-sea testing, including providing remotely operated vehicle support, coordinating barge mobilization and demobilization, and managing vendor support throughout the actual at-sea testing.

The at-sea tests commenced on 4 May, when the barge holding the SATFADS and all associated support equipment was moved to its anchorage a few miles off Panama City, Florida. After a few days of unmanned testing, manned dives commenced on Tuesday, 8 May when U.S. Navy divers entered the bell. After making successful diving bell runs to target test depths of 400ft and 700ft, Navy divers were set for the final test. On the morning of Friday, 11 May, Navy divers exited the diving bell at just over 1,000ft. This event signified reaching the designed operational depth of the SATFADS. Following this milestone, the six Navy divers remained in the SATFADS for the next 10 days while going through gradual decompression; on Tuesday, 22 May, all divers safely exited the system – finally “reaching the surface.”

For more information, visit www.phnx-international.com.

Hull inspection robot successfully completes Government testing

Bluefin Robotics, a leading provider of unmanned underwater vehicle (UUV) solutions for U.S. Navy Programs of Record, announces that the HAUVE-3, a hovering underwater robot, has completed Government Acceptance Testing as the production system for the Explosive Ordnance Disposal (EOD) Hull Unmanned Underwater Vehicle Localization Systems (HULS). The HAUVE-3 is designed to autonomously perform ship hull inspection and obtain 100% sonar coverage – a demanding task typically performed by divers to secure our ports and harbors.

The week prior to the formal Government Acceptance Testing, Bluefin provided training to Fleet personnel. Trainees then operated the HAUVE-3 in several in-water operational scenarios as part of the formal testing. The system demonstrated increased operational speeds and nearly twice as much endurance as its predecessor – the prototype HAUVE-2. In addition to its standard DIDSON imaging sonar, it is equipped with a camera, which provides

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vital supplemental visual information to divers tasked with relocating contacts.

The Navy also conducted a series of environmental tests consisting of freezing, shaking, and baking one of the vehicles and its support equipment. Testing highlighted specific areas for ruggedization in order to optimize the system for very harsh conditions. However, even after the tortuous testing, operators were able to power up all of the vehicle subsystems successfully.

In 2011, Bluefin Robotics was awarded a contract modification from Naval Surface Warfare Center, Indian Head to move the system design into production. Since then, Bluefin has delivered one system, which constitutes two vehicles and support equipment. An additional two systems are currently in production.

For more information, visit www.bluefinrobotics.com.

Falcon frees Willy

Helping free Willy in the fourth remake of the film is a strong-swimming Falcon.

With the world-famous Willy

strapped to its back, the small Saab Seaeye Falcon ROV used its five powerful thrusters and intelligent electronics to give Willy the wriggle he needed to swim free.

Filmed in South Africa, the realistic swimming motion was cleverly recreated through the precise fingertip control of the Falcon by ROV pilots Nick Stroud and Josh Smit of Marine Solutions.

The biggest challenge, according to Marine Solutions director, Kevin Bey-Leveld, was to make the Orca whale, with its large body, look like it really was swimming along.

The success of the project, says Kevin Bey-Leveld, helped keep down the cost of filming.

"The way the Falcon flies, combined with trained ROV pilots, allowed the director to film the sequences in a relatively short space of time in terms of normal filming," he explains.

Although small and compact, the Falcon was powerful enough to maneuver in both a swimming pool and the open ocean – the trick, explained Kevin Bey-Leveld, was to balance the buoyancy to compensate between sea water and fresh water.

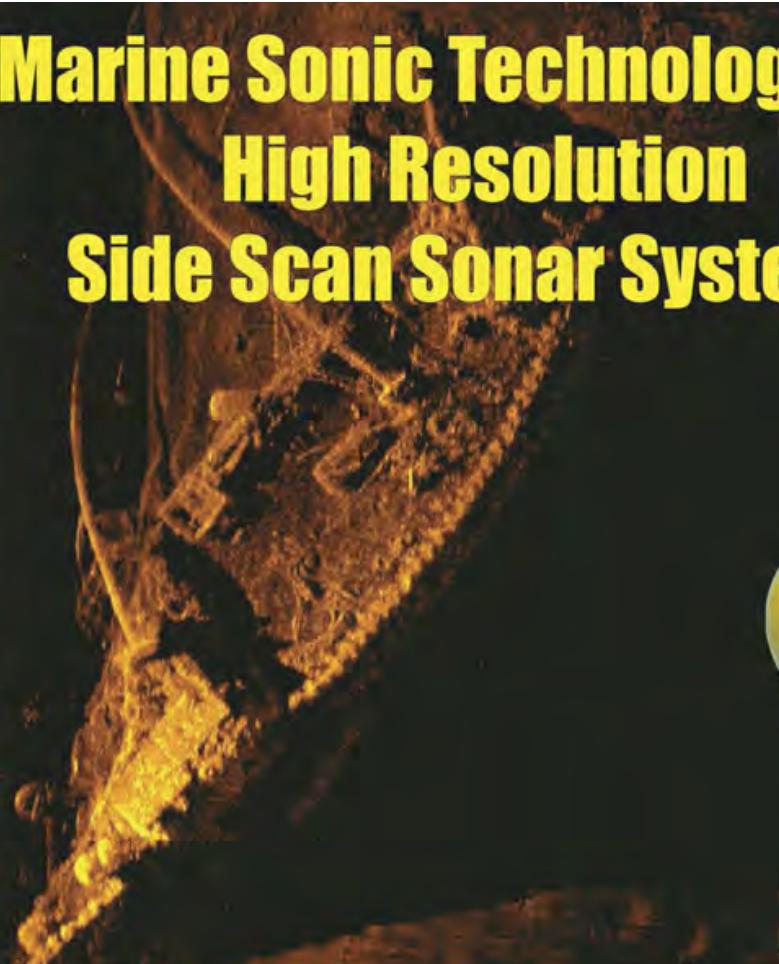


It is not the first time the Falcon has starred in the movies. In the Bollywood film, "LUCK," also filmed in South Africa, it was strapped under a 4.2m long latex and polyurethane replica of a tiger shark and used to replicate the realistic swimming motion of the shark and its violent attacks on hapless swimmers.

The Falcon is owned and operated by Cape Town-based Marine Solutions. For more information, visit www.marinesolutions.co.za.

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MISC Berhad chooses Inmarsat XpressLink™ for its fleet

Inmarsat announces that leading Malaysian shipping conglomerate MISC Berhad (MISC) has signed up 46 of its vessels, comprising chemical and LNG tankers, for Inmarsat's XpressLink™ service. Additionally, within the scope of the agreement, there is potential for future opportunities and new deployments with the MISC Group. The XpressLink™ solution from Inmarsat is a fully integrated and managed combination of VSAT and market-leading FleetBroadband™ delivering unlimited data availability across the world's oceans. It includes an option for MISC Berhad to double its available bandwidth at a pre-determined monthly rate when Inmarsat's Global Xpress® constellation becomes commercially available in 2014. Inmarsat XpressLink™ is a communications solution designed to take the maritime customer into the future. It combines Inmarsat's high-volume Ku-band VSAT system with the versatility of FleetBroadband in a single package. The integration of both Inmarsat services means that ship and shore communications can be seamlessly and professionally managed and supported end-to-end thanks to Inmarsat's state-of-the-art global infrastructure. The dual system design also results in unmatched redundancy, delivering near 99.9% uptime.

John T. Essberger appoints Telemar

The Telemar Group, through its German subsidiary Telemar GmbH, is to provide broadband satellite communication for the entire John T. Essberger fleet. The Essberger Group, currently operating a fleet of 35 vessels, is a diversified group with activities in the business fields of ship owning and management, liner shipping, and maritime-related services. The contract encompasses satellite airtime through Telemar's partner Vizada until 2015. Moreover, Telemar will – in a turnkey approach – deliver and install a customized hardware solution, including FB250 terminals as per Essberger specifications (for 21 vessels), which allow access to the global arteries of digital communications in real-time via the Inmarsat Fleet Broadband network and create a value platform for Essberger. Further value will be generated by Telemar's dedicated project engineer, maintenance of the equipment, and a 24/7 priority customer service. The adoption of Fleet Broadband consolidates the Telemar strategy that considers Inmarsat as the most reliable partner for its integrated projects on the strength of Inmarsat state-of-the-art, high-performance, affordable, and global broadband services. John T. Essberger has selected Telemar for its unique value of integration and management of all communications and networking needs. John T. Essberger appreciates the distinctive global servicing network offered by Telemar and its integrated capabilities. Telemar is not only a communication provider and a systems integrator with distinct technical expertise, but also a global maintenance player close to the end user. The end user benefits from competencies and synergies made possible by Telemar's unique field experience, with more than 100 thousand hours onboard by its engineers to servicing full electronic bridge. This puts Telemar in the best position to design and implement Broadband systems and to optimize the total cost of ownership for John T. Essberger.

Harris CapRock selects the Intelsat EpicNG

Intelsat S.A. announced that Harris CapRock Communications, a global provider of fully managed communications for remote and harsh environments, will utilize the Intelsat EpicNG platform on Intelsat 29e for advanced fixed and mobile services.

Under a multi-year agreement, Harris CapRock will utilize the next-generation Intelsat EpicNG platform to expand its service offerings and offer new applications to its global customers across the energy, maritime, and government markets. Harris CapRock currently has Ku-band capacity on multiple satellites on the Intelsat fleet, which will expand to Intelsat 29e when it is launched.

The agreement, which will enable the provision of more than 1GB of throughput on the Intelsat EpicNG satellite platform, furthers Harris CapRock's global relationship with Intelsat.

Demand for Harris CapRock's turn-key solutions to the energy, maritime, and government industries reflect the growing need for broadband connectivity, whether on the ground, at sea, or in the air. Connectivity in these environments is mission-critical to enabling constant monitoring and control of valuable assets and mobile platforms in remote locations. Intelsat's global satellite infrastructure enables broadband connectivity to virtually any point on the Earth's surface.

The Intelsat EpicNG platform, initially composed of Intelsat 29e and Intelsat 33e, will utilize multiple frequency bands, wide beams, spot beams, and frequency reuse technology. Intelsat EpicNG will be complemented by Intelsat's existing satellite fleet and IntelsatONESM terrestrial network. The two satellites, which are expected to launch in 2015 and 2016, respectively, will serve all of the populated continents.

For more information, visit www.harriscaprock.com.

O3b Networks teams with Harris CapRock

O3b Networks is collaborating with Harris CapRock Communications to implement and maintain O3b Maritime, a state-of-the-art broadband solution, for Royal Caribbean Cruises Ltd's Oasis of the Seas, the largest and most innovative cruise ship in the World.

The new service, based on O3b's unique Medium-Earth-Orbit (MEO) satellite fleet and Harris CapRock's expertise as a maritime systems integrator, will dramatically improve the Internet experience aboard the cruise ship. The more than

8,000 guests, staff, and crew members traveling the Caribbean on the cruise liner can now look forward to vastly enhanced connectivity at sea.

As O3b's systems integrator for Oasis of the Seas, which sails under the cruise company's Royal Caribbean International brand, Harris CapRock will deploy the stabilized VSAT antenna systems and provide a fully managed service, enabling the delivery of fiber quality bandwidth to the vessel throughout her voyage.

In service in summer 2013, O3b Maritime will enable maritime service providers to provide fiber-like connectivity to cruise ships and super yachts across the Caribbean and the rest of the world's oceans.

For more information, visit www.o3bnetworks.com.

Orolia acquires Boatracs

Orolia, a group specialized in positioning, navigation, and GPS timing equipment and systems for critical operations, announced the acquisition of Boatracs Inc., a maritime information solutions provider for the commercial marine industry (fishing vessels, dredgers, tugs, barges, training vessels, rescue boats, oil platform service vessels, etc.).

The Boatracs acquisition is part of the group's strategy to move up the value chain by offering more complete business solutions to its customers operating critical infrastructure in remote or harsh environments. These solutions consist of a hardware platform, a communications beacon that allows for wireless data transmission and reception, and software that provides a web-based user interface to facilitate effective data communications between ship and shore. The business model calls for initial hardware sales, followed by recurring airtime revenue and Software as a Service (SaaS). This business model and leverageable technology platforms give Orolia the opportunity to expand its solution offerings to all its customers worldwide.

"This acquisition not only expands our product offering, but also strengthens our presence in the North American fishing and workboat market segments. It has the added benefit of bringing us critical size in the application software domain, human-machine interfaces, and client-server architectures that are crucial for the development of M2M solutions and services for our customers operating in challenging environments", said Jean-Yves

Courtois, president and CEO of Orolia.

"Strategically, we now have in Orolia a strong software center of excellence and solutions competency on which to build more valuable business contributions for all our customers."

