

Subsea Springboard

16th June 2020

4pm – 5pm

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Greg Smith
General Manager
C-Kore Systems

Fast Automated Subsea TDR Testing

With subsea oilfields aging and becoming increasingly complex, operators need new technologies to quickly and cost efficiently locate faults in their subsea networks. This talk will discuss how C-Kore Subsea TDR technology can be used to rapidly pinpoint faults in subsea electrical systems.

Traditional TDR testing employs deck-based equipment connected to the subsea infrastructure via down-lines, a procedure with many disadvantages, including unwieldy operation, attenuated signals and unwanted reflections, which limit their usefulness. The C-Kore Subsea TDR solves these problems in two ways: by taking all TDR measurements directly at the subsea interface and by automating the testing process allowing for detection of near-end faults and tiny discontinuities.

Case studies will be presented where operators have located subsea faults using the C-Kore Subsea TDR that could not be found using traditional techniques. These include measurements through subsea trees and down-hole cables to find DHPT gauge faults and the location of faults in infield umbilical terminations assemblies.

Greg is General Manager of C-Kore Systems. He has an engineering background, with a master's degree in electronic engineering from York, where he graduated top of his year, and has recently completed an MBA at Warwick, graduating with a distinction. He has been with C-Kore since its foundation and personally developed the Cable Monitor from first prototype to production unit. Presently he oversees the team designing new products and manages C-Kore's operations and deployments. Greg is keen to ensure C-Kore fulfils customer needs and so has frequently accompanied the units offshore to observe their use in the field.



Allan Spencer
Managing
Director – UK &
Europe
Cellula Robotics

Imotus-1 Hovering AUV System

Cellula Robotics Ltd has designed, developed and factory/wet tested a hovering AUV system; the IMOTUS-1. The underwater vehicle is currently configured for a specific confined space inspection campaign for a major oil and gas operator in the North Sea sector. Unfortunately, the inspection campaign was cancelled by the operator earlier this year before the IMOTUS was deployed in the field.

The IMOTUS system can be brought to mission-ready status with minimum effort and cost and could be readily configured for either confined space or open water inspection tasks. Capabilities already tested/proven include: subsea autonomous docking, wireless power and data transfer, GVI (camera), marine fouling removal from submerged structures (rotary brush) single point ultrasonic weld inspection and auto navigation in an enclosed environment using a proprietary SLAM navigation algorithm. Cellula are now looking for opportunities to perform further operator sponsored field trials as soon as possible.

Allan has been working in the subsea industry for the past 21 years, firstly as Senior Mechanical Design Engineer with Slingsby Engineering Ltd., UK. And latterly as UK

Commercial Manager. He was then seconded to Perry Slingsby Systems in Florida, USA as Geotechnical Business Development Manager.

Later he relocated to Houston, Texas, where he formed and headed up 'Seafloor Geoservices Inc.', as General Manager. A co-inventor of the Rovdrill 3 – a remotely operated seafloor geotechnical drilling, sampling and in-situ testing machine, he also co-developed and patented a unique wire line drilling and sampling system.

Allan holds a Bachelor of Engineering degree, with Honours, from Leeds Beckett University and an MBA with merit, from Robert Gordon University, Aberdeen. Allan is a Chartered Engineer with the UK Engineering Council and a Chartered Marine Engineer and Fellow of the Institute of Marine Engineering Science and Technology.

In 2015 Allan formed 'Aspen Subsea Ltd.', an underwater intervention engineering and robotic solutions consultancy, based in Aberdeenshire, UK, and is currently also regional Managing Director of Cellula Robotics UK Ltd.

Safe and Precise Gasket Installation

The objective of the presentation is to introduce a new and sustainable method of installing gaskets subsea.

Installing Ring Type Joint (RTJ) gaskets subsea is a regular part of any dive contractors project scope. This presents many challenges given the environment. There have been instances of divers trapping hands and even losing fingers in the process of installing the gasket.

In addition to the safety concerns a misaligned gasket will fail leak test incurring long delays and significant additional costs to the client. Alba Gaskets have introduced a new method of installing gaskets subsea with their new Lobster Tool. We would propose to provide some case studies of how the tool has assisted various Subsea clients and how it can add value to the Subsea sector.

Gavin Sim is 45 and was born and raised in Aberdeenshire and studied at RGU. Gavin is the owner and Managing director of Alba Gaskets and has been involved in supporting the North Sea sector since 1997.

Gavin was an active member on the energy institute working committee in the writing of the latest 'Guidelines for the Management of Bolted Joints in Pressurised Systems' to 3rd Ed' and has a keen interest in all matters relating to Joint integrity

Gavin was involved in the introduction of the 1st generation of subsea gasket installation tools in 2012 and is in regular contract with Global Dive Contractors technical teams supporting them on products and installation.



Gavin Sim
*Managing
Director
Alba Gaskets*



Dave Gardiner
Commercial & BD
Manager
Maritime
Developments
Limited

Enabling asset life extension with local supply chain

MDL traditionally works directly with Tier 1 and 2 SURF Installation Contractors, facilitating bringing new wells online and shutting down expired ones through installation and retrieval of umbilicals and flowlines.

