



AQUASPHERE

The Global Subsea Services Publication of the Fugro Group

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Latest ROV Technology

Fugro recently sponsored an evening on behalf of SUT Aberdeen. The event was chaired by Tom Taylor of Nexen Petroleum UK Ltd.

An overview presentation was made by Jim Mann, the Fugro Global ROV Manager, on the development of the modern fifth generation of Work Class ROV System. The presentation commenced with a description of the development process showing the early concept drawings, through to the pre-production 3D models. He then went on to describe the FCV 3000 ROV System in detail emphasising its many advantages and hidden technologies / features.

Other presenters included Dr. Trevor Larkum CEO of GRL who, together with Fugro are co-developing the Simulator and Animation software used in the new FCV 3000 ROV System. This new software provides the functionality of mission planning and rehearsal that allows for a helicopter or "bird's eye" viewpoint of the work scene. This system is built in to each of the new FCV 3000 ROV Systems and will provide us with the very latest in cutting edge visualisation technology. It will also provide significant benefit to both Fugro and our customers, not least of which shall be time saving on subsea operations.

The final presentation of the evening was by Mr. Kevin Taylor, the General Manager of PSSL who presented his company's latest developments in controls engine technology, which has the capability to be utilised on a number of subsea technology developments, but more relevant to the evening session was the details on the Tether Management System (TMS) that is used on the FCV 3000 ROV System.

▼ *Early concept drawings*



▼ *FCV3000*



▼ *Jim Mann, Global ROV Manager, Fugro*



Fugro acquires Australian based company SureSpek ISS Pty Ltd.

▼ *SureSpek ISS Pty Ltd.*



SureSpek, established in 1995, is an Australian based company operating mostly in the Asia Pacific region.

The company manages and undertakes subsea inspections on offshore pipelines, jackets and structures, mostly for oil and gas companies. As well as managing projects it also provides a range of core inspection services, including UT (Ultrasonic Testing), ACFM (Alternating Current Field Measurement), FMD (Flooded Member Detection) and CMS (Chain Measurement Services).

The business - in combination with Fugro's existing ROV (Remotely Operated Vehicle) business - will help to strengthen the subsea activities of Fugro not only in the Asia Pacific region, but also in other regions where Fugro carry out inspection programmes for its clients.

The current management will stay in place and the company will be renamed Fugro-SureSpek Pty Ltd. The company has sixteen staff and revenues of approximately EUR 2.5 million.

FCV3000 ROV Trials Fort William

The new Fugro FCV 3000 ROV System recently underwent a full set of sea trials at The Underwater Centre in Fort William on the west coast of Scotland.

The Underwater Centre is located on the shores of Loch Linnhe, one of the deepest sea lochs in Scotland. This site was selected as being ideal for sea trials of the FCV 3000 System for a number of reasons. The large private pier gives unrestricted sea access with water depths of 50msw nearby and 150msw within half a mile of the pier. This site is also used by the Fugro Academy for practical sessions during ROV training.

Unlike most other seawater sites the sheltered waters of Loch Linnhe allow operations to continue in almost all weathers, an attribute that was used to the full given the time of year and the very inclement weather experienced during the trials, an aspect that was not lost on the ROV trials crew, who operated the System on a 24 hour per day shift system to maximise the water time during the trials.

