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1) GENERAL OCEAN NEWS

1.a) Simulation makes perfect when manoeuvring the largest offshore floating facility ever built – Shell’s Prelude FLNG facility

At 488m in length, and longer than four football pitches, Shell’s Prelude FLNG facility was always going to represent a formidable challenge even for the skilled tug masters who were charged with towing the facility from the shipyard in South Korea where it was constructed, and delivering it to its final destination, a remote gas field 475 kilometres off the coast of Western Australia.

But practice makes perfect, and HR Wallingford, using its Australia Ship Simulation Centre in Fremantle, W.A., created an accurate and detailed navigation simulation of Prelude for Shell, which was used to prepare the Tow Masters, Tug Masters and Pilots, allowing them to familiarise themselves with a realistic simulation of Prelude manoeuvres at sea. And on 25 July 2017, Prelude arrived safely at its destination in the East Browse Basin.

HR Wallingford’s involvement in the project extends to the real-time navigation simulation for the facility’s departure from the Geoje Shipyard in Korea, along the Busan Channel; positioning and mooring Prelude once on site; conducting berthing and departure simulations of the LNG, LPG and condensate offtake tankers that will moor alongside the FLNG; and providing ongoing pilot and tug master training in the Australia Ship Simulation Centre in Fremantle.

HR Wallingford also created and provided to Shell Australia a bespoke, web-based decision support tool, to assist with operations planning.

Up to six integrated simulators at the Australia Ship Simulation Centre were used to simulate the FLNG facility and the tugs for the shipyard departure operation, and for the positioning during connection of the FLNG’s mooring lines, once at its installation site. Actual wind, wave and tidal conditions were recorded, and then modelled, which meant that the crew were able to accurately test the capability and power of the tugs in advance. The simulated positioning operation was used to prepare for the real-life operation in which the tugs were attached to the FLNG facility by 700-metre-long wires, weighing approximately 30 tonnes each.

For further information, visit www.hrwallingford.com

1.b) CGG Launches Gippsland ReGeneration reprocessing project in SE Australia

CGG announced the start of its Gippsland ReGeneration 3D reprocessing project in Australia’s premier Gippsland Basin, in South-East Australia. The project will offer the industry the highest-resolution 3D seismic data available in this extremely prospective area.

Historically, imaging the Gippsland Basin’s shelf break and numerous submarine channels has proven extremely challenging. With the application of CGG’s latest high-end technology and workflows, including advanced de-multiple and high-frequency FWI, the Gippsland ReGeneration project will deliver significant reservoir imaging improvements, reveal new potential deep reservoir targets and extensively improve understanding of the basin.

To date, the Gippsland Basin has produced over 4 billion barrels of liquid hydrocarbons and 7 trillion cubic feet of gas, sourced from thick coal seams formed during the Paleocene to

Eocene, and trapped in late Tertiary, inversion-formed, compressional structures. The first major offshore discovery was made over half a century ago and there is still tremendous opportunity for new discoveries and developments.

For further information, visit www.cgg.com

1.c) Miko supplies peel-off patches for fouling measurement on turbine towers

A scientific study of fouling growth on the new Hywind floating turbine structures will be aided by the use of magnetic patches supplied by Miko.

With construction of the world's first floating wind farm currently in progress off the Scottish coast near Peterhead, a unique method of monitoring biological growth is due to be conducted by the Scottish Marine Institute on behalf of farm operators; Statoil and Masdar. Magnetic patches measuring 3500mm x 200mm are being fixed to the underwater surface of the floating turbine spar where they will experience the same degree of biological growth as the main hull. At intervals of around four months, the patches can be simply peeled-off and returned to the laboratory where the composition and extent of any growth can be measured with exceptional accuracy.

This is seen as a simple but important advance over traditional methods of fouling assessment which usually employ either in-situ measurement by divers or ROV, or by the use of a removable plate that can be recovered for laboratory analysis. On site measurement is considerably less accurate while removable plates must be fitted inside custom-made mounting structures which offer fewer siting options. This is not a problem with magnetic patches which will make it possible to monitor the extent of growth in relation to its depth on the structure and its orientation in relation to light, currents and water temperature.

The Miko magnetic patches are manufactured in Norway and are more typically used for the emergency repairs of damaged ships or offshore platforms. Each patch consists of high strength fabric backed by a powerful and flexible magnetic layer. Lifting points are included for ease of handling by divers or ROVs and they have a life expectancy of many years of demanding use. The power of the magnetic adhesion enables them to withstand the effects of wave and current action and to ensure that the patch stays in place regardless of sea conditions. The first phase of the wind farm will cover around 4 square kilometres 25 km offshore Peterhead where the average wind speed is around 10 metres per second.

