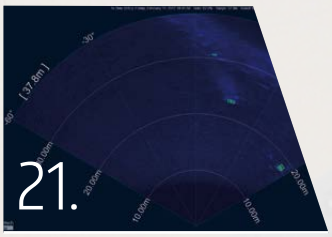
ROV PLANET



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ISSUE
Q3 / 2017


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www.ROVPlanet.com

Courtesy of QSTAR

ROV PILOT TECH TRAINING

HIGH VOLTAGE AND ELECTRONICS

By Richie Enzmann, ROV Planet

The High Voltage (HV) and Electronics modules (No.2.2 & 2.3) in my Premium ROV Pilot training were building on the knowledge from the Electricity and Electrical Systems modules previously completed at QSTAR.

The High Voltage module raised awareness of the possible hazards when operating in the HV environment within the marine/offshore operations context. The module focused onto what ROV pilots might encounter when operating such a system. The HV hazards, possible injuries, and effects on the human body explained the necessity of specific HV PPE required for operations. HV work usually involves the testing of circuits for live electricity, discharging and isolating and earthing the circuits, hence great emphasis was put on the LOTO (Lock Out/Tag Out) and the procedures need to be taken when working (maintain, repair, or test) on HV systems. Furthermore, the components of the HV protection systems, such as line insulations monitors (LIM) and residual current devices (RCD) were also explained. We had the chance to check for residual load inside a HV junction box where a controlled simulated charge was present, making use of the HV probe and us wearing all our HV electrical PPE in the workshop to implement what we have learned in the classroom earlier.


Courtesy of QSTAR

According to Cristian Gurgu, ROV Supervisor & Instructor, the HV training is more of an attitude and awareness enhancement.

"The electrical basics required for understanding rationally have been clarified in the previous module of electrical systems. Understanding doesn't always involve Awareness. They say the worst accidents involve the best professionals. Like the HSE policies goals, we want our students to logically understand the HV systems and involved hazards, building up awareness and to be able to follow the LOTO programme."

The Electronics part of the training is where everything previously learned comes together along with new semiconductor components. Step by step from different types of diodes towards transistors and integrated circuits the course gave us the basic knowledge to understand how devices work and thereafter we were capable of troubleshooting the circuits in case of abnormal behaviours. We used the multimeter and the oscilloscope during the practice hours when we built different circuits in the workshop. One of the targets was to build a PWM (Pulse Width Modulation) circuit in order to implement controllers that are nowadays present within any equipment that allows output level adjustment – such as lights and thruster control.

"In the Electronics module, we present semiconductor devices and practical circuits that are used in ROV spreads, giving the skills for troubleshooting, maintenance and modification when needed. The practice gradually becomes more complex reaching PWM controllers. The ROV environment is team based and people will always be different, with different strengths. The students need to build circuits and for sure one will be faster than another, moment when the fastest is encouraged to support and troubleshot his team colleagues work. Different approaches help unlock new views and solutions in solving faults. At the same time someone that is helping a colleague stabilises the knowledge and gets exposed to various technical interpretations of human induced faults in circuits. We look forward to encouraging the team spirit within the training environment and making the students aware that at some point everybody will work with everybody. For this reason we all need to be good at it and capable to carry the weight." said Cristian.

One of the students, Bryan Malley has just completed an apprenticeship in Mechanical and Manufacturing Engineering, within the Automotive Industry. His interest in the offshore oil & gas industry began at a very early age, as his father was a saturation diver in the North Sea and had vivid memories of exploring the saturation chamber, diving equipment and the ROV control room.

"It has always been my goal to work in this environment and therefore, it was no surprise to my family that I wanted to train as an ROV Pilot Technician as soon as I finished my apprenticeship. I researched several training centres as to where to do my training and after many recommendations from prior students who had completed their training with

Courtesy of QSTAR

Courtesy of QSTAR

QSTAR in Gran Canaria. I decided that this would be the best option for me. I am now halfway through the 7-week course and must commend the quality of instruction and support I have received to date, especially from Cristian Gurgu. The organisation from booking to beginning the course was very efficient and stress free. I am very impressed with the exceptionally high standard of training facilities and course content and I must admit that I am thoroughly enjoying my time here. It has exceeded my expectations and I feel that I have invested my time and money wisely to help me on my chosen career path." said Brian.