▼ Crew prepare FCV3000



▲ FCV 3000 LARS

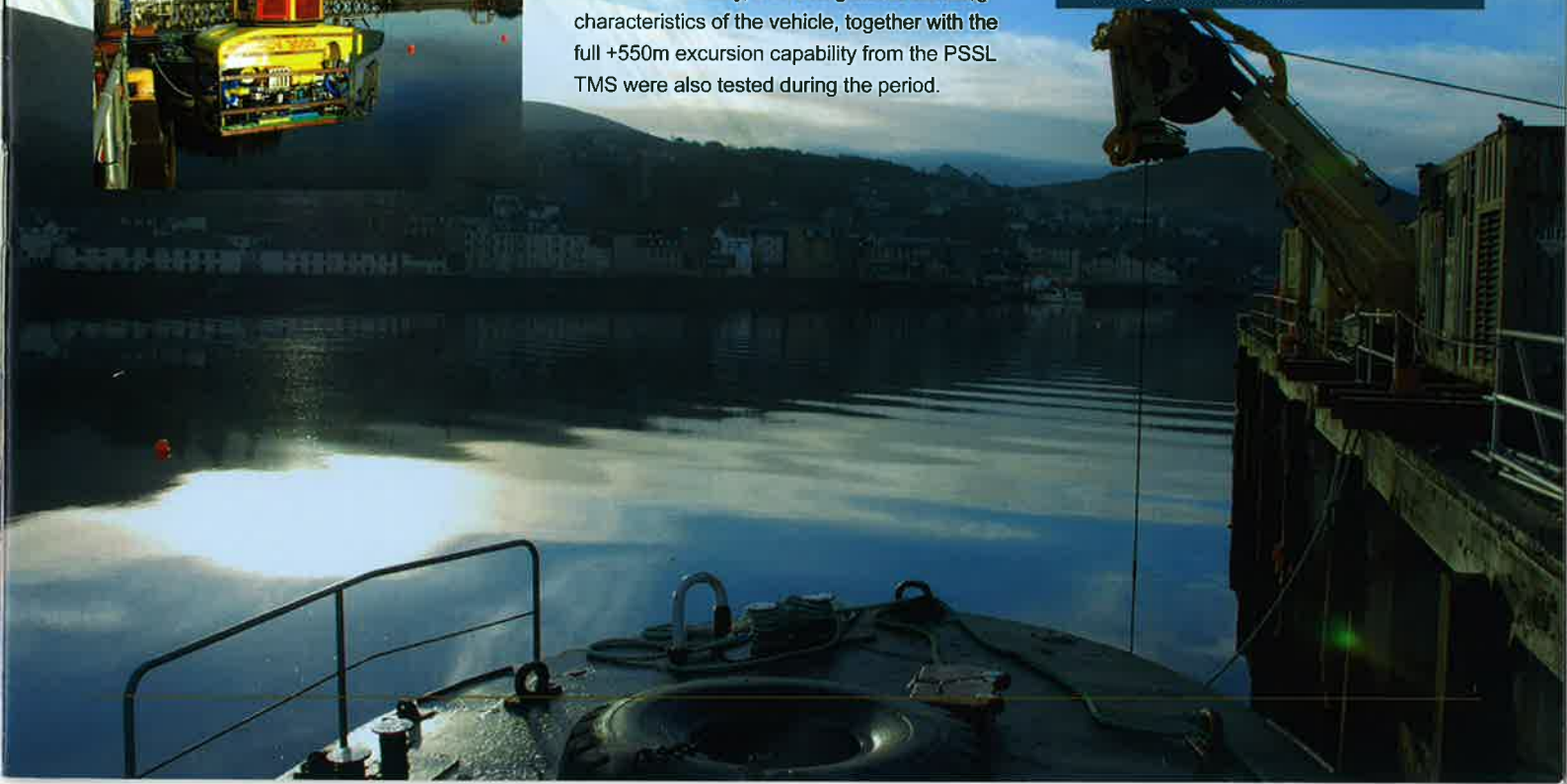
During a week long program, and despite the wind and rain, the FCV 3000 System underwent a full set of factory acceptance tests (FAT) on all of its advanced systems. The fine tuning that was completed on the sophisticated sub-systems and operating procedures could only be carried out when the individual components such as the crew, winch, LARS, hydraulic power pack, control cabin etc were gathered together in one location for the first time.

Systems like the new Launch and Recovery System (LARS) and Tether Management System TMS were tested to their full operating limits together with the auto control features, the advanced camera and sonar functions and new pilot display screens that could only be fully tested with the ROV actually in the water. The stability, trim and general handling characteristics of the vehicle, together with the full +550m excursion capability from the PSSS TMS were also tested during the period.