For more information visit www.mikomarine.com

1.d) MetOcean Telematics to provide CANADA with global connectivity via the Iridium® satellite network

MetOcean Telematics is pleased to announce it has been awarded an extensive multi-year contract to provide global satellite communications to the Canadian Government, exclusively through the Iridium® network. The agreement will feature MetOcean Telematics cutting-edge hardware products and services, deployed for use by over 150 Canadian Government agencies. The Iridium network is the only satellite constellation to offer 100

percent global coverage, including the polar regions, such as the remote Arctic territory of northern Canada.

Iridium currently operates the largest global commercial, low-Earth orbit satellite constellation. The Company is in the process of refreshing the constellation with new satellites, in a program called Iridium NEXT. This \$3 billion investment has been coined the largest “tech refresh” in history. Iridium customers and end users will have access to enhanced voice, data and satellite broadband services anywhere in the world during and after deployment of Iridium NEXT.

For further information, visit www.metocean.com

1.e) Valeport supports quest for new marine discoveries

Valeport, a manufacturer of oceanographic, hydrographic and hydrometric instrumentation, is supporting scientists with leading edge research to expand knowledge of marine biodiversity with its latest CTD profiler, the fastCTD, which records the conductivity, temperature and depth of sea water.

The fastCTD is integral to the research kit that will accompany respected marine biologist Dr Sonia Rowley as she undertakes her latest expedition to the island of Pohnpei, in the western Pacific Ocean, from 2 August until 13 September. The trip follows in the wake of successful explorations at Pohnpei, the Cook and McCall seamounts, and Lō‘ihi volcano in 2016. Data recorded by Valeport’s CTD profiler contributes to the research team’s understanding of biological processes, such as an invasive algal bloom that was found at the reefs of Pohnpei during the previous projects.

Dr Rowley, originally from Devon, UK, and now based at the University of Hawaii, uses the latest technological advances in closed circuit rebreather diving to explore the biodiversity of ‘twilight coral reefs’ at seamounts, which are underwater mountains formed by volcanic activity. The majority of tropical coral reefs exist at depths between 100-500 feet which is too deep for traditional scuba diving, but too shallow to justify the cost of using manned or unmanned submersible craft to reach them. Dr Rowley’s advanced training enables her to reach these unexplored regions of the marine environment.

For more information on Valeport, visit <http://www.valeport.co.uk/>

1.f) EdgeTech Enhances Discover Software with New Coverage Mapper and Target Logger

EdgeTech, the leader in high resolution sonar imaging systems and underwater technology, has released a new version of its well-known Discover sonar software. The new software coverage mapper module has advanced navigation features allowing the setup of survey lines with a left/right steering indicator to assist in survey line control. Background navigation charts and other imagery such as multibeam bathymetry and satellite imagery can be layered or blended with individual transparency control, a feature unique to this software. Coverage mapper supports unencrypted S-57 Electronic Navigational Charts (ENCs), BSB3 Raster charts as well as standard Geo-TIFF imagery. Real-time survey track

lines of both the survey vessel and towfish are displayed along with side scan sonar swath coverage to ensure that proper overlap is maintained during survey operations.

In addition, the new Target Logger module has simplified the process of analyzing and measuring targets of interest. Measurements are performed with simple cursor click and drag. Advanced manual altitude tracking is a feature that helps with noisy data where auto tracking may have difficulties. This feature ensures the accurate measurement of target height above the seafloor. Targets are catalogued and can be exported as a Target Report with target images and all-important information such as measurements, position, etc.

The new coverage mapper and target logger software comes with all new side scan sonar systems such as the 4125 ultra-high resolution lightweight portable system and the 4200 multi-purpose survey system.

Customers using EdgeTech sonars can download the Discover software at no charge from the company's website or by contacting the company directly.

For more information please visit: www.edgetech.com

1.g) SubConn® connectors for defence contractor

The industry standard underwater mateable rubber moulded SubConn® Micro connectors have been selected by Finnish defence contractor DA-Design OY for underwater technology applications.

MacArtney has received and delivered multiple orders for SubConn® Micro connectors placed via their Finnish sales representative, ARWELL-Tekniikka Oy, by Finnish defence contractor DA-Design Oy. The SubConns are standard micro connectors that are subjected to adaptation in MacArtney's workshop in order to tailor them for use together with the underwater defence products designed and engineered by DA-Design Oy.