Meanwhile the other student, Alessio Gentile has discovered the world of ROVs just a year ago when he was still in Australia. He had a strong desire for a career change that he could fit perfectly with his lifestyle and ambitions. So he searched online and found the course offered by QSTAR in Las Palmas.

"The courses taught are competitive and the program is vast and ranges from electronics to hydraulics. I hope to embark on an offshore career that I will find unique and stimulating, where my piloting excellence will develop to the highest standards. I have the strong conviction that this is the right path for me, because robotics is a subject that looks into the future that can be applied in different sectors including the marine science field. And because it meets perfectly with my biggest passions that are both sea and technology!"

QSTAR Subsea Solution has also been expanding and Gianluca Belardinelli, a previous QSTAR student, has joined the company. Now, he is helping out in the workshop and getting the ROV systems ready for a subsea cable installation campaign that is scheduled for this summer within the vicinity of the islands.

"I have been an ROV Pilot for about a year. I have undertaken this career because I have always been a sea lover being born in Tarquinia, Italy, in a medieval town just a few kilometres from the sea, and I also have friends working in the offshore industry. After completing the course I worked here for four months as an ROV Pilot before returning to Italy. After a few months away, I had the chance to come back again to QSTAR as an ROV base tech and pilot for offshore work. Here, I have had the opportunity to get to know many people of different nationalities; fantastic people who in turn have taught me much about life and work."

During my stay at the QSTAR headquarters I have witnessed the reception of their new Ageotec Perseo GTV ROV coming from Lighthouse – L3 in Italy. The Perseo GTV is capable of reaching 1500m and comes with full setup, modular mobile surface equipment, tether winch and the vehicle that is a an enhanced Class 2 – Observation - Light Work Class. The ROV is capable of relevant payloads as skids for extra sensors or tooling, providing an auxiliary 3 phase power line dedicated for that.

The system has returned from the manufacturer after an upgrade for installing a Fibre Optic by-pass link for auxiliary instruments, in this case dedicated for a HD camera, allowing live HD signal to be sent back to the surface for recording and control. We did a function check in the workshop and the commissioning time was impressively short. In about 2 hours we had everything running and live!

"QSTAR would like to thank Lighthouse Geo for their excellent support given for the upgrade of our Perseo GTV ROV. We found very important the customer and after sales services quality giving by a manufacturer & supplier when buying a new ROV system." said Victor Sepúlveda, QSTAR Managing Director.

"One of the most recent projects that QSTAR was involved in was the National Geographic documentary "Atlantis Rising" produced by Oscar-winning legend and executive producer James Cameron and the three-time Emmy-winning film-maker Simcha Jacobovici, where they go on an adventure to find the lost city of Atlantis. QSTAR Subsea Solutions supported the documentary with their research vessel "Atlantic Explorer" crossing 2000 nautical miles and giving support to the ROV operations, Side Scan Sonar and permits on-site."