▲ ROV Superintendent Mike Allan working on the FCV 3000

▼ Recovery





Fugro SAE's – new ROV organisation

Fugro Misr, Fugro SAE and Fugro-Rovtech have recently joined forces to set up a new organisation to focus on the provision of ROV and Engineering services in the area. This means that Fugro can offer a complete range of work class and observation class ROV services and support vessels. FSAE will also offer a complete subsea intervention support service including planned, contingency and emergency engineering services, delivered locally from the new base which is now located at Katameya in Cairo.



▲ Mohamed Aboue Elela

In Egypt, FSAE currently employ approximately 140 staff in both onshore and offshore roles. Well over 90% of the staff are locally hired with many of the Engineers and Technicians trained in-house via the Fugro Academy and cooperating ventures with local universities and technical colleges.

At the moment, in Egypt, there are currently 2 work class and 7 observation class ROVs in operation. This forms part of a regional fleet of approximately sixty ROVs, which in turn is part of a global fleet of well over 100 ROVs.

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Fugro Brasil Ltda

In May this year Fugro acquired the remaining 38% interest in the Joint Venture Fugro-Oceansatpeg S/A in Brazil – a company that was formed at the end of 2005 combining the operational departments of Fugro Marsat and Fugro Geosolutions with the Brazilian company Oceansatpeg. The new company will operate under the name Fugro Brasil Ltda.

The company currently has over 700 employees; the great majority of them being local Brazilians. They operate from two main Bases one in Macaé and an office in downtown Rio de Janeiro. Combining the technology of Fugro Group worldwide with more than thirty years of experience in the oil & gas industry in Brazil, they provide a comprehensive range of services including: geotechnical services, environmental and met ocean service, DGPS satellite positioning service and uniquely air and saturation diving services to 350m. They also operate a fleet of specialist vessels and act as Regional hub for other Fugro Group Services.

In this article we will concentrate on their ROV service, in particular the ROV training program. Seventeen systems are currently working in Brazil, all operated by highly-skilled Brazilian personnel. They offer the full range of intervention tooling services to support drilling, subsea engineering, construction and inspection, repair and maintenance (IRM). The ROV fleet is also used as a platform for various types of deepwater surveys using ROV-mounted geophysical sensors.

Fugro Brasil Ltda has been quietly busy over the past couple of years training and developing their own ROV crews, engineers and managers. They have used the Fugro network highly effectively utilising both the Fugro Academy and by working together with other Fugro companies who also operate ROVs. They have also taken full advantage of the training facilities offered by our main suppliers like Saab Seaeye.

For example this year they will send at least another six trainees for factory training at Saab Seaeye, another four will travel to RTSU in Singapore for advanced training on our own FCV 3000 ROVs. They have gone the extra step and helped develop an exchange program which has seen experienced Brazilian ROV crews working for our Norway office on projects in Africa. This will be further developed through the year.

Training in Brazil contains both practical and academic elements. Some of the practical elements are carried out at our facility at Arrail do Cabo using small observation class ROVs. This facility is enhanced by using a newly installed mission rehearsal and ROV simulator. Fugro Brasil Ltda intends to develop the facility at Arrail do Cabo to cover other practical elements of survey training and for equipment testing.



▲ Trainees and Staff undergoing training at Fugro Brasil offices

►► Please contact Paulo Cesar Monteiro Martins
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Fugro-Rovtech's new Tool Deployment Unit enters service

The disadvantage of using manipulators is in some conditions, such as low visibility or heavy currents, when combined with the difficulty of trying to do a 3D task with only a 2D video screen; many hours can be added to a relatively simple task and highly complex tasks cannot be achieved at all.



To overcome these problems the Tool Deployment Unit (TDU) was first developed. The TDU is mounted on the rear of the ROV leaving the Manipulators (mounted on the front) available for any ad-hoc or unplanned jobs.

The basic TDU design contains 5 main sub assemblies:

- Buoyancy Block which is the yellow block of syntactic foam on top of the unit, designed to leave the unit nearly neutral in water.
- Docking Probes; seen at the front of the TDU. A pair of these hydraulically operated assemblies replace the large manipulator and are used to dock the TDU / ROV into two special Docking Receptacles which are welded to the work area often on a dedicated panel.
- A cartesian type of hydraulic manipulator which operates in a predefined XYZ axis.
- A gripper unit which is really the single hand of the unit and can grip a variety of tools or connectors.
- An electrical and hydraulic control system.