"Boatracs will benefit from Orolia's international sales presence in the maritime sector to expand its business reach, taking advantage of our prominent brands and customer relationships all over the world," explains Irwin Rodrigues, CEO of Boatracs Inc. "As part of Orolia, we will have additional resources to accelerate our market leader position in commercial maritime communications solutions through new product offerings and global coverage and be at the forefront of meeting the evolving needs of the industry."

M2M solutions from Boatracs allow fleet managers to efficiently comply with government, safety and environmental protection regulations, while also adding value to their day-to-day business processes, all resulting in superior productivity gains.

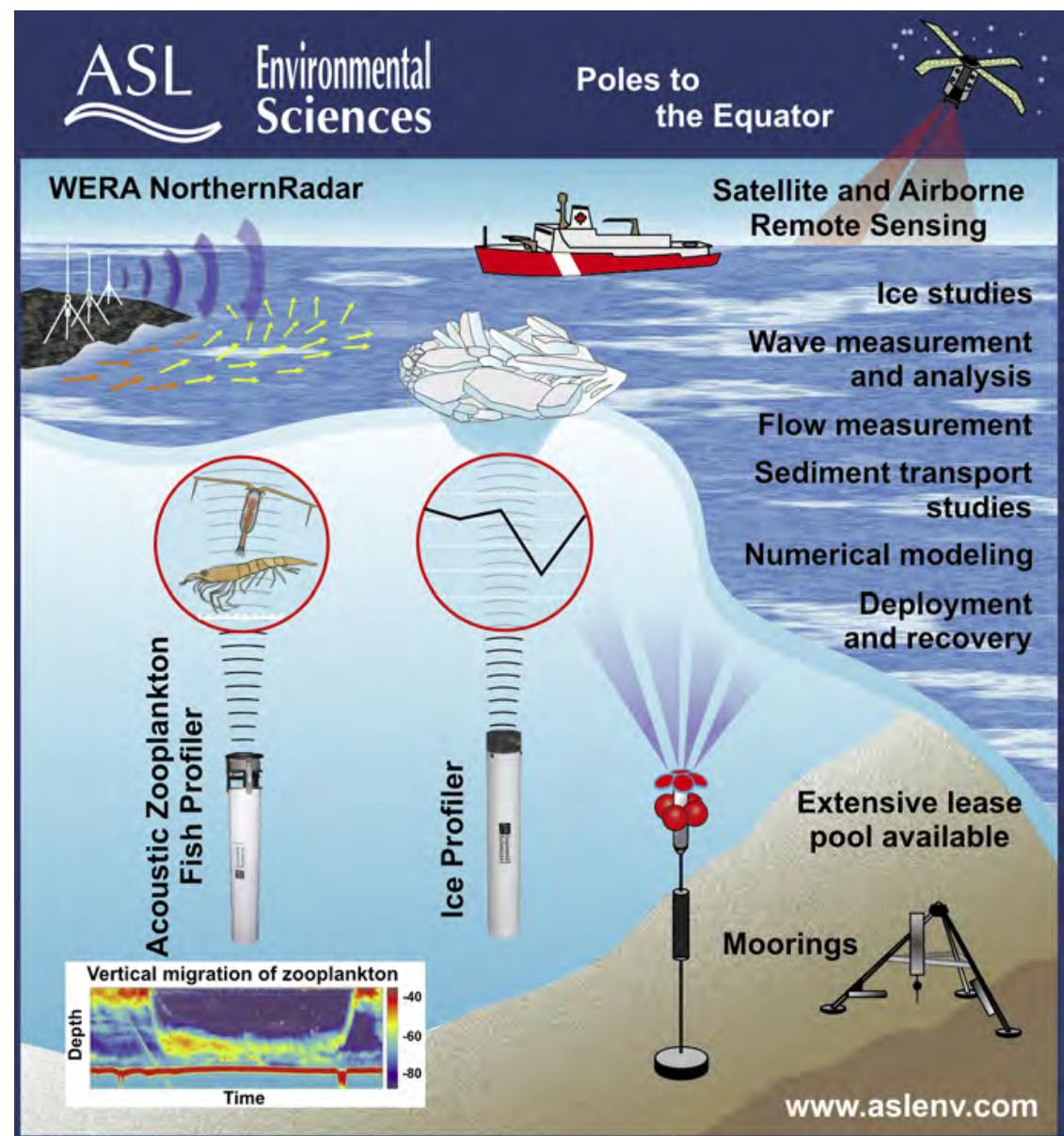
For more information, visit www.orolia.com.

Beam receives order for trial of Inmarsat Oceana terminals

Beam Communications received an initial order for US\$170,000 from a China-based satellite communications company. This initial order follows a commitment by the Chinese entity to undertake a short trial deploying 200 Beam Oceana 400 and Oceana 800 marine communications terminals on fishing vessels in China, using the Inmarsat FleetPhone Service.

The customer is a leading operator of satellite communication services in China, with more than 20 years experience providing a full range of sea, land, and air mobile satellite terminals and technology integration services for Chinese users.

The trial commencing in July 2012 will deploy 100 of the Beam Oceana 400 terminals and 100 of the Beam Oceana 800 terminals. The terminals were specifically designed to support the voice, data, and tracking communications that take place over the Inmarsat satellite network via its "Fleetphone" maritime service. The terminals were launched to the global market in late 2011 to specifically tar-



get high-volume deployments in emerging satellite markets.

A relatively short trial period is expected and, following market acceptance, the customer expects to commit to a minimum further order of 1,000 units for expansion of the trial into the broader maritime users in China.

Following the completion of successful trials, the company will further inform the market when additional

orders are placed and of plans to further commercialize the products to the mass maritime market. For commercial and competitive reasons, customer details cannot be disclosed at this time and remain confidential.

For more information, visit www.beamcommunications.com.

MTN, WMS outfits Carnival Breeze

MTN Satellite Communications

(MTN) and Wireless Maritime Services (WMS) have announced unprecedented services to Carnival Cruise Lines' newest ship, Carnival Breeze, during her first month in service. Carnival leveraged the telecommunications expertise of MTN and WMS to deliver a "shore-side" experience to more than 4,000 passengers and nearly 1,800 crew members on each sailing. Carnival Breeze began a summer schedule of European cruises 3 June and will launch year-round Caribbean service from Miami starting 24 November 2012.

MTN's VSAT services exceeded the connectivity demands of the crew, passengers, and corporate communications requirements during its inaugural month. Carnival Breeze also leveraged MTN's Internet Café solution, delivering access to passengers and crew on mobile devices such as tablets, smart phones, and laptops as well as fixed PCs to stay connected while at sea. Additionally, MTN integrated this seamless connection with Carnival's FunHub portal to provide passengers with immediate digital access to all of the Breeze's ship services, facilities, daily activities, and social media.

Through MTN's reliable VSAT solutions, a comprehensive portfolio of onboard revenue opportunities is offered to cruise line partners. The products and services, which add to the overall cruising experience, include remote access for Internet, fixed and mobile phones, MTN Worldwide Television, OceanPhone crew calling, a payroll solution for crew, and other enterprise solutions.

The WMS solution delivers seamless cellular connectivity to guests and crew members just as they would on land at sea beyond any land-based towers. Connectivity is activated when the ship leaves port and turned off when in range of land-based providers. WMS provides uninterrupted service to guests and crew so they can stay in touch with family, friends, or business associates back home while they enjoy the experiences of their cruise. Guests and crew can make and receive calls, send text messages, access e-mail, and surf the Internet at rates similar to roaming internationally.

For more information, visit www.mtnsat.com.

New version of NMEA 0183 standard released

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in the Field

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Association (NMEA) has released a significantly updated version of NMEA 0183, its well-known standard that enables the interfacing of marine electronics. Version 4.10 will improve boating safety and navigation through updates and expansions of various electronic communications "sentences" pertaining to a number of navigation and communications devices, including Galileo satellite receivers and Automatic Identification Systems (AIS).

NMEA 0183 defines electrical requirements, data transmission protocol and timing, and specific sentence formats for a 4800-baud serial data bus. Version 4.10 impacts shipboard, non-shipboard, and land-based equipment as well as networks for maritime and other industry use. The standard has been expanded to include the new Galileo Global Navigation Satellite System (GNSS). Many of the existing GNSS sentences have been extended to accommodate Galileo and future GNSS improvements.

Version 4.10 replaces V 4.00, created in 2008. The new version is backward-compatible to V 2.00.

Continued advancements in AIS technology from the ITU (International Telecommunication Union) have resulted in enhancements to a number of AIS sentences as well as the development of new ones. NMEA has worked closely with the IEC (International Electrotechnical Commission) Technical Committee 80 Working Group 15 (AIS) to include the latest AIS updates in Version 4.10.

The NMEA, in cooperation with the U.S. Coast Guard and RTCM (Radio Technical Commission for Maritime Services), has established in Version 4.10 standardized wire coding labels for NMEA signal wiring to differentiate between the NMEA 0183 "talker" and "listener" connections. In addition, a new wiring diagram illustrates device connection options.

For more information, visit www.nmea.org.

USCG receives maritime security system from Northrop Grumman

Northrop Grumman has finished core capability development of the Nationwide Automatic Identification System and delivered it to the U.S. Coast Guard to start government testing.

The system provides a more comprehensive view of vessels navigating with-

in and bound for U.S. ports and waterways. Nationwide, AIS features shore-side communications, network, and processing capability to ensure the effective exchange of AIS information.

The system is a two-way maritime digital communication system that logs information relating to a vessel's identity, position, speed, course, destination, and manifest and cargo data. The information will then be combined with other

government intelligence and surveillance data and shared with authorized government operators to enhance maritime situational awareness.

The formal government testing includes specific scenarios and test environments to meet reliability, maintainability, and availability requirements at physical and logical shore installations.

For more information, visit www.northrupgrumman.com.

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UK-Norway interconnection secures Scotland connection

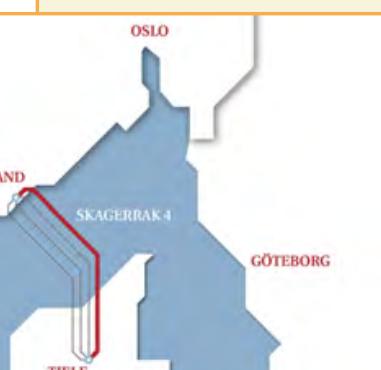
NorthConnect, the development company planning an interconnector between the UK and Norway, has signed an agreement with the Transmission Systems Operator (TSO) National Grid, securing a connection point in Peterhead, Scotland. The agreement paves the way for further detailed planning of the grid connection on the British portion of the interconnector. NorthConnect is jointly owned by Vattenfall, SSE and three Norwegian companies, E-CO Energi, Agder Energi and Lyse. When in operation, NorthConnect will be the first interconnector to directly connect the UK's electricity network with Scandinavia and will contribute to enhanced security of energy supply in both the Scandinavian and the the UK market. Furthermore, it will facilitate the development of renewable generation in both regions, as the high penetration of wind generation in UK and hydro-energy in Scandinavia complement each other. From a pan-European perspective, NorthConnect will make a significant contribution towards the development of the internal European market for electricity, with increased competition between regions in Northern Europe and a cost-efficient realization of the targets for reduced greenhouse gas emissions and renewable energy in Europe. The agreement with National Grid is an important milestone in the development of the NorthConnect Interconnector. NorthConnect is planned with a capacity of 1.400MW and is scheduled to be commissioned in 2020.

DeepOcean awarded trenching contract for Skagerrak 4

DeepOcean announces the multi-million pound pre-cut trenching contract award with Statnett and Energinet.dk on the Skagerrak 4 HVDC submarine power interconnector project. DeepOcean will provide the engineering and project management for the pre-cut trenching workscope in Denmark, which is expected to commence in July 2012. The scope of work will include mobilization out of DeepOcean's offshore base in Middlesbrough, pre-trench survey, and pre-cut trenching of 23km of the Skagerrak 4 route. Handled

out of the UK office, DeepOcean will provide its heavy-duty APP pre-cut trenching plough for the project, which provides high control and instrumentation during operation. This will be operated off the high bollard pull TSV Maersk Assister, which will arrive into DeepOcean's offshore base later next

week to commence mobilization activities. DeepOcean leads the market in the use of pre-cut trenching for the protection of submarine power cables. As the only independent contractor with sophisticated pre-cut ploughing capability, DeepOcean offers a number of ploughs for this solution and has a proven track record in the operation of these. Its specialist ploughs offer a high level of control and precision, capable of navigating along pre-determined cable routes and transitioning in and out of the seabed as required. These solutions eliminate any risk of product damage and provide a high-quality trench for the protection of HVAC and HVDC export cables.