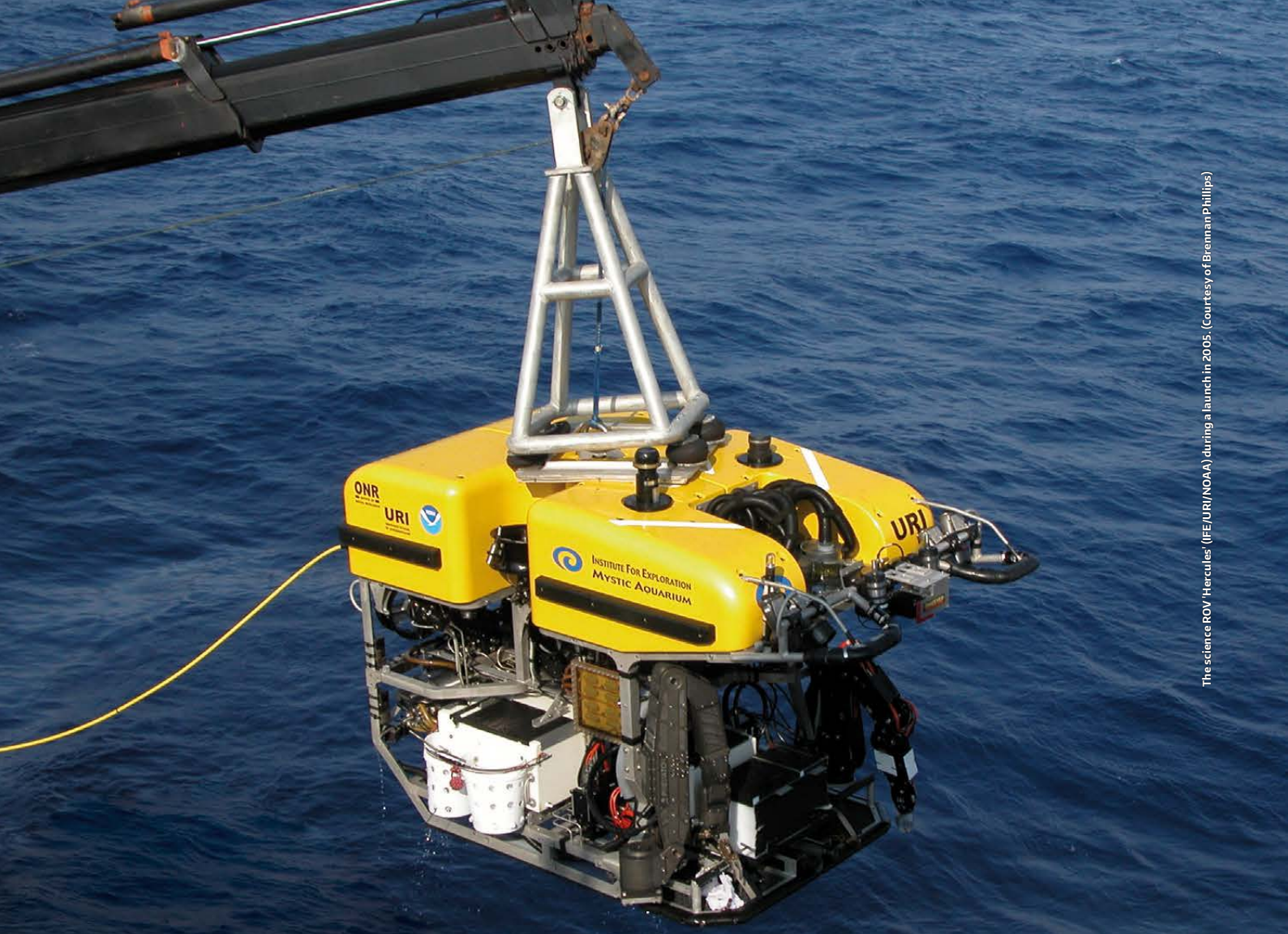
"In the course of the expedition they discovered ancient anchors in an unlikely place that could rewrite the history of human travel in the Bronze Age, the possible remains of the lost civilization or a great maritime culture that the Greeks knew as Atlantis!"

Courtesy of QSTAR

QSTAR Subsea Services
Founded in 2007, QSTAR – ROV TRAINING & SUBSEA SOLUTIONS, located in the Canary Islands & Barcelona (Spain) has been operating worldwide as a subsea contractor managing all involved assets, from vessel to survey, ROV equipment including on-field personnel.