Our expertise in delivering, running, maintaining and repurposing marine equipment also carries direct benefits for Operators.

In 2019 MDL was contracted to perform a survey of lifting equipment on board a North Sea FPSO. Multiple winch packages had not been utilised in many years and due to limited on-going maintenance activities they were in need of repair.

The survey led to MDL's in-house Projects team designing a complete work package and carrying out repairs of the equipment in-situ on the FPSO - eliminating costly requirement to bring equipment onshore and production downtime.

After repairs works, MDL's experienced offshore flex-lay team operated the winches to complete a successful riser pull-in.

This case study demonstrates how an open dialog between the different industry tiers can quickly take away the headaches faced by Operators with aging assets, without sacrificing production.

Based in Aberdeen, Dave has over 10 years' experience of working in the Oil and Gas market. Prior to joining MDL he established a successful career in TechnipFMC delivering key, high-value projects including EnQuest Kraken, one of the biggest subsea heavy-oil field projects in the UK sector of the North Sea and Total Islay, the world's first ETH-PiP system to be installed subsea.

Dave has experience in project management, contract management, vessel scheduling and risk management. His remit in MDL is to build strategic alliances and drive forward-thinking solutions to the MDL client base.



Andrew Woollven
Managing
Director
EODEX UK Ltd

Innovation in Underwater Explosive Cutting Systems for Decommissioning Programmes

Due to its large environmental disadvantages and 'heavy handed' approach, the use of traditional explosives in underwater cutting for decommissioning has had limited demand in recent years. However, new technology which can deliver 'surgical' levels of cutting control along with a fraction of the noise output has the potential to save future O&G decommissioning programmes significant time and costs. In late 2019 EODEX and partners Alford Technologies carried out a series of noise trials led by the National Physical Laboratory and Loughborough University to compare the noise output from our specialist cutting systems against traditional bulk explosive charges. The results confirmed a significant noise output reduction and JNCC have commented on the sizeable improvement instantaneous low noise cutting solutions brings in terms of minimising environmental impact. With an in-house design and manufacture capability we are able to easily adapt our proven military underwater explosive systems for subsea cutting operations, be it structural, linear, circular or bespoke



complex shapes. Whilst we recognise that the use of explosives for cutting will not be suitable for all situations; the speed, accuracy, safety, low environmental footprint, and significant cost efficiencies now makes this new technology a compelling option for future decom programmes.

Andrew Woollven is a former Naval Warfare Commander and Mine Clearance Diving Specialist and throughout his career been involved in extensive EOD and underwater clearance operations all over the globe. On leaving the forces, Andrew worked as an offshore EOD Superintendent before taking up the position as Managing Director at EODEX UK Ltd, a company that has been specifically formed to bring the very best maritime EOD and underwater explosive cutting processes for use within the commercial subsea sector with safety, environmental safeguarding and cost efficiency as central pillars of its delivery.

A masters graduate of Kings College and a Member of the Institute of Explosive Engineers, he is also a keen sportsman having represented the Navy and Combined Services at rugby, hockey and athletics; having now retired from competitive sport he enjoys keeping fit enough to enjoy his skiing and currently sits as the Chairman of Middleton Hockey Club.



Dr Roy Bitrus
Director of Sales
TenzorGeo

Low Frequency Seismic, its potential and application in the Offshore Oil and Gas Industry

The oil and gas industry is focused on maximising economic recovery (MER), opening a window of opportunity for technologies such as passive low frequency seismic sounding (LFS) with a proven onshore track record of 15 years. LFS is a direct hydrocarbon indicator and on average halves the chance of drilling a dry hole.

Natural low-frequency spectrum (0.5 - 10 Hz) is modified above hydrocarbon reservoirs due to the relative dispersion and attenuation of the signal. LFS assesses the spectral characteristics of vertically oriented waves to determine the presence or absence of hydrocarbon reservoirs.

With the recently completed offshore trial in the UKCS, TenzorGEO was able to deliver a hydrocarbon probability map, proving the ability and application of LFS to detect hydrocarbon in an offshore reservoir. There is an opportunity to further validate the technology with a second field trial and help de-risk offshore drilling decisions and MER in the UKCS.

Roy is a Royal Society of Edinburgh RSE – Unlocking Ambition Enterprise Fellow with technical, entrepreneur and intrapreneur skills working as a director of sales with TenzorGEO Ltd to provide micro seismic data acquisition and interpretation services to the oil and gas companies in the north sea aimed at maximising economic recovery in the UKCS.

He is a Geologist with degrees in geology and mining, a master's in environmental management and a doctorate in geology focused on 4D seismic interpretation and reservoir characterisation for CO2 storage.

Roy has a passion for giving to others and is a committed member of the AFBE Scotland UK, where he volunteers his time and energy to help develop others contributing to leadership and STEM activities around schools in Aberdeen.