**Cable ship Chamarel catches fire, abandoned off Namibia**

A fire broke out on the ship late afternoon on 8 August while returning from a repair operation on the SAT-3-SAFE cable off the coast of Namibia in the Atlantic Ocean. Despite the crew's efforts to control the fire, the decision was made to abandon the ship at around 8pm local time. All 56 crew members were safely recovered by a Namibian fishing vessel without injury or incident. The crew is currently located at the Namibian port, Walvis Bay, and will be repatriated in the coming days.

The cause of the fire has not yet been established, and a full investigation will be launched as soon as the vessel has been recovered. The Group will also work with the Namibian authorities to ensure minimum environmental impact during the recovery operation.

This incident had no immediate impact on submarine cables in the area, which will continue to function normally. The Group will take all appropriate measures to manage maintenance operations that had been scheduled for the coming days.

France Telecom-Orange operates six cable ships and is one of the leading players in the industry. Four vessels are dedicated to maintenance services in the Mediterranean basin, the Atlantic Ocean, and the Indian Ocean. Two vessels are specialized in laying new telecommunications submarine systems worldwide: the René Descartes, the flagship of the Group's subsidiary FT Marine, and the Teliri, which is operated by the subsidiary Elettra.

France Telecom-Orange's submarine cable activity plays an important role in the Group's overall ambitions to improve network accessibility across the world and to meet customer expectations for improved quality of service across its global network.

For more information, visit www.orange.com.

Alcatel-Lucent to supply GlobeNet's link to Colombia

GlobeNet, Oi's international subsidiary provider of submarine capacity, and Alcatel-Lucent have signed a contract to extend the GlobeNet submarine cable system to Colombia, supporting the exploding demand for broadband services between Colombia, the U.S., and other Latin American countries

This 100Gbps capable link will help GlobeNet provide

Subsea Telecom

a significant increase in capacity to support the deployment of next-generation wireless services and support the exploding demand for broadband services such as streaming media, online gaming, high-definition video, and social media applications. This 1,000km extension will create a link with direct connectivity between Colombia and the U.S. and between Colombia and Venezuela. It will have a state-of-the-art design that provides the capability of supporting a future ultimate design capacity in excess of 8Tbps on each connectivity path.

The GlobeNet submarine cable system currently spans 22,000km, with landing points in Rio de Janeiro and Fortaleza in Brazil; Maiquetía in Venezuela; St. David's in Bermuda; and Boca Raton, Florida and Tuckerton, New Jersey, USA. With this extension that will land on Colombia's Atlantic coast, GlobeNet further positions to offer ultra-fast low latency services on both protected routes between the U.S. and Latin America.

The Alcatel-Lucent solution deployed for this project includes an integrated 100G-capable wet plant of cable and high-bandwidth repeaters, power feed equipment, and its 1620 Light Manager (LM) submarine line terminal equipped with advanced coherent technology and offering unique flexibility to increase direct connectivity between countries. Designed to accommodate 10G/40G/100G wavelengths in the same platform, the Alcatel-Lucent 1620 LM enables seamless capacity upgrade on flexible grid for channel spacing without traffic interruption.

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

Seaborn to offer direct route between NYC and Sao Paulo

Seaborn Networks announced that in response to significant customer demand, its Seabras-1 submarine cable will now provide the first-ever direct route between the commercial and financial centers of Brazil and the U.S..

Seabras-1's new landing in the New York metropolitan area will connect directly to the landing in Sao Paulo. Seabras-1 will continue to have a branching unit that lands in Fortaleza, Brazil. Seaborn Networks will provide capacity on a POP to POP basis, and also plans to continue to make available



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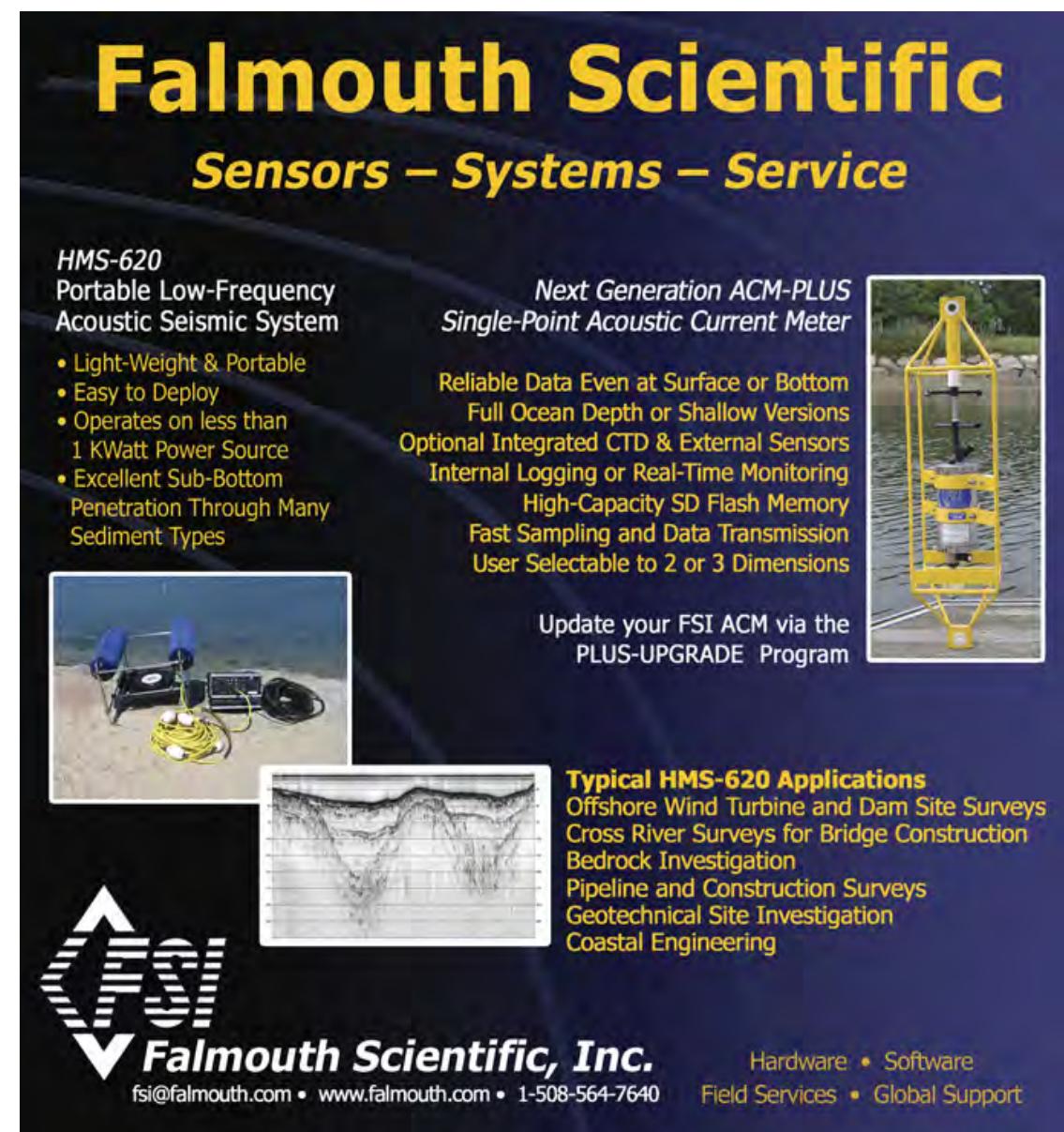
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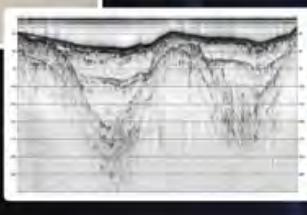
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a route from all three of its landings to the NAP of the Americas and other POPs in Miami.

The direct Sao Paulo – New York route offers numerous advantages:

Lower latency between the financial and commercial centers of Brazil and the United States. Latency for the New York – Sao Paulo route is engineered at 104ms for POP to POP service.

Shorter distance to most of the Mid-Atlantic region in the US. Virginia, Maryland, North Carolina, and Washington, D.C. are closer to New York metropolitan area than to Miami.

Lower costs for customers. By bundling backhaul into major POP locations, Seabras will provide improved access to onward connectivity to key IP hubs, data centers and points of presence throughout North America.

Easy onward connectivity to rest of world. The New York metropolitan area is an international gateway to Europe, the Middle East and Africa via transatlantic cables, and enables high speed routes to the West coast of the US to connect to Asia via transpacific cables. More reliable network architecture than existing US – Brazil systems. With no interim landings on the subsea route, Seabras-1 will maintain a lower number of active system elements, thereby reducing the probability of system failure. Competing systems have more than 2.3X the number of active elements in delivering a single wavelength service.

Improved route diversity with no dependencies on hurricane-prone Florida. With the majority of other cables landing in Florida, Seabras-1 offers a compelling alternative route or protection route.

For more information, visit www.seabornnetworks.com.

Teledyne acquires PDM Neptec

Teledyne Technologies Incorporated announced that its subsidiary, Teledyne Limited, has acquired the parent company of PDM Neptec Limited. PDM Neptec, located in Hampshire, UK provides underwater cables, fiber optic and electrical subsea connectors, and custom engineering solutions. The acquired company will now operate under the name Teledyne Impulse-PDM Ltd. Terms of the transaction were not disclosed.

The acquisition is the thirteenth for

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Teledyne's Marine group and will expand the company's line of harsh-environment marine interconnects as well as adding additional engineering talent and strengthening its international sales channels.

Teledyne Technologies is a leading provider of sophisticated instrumentation, digital imaging products and software, aerospace and defense electronics, and engineered systems. Teledyne Technologies' operations are primarily located in the U.S., Canada, the UK and Mexico.

For more information, visit www.teledyne.com or www.pdmneptec.com.

HTI to acquire Wavecom Solutions

In a move that will unite two submarine fiber optic cable networks serving the Hawaiian Islands, Wavecom Solutions Corporation and Hawaiian Telcom, Inc. (HTI) have filed a series of applications with the U.S. Federal Communications Commission (FCC) seeking approval for the transfer of control of Wavecom to HTI.

Specifically, the companies seek approval to transfer control of domestic and international section 214 authorizations, a cable landing license, and various wireless licenses. Hawaiian Telcom Holdco, Inc. (Holdco), the ultimate parent corporation of HTI, also requests that the Commission extend Holdco's current authority regarding foreign ownership to include common carrier licenses and authorizations held by Wavecom.

Wavecom (formerly known as Pacific Lightnet, Inc.), a Hawaii corporation, is a facilities-based competitive local exchange carrier (LEC) serving Hawaii. It provides local dial tone, high-speed Internet access, long distance, special access, enhanced data, and another services primarily to business customers.

It provides Voice over Internet Protocol service to a small number of residential customers. Wavecom provides communications services through an inter-island submarine fiber optic network, the Hawaii Island Fiber Network (HIFN), which consists of approximately 400mi of submarine fiber that connects the six major islands of Oahu, Kauai, Molokai, Lanai, Maui, and the island of Hawaii. Wavecom and tw telecom, a competing common carri-



er, jointly own the HIFN, which is operated on a common carrier basis. Wavecom's network also includes about 140mi (route) of terrestrial fiber, which includes three SONET fiber rings on Oahu.

HTI, a Hawaii corporation, is the incumbent LEC in Hawaii and provides service to 408,883 local access lines on all of Hawaii's major islands. Its sister company, Hawaiian Telcom Services Company, Inc., provides long distance, high-speed Internet, managed services, video services, and wireless services.

HTI owns and operates a submarine cable that was licensed in 1993 to GTE Hawaiian Telephone Co., the predecessor to HTI. The cable connects four of the Hawaiian Islands and is a completely intrastate, inter-island cable facility.

For more information, visit www.hawaiiantel.com or www.wavecomsolutions.com.

Pacific Fibre to cease operations

The Pacific Fibre board resolved to cease operations, citing an inability to raise the NZ\$400 million required to fund the cable build. Pacific Fibre launched in March 2010 and planned to build a 13,000km high-speed fiber optic cable connecting New Zealand and Australia to California.

The company said it spent millions of shareholder funds trying to get this done but, despite getting some good investor support, were not able to find the level of investment required in New Zealand initially and more broadly offshore. It cited the difficult global investment market, but noted that the company knew raising money for such a large project would be difficult, regardless of the timing. The project began with the knowledge of how important it is to connect New Zealanders to global markets. The high cost of broadband in New Zealand makes it hard to connect globally, and it is this market failure, not a technical failure, that the company tried

hard to solve. The backers of Pacific Fibre believed that the government's investment in the Ultra Fast Broadband project – in which public funding would be used to build a high speed network throughout the country – will only work if the price of international bandwidth is greatly reduced. In September 2011, the Australian telecommunication research company Market Clarity reported the cost of bandwidth to the U.S. from New Zealand as 5.8 times greater than the price paid by Australians.