Available services provided by QSTAR Subsea Solutions

- ROV Services: Operations & Maintenance, Management & Consulting
- Vessel management: Managing, Operation, Maintenance and Repairs
- UWILD Inspections.
- Non-Destructive Testing.
- ROV Commissioning support projects.
- ROV Personnel: We provide Pilots/Technicians, Supervisors for ROVs, Trenchers & Ploughs submersible vehicles worldwide.
- ROV Sales (Spain & South America) & Rentals
- Global Communications, Pipe & Cable tracking.
- Marine Surveys (SBP, SSS, MBES).
- Drill Support, Subsea Construction.
- Mooring & Underwater structures inspections.
- Emergency Intervention & Recovery Operations.
- Subsea Engineering Projects.
- Oceanography and Marine research.
- Support in Salvage & Diving operations.
- Archaeology Projects.
- Underwater Documentary Films.
- Fish Farms & Dam Inspections

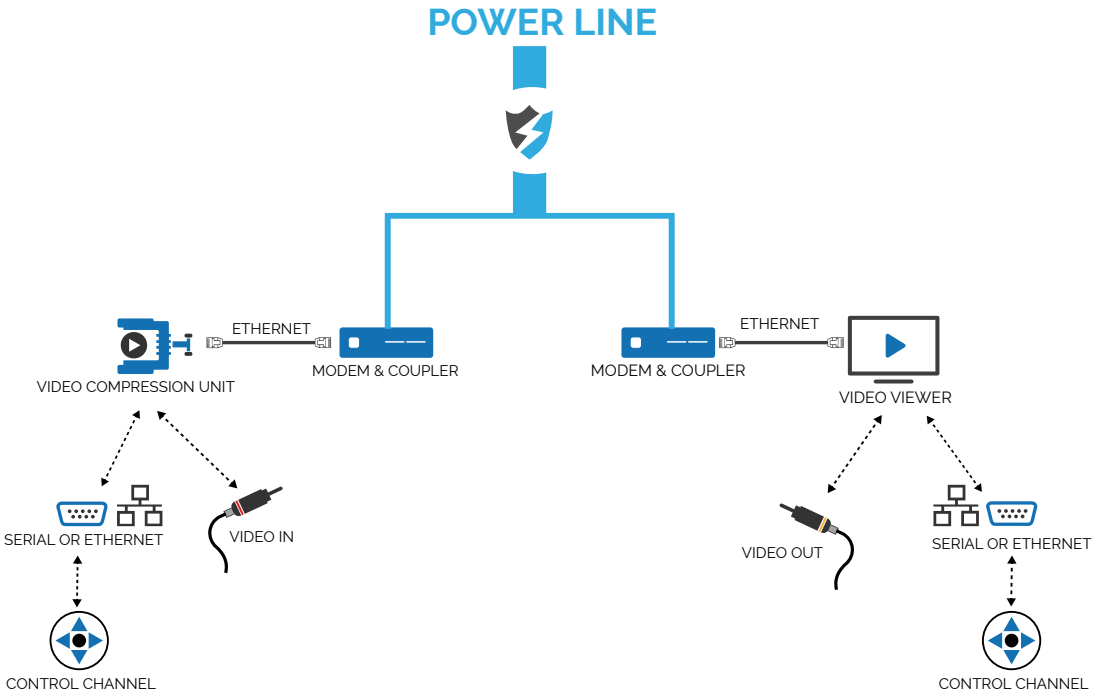


The science ROV 'Hercules' (IFE/URI/NOAA) during a launch in 2005. (Courtesy of Brennan Phillips)

ROVS USING POWERLINE COMMUNICATIONS

TO PILOT AN ROV ON THE LOSS OF FIBRE-BASED COMMUNICATIONS

Andrew Parker, Snr. Field Applications Engineer, Astute Electronics Ltd.
Michael Propp, President, Adaptive Networks



Courtesy of Astute Electronics

Remote piloting generally operates over an umbilical using fibre optics to deliver video, control, and data. This fibre-based communications system shares the umbilical with powerlines to drive the propulsion and control systems. On larger ROVs, operating to depths of up to 6000 metres, the powerlines can be powered from a source on the order of several thousand volts at a much higher than mains frequency to minimise transformer magnetics, thereby lightening the vehicle's weight.