The TDU is also fitted with an array of lights and cameras giving a view in each of the 'X' 'Y' and 'Z' axis. Additional cameras can be set up to provide specific views of the whole work area

Fugro-Rovtech's Engineering and Tooling Department recently completed the design and manufacture of the new TDU. The new unit offers many advantages over existing systems:

- It is 250Kg lighter than existing units, making the unit easy to move around and fit to a larger range of existing ROVs. The lighter unit is much easier to use during shore side tests and interface checks on a client's equipment.
- The new unit operates over a larger than standard XYZ envelope allowing it to operate outside of the standard industry operational envelope.
- More use of simple, off the shelf components has reduced the spares inventory, helping save costs and increasing overall reliability.
- A simplified modular layout makes maintenance easier and quicker.

The first Fugro TDU completed its acceptance tests in early 2008 and was added to the fleet of 8 systems. It immediately went into service with a major oil company and has been operating offshore for all of 2008.

For further information please contact, Ian Murray, Engineering and Tooling Manager, i.murray@fugro.com

MCS & Fugro Launch OPTIMA

Subsea engineering company MCS, in partnership with Fugro are launching a new range of on-board riser management tools that provide the offshore drilling industry with enhanced safety and substantial costs savings at the International Association of Drilling Contractors (IADC) conference in Rio de Janeiro, and simultaneously at Oceanology International.

Optima is a software platform that assists operators and drilling contractors to plan and monitor operations with drilling or completion/workover risers.



Combining MCS' advanced riser analysis techniques and Fugro's offshore monitoring experience, Optima provides an integrated approach to help overcome the challenges of drilling in deepwater, high currents, and other environments posing significant risks to operations.

Patrick Scully, General Manager of MCS' software division, says: "This launch represents a significant development in the evolution of real-time support tools for the offshore drilling industry. Together with Fugro, we have created a comprehensive package which addresses today's key drilling challenges. Optima is modular, simple to use and easily installed on-board mobile drilling units and production facilities with drilling capabilities."

Commenting further, Fugro's Optima Project Manager Ken Kirkwood says "We are delighted with initial feedback that Optima is indeed a solution which provides considerable opportunities for saving costs and enhancing safety."

For further information, please contact: Ken Kirkwood, Optima Project Manager k.kirkwood@geos.com

Skandi Carla's Indian Adventure

Fugro ROVSV Skandi Carla is currently working offshore in India on Block KG D6 in the Krishna Godavari Basin.

The KG-DWN-98/1 (KG-D6) lies in the Krishna-Godavari basin, Bay of Bengal, on India's East Coast. On this location the seabed slopes sharply causing water depths to vary between 100m (328ft) and 1,700m (5,577ft).

Reliance Industries has received first oil from the development with first gas to follow in the near future.

The KG D6 development will require the drilling of 17 development wells and the installation of an offshore platform subsea structures and pipelines. Work is already well underway on the project with the installation of the platform jacket completed earlier this year. Reliance are using a number of vessels on the project, including pipelay vessels Audacia, and Lorelay. The support vessels Calamity Jane and Olympic Canyon are being used to install and test the subsea structures and pipelines.

The fast-track development of the field will involve one of the biggest and most complex underwater installation campaigns ever. The subsea contract is based on 19 subsea trees tied into six, six-slot production manifolds weighing 225t each. The longest tieback will be 6.4km. From these manifolds, production will flow through in-field pipelines to the 370t Deepwater Pipeline End Manifold (DWPLEM).

This fast-track development will involve one of the biggest and most complex underwater installation campaigns ever.

The longest manifold tieback is 6.8km.

The DWPLEM has been designed to accept additional pipeline tie-ins.

The umbilical distribution hub weighs 170t and there are three 110t (each) subsea distribution assemblies. The 32 lengths of steel-tube umbilical total 101km and there is also 57km of electric power cable. Finally, there is a comprehensive subsea control system.