For more information, visit www.pacificfibre.net.

NTT Com launches ASE

NTT Communications Corporation (NTT Com) will start operation of the Asia Submarine-cable Express (ASE), a 40Gbps, ultra-low latency undersea cable connecting major cities in Asia on 20 August. ASE will enhance NTT Com's highly reliable global network services by boosting the capacity and strengthening the redundancy of its Asian cable networks.

ASE, which eventually will incorporate 100Gbps optical technology, will

launch with a total carrying capacity exceeding 15Tbps, a total length of about 7,800km, and special designs to withstand earthquake and typhoon damage.

NTT Com is the major investor in the cable system, which has been constructed in cooperation with Malaysia-based Telekom Malaysia, Philippines-based PLDT, and Singapore-based StarHub. The cable has landing points in Japan, the Philippines, Singapore, and Malaysia, and will add Hong Kong in the first quarter of 2013. The route between Japan and Singapore not only covers the shortest distance to maximize reliability and minimize latency, it is also connected directly to the Serangoon Data Center in Singapore and later will also connect to the Hong Kong Financial Data Center. The direct connection enables customers there to use NTT Com's network, data centers, and cloud services on an end-to-end, one-stop basis.

On 20 August 2012, with the launch of the new subsea cable, NTT Com will begin offering an enhanced global leased line service by incorporating ASE's low-latency routes into its exist-

ing Arcstar Global Leased Line Service. The newly enhanced service leverages ASE's Japan-Singapore connection with an industry-leading latency of less than 65milliseconds latency, more than 3milliseconds faster than routes via other subsea cables.

Existing U.S.-Japan routes also will be used, including the NTT Com's own PC-1 cable that offers the lowest latency connection between Tokyo and Chicago, home of the Chicago Mercantile Exchange. Superior service between Asia and the U.S. is especially attractive for financial enterprises, such as high-frequency trading firms that issue huge numbers of buy/sell orders for financial products and must transmit such information instantaneously.

This month, NTT Com will incorporate ASE into the backbone of its Tier-1 global IP network, which directly connects the world's major internet service providers (ISPs) and content providers, and, in the near future, will do the same for Arcstar Universal One, its scalable, cloud-based network service.

For more information, visit www.ntt.com.

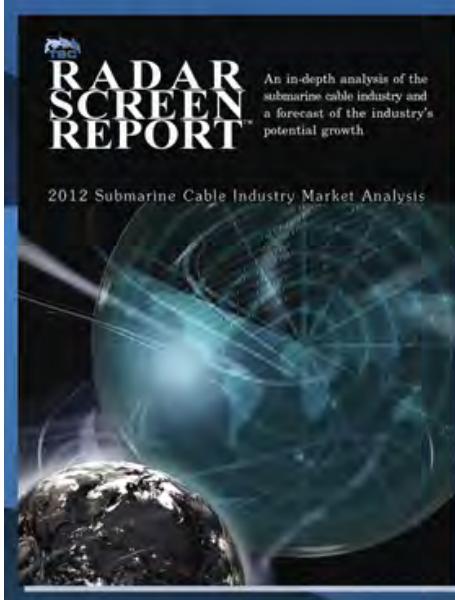
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Global Marine Energy to maintain wind farm link

Transmission Capital Partners has contracted with Global Marine Systems Energy Ltd., the largest independent provider of subsea power cable installation, maintenance, and related engineering services worldwide, to provide cable repair and maintenance services for the transmission link at the Ormonde offshore wind farm.

The groundbreaking cable maintenance

agreement is designed to ensure that the transmission link is inspected and maintained properly over its service life.

Key features of the agreement include:

- A framework agreement for cable-related incidents, such as repairs, surveys, and re-burial activities;
- The selection of Global Marine Energy as the preferred subsea cable repair contractor;
- A 24/7 call out facility provided by

Global Marine Energy for submarine cable fault location; and

- The production of a set of agreed procedures to cover submarine cable-related incidents at the Ormonde site.

A leader in the Offshore Transmission Regime (OFTO), Transmission Capital Partners was selected by Ofgem in 2010 to run the transmission link for the 150MW Ormonde offshore windfarm off the Cumbrian coast. The Ormonde transmission link transmits around 500GW hours of electricity every year, enough to supply 100,000 homes, and is valued at over £100 million.

As part of the agreement, Global Marine Energy will also create and manage a site-specific cable system database, allowing appropriate parties to easily view and analyze data relevant to the transmission link maintenance over the life of the system.

The Offshore Transmission Regime was established by the UK Department of Energy and Climate Change (DECC) and Ofgem's delivery arm, Ofgem E-Serve, to deliver high-voltage links to offshore wind farms as cost effectively as possible. Over the coming years, high-voltage cable links worth over £20 billion will be needed to connect a potential of around 50GW of offshore wind in UK waters.

For more information, visit www.globalmarine-energy.com.

Underwater 'electrical outlets' in place for cabled ocean observatory

The first U.S. cabled ocean observatory reached a milestone on 14 July with the installation of a node 9,500ft deep off the coast of Oregon. Like a giant electrical outlet on the seafloor that also provides Internet connectivity, the node was spliced into a network of cable segments, totaling some 560mi, that were laid in the summer of 2011.

Six more of these primary nodes — each about the size of a Volkswagen Beetle — are being installed this summer. Smaller, secondary nodes will be installed in 2013 and will transfer power and communications from the primary nodes to experimental sites.

The project, designed to deliver real-time ocean observations for 25 years, is part of the National Science Foundation's Ocean Observatories Initiative. The construction and early operations of the cabled observatory, known as the Regional Scale Nodes component, is led by the University of Washington.

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The nodes are, in many ways, the brains of the system, designed to distribute power and two-way communications to a network of ocean observing sensors, instruments, and moorings that are scheduled to begin operating in late 2013. When fully completed in 2014, the regional cabled observatory will provide real-time information on ocean phenomena such as active underwater volcanoes, gas hydrate deposits, major ocean currents and rich environments of marine plants and animals. Anyone with a connection to the Internet will be able to see what's happening at the study sites.

Connecting the nodes to the cable segments involves a delicate ballet of cable retrieval from the seafloor, testing, cutting, on-deck splicing, and computerized positioning calculations. Once a node is successfully spliced into the cable segments and thoroughly tested, it is deployed from the ship to a precise location on the seafloor.

The first installed node now rests in its intended home for the next 25 years: on the seafloor at a study site named Hydrate Ridge, some 75mi southwest of Pacific City, Oregon. Depending on good weather and successful testing results, the last node should be installed on 16 August. The work is being conducted by the installation vessel Dependable, owned by TE SubCom.

Two primary nodes will be installed on cables that reach Hydrate Ridge at the base of the Oregon continental margin, and two more will monitor another main study site, Axial Seamount, about 300mi west on the Juan de Fuca Ridge. Two nodes will be at the Endurance Array site for coastal studies overseen by Oregon State University. Another primary node, in the middle of the Juan de Fuca plate, will act as a placeholder with minimal internal electronics available for future network expansion.

For more information, visit www.washington.edu or www.oceanobservatories.org.

Pharos completes diver-less cable repair

Pharos Offshore Group has completed cable repair and burial for the London Array Offshore Wind Farm on a section of damaged subsea export cable. Pharos delivered a work package with the rapid mobilization of engineering, fabrication, and operational teams to locate, recover, re-lay, and re-bury the power cable off the Kent coast. The 800mm² HVDC export cable has a 218mm diameter and weighs over 50 kg/m in water and 86 kg/m in air.

Tools for properly handling the large stiff cable did not exist in the market, and standard grapnel operations were not possible due to nearby cable routes. The Pharos team developed multiple operational plans that not only met the client's tight schedule but allowed for the infield flexibility to deal with as-found conditions. In addition to the complexities of cable retrieval, the Pharos team also converted a conventional telecoms cable ship to accommodate the loading, storage, lay, splicing, and safe handling of the product.

Pharos has a strong track record of utilizing commercially available off-the-shelf (COTS) technology from other markets to meet client requirements. The equipment and procedures developed for this repair will work for other repair situations; especially those where increasingly congested cable corridors preclude anchoring and grapnel runs and/or are beyond diver limits.

London Array Limited is a consortium comprising Dong Energy, E.ON, and Masdar—who are combining their experience and expertise to develop and build the world's largest offshore wind farm in the outer Thames Estuary between the Kent and Essex coasts.

Phase One of London Array involves installing 175 turbines, 2 offshore substations, 4 undersea export cables with a total length of around 220km, and over 200km of inter-array cables to connect the turbines to each other and to the offshore substations. The export cables connect to the National Grid at a new onshore substation located at Cleve Hill, near Graveney on the North Kent coast. Once completed, London Array's 175 turbines will generate enough electricity for over 470,000 UK homes.

For more information, visit www.pharosoffshoregroup.com.