Unfortunately, fibre-optic communications can break down, resulting in the loss of both video and data. On tethered, smaller ROVs, simply pulling the vehicle home may be sufficient. However, with larger vehicles and depending on the operations being conducted at the time, simply winching the vehicle back is not an option. Losing both video and control means either an expensive recovery operation or worse, the loss of the vehicle in its entirety.

Adaptive Networks has developed a proven solution to enable ROVs to be recovered under pilot control, through communications of compressed video and control data over the umbilical's powerline, building on proprietary products for reliable powerline communications in electrically-harsh industrial environments. This backup control solution can operate over any voltage level, single and multiphase systems. The solution simply consists of three devices—a powerline modem, a video unit (an encoder subsea and a decoder topside), and a powerline coupler—at each end.

Adaptive Networks has been advancing the state of industrial powerline communications for over three decades. Subsea oil and gas production, characterized by the intense demands of continuous 24/7 operation, is an important application where the company's products are widely deployed. Product offerings work reliably in impaired-media conditions, optimising bandwidth and network performance, and providing error-free (less than 10^{-9} BER) delivery of essential data. The company's expertise has led to the development of recognized ISO and IEC standards.

Using patented optimised signal processing and low-level network protocols with integrated intelligence at the receiver, Adaptive Networks' products adapt rapidly to changing powerline conditions, an essential feature for powerline communications for ROVs and other industrial systems. The results are unique field-proven solutions that can be tailored to the requirements of each application, exhibiting optimised network speeds, robust, continuous throughput, extended coverage, and predictable rapid response times that are essential for today's demanding industrial operations and environments.

The company's unique approach utilizes wideband modulation, adaptive equalization, rapid synchronization, error-control coding and powerline-optimized deterministic token passing protocols, all optimized for the harsh industrial powerline. This solution inherently supports multipoint networking with large node populations, including efficient network communications even with short control and monitoring frames, all under conditions of industrial powerline attenuation and noise.

QSTAR
SUBSEA SOLUTIONS

- ROV Pilot Training Center
- ROV Services, Support & Sales
- Marine Geophysical Surveys
- Oil & Gas Pipelines & Platform Surveys
- Submarine Cable Surveys
- Marine Geotechnical Services
- Ports & Marine Construction Support
- Vessel & ROV Management
- Multipurpose work vessels
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QSTAR ROV PILOT TRAINING


View over the Port of Las Palmas

Some readers may be aware that I started my oil and gas career as an ROV Base Technician at Oceaneering in Aberdeen. After spending some time in the company and completing my university education, I moved into an engineering design/support role working for KBR, Aker Solutions, and Cameron/OneSubsea. This role saw me working in several locations around the world, both in offices and fabrication yards. During that time I always dreamed of going offshore as an ROV Pilot and actually seeing how the kit I designed was being installed and operated underwater. Now after all these years it appears that this dream is going to become a reality.

I was recently offered a position on an ROV Pilot Technician training course with QSTAR ROV Training and Subsea Solutions in the Las Palmas de Gran Canaria and Barcelona facilities.

As the course progresses I plan to write a series of articles recording my experiences, which will hopefully inspire other potential candidates to follow suit and enrol.

Las Palmas is located off the coast of the Western Sahara in Africa, although it is actually a part of Spain. As such it enjoys all the advantages of being within the EU, whilst still being located in close proximity to the North and West African oil fields and offshore operations. The island has high speed internet coverage even in remote locations, motorways make it easy to get around, and it even boasts its own deepwater port. Recently the island started to attract a lot of Oil&Gas companies to setup logistic bases by providing suited infrastructure and services for multipurpose and drilling vessels, semisubmersible platforms. Its strategic location in relation to Africa and Europe and the local tax system makes it an interesting option for business development.