The adaptation includes various steps such as a) installation of several other connectors on the SubConn leads in order to quickly connect each lead for a specific purpose, b) installation of high frequency noise suppressors to prevent electrical signal interference, c) individual labelling, testing, documentation and packing of each completed assembly to enable tracking and facilitate receiver QC.

All steps are made so that the final assembly with installed connectors and noise suppressors has an OD smaller than the connector thread. The entire assembly will thus fit through a standard SubConn micro mounting hole.

For further information, visit www.macartney.com.

1.h) SMARTRAK can now offer buried pipeline & submarine cable tracking on AUVs

INNOVATUM has carried out successful testing, including autonomous operation of the Smartrak cable and pipeline tracking system on AUV. This integration enables the AUV to navigate to the target cable or pipeline, follow it, and measure position, including "Depth of Burial".

Applications for AUV-integrated Smartrak systems include: survey of submarine pipelines (oil, gas and water); energy cables (wind farms & interconnectors); and communications cables. System integration between SMARTRAK and the AUV, included both hardware and software elements. Data can be recorded in the AUV and retrieved post dive, for display and analysis.

Terry Slater, INNOVATUM Ltd. explains that, by removing human decision-making from the loop, integration of this smallest, commercially successful cable tracker with AUV autonomous robotics, achieves even higher standards of data collection.

This SMARTRAK testing also indicates it will be possible to deploy the SMARTSEARCH UXO location system on AUVs.

For further information, visit <http://www.innovatum.co.uk/products.aspx>

1.i) IMO in the polar environment: Search and Rescue

Following the launch of IMO's film on the IMO Polar Code, a new video focused on search and rescued in polar regions is being published today.

The second video in a series on IMO in the polar environment takes a closer look at the challenges of search and rescue operations in polar regions, for example, how the current lack of marine infrastructure, coupled with the vastness and harshness of the environment, makes emergency response significantly more difficult in the Arctic and Antarctica. The limitations of radio and satellite communications to monitor and control ship movements in polar waters is another issue. The new video also explores IMO's International Convention on Maritime Search and Rescue – the SAR Convention – which was adopted by IMO in 1979. Under the SAR Convention, individual countries are responsible for specified search and rescue regions, together forming the Global Search and Rescue Plan. A network of rescue co-ordination centres and sub-centres has been established and, together, they cover all the world's oceans.

To watch the video, visit

https://www.youtube.com/watch?v=N_gs9wgaHQo&feature=youtu.be

2) EVENTS, TRAINING & DEMONSTRATIONS

2.a) 25th annual HYPACK Training Event, Savannah, US

Join HYPACK at their 25th annual HYPACK Training Event in Savannah, Georgia on January 16th-19th, 2018. The event will be hosted by the Westin Savannah Harbor Resort.

The training event will offer instruction on the newest features of HYPACK® 2018 as well as comprehensive training for both novice and experienced users in HYPACK®, HYSWEEP® and DREDGEPACK® software. HYPACK certified trainers and programmers will also be present for one-on-one sessions, giving attendees the opportunity to discuss any project specific questions. You will also find 30 of the industry's leading companies exhibiting at the HYPACK 2018 Training Event.

For more information and to register for the early bird special, visit www.hypack2018.com

3) JOB POSTINGS

3.a) 2x Mechanical Engineer, British Antarctic Survey, UK

With the launch of their new research vessel, the RRS Sir David Attenborough, BAS are looking for two sea-going Mechanical Engineers to support their ongoing science on their existing vessel the RRS James Clark Ross, while the RRS Sir David Attenborough is getting into service.

The role would be split between time at BAS Cambridge, where you will be developing and maintaining scientific or operational systems, and aboard BAS's research vessels where you will be providing engineering support for scientific equipment in remote polar locations. This will include a huge variety of equipment from small sampling nets to complex mooring systems.

Applicants must have a strong mechanical background as per the skills spec, with the ability to produce workable engineering solutions with the limited facilities associated with working in remote locations and on ships. You will need no previous experience with scientific equipment or working on a research vessel, as full training and support will be provided. This is an exciting opportunity to provide first-hand scientific support to a world-leading institute of polar research and to work on one of the most advanced polar research vessels in a truly unique environment.

Although the post is based in Cambridge successful applicants can expect to go to sea on multiple cruises aboard BAS research vessels, accumulating up to 3 months a year. The post is a fixed term appointment of 3 years, starting as soon as possible after the successful interview.