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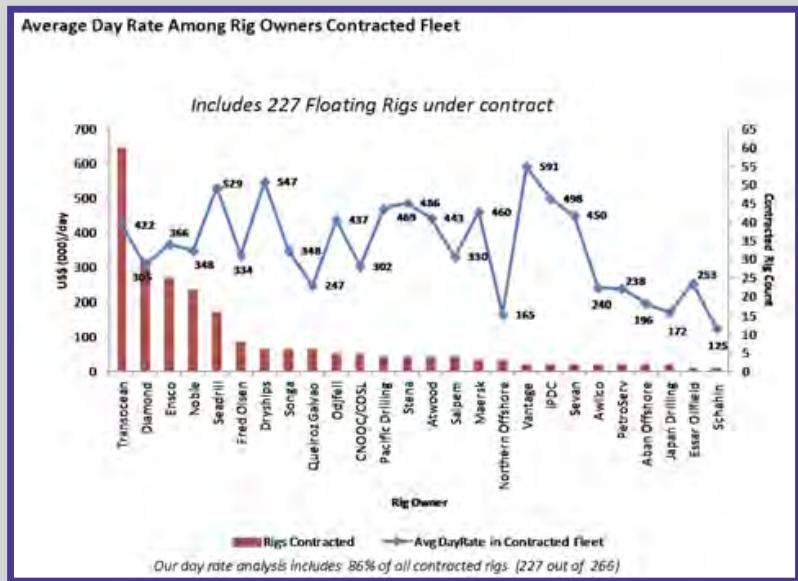
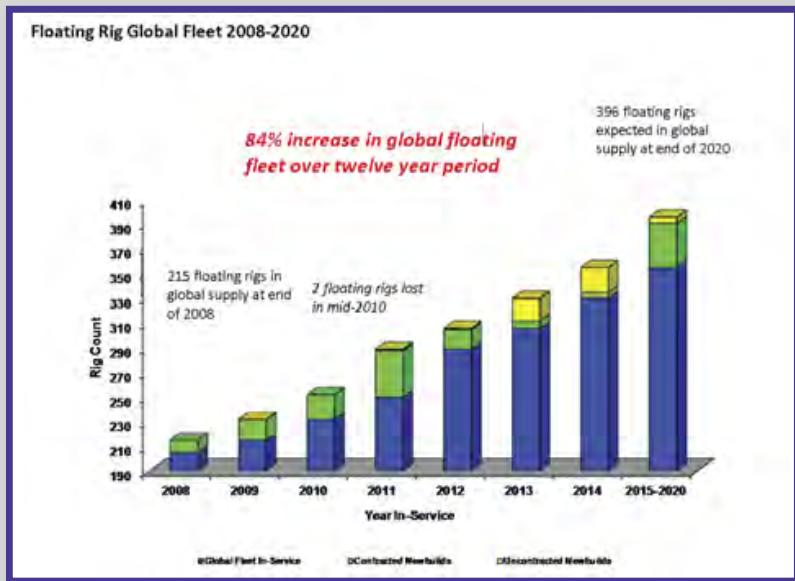
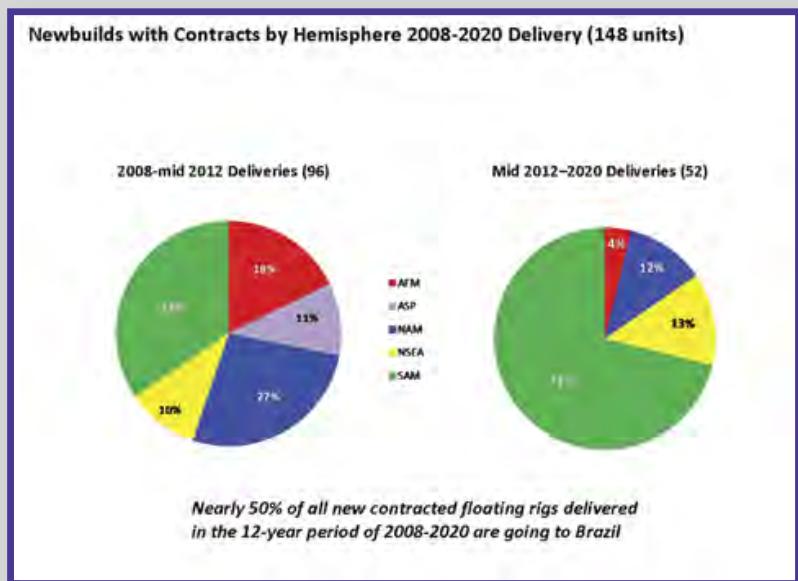
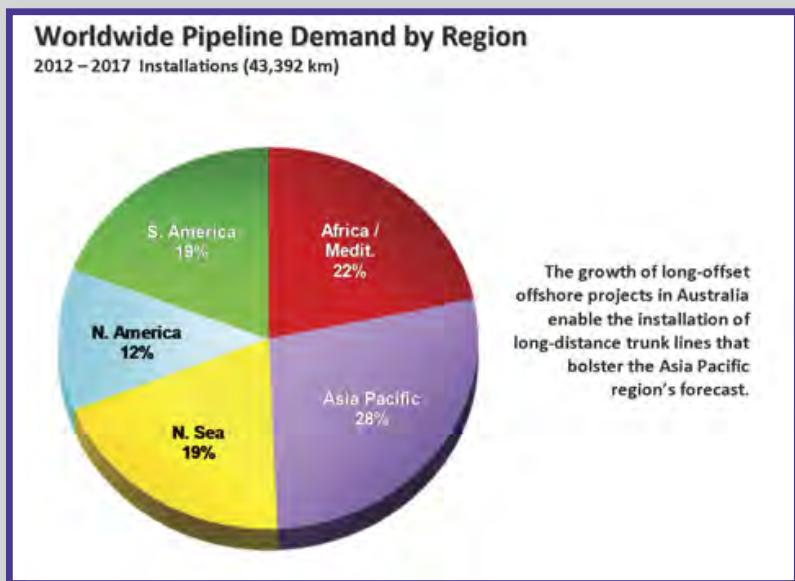
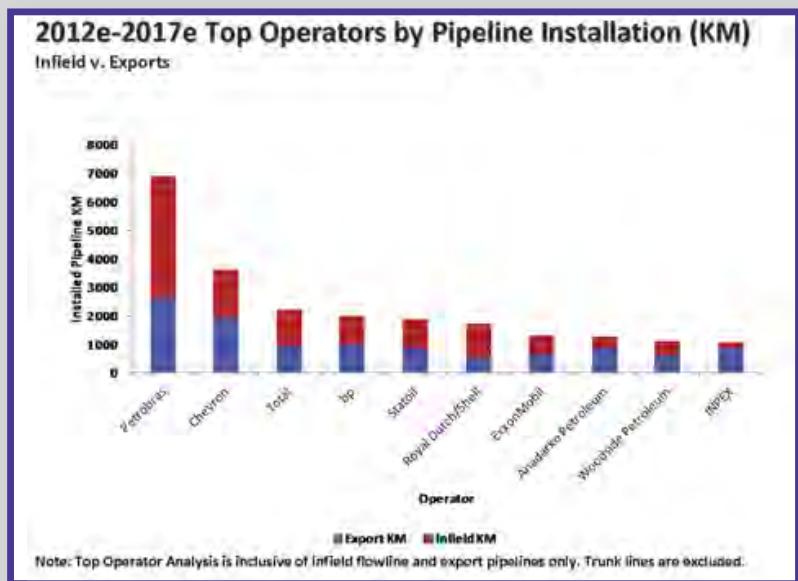
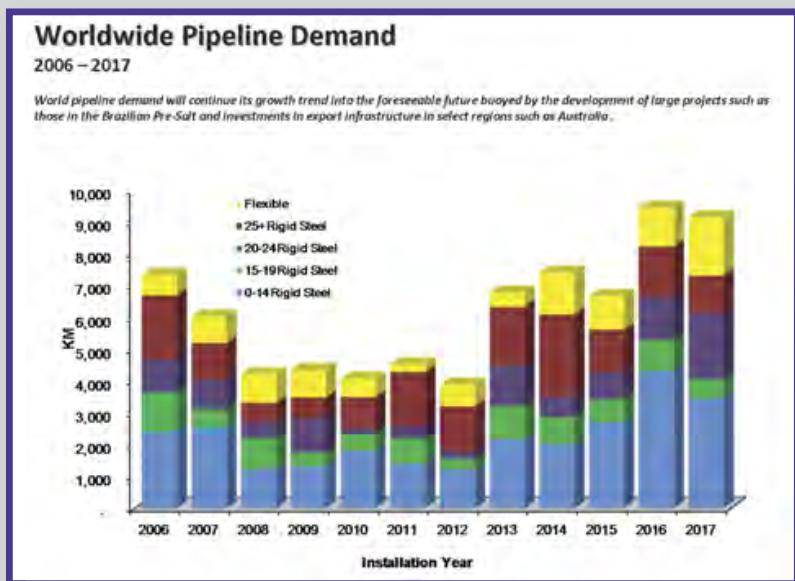


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Offshore At-A-Glance

Quest Offshore Activity Report



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Gulf of Mexico Data

Current Deepwater Activity

Operator	Area	Block	OCS Lease	Rig Name	Prospect Name	Water Depth (ft)
Shell Offshore, Inc.	WR	508	G18730	NOBLE DANNY ADKINS	Stones	9,553
Petrobras America, Inc.	WR	206	G16965	PRIDE DEEP OCEAN MENDOCINO	Cascade	8,143
Shell Offshore, Inc.	AC	857	G17565	H&P 205	Great White	7,815
ExxonMobil Corp.	KC	918	G32654	T.O. DEEPWATER CHAMPION	Hadrian	7,381
Shell Gulf of Mexico, Inc.	MC	391	G26252	T.O. DEEPWATER NAUTILUS	Appomattox #3	7,157
ExxonMobil Corp.	KC	919	G21447	MAERSK DEVELOPER	Hadrian	7,123
Union Oil Co. of California	WR	677	G18753	T.O. DISCOVERER INSPIRATION	Saint Malo	7,040
Union Oil Co. of California	WR	634	G18745	T.O. DISCOVERER CLEAR LEADER	Saint Malso	6,805
BP Exploration & Production, Inc.	MC	607	G09837	SEADRILL WEST CAPRICORN	East Anstey	6,590
BP Exploration & Production, Inc.	GC	744	G15605	T.O. DEVELOPMENT DRILLER II	Atlantis	6,523
Statoil Gulf of Mexico LLC	KC	698	G33343	T.O. DISCOVERER AMERICAS	Bliokp	6,313
BHP Billiton Petroleum (GOM) Inc.	AT	618	G08038	GSF C.R. LUGS	Neptune at 574	6,266
Union Oil Co. of California	WR	98	G21841	PACIFIC SANTA ANA	Coronado	6,127
Noble Energy, Inc.	MC	948	G28030	ENSCO 8501	Bob	6,060
BP Exploration & Production, Inc.	MC	778	G14658	THUNDER HORSE PDQ	Thunder Horse South	6,040
BP Exploration & Production, Inc.	KC	292	G25792	SEADRILL WEST SIRIUS	Kaskida	6,031
Eni US Operating Co. Inc.	MC	299	G21752	DIAMOND OCEAN VICTORY	Seventeen Hands	5,881
Eni US Operating Co. Inc	MC	299	G21752	GENERIC COIL TUBING UNIT	Seventeen Hands	5,881
Shell Offshore Inc.	WR	95	G31943	NOBLE GLOBETROTTER	Yucatan North	5,847
Anadarko Petroleum Corp.	WR	51	G31938	ENSCO 8505	Shenandoah	5,838
Murphy E&P Co.	MC	734	G21778	T.O. DEEPWATER PATHFINDER	Thunderhawk	5,712
BP Exploration & Production, Inc.	GC	743	G15605	T.O. DEVELOPMENT DRILLER III	Atlantis	5,413
Chevron USA, Inc.	WR	29	G16942	T.O. DISCOVERER INDIA	Big Foot	5,187
BP Exploration & Production Inc.	GC	700	G15604	T.O. DISCOVERER ENTERPRISE	Atlantis	4,409
Hess Corp.	MC	725	G22898	STENA FORTH	Tubular Bells	4,334
Cobalt International Energy LP	GB	959	G30876	ENSCO 8503	North Platte	4,297
Chevron USA, Inc.	GC	640	G20082	T.O. DISCOVERER DEEP SEAS	Tahiti 2	4,292
BHP Billiton Petroleum (GOM) Inc.	GC	507	G22970	T.O. DEVELOPMENT DRILLER I	Ness	4,028
Anadarko Petroleum Corp.	EB	602	G14205	WIRELINE UNIT (L.J.#3)	Nansen	3,678
Shell Offshore, Inc.	GC	248	G15565	NOBLE DRILLER	Glider	3,440
Murphy E&P Co.	GC	338	G21790	NABORS MODS 200	Front runner	3,325
Eni US Operating Co. Inc.	GC	298	G08876	ENSCO 8500	Allegheny (south)	3,308
Shell Offshore, Inc.	MC	807	G07958	NOBLE BULLY 1	Mars B	3,030
Shell Offshore, Inc.	GC	158	G07995	H&P 202	Brutus	2,985
LLOG Exploration Offshore, LLC	MC	503	G32334	NOBLE AMOS RUNNER	WhoDat	2,725
Shell Offshore Inc.	GC	200	G12209	CAL DIVE Q-4000	Troika	2,670
Chevron USA Inc.	VK	786	G10944	NABORS 87	Petronius	1,754
Hess Corp.	GB	260	G07462	NABORS S.D. XVI	Baldplate	1,646
Dynamic Offshore Resources, LLC	GC	65	G05889	H&P 206	Bullwinkle	1,353
W&T Energy VI, LLCC	VK	823	G10942	WIRELINE UNIT (N.O. #3)	Virgo	1,132
W&T Energy VI, LLC	VK	823	G10942	WIRELINE UNIT (N.O. #2)	Virgo	1,130

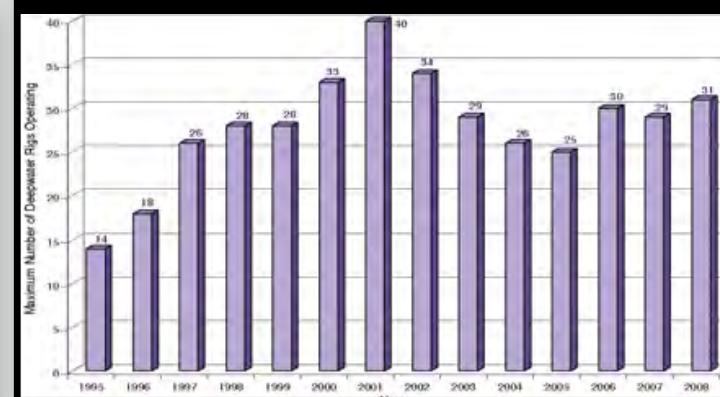
Deepwater prospects with drilling and workover activity: 41

Current Deepwater Activity as of Monday, 13 August 2012

Activity by Water Depth

Water Depth (m)	Active Leases	Approved Applications	Active
0 to 200	1,741	34,427	2,892
201 to 400	117	1,113	20
401 to 800	271	844	10
801 to 1,000	392	548	9
1,000 & above	3,296	1,764	26