When I landed in Las Palmas a taxi was waiting for me to drive me to my accommodation. Once I arrived and got settled in I had a whole day to myself to explore the area. As such, I decided to take a 30km walk to the Bandama Vulcano, and try some of the local cuisine. It proved to be a lovely daytrip.

On day one of the training course we were taken to the QSTAR Base, located in an industrial estate within the port of Las Palmas. Victor and Jose Maria Sepuvelda (e.n. brothers) have started up the subsea services and training company after having worked offshore. The vast oceans of the world are second home to them: they grew up and lived on a boat sailing around the world for over 10 years exploring all kinds of exotic locations before settling down on the Canary Islands permanently.

"We have been working in the ROV industry for many years and we wanted to share our knowledge and experience with other persons that want to get into this industry, so we decided to open a ROV Training division at QSTAR located in Canary Islands and Barcelona" explained Victor.


Christian Gurgu (Courtesy of QSTAR)

At the training school we were greeted by Cristian Gurgu, one of the ROV trainers, who showed us around the premises. After our tour we had a coffee break on the roof of the building which has a breath-taking view over the harbour. We were lucky enough to experience 20°C (68°F) heat whilst most of Europe was suffering from the sub-zero temperatures of mid-winter.

Module number 1 of the course lasts approximately one week and covers the introduction to offshore life, basic ROV architecture, and general ROV operations. Basically it acts as an overview for the course. With this cohort the intro to offshore operations went relatively quickly; everybody on the course had some background in offshore, oil and gas, or seismic work , not to mention a valid BOSIET (offshore survival certificate).

One participant in the course, Mathieu Le Noac'h – a French seismic navigator with 10 years of offshore experience – already had a job lined up in Tahiti, French Polynesia. He was eager to learn about ROVs and was excited to pick up his brand new ROV from ECA, scheduled to be ready for him right upon completion of the course.

"I grew up by the sea and have always been attracted by the marine environment. I graduated in Oceanography specialized in survey and monitoring sensors. After more than 10 years surveying for CGG, I obtained a contract with ROVotik, a freshly created Polynesian Company that is going to conduct ROV inspections down to 1000m. Piloting an ROV, a new underwater adventure!

I therefore decided to be trained as Pilot Tech. QSTAR quickly turned out to be the most convenient provider for my needs. Very responsive to emails, lodging proposed with shared house in a residential area downtown, transportation taken care of, great training facilities, well experienced and knowledgeable trainers. Another advantage is the location in Las Palmas offering a nice climate for a course hold in January and February. First week done, I feel really happy about having chosen QSTAR and calling for more!" said Mathieu.

The next segment of the module was ROV architecture which covered more technical things. This segment provided an overview of the main parts of an ROV, their purposes and various types, related principles of working, navigation and positioning principles (USBL, LBL, etc.), sonars, ROV tooling options including hotstabs, 5 and 7 function manipulators, and also the hydraulic parts, pressure principles, and their basic calculations for different scenarios.

Then there was the ROV operations segment. This touched on the possible type of works performed and main offshore operational procedures that were likely to be encountered on a job.

Normally the training hours were between 8:30am and 4:30pm. However on a couple of occasions we stayed on until 8:00pm, when there were a lot of questions to cover or we had to collect and try on our PPE from the nearby store in the harbour. Afterwards we would normally relax with a couple of beers at our villa.

During the module we tried the ROV simulators, practised manipulator operations by trying to retrieve and reinsert a dummy hotstab using the 5 function manipulator and also piloted a mini-ROV in the test tank. It was great to get a bit of practice and experience piloting first hand.

Cristian Gurgu, our trainer, has spent time offshore with Fugro-TSMarine and GSP Offshore working as an ROV Pilot Technician. He also has an extensive electrical background, and I found him to be a very competent trainer both in terms of knowledge and experience. He also possesses the skill and ability to transfer that knowledge to his audience.