For further information, visit <https://www.bas.ac.uk/jobs/vacancy/mechanical-engineer/>

3.b) Senior Coastal Processes Scientist, Cefas, UK

£33,693 – £39,652, Permanent, Lowestoft

Cefas is seeking a highly-motivated coastal scientist to join a team producing high quality evidence based deliverables for Cefas' nuclear portfolio, government regulatory clients and other customers. The work involves developing projects to solve coastal problems, gather baseline evidence, predict and measure impacts arising from major infra-structure projects. It will also involve developing proposals and bids for new work, both in the UK and abroad.

This post relates to new nuclear power stations and involves contributing to an interdisciplinary marine programme. The coastal geomorphology and oceanography component of the portfolio considers how developments and associated coastal defences will impact the nearshore zone, including potential impacts on ecology, sediment transport and coastal configuration. It also examines changes to coastal processes and coastal morphology, including extreme events to inform safe and efficient engineering design and regulatory planning applications. Examples of the work include the use of video cameras, x-band radar and drones to measure coastal change, and experiments using RFID tags to study gravel transport.

This role also requires delivery of scientific advice to key customers on coastal energy projects, coastal construction, aggregate extraction and other coastal/marine

developments. Advice will be based on a balanced, impartial and critical examination of data and reports on coastal processes including seabed stability, coastal erosion, sediment transport, coastal geomorphology and oceanography. You would be responsible for coordinating a small team of coastal processes advisors.

Excellent report/paper writing and effective communication skills are essential.

Academic qualifications for direct entry to this Pay band 6 post is a Higher Degree and relevant experience in an appropriate coastal dynamics, geomorphology or coastal engineering discipline.

Closing date 01 September 2017

For full details and to apply online please visit
<https://www.civilservicejobs.service.gov.uk/csr/index.cgi>

3.c) Graduate Oceanographer, Fugro, UK

Fugro are the world's leading, independent provider of geo-intelligence and asset integrity solutions for large constructions, infrastructure and natural resources. They provide the technical data and information required to design, construct and maintain large structures and infrastructure in a safe, reliable and efficient manner. Working around the globe, predominantly in energy and infrastructure markets, Fugro employ approximately 11,000 employees in around 60 countries.

Fugro's office in Portchester delivers a number of key services supporting projects in both the marine and land environment.

The Coastal Oceanography Department has the following vacancy for a Graduate Oceanographer based within the team in our Portchester office.

The duties and responsibilities include: Metocean survey – setting up metocean equipment, preparing moorings, mobilising vessels, deploying equipment, collecting metocean data; Equipment selection and preparation prior to survey work, and demobilisation following survey; Processing and quality control of measured metocean data; Writing technical reports.

Your attributes will include: Degree in Oceanography or related discipline; Graduate Oceanographer; Ability to work well as part of a team.

Fieldwork experience is desirable, but not essential. Understanding of metocean equipment and knowledge of the offshore renewables industry is also desirable, but not essential.

For more information please visit, <https://www.fugro.com/careers/search-for-vacancies/apply/view?vacancyId=2757>

3.d) Underwater Glider/Mechanical Engineer, Marine Autonomous and Robotic Systems (MARS), National Marine Facilities (NMF), National Oceanography Centre (NOC), Southampton

About the role: As a Glider Engineer you will be focused on Slocum glider, Seaglider and Unmanned Surface Vehicle (USV) operations. This includes preparation and mobilisation, piloting and sea-going support and time at sea and at shore-bases. Your role will also involve the maintenance of gliders, unmanned surface vehicles and associated sub-systems and sensors. You will contribute to external relationships with vehicle users, manufacturers and centres and prepare material for knowledge exchange.

As a Mechanical Engineer, you will undertake mechanical design work, both within the glider group and more broadly across MARS. This will involve taking designs from initial concept through drawing to production and final testing.

Fixed Term 3 years. Salary will be £28,200 per annum depending upon skills and experience. Sea time may be required for this role, which attracts a daily allowance.

About you: You will have a degree or HND in engineering or other numerate subject, or equivalent higher/further education in a related field, with experience in mechanical design and a strong track record of solving engineering problems.

NOC offer a competitive remuneration package, including RCUK pension scheme, 30 days annual leave with a further 14 Public/local days off and free car-parking. <http://noc.ac.uk/>.

How to apply: Applications are handled by UK Shared Business Services Ltd (UK SBS); for further information about the role and to apply, please visit http://www.topcareer.jobs/Vacancy/irc241919_7317.aspx. If you are unable to apply online please call 00 44 (0) 1793 867000.

Closing date: 28 August 2017

For general enquiries only regarding this role please contact David White dwh@noc.ac.uk + 44 (0) 2380 596154 or Ella Richards ella.richards@noc.ac.uk + 44 (0) 2380 596004. Please do not send CVs.