Rig Activity by Year



Activity by Water Depth Information current as of Monday, 13 August 2012

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

Monthly Stock Figures & Composite Index

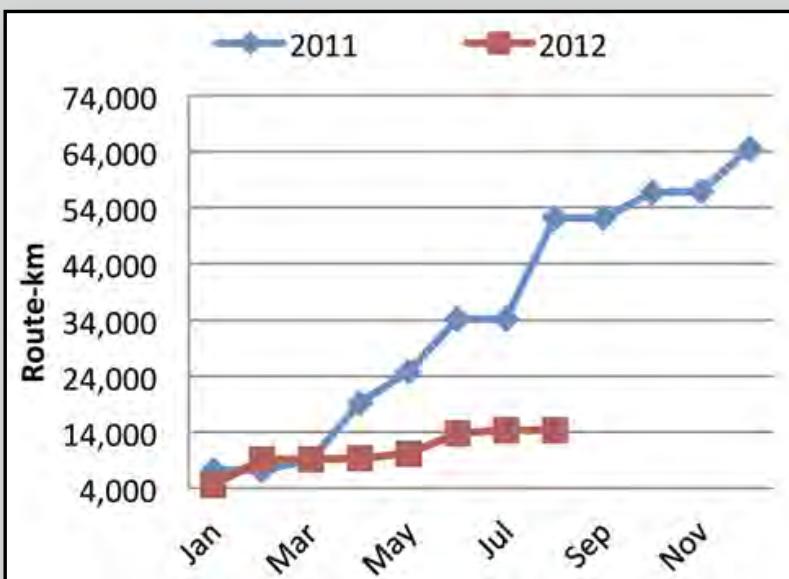
Industry Company Name	Symbol	Close Mid-August	Close Mid-July	Change	Change %	High	52 week	Low
Diversified, Production Support and Equipment Companies								
Baker Hughes, Inc.	BHI	47.07	39.46	7.61	19.3%	64.21	37.08	
Cameron Intl. Corp.	CAM	51.28	43.95	7.33	16.7%	57.65	38.38	
Drill-Quip, Inc.	DRQ	70.78	69.79	0.99	1.4%	77.12	47.49	
Halliburton Company	HAL	34.85	28.97	5.88	20.3%	46.99	26.28	
Tenaris SA	TS	40.43	35.93	4.50	12.5%	42.36	23.29	
Newpark Resources, Inc.	NR	6.88	6.32	0.56	8.9%	10.62	5.19	
Schlumberger Ltd.	SLB	73.50	66.32	7.18	10.8%	81.33	54.79	
Superior Energy Services, Inc.	SPN	21.92	19.69	2.23	11.3%	36.37	17.54	
Weatherford International, Inc.	WFT	12.15	11.99	0.16	1.3%	18.33	10.85	
Deep Down, Inc.	DPDW	1.45	1.20	0.25	20.8%	1.80	0.80	
FMC Technologies	FTI	47.32	40.47	6.85	16.9%	55.19	34.46	
Total Diversified, Production, Support and Equipment.....	407.63	364.09	43.54	12.0%	491.97	296.15		
Geophysical / Reservoir Management								
Dawson Geophysical Company	DWSN	22.50	24.55	-2.05	-8.4%	40.76	20.20	
Mitcham Industries, Inc.	MIND	16.44	16.36	0.08	0.5%	26.76	9.52	
Compagnie Gnrale de Gophysique-Veritas	CGV	29.27	26.30	2.97	11.3%	31.48	15.08	
Total Geophysical / Reservoir Management.....	68.21	67.21	1.00	1.5%	99.00	44.80		
Offshore Drilling Companies								
Atwood Oceanics, Inc.	ATW	45.07	41.45	3.62	8.7%	48.91	30.64	
Diamond Offshore Drilling, Inc.	DO	67.41	63.51	3.90	6.1%	72.80	51.16	
ENSCO International, Inc.	ESV	55.17	49.10	6.07	12.4%	59.90	37.39	
Nabors Industries, Inc.	NBR	15.91	13.19	2.72	20.6%	22.73	11.05	
Noble Drilling Corp.	NE	37.62	34.47	3.15	9.1%	41.71	27.33	
Parker Drilling Company	PKD	4.66	4.67	-0.01	-0.2%	7.62	3.60	
Rowan Companies, Inc.	RDC	34.95	34.18	0.77	2.3%	39.40	28.13	
Transocean Offshore, Inc.	RIG	47.53	46.50	1.03	2.2%	60.09	38.21	
Total Offshore Drilling.....	308.32	287.07	21.25	7.4%	353.16	227.51		
Offshore Contractors, Services, and Support Companies								
Helix Energy Solutions Group, Inc.	HLX	18.51	17.00	1.51	8.9%	21.09	11.57	
Gulf Island Fabrication	GIFI	26.74	30.47	-3.73	-12.2%	35.48	19.55	
McDermott International, Inc.	MDR	11.29	11.56	-0.27	-2.3%	15.35	9.04	
Oceaneering International	OII	55.05	50.00	5.05	10.1%	57.16	31.77	
Subsea 7 SA	SUBCY.PK	23.09	20.02	3.07	15.3%	27.21	16.82	
Technip ADS	TKPPY.PK	26.73	26.29	0.44	1.7%	29.90	17.52	
Tetra Technologies, Inc.	TTI	6.53	6.88	-0.35	-5.1%	10.97	6.09	
Cal Dive International, Inc.	DVR	1.78	1.83	(0.05)	-2.7%	4.00	1.50	
Total Offshore Contractors, Service, and Support.....	169.72	164.05	5.67	3.5%	201.16	113.86		
Offshore Transportation and Boat Companies								
Seacor Holdings, Inc.	CKH	88.85	90.89	-2.04	-2.2%	100.00	75.04	
Gulfmark Offshore, Inc.	GLF	36.01	35.87	0.14	0.4%	56.41	30.03	
Bristow Group	BRS	45.04	43.46	1.58	3.6%	52.26	37.92	
PHI, Inc.	PHII	25.81	25.65	0.16	0.6%	27.33	16.95	
Tidewater, Inc.	TDW	48.69	47.45	1.24	2.6%	63.27	38.80	
Trico Marine Services, Inc.	TRMAQ.PK	0.04	0.04	0.00	0.0%	0.11	0.01	
Hornbeck Offshore	HOS	41.24	39.92	1.32	3.3%	43.83	19.80	
Total Offshore Transportation and Boat	285.68	283.28	2.40	0.8%	343.21	218.55		

Monthly Stock Figures & Composite Index

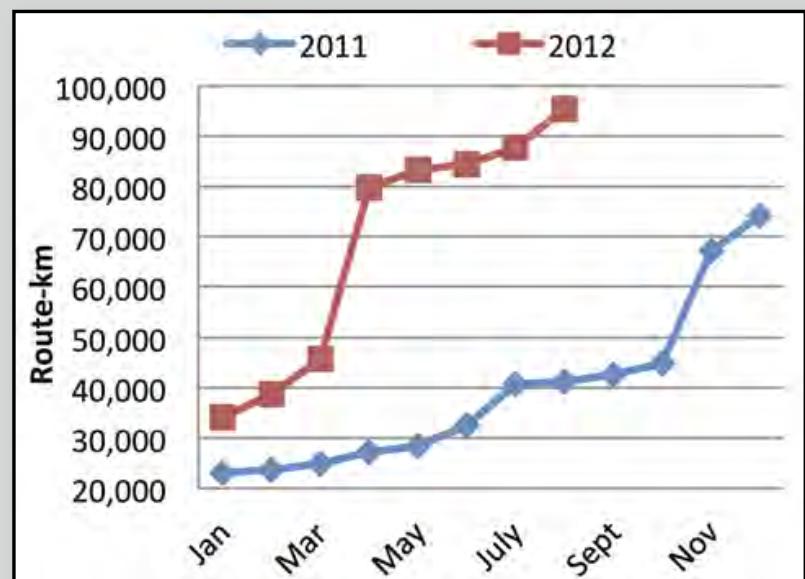
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	Total Geophysical / Reservoir Management	308.32	287.07	21.25	7.4%	353.16	227.51
	Total Offshore Contractors, Service and Support	169.72	164.05	5.67	3.5%	201.16	113.86
	Total Offshore Transportation and Boat	285.68	283.28	2.40	0.8%	343.21	218.55
	Total Offshore Source Index...	1,239.56	1,165.70	73.86	6.3%	1,488.50	900.87
DISCLAIMER <i>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.</i>							
<h2 style="font-size: 2em; font-weight: bold;">Oil & Gas Industry Trends</h2> <p style="color: red; font-style: italic; font-size: 1.2em;">Monitoring the pulse of the U.S. Offshore Oil & Gas Industry</p>							

Subsea Telcom & Power Cable Data

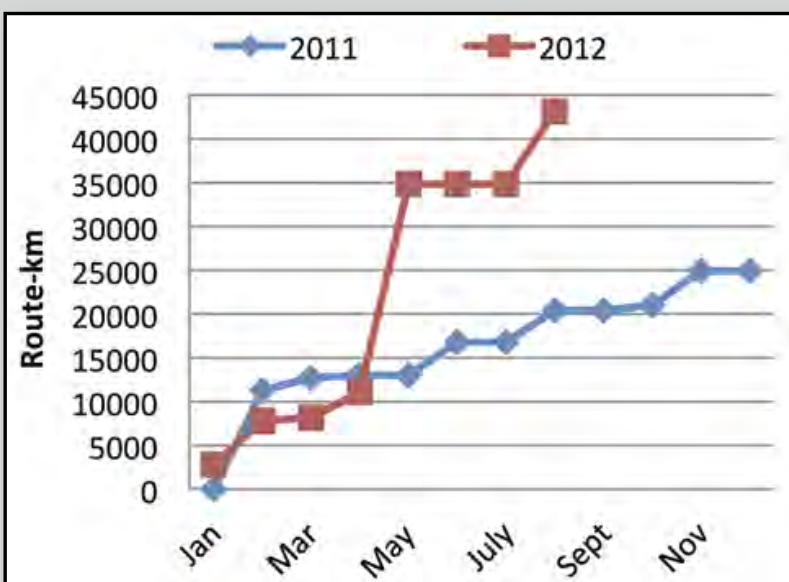
FO Cable Awards by Month



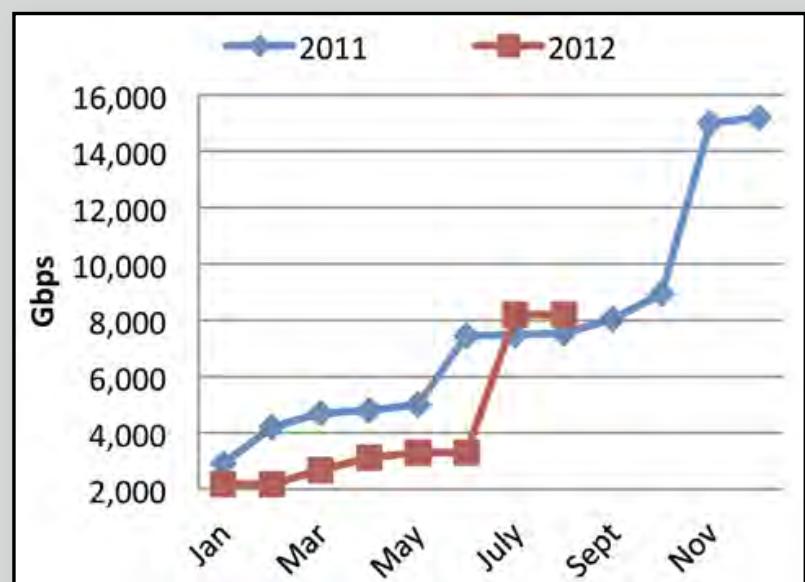
FO Cable Announcements 2012



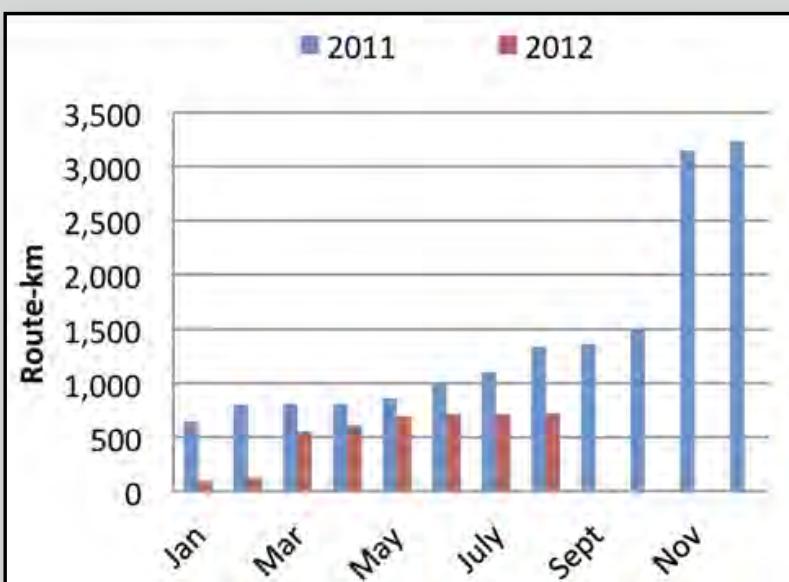
Submarine FO Cables Entering Service 2012 in Route-km



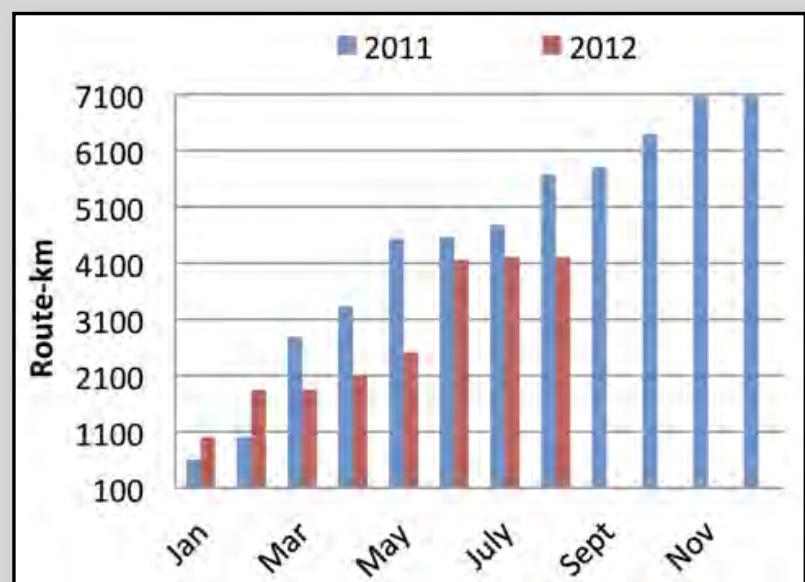
Upgrades of Existing Cable Systems in Gbps



Submarine Power Cable Awards 2012 in Route-km



Submarine Power Cable Announcements 2012 in Route-km



FLASHBACK

A look back at the pioneering days of the ocean and offshore industries



Industry briefs torn from the Ocean News Archives

Two research submersibles of the Harbor Branch Foundation successfully completed test dives down to 2,640 feet in the Bahamas allowing for reclassification to an additional 640 feet from the previous 2,000 foot rating.