"Gaining experience in the ROV field requires passion and persistence. Now, being part of QSTAR I can give it forward, intending to inspire the future pilot-techs into their new careers. We are glad that recently a new IMCA training guideline has been issued and we have contributed to it, therefore the quality of our services is in line with the most recent requirements." explained Cristian.

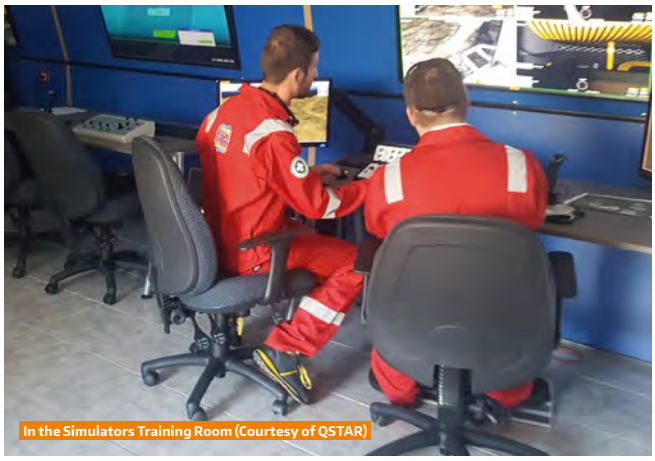
The ROV Pilot Technician Premium Course that I'm taking with QSTAR consists of eight modules, and is normally seven weeks long. It can be completed in one round or on a modular basis with the weekends reserved for rest and regeneration. It is also a good opportunity to explore the islands that have so much to offer: be it the sandy beaches of Lanzarote, or the rainforests and volcanos of Tenerife, or the party scene of Playa del Ingles, everybody can find something to entertain themselves.

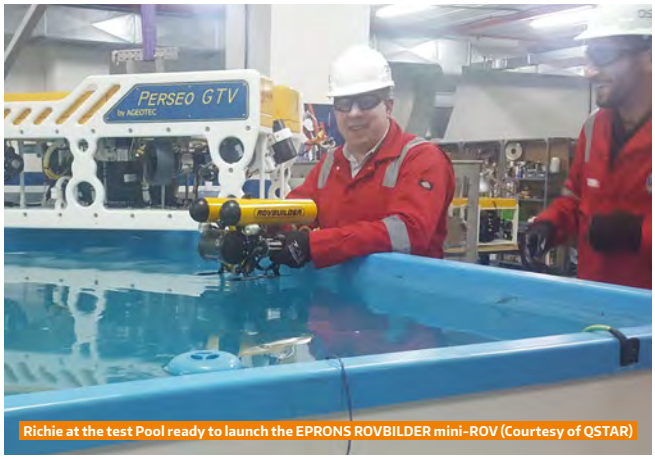
Gran Canaria has proven to be a splendid location for both training and leisure. As I was standing at the airport awaiting my departure, I was looking forward to my return visit. And when that happens, I will be sure to keep you all updated.


In the Classroom (Courtesy of QSTAR)


ROV Instructor on the Forum VMax Simulator (Courtesy of QSTAR)


ROV Trainee Team on the Atlantic Explorer – Nov 2016 (Courtesy of QSTAR)


In the Simulators Training Room (Courtesy of QSTAR)