A pair of 10km 24in production lines will link the PLEM to a Control and Riser Platform (CRP) located in 100m of water. Compression facilities will ease the anticipated reservoir pressures drop two to three years after start-up. Gas export will use three 24in lines running 25km from the CRP platform to shore where gas will be routed to the onshore terminal at Yanam near to Kakinada on India's East Coast. The MEG used to prevent hydrates will be reprocessed in a closed loop system.

Fugro ROVSV Skandi Carla is currently involved in various pre-commissioning work and pipeline testing. They have also been involved with umbilical testing, infield support for both the Lorelay and Audacia and basic pre-lay survey work. In addition the vessel has assisted with DMA installation and tensioning, the installation of the DWPLEM Structure as well as numerous other field support tasks where ROV capability is required. ROVSV Skandi Carla is expected to be involved in the project for over a year.



▼ Equipment and umbilical on the back deck of the Carla

▼ The Allseas pipelay vessel Lorelay



Latest purpose-built vessel marks new era for Fugro

Recently, Fugro-Rovtech Ltd took delivery of its latest purpose-built construction support and intervention vessel. The vessel commenced its build in Gdansk in April 2007, with the laying of her keel and she was outfitted in Bergen before finally being delivered to Fugro-Rovtech in August 2008. The vessel is specifically designed to address the latest demands of the deep water remote intervention, construction and survey markets.



The Vessel is a DNV +1A1 class vessel equipped with a Simrad SDP21 system interfaced to the Fugro Seastar DGPS, two Simrad HIPAP500 USBL acoustic systems, Seapath 200 and a Fanbeam laser system. Provision has been made for under-deck tanks capable of use for storage and discharge of pipeline commissioning fluids and chemicals.

Dual Fugro FCV3000 125HP work-class ROV systems are deployed from the integrated ROV hangar via hydraulically operated doors on either side of the vessel, and the purpose-built Launch & Recovery Systems (LARS) are designed to minimise the effects of vessel motion. In addition, a Lynx Observation class ROV forms part of the permanent core of vessel equipment, enabling further operational flexibility. All ROV underwater operations are controlled from a central control area, integral to the main online systems control area in the vessel's main accommodation block.

The Fugro Saltire has an impressive 150 Tonne, active heave compensated, knuckle-boom crane capable of operating to 3,000msw, with a 10 Tonne whip line. In addition to the main crane there is a 10 Tonne auxiliary subsea crane with a depth capability of 1,000msw. The main deck is 1,000m² in area and because the ROVs are built in to the hangars, this is available for the exclusive use of the client. The timbered deck is capable of supporting loads of 10T/m² and offers clients the flexibility to accommodate large quantities of equipment and to provide a platform for the deployment of substantial subsea structures using the main crane. A large 7m square working moon-pool is situated immediately aft of the ROV hangar area.

With additional dedicated 500KVA power, fuel, water and air supply points around the deck, the facilities are in place to support a wide variety of client's construction, intervention, maintenance and pipeline

support spreads. Fugro-Rovtech now provides subsea construction support through provision of three permanently installed equipment spreads on Fugro Saltire, Skandi Inspector and Skandi Carla. In addition, the Highland Eagle supports a wide variety of IRM operations and can also provide light construction support.

Building on the established strong reputation and excellent track records of its existing vessels, Fugro-Rovtech are entering a new phase in its growth strategy. The depth of expertise gained in construction support operations has been further enhanced by developing and integrating subsea engineering and intervention capabilities to all its spreads. As a result, Fugro-Rovtech is now much more adaptable and can offer a wider range of subsea support services.

The Fugro Saltire is currently working in the UK sector of the North Sea.

Innovative subsea repair

Fugro has recently carried out an innovative subsea repair on an offshore pipeline.

As a result of a routine planned inspection the 24" pipeline, which is located in 100m of water, was found to have a small leak at the 2 swivel joints of a connecting spool piece.

Early in March 2007 plans were drawn up to conduct a repair on these and a further

6 swivel joints. Special customised tools and resin injection units were designed to be deployed by the ROV Sealion 14 which in turn would be deployed from the nearby host platforms. The compact size of this ROV allowed it to be installed on a platform with very limited deck space.