May 1984

Applied Remote Technology and Reson, Inc. joined forces to demonstrate the capability of an UUV equipped with a sonar and video suite to survey an underwater site off San Diego.

March/April 1994

Can you name the product, the company, or the year?

Many companies have contributed to the evolution of the industry. Some continue to forge the path of new technology, others have faded into the annals of history. But all have played a role in setting the milestones that have led to today's achievements.

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The first respondent to answer all 3 questions correctly will receive an ONT Press Photographer T-Shirt.

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Falmouth Scientific announces a new generation of current measurement technology

Falmouth Scientific, Inc. (FSI), a global leader in precision oceanographic instrumentation and marine systems integration, announces the next generation of single-point Acoustic Current Meter (ACM) technology. The FSI ACM-PLUS offers new features, functionality, and benefits that will enhance users' ability to measure current speed and direction in two or three dimensions and display the data in real-time or capture it for later analysis.

The ACM-PLUS employs Acoustic Phase-Shift Transit-Time Technology, which enables it to operate in very clear as well as turbid water. It excels in providing high-resolution current readings at the water surface (e.g., for oil spill tracking) or at deep depths where slow-moving currents are difficult to measure accurately.

New features of the ACM-PLUS include software-selectable two- or three-axis velocity measurement, extended on-board SD Flash data memory, high-speed data sampling, a high-accuracy real-time clock, and fast download capability. FSI will continue to offer



shallow (200m) and deep (7,000m) versions and options to add an integrated CTD module and/or up to two external sensors.

In addition to shipping new ACM-PLUS instruments, FSI is also offering a cost-effective PLUS-UPGRADE program to customers who wish to refurbish, recalibrate, and update their existing equipment and gain the new feature set (contact FSI for details).

Falmouth Scientific offers other sensor-based products such as wave and tide meters; solutions for drilling/vortex-induced vibration monitoring; eco- and user-friendly subbottom seismic systems; portable side-scan sonar imaging; and other acoustics-based underwater instrumentation. Service areas include custom design, development, integration, and production of marine systems and acoustic transducers and manufacturing services such as prototyping, product assembly, encapsulation (potting), calibration, and pressure testing.

For more information, visit www.falmouth.com.

Marine instrumentation manufacturer celebrates 6-week deployment of submersible analyzer

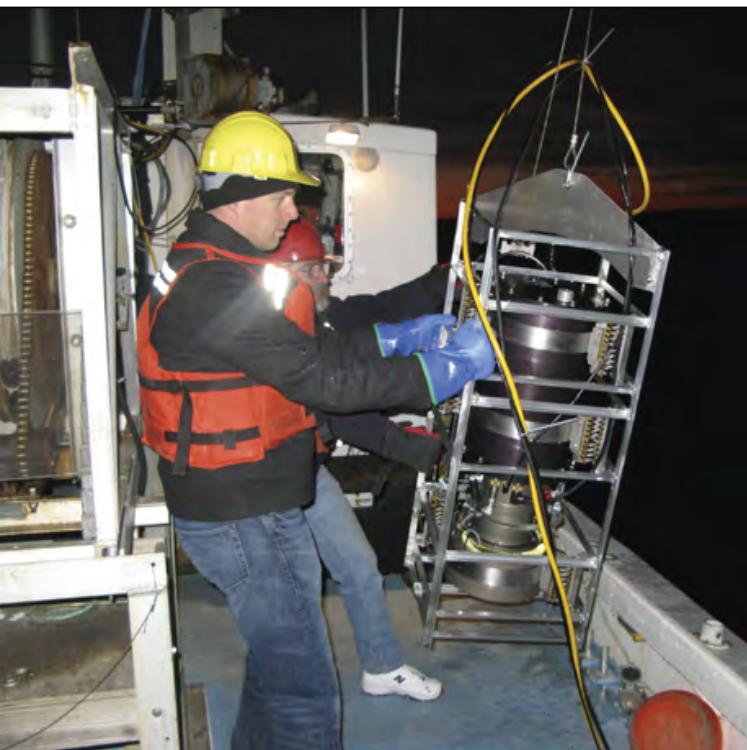
The Submersible FlowCAM® imaging particle analysis system from marine instrumentation manufacturer Fluid Imaging Technologies, based out of Yarmouth, Maine (www.fluidimaging.com), recently surpassed 6 weeks of continuous, unattended operation

during *in situ* deployment in the coastal waters of Florida. Featuring patent-pending, chemical-free, biofouling control technology from Battelle, based out of Columbus, Ohio, the Submersible FlowCAM® automatically detects water-borne particles and microscopic organisms; acquires hi-resolution digital images of each one detected; and counts, measures, and characterizes them using a choice of 32 different properties

such as size, shape, and fluorescence. During the 6-week remote deployment, the Submersible FlowCAM® acquired and measured thousands of images sampled at a variety of depths from its mooring. The data were accessed online in real-time from the company's Yarmouth, Maine test laboratory and saved for further analysis while the FlowCAM®'s built-in, proprietary pattern recognition software automatically differentiated, identified, and quantified each individual microorganism and particle. On-the-fly adjustments to the flow rate, camera speed, sampling schedule protocols, and other parameters were also available remotely.

The Submersible FlowCAM® includes the same patented FlowCAM® imaging technology proven effective by the U.S. Naval Research Labs, Scripps Institution of Oceanography; the National Institute of Oceanography, Goa, India; the Xiamen Marine Environmental Monitoring Center, Xiamen, China; and in hundreds of other installations worldwide. The Submersible FlowCAM® operates in freshwater, ocean water, and estuarine environments and may be configured to be deployed aboard autonomous underwater vehicles (AUVs) and tethered behind research vessels and sampling boats in addition to being moored. A full, 1-year warranty is included.

For more information, visit www.fluidimaging.com.



Partrac Ltd. introduces novel sediment erosion measurement technology

Partrac Ltd has introduced an innovative technology designed to measure small-scale changes on seabed elevation levels. The Genesis™ Altimeter takes high-resolution measurements of sediment erosion and deposition at the seabed, enabling users to determine the impacts of sediment movements on ecological and environmental systems.

In most coastal and estuarine settings, the seabed elevation (water depth/bathymetry) changes due to daily sediment and sediment deposition processes. More pronounced changes occur when wave energy can penetrate to the seabed during winter storms. Changes in seabed level greater than ~0.10 to 0.15m can be detected using conventional single- and multi-beam echo sounders. From a navigational safety viewpoint, it is only changes at scales greater than this that are of importance. However, smaller-scale changes (millimeters to centimeters) are important to, among others, benthic habitat stability, contaminated sediment impacts, dredging impact evaluation (e.g., siltation onto sensitive benthic communities), and benthic ecosystem function. Within these examples, the transfer of sediments on the small scale can have considerable ecological and environmental impacts.

The Genesis™ 2MHz High-Resolution Recording Altimeter is a marine sonar (3.6° at -3dB beam width) capable of measuring small scale (millimeter to centimeter) changes in sediment level in

coastal and estuarine environments. It is based on an echo sounder, which can be deployed onto fixed infrastructure or on a special frame that is designed to avoid any sediment scouring in the measurement area. The elevation resolution varies with fixed distance (2mm, for a range of 20 to 70cm; 5mm, for a range of 20 to 200cm). The instrument is autonomous and self-logging and can operate unattended for periods up to 9 months (variable according to sampling frequency). A second channel measures water pressure (depth), which can also be configured to sample for waves.

Communication with Genesis™ is unique via a serial port data pencil and by induction. By holding the data pencil against the unit, data and commands are transferred (@57,600 bauds) – ideal for wet muddy environments. Genesis™ can be configured for inter-tidal and sub-tidal deployment.

For more information, visit www.partrac.com.

Nortek redefines online data access

The new Autonomous Online System (AOS) from Nortek offers online access to current and wave data from any location. Battery-powered satellite communication ensures uncomplicated real-time data transfer from Nortek sensors, whether deployed in the Arctic, on a remote island, or in a shipping channel.

The concept consists of five elements: A Nortek instrument with communication to shore, an AOS unit with data



interface and battery power, iridium satellite communication, a server to host the data, and a WEB interface to access the data from any computer connected to the Internet. All elements in the communication chain are addressed, cost is predictable, and no local engineering is required other than the instrument deployment.

Experience shows that designing reliable, flexible and user-friendly systems for online data logging is challenging. With the Nortek AOS, users have a rugged and compact single-box solution that takes the mystery out of Internet data transfer and access. It offers do-it-yourself online functionality to any Nortek user, regardless of technical competence or prior experience.

For more information, visit www.nortek-as.com.

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Product News

Analox launches IMCA-compliant dual gas analyzer

Analox Sensor Technology has launched a new panel-mounted gas analyzer that is ideal for IMCA-compliant surface-supplied dive operations.

The new ADM Aspida is a panel-mounted solution for oxygen (O_2) and carbon dioxide (CO_2) monitoring and was designed specifically for use in surface-supplied diving operations. In line with IMCA requirements, it incorporates an O_2 analyser with audio-visual alarms.

The ADM offers high levels of functionality at a low cost. There are single gas and dual gas alternatives of the unit available. The ADM is easy to install and maintain and incorporates data logging and fresh-air calibration.

Mark Lewis, managing director of Analox Sensor Technology, commented: "Analox Sensor Technology prides itself on working closely with the commercial diving industry. We discuss their gas analysis needs with dive operators and seek feedback on all our products. This on-going industry consultation has resulted in the ADM Aspida, a cost-effective dual or single gas analyzer, ideal for IMCA-compliant surface-supplied diving operations."

As with the whole Aspida series, the ADM Aspida has a robust housing ideal for the environment in which it will be used. Analox Sensor Technology Ltd is based in Stokesley, North Yorkshire and specializes in the design and manufacture of gas analyzers for military and commercial use.

For more information, visit www.analox.net.

Clear Signal Coating selected for \$450M ocean observing initiative

Teledyne RD Instruments (San Diego, California) and Nobska (Woods Hole, Massachusetts) have selected Severn Marine Technology's (Annapolis, Maryland) Clear Signal Biofouling Control System to coat their instruments for long-term deployments in the ocean observing initiative.

Both Teledyne RD instruments and Nobska performed in-house testing and verification and concluded that the Clear Signal coating provided outstanding biofouling control. The Clear Signal coating met the requirements of both companies because it is a highly robust coating that is designed to last the life of the instrument.

The Ocean Observing Initiative is a

\$450 million National Science Foundation-funded ocean observing system and represents the largest investment of its type in the U.S.

For more information, visit www.severnmarinetech.com.

Chinese manned submersible world-record dive uses Caley A-frame launch and recovery system

When the Chinese Jiaolong manned submersible successfully completed its world-record breaking dive to 7,015m (23,015ft) recently, it was A-frame lifting technology from leading marine handling systems specialist, Caley Ocean Systems, that safely recovered the submersible back onboard.



Mounted on the stern of the mother ship Xiangyanghong9, the Caley A-frame was used to both launch and recover the Jiaolong manned submersible, weighing 22tons. The hydraulically-operated A-frame lifts and pivots to position the Jiaolong above the water before lowering it; during recovery, the process is reversed. In addition to winches to lower and raise the submersible, Caley has supplied two bespoke, oceanographic winches for handling scientific instruments for ocean bed research; these too are deployed using the Caley A-frame.