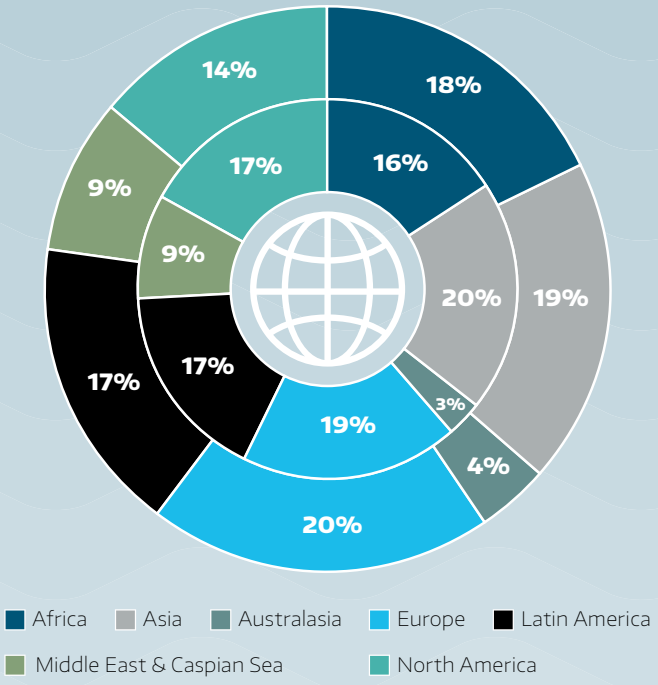


Richie at the test Pool ready to launch the EPRONS ROVBILDER mini-ROV (Courtesy of QSTAR)

ROV DEMAND UPDATE

By Kieran O'Brien, Energy Researcher at Infield Systems
(Kieran.OBrien@infield.com)

Despite the current and forecast short-term weakness within the ROV market, a more positive longer term market projection is anticipated, with Infield Systems' new analytical tool, providing a quarterly demand forecast of the ROV market, expecting an ROV demand growth of 18% over the five years to 2020.

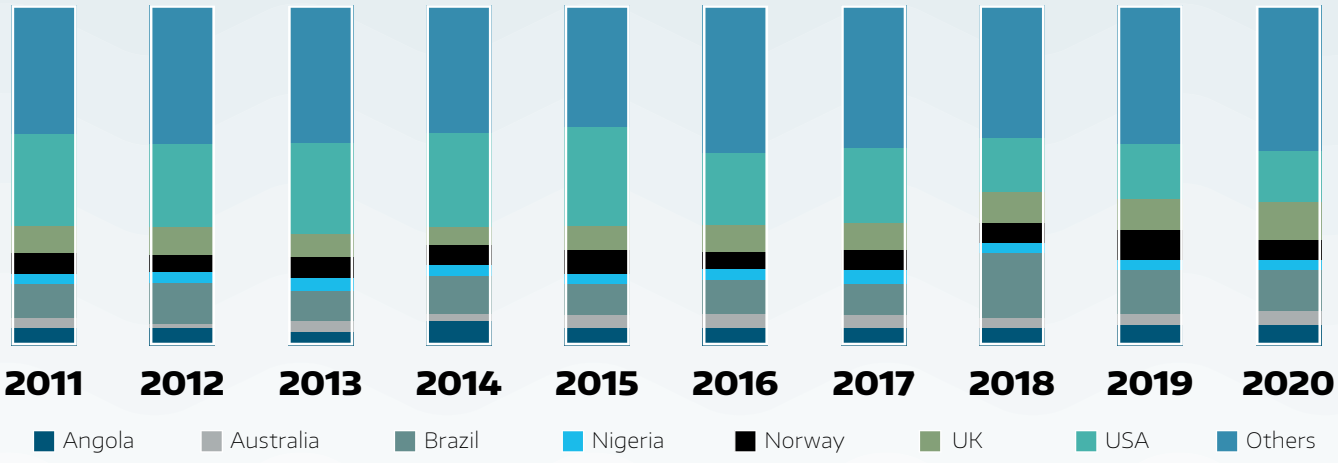


ROV Market Share (Days %) by Region 2011-2015 (inner ring) 2016 – 2020 (outer ring)
(Source: InfieldAnalytics – ROV)

The prevailing low oil price has affected all sectors of the industry and the ROV market is no exception: the sector's high level of exposure to the floating rig market results in a vulnerability to any decrease in drilling activity. However, after decreases in demand from 2014 to 2016, the floating rig and the marine construction markets are expected to recover from 2017 onwards. Over the longer term, higher levels of growth in demand for oil and gas are expected to return and with this the current market oversupply is expected to be rectified. With global energy demand increasing and near-term declines in conventional production expected, unconventional reserves, and more challenging prospects, including deep and ultra-