The ROV was fitted out with a variable buoyancy unit. This was to compensate for the additional weight of the Tools which were held and operated by the ROV manipulators. The specialist tooling consisted of a clamp harness, vent unit, injection unit and a drill unit. A standard torque tool was used to secure the clamp harness to the swivel joint on the pipeline.

The tools were designed and built by Fugro-impROV and the operational phase was carried out by Fugro-Rovtech. The repair was completed 2 days ahead of schedule.

▼ Repair Tools



The compact size of this ROV allowed it to be installed on a platform with very limited deck space

▼ Sealion 14



▼ Sealion 14 fitted with specialised repair tools



▼ Repair Tools



Deep diving Observation class ROV Lynx 23

Keith Prichard, Project Manager of Lynx 23 onboard the dive support vessel Skandi Achiever says "This was a technically challenging mobilisation, particularly as there were many last minute changes to the eventual layout and design of the Launch and Recovery System (LARS). We were able to accommodate these changes due to the large inventory of similar ROV systems in transit through our workshop in Aberdeen. By switching around these major components we were able to deliver what the client wanted and achieve our customary rapid mobilisation".

The ROV Lynx 23 on board the dive support vessel Skandi Achiever recently was test dived to 1,200msw and performed perfectly a credit to the offshore crew and engineers who installed the system. Fugro ROV Lynx 23 successfully completed work on the AD 6 project offshore Kakinada, India working in a diver and construction support role. The coastal city of Kakinada is located about half way up the East coast of India. Kakinada has been in the news recently after several oil companies have begun to use it as a transit point for oil and gas shipments as the city has a rapidly expanding deep-water port. It is reported activity in the area has further increased lately due to recent gas finds offshore by ONGC [Oil and Natural Gas Commission], and Reliance in the KG basin.

▼ Skandi Achiever



FCV 3000 ROV System; From Concept to Reality

Those who have been following the rise of the Fugro ROV capability, will know that in late 2005 we finalised the strategic decision to build up our Work Class ROV Fleet based on an in-house design and build solution and that since then we have been working towards that goal. This article provides the latest update on the "Concept to Reality".

The concept from Q1 2006 has matched the realisation very closely, with the photograph on the right being of the first production vehicle, taken in Q3 2006, although admittedly it has taken us a little longer to actually create the whole System, see later.

From Small Beginnings:

In the first quarter of 2006, a Team of experienced Fugro ROV Managers and Engineers met in Singapore to put the final touches to the specifications for what would be the flagship FCV 3000 and a cornerstone of our Work Class Fleet into the future, conceived and designed to serve our customers, by doing better, what Fugro do, which is to collect and interpret data from which to provide advice and information to that global customer base.

With the concept "frozen" we very quickly produced a 1:3 scale model with which to launch the FCV 3000 at OI06 in London and as one might imagine from Fugro, who have a



long track record of technology development to match the customers' expectations, the FCV 3000 was very well received when we took the covers off. However; the detailed design would take us a little longer than the rush production of the exhibition model.

With a team of only 10 people within GROV / RTSU in Singapore, we began the process to not only design our vision but also recruit the additional people and skills that would assist us to reach our ambitious goal of an in-house design AND build, of not just the vehicle, but the complete System.

By September 2008 the headcount of the Fugro GROV / RTSU Team had grown from that original Team of 10 to now number 61 men and women, with a tremendous mix of skills experience and enthusiasm and, possibly, the highest morale of any Team within Fugro as they see the vision become reality from their labours.

▼ The photograph below shows members of the Singapore Team, together with Handover / Acceptance Team from Fugro-Rovtech (UK), who were to take delivery of the first Production System with Kobi Ruegg, COO of OSD and Jim Mann, the Fugro Global ROV Manager.

Instrumentation for Floating Production Systems

Introduction

The exploitation of deep-water oil and gas reserves has led to the wide-spread use of floating production systems. This method is also often very attractive as a low cost means of developing marginal fields in shallower water depths. However, little is known about the actual performance of Floating Production Systems in-situ.