The Jiaolong submersible successfully completed its program of deep-sea dives in the Mariana Trench in the Pacific Ocean at the end of June.

Caley Ocean Systems worked with its long-term Chinese agent, Laurel Technologies, on the supply of the A-frame and winch systems for the Xiangyanghong9 vessel.

Caley Ocean Systems is also upgrading the U.S. Woods Hole Oceanographic Institution's (WHOI's) R/V Atlantis research vessel's A-frame handling system for the launch and recovery of the new "Alvin" deep submergence vehicle.

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

Ocean News & Technology

2012 EDITORIAL CALENDAR

January/February 2012

Editorial: Inspection & Light Work Class ROVs, Oceanography & Meteorology

Distribution: NACE • Oceanology International

Deadline: January 15th

Product Focus: Diving Equipment & Buoyancy Materials

March

Editorial: Defense & Naval Systems, Maritime Security, Decommissioning, Plug & Abandonment

Distribution: Decommissioning & Abandonment Summit

Deadline: February 15th

Product Focus: Navigation, Mapping & Signal Processing; Diver Detection Systems

April

Editorial: Offshore Technology

Distribution: Global Marine Renewable Energy • OTC

Deadline: March 15th

Product Focus: Connectors, Cables & Umbilicals

May

Editorial: AUVs & Gliders, UW Imaging & Processing, Acquaculture & Marine Resources,

Distribution: UDT Europe • Anti-Submarine Warfare

Deadline: April 15

Product Focus: Cameras, Lights & Imaging Sonars

June

Editorial: Workclass ROVs, Wave & Tidal, Ocean Observing Systems

Distribution: EnergyOcean Int'l

Deadline: May 15th

Product Focus: Subsea Tools & Manipulators

July

Editorial: Offshore Mooring, Subsea Fiber Optic Networks, Company Showcase

Distribution: Offshore Northern Seas • AUFSI

Deadline: June 15th

Product Focus: Tracking & Positioning Systems, Seismic Monitoring

August

Editorial: Ocean Mapping & Survey, Subsea Telecom, Deepwater Pipeline Repair & Maintenance

Distribution: TBA

Deadline: July 15th

Product Focus: Multibeam & Side Scan Sonars

September

Editorial: Coastal Engineering, Environmental Assessment & Monitoring, Offshore Wind

Distribution: MTS Dynamic Positioning • AWEA/Offshore Windpower • Oceans 2012 MTS/IEEE Hampton Roads

Deadline: August 15th

Product Focus: Buoys & Monitoring Instrumentation

October

Editorial: Offshore Communication, Offshore IRM, OTEC

Distribution: Offshore Communications • Subsea Survey IRM • Clean Gulf • North Sea Decommissioning

Deadline: September 15th

Product Focus: Acoustic Modems, Releases & Transponders, Marine Communications

November

Editorial: Offshore Vessels, Marine Construction

Distribution: International Workboat

Deadline: October 15th

Product Focus: Workboats, Diving Systems

December

Editorial: Year in Review, Marine Salvage Operations, Commercial Diving

Distribution: Underwater Intervention

Deadline: November 15th

Product Focus: Handling Equipment, Winches & Control Systems, Battery Technology

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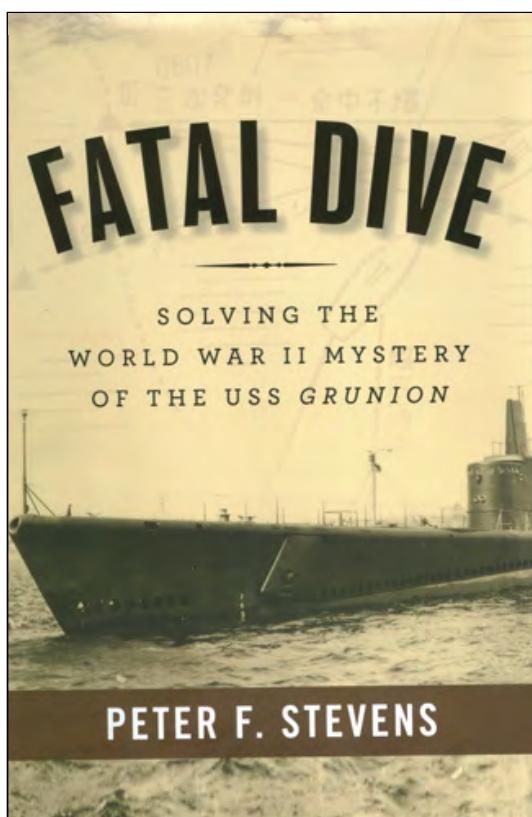


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Media Reviews



Fatal Dive: Solving the World War II Mystery of the USS Grunion

Peter F. Stevens

Call it divine intervention, happenstance, or a miracle, but it was loyalty and determination that helped Bruce, Brad, and John Abele discover their father's submarine after it disappeared over half a century ago. Shipwreck experts called it an unbelievable discovery.

Last seen off the coast of the Aleutian Islands on 31 July 1942, Jim Abele, commander of the USS Grunion submarine, and 69 other crew members were pronounced missing in action — and that was the last word their families would receive until the Abele brothers began their diligent and high-risk search. Lying 3,000ft below the surface of the Bering Sea — one of the world's most dangerous bodies of water — there were more obstacles than opportunities to finding the Grunion.

In his new book, *Fatal Dive: Solving the World War II Mystery of the USS Grunion*, Peter F. Stevens presents the first complete account of the series of unlikely events that led the Abele brothers to the submarine's remains and the devastating reason for the submarine's untimely demise.

Regnery Publishing, Inc.; ISBN: 1596987677
Hardcover - 400 pages (May 2012), \$24.95

I recently read this book and found it fascinating. You really get to know the family of the commander and their quest to discover his lost submarine. However, what really sets this book apart from the rest, is the Appendix. It includes a brief biography of each of the crew members who lost their lives. It makes the tragedy much more personal. - Ladd Borne



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People & Company News

Occidental Petroleum Corp. appointed **Cynthia L. Walker** to executive vice president and chief financial officer. Walker will assume the position from **James M. Lienert**, who has been Occidental's chief financial officer for the past 2 years. Lienert will continue with the company as executive vice president of business support. Walker, 35, most recently served as managing director at Goldman, Sachs & Co., where she enjoyed a 12-year career. While at Goldman Sachs, she provided clients with strategic advice in high-profile energy industry transactions as a senior member of the global natural resources group located in Houston, Texas. She was also a member of the mergers and acquisitions group. Walker holds a bachelor of business administration in accounting with high honors from the University of Texas at Austin.

Louisiana-based Reamco, Inc., an international drilling tool manufacturing, rental, and refurbishing provider, named **Ashley Lane** chief executive officer, said president and founder Brent Milam. Familiar to Reamco, Lane assisted with the startup of the company in 1986 and

progressed from operations manager to vice president during his 12-year first tenure. Altogether, he holds 32 years of experience in the oil and gas industry. Lane garnered additional entrepreneurial and management experience through roles as international business development manager of Superior Energy Services, Inc. and president of Drilling Logistics, Inc., a downhole rental and manufacturing company he spearheaded in Lafayette, Louisiana.

Seaborn Networks, the developer and operator of the first express submarine cable system between the U.S. and Sao Paulo, Brazil, said that **Erikas Napjus**, a recognized authority on global carrier-grade telecommunications, was elected to the board of directors. During his tenure at Google, Napjus founded and built Google's global infrastructure and data centers around the world.

T.D. Williamson (TDW), a leading provider of pipeline equipment and services, announced the opening of a new



Lane

office in Kazakhstan. The facility has been set up as a limited liability partnership (LLP) in Atyrau, Kazakhstan. Atyrau was chosen because it is known as an "Oil Capital," with a number of major oil and gas companies and service providers operating in the area. The city possesses a well-developed infrastructure and a good transportation system and is located at the juncture of Europe and Asia, making it the perfect hub for expanding the company's operations in the region.

The **MacArtney Underwater Technology** group recently combined Boston-based SubConn® sales with existing Houston operations under the new name MacArtney Inc. and is expanding its north American coverage further by opening in the Pacific Northwest. This initiative will bring MacArtney Inc. closer to many SubConn® customers and improve local service. The MacArtney Underwater Technology group is responsible for SubConn® sales in North America and the rest of the world and is continually seeking to provide better service, more capacity, and faster delivery.

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The Vice President of Sales and Marketing for **Exocetus**, Mr. Ray Mahr, Jr., announced the appointment of **Sanko Tsusho Co., Ltd.** as their exclusive agent in Japan, effective immediately for the sales and marketing of the new Exocetus Coastal Gilder. Sanko Tsusho has been representing some of the world's leading scientific instrument manufacturers for many years, and their staff of engineers has extensive experience in all oceanographic matters.

The Woods Hole Oceanographic Institution (WHOI) has appointed **Jeffrey Fernandez** to the position of chief financial officer and vice president of finance. Fernandez assumes his post 23 July. Fernandez joins WHOI after nearly 30 years with the University of California, most recently serving as the chief financial officer of Lawrence Berkeley National Lab (LBNL). Prior to this, Fernandez held financial positions at Lawrence Livermore National Laboratory as well as with the U.S. Department of Energy and the Office of Management and Budget in Washington, D.C.

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www.offshorewindexpo.org
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E-mail: tsssales@teledyne.com
Website: www.teledyne-tss.com
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Contact: Ross Johnson

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E-mail: tsssales@teledyne.com
Website: http://www.teledyne-tss.com
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Contact: Calvin Lwin, Applications Engineering

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E-mail: larry.bobbitt@oegoffshore.com
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Website: www.channeltechgroup.com
Contact: K.Ruelas, pres.; R. Franklin, v.p., nav & range sys; M. Shaw, v.p., sonar & transducer sys; B. Febo, Director of Business Development



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ROVs

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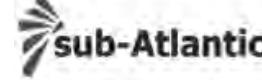
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UNDERWATER VIDEO EQUIPMENT



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3 Which category best describes your business?

(Indicate the primary activity of your organization by placing a 1 next to the category. Place 2, 3 and 4 next to other markets served.)

- | | |
|---|---|
| A. <input type="checkbox"/> SHIPS, CONSTRUCTION, SALVAGE | O. <input type="checkbox"/> DIVING EQUIPMENT / SERVICES |
| B. <input type="checkbox"/> U/W VEHICLES / COMPONENTS | P. <input type="checkbox"/> CONSULTING, DATA SERVICES |
| C. <input type="checkbox"/> NAVIGATION / POSITIONING | Q. <input type="checkbox"/> MARINE ELECTRICAL / ELECTRONICS |
| D. <input type="checkbox"/> RESEARCH & DEVELOPMENT | R. <input type="checkbox"/> COMPUTER SERVICES / SOFTWARE |
| E. <input type="checkbox"/> OCEAN INSTRUMENTATION | S. <input type="checkbox"/> OCEAN RENEWABLES |
| F. <input type="checkbox"/> OFFSHORE OIL & GAS | T. <input type="checkbox"/> SUBSEA IRM |
| G. <input type="checkbox"/> COMMUNICATIONS / UTILITIES | U. <input type="checkbox"/> OCEAN OBSERVING |
| H. <input type="checkbox"/> SCIENCE, ENVIRONMENTAL | V. <input type="checkbox"/> SHIPPING/ TRANSPORTATION |
| I. <input type="checkbox"/> EDUCATIONAL INSTITUTION / LIBRARY | W. <input type="checkbox"/> SUBMARINE TELECOM |
| J. <input type="checkbox"/> GOVERNMENT MILITARY | X. <input type="checkbox"/> EQUIPMENT RENTAL |
| K. <input type="checkbox"/> GOVERNMENT CIVILIAN | Y. <input type="checkbox"/> MANUFACTURERS' REPRESENTATIVE |
| L. <input type="checkbox"/> MARINE HARDWARE / DECK EQUIP. | Z. <input type="checkbox"/> OTHER (Please specify below) |
| M. <input type="checkbox"/> FISHING INDUSTRY, AQUACULTURE | _____ |
| N. <input type="checkbox"/> SURVEY, MAPPING, EXPLORATION | _____ |

4 Which category best describes your job function? (check only one)

- | | |
|--|--|
| 1. <input type="checkbox"/> OWNER / EXECUTIVE | 5. <input type="checkbox"/> BUYER |
| 2. <input type="checkbox"/> MANAGEMENT / PROFESSOR | 6. <input type="checkbox"/> SALES |
| 3. <input type="checkbox"/> ENGINEER / SCIENTIST | 7. <input type="checkbox"/> OTHER (Please specify below) |
| 4. <input type="checkbox"/> TECHNICIAN / OPERATOR | _____ |

5 How many other people will read your issue of Ocean News & Technology at this location?



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