The use of structural instrumentation on fixed structures has shown that in-situ measurements can demonstrate significant conservatism in design. Using a similar approach it may be possible to demonstrate that the critical components of FPSs are not as heavily loaded as assumed in design. The instrumentation packages for Floating Production Systems can be split into three distinct areas:

Moorings

Moorings tension can be monitored using load cells or instrumented pins. Instrumentation such as Fibre Optic sensors are also being developed for deployment within the tether systems to enable long term measurements of strain at remote locations to be obtained. Scanning sonar can also be used to continuously monitor the position of anchor chains or cables relative to the vessel turret to warn of breaks.

Vessel Instrumentation

An array of different parameters can be offered in support of vessel operations. These include:

- Six degree of freedom Motion Measurements
- Environmental Measurements including wave height, wind, temp atmospheric etc
- Current Measurements using Acoustic Doppler Current Profiling Systems (ADCPs)
- Vessel absolute position using DGPS
- Structural Loading and fatigue using appropriate strain gauge technology suited for extreme environment

Riser Instrumentation

The instrumentation of risers can provide detailed information regarding the response, which can then be analyzed to evaluate loads, vortex shedding etc. Fugro Structural Monitoring (FSM) has produced a subsea instrumentation system, DeepData, to enable performance data to be readily obtained at depth. Data can either be cabled back to the surface, downloaded subsea by ROV or accessed via hydro-acoustic telemetry.

For further information contact:
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Fugro Brasil – Diving Division

Diving into clear blue waters, playing with fish, exploring the depths, swimming along blowing bubbles whilst holding hands with a beautiful girl clad only in diving gear and thong and then relaxing on the beach with an ice cold beer eating fresh lobster.... Nooo! That's not our business but it's a nice thought. We dive for the oil patch in murky, freezing cold water constantly trying to keep warm in our dive suits, spending hours stuck in a small steel cylindrical chamber with nothing but the gruff voice of the Supervisor and the smelly feet of the other diver to pass the time. Its tough but fun and very rewarding when the job goes well and the team spirit is always great.

Fugro Brasil is unique within the Fugro group in that it is the only Opco that provides diving services to the offshore hydrocarbon industry. This business line helps Fugro Brasil to improve its position as an important strategic player in the Brazil offshore market by allowing us to offer a fully integrated package of services including positioning, survey, oceanographic, environmental, ROV and Diving to our clients, making us a truly single source contractor.

The Diving business line has a clear division between Air Diving (down to -50m depth, breathing air) and Saturation Diving (down to -350m depth, breathing a HELIOX mix, with the divers under pressure for 28 days at a time.



▲ Portable and retractable LARS

Due to very strict Brazilian regulations for Air Diving on rigs and production complexes, all our systems are explosive proof as standard and fully DNV certified and consist of complex spreads of decompression chambers, air and oxygen racks, LP and HP compressors, LARS (diving bell Launch and Recovery),

Dive Control and Workshop vans, etc.

The control vans are more complex than an ROV control van, but this is expected as we are dealing with lives every time we dive and safety is the number 1 priority in this business.

Our Main Client is obviously Petrobras for whom we supply 5 air dive maintenance teams with options for more providing services such as NDT inspection, subsea construction, maintenance and repairs. We also provide a special SWAT diving team who are on 24 hr standby for emergency pipeline repairs (EPRS), other clients include SBM, Modec, Global, Prosafe, Sea stream to name a few for whom we do spot work on FPSO's, Barges and Vessels .

We have over 200 professional air divers all skilled in the various disciplines required to perform our works and we believe the Fugro Brasil Diving team are the best available in country.

Saturation Diving: Fugro has been working on board DSV Toisa Sentinel since 1994, in a successful partnership with Sealion Shipping. Contracts with Petrobras have been renewed continuously through mutual agreement or tender processes and a new 3 year contract was signed last month for an October start for which Fugro is providing 24 hr Saturation Diving, ROV operations and positioning services.



▲ Fugro Brasil Diver performing NDT inspection

Fugro has an exceptional Operational and Safety track record, running this contract with a dive team of 85 qualified professionals.

This team runs the Saturation System designed and certified up to 350m water depth and able to handle up to 18 divers working up to 3 different depth levels. From 1994 to July 2008, Fugro has performed more than 5.900 bell runs, without any major incident a record we are proud of and intent to maintain.

In Brazil Fugro are the only company with a dive system rated to -350msw, our competitors only have dive systems rated to -300msw. So whenever there is work deeper than -300 meters, FUGRO get the call.

Just recently we have secured Saturation diving services for a new strategic client to Brasil but well known to Fugro, GLOBAL Industries, on the Petrobras Camarupim Project. On this, Fugro is providing full Saturation Diving services on board Global's DSV Rem Commander, helping on the mobilization and certification of the Rem Commander Sat System then to carry out tie-ins of 24", 18" and 12" pipelines and spools, free span correction, metrology and testing. Work is expected to start Q1 2009 and we hope this will lead to a fruitful partnership in the future.

The Blue Ocean is out there but that's recreation, not work.



▲ Fugro Brasil Diver on maintenance job



▲ Fugro Brasil Diver performing NDT inspection

Fugro wins ROV contract in New Zealand



Fugro BTW Ltd, based in New Plymouth, have successfully completed ROV (Remotely Operated Vehicle) contract with Origin Energy Resources (Kupe) Ltd.

Fugro BTW ROV provided ROV drilling and construction support off the EnSCO 107 drilling rig for the installation of the Kupe Gas Project jacket on a 200 day drilling program for the development of the Kupe Field offshore Taranaki, New Zealand. Fugro BTW also provided the positioning services to put the EnSCO 107 on location.

Fugro BTW worked very closely with Origin and the construction company Technip to ensure the success of the Kupe Gas Project.

For further information contact n.mackay@fugro.com.au

Return to the Wreck of the Prestige

In late 2007 Fugro-Rovtech returned to the wreck of the tanker Prestige which sank in 2002, 120 km off the North West Coast of Spain.



▲ Siem Danis with Fugro G4 ROV

Fugro-Rovtech were contracted by the Spanish oil company Repsol YPF (who were working on behalf of the Spanish government) to supply a deepwater ROV and crew to survey the wreck. The Prestige lies in 3,850m of water.

Fugro-Rovtech mobilised the G4, 150hp, 4,000m ROV onto the multi-role vessel Siem Danis, together with an Argus Abyss ROV, which was to be used as a back-up system. The G4 was outfitted with special lights, cameras and positioning equipment for the project.



▲ G4 ROV heaves surface

There were several objectives of the mission; firstly a video survey had to be carried out to evaluate the general condition of the hull, secondly, hull repairs and valve installations carried out during the cargo salvage operation in 2004 (during which time 14,000 Tonnes of oil was recovered) had to be checked and verified as still intact. The video footage will be used to determine the rate of corrosion of the hull. Finally, using containers designed specifically for the job, samples were extracted from areas of interest in the seabed around the wreck.



▲ Bow of Prestige

Fugro wins contract for Survey and ROV services in Australia

Fugro have successfully completed a construction project with Hydro Marine Services (HMS), a subsidiary of J. Ray McDermott, to provide Survey and ROV services for the Angel Substructure and Pipelay Installation Contract for the Woodside Angel Development Project off Western Australia's North West Shelf. The contract value was in the order of USD \$10 million. The project commenced in September 2007 and was completed in July 2008.

Fugro successfully used state of the art Sonardyne Wideband Fusion acoustic equipment to undertake the subsea acoustic positioning work during the Angel Project for the platform installation and subsea tie-in spools positioning.

The project being developed by Woodside involved the installation of the Angel Platform and a 30" Export pipeline to tie into the existing trunk line, along with 3 x 14" pipelines from the subsea wellheads to the Angel Platform.

Fugro provided two Sealion workclass ROV's for construction support on both the DB30 construction barge and the ROVSV Pacific Valhalla on the Angel Project.

For further information please contact Norman Mackay – Fugro ROV & Construction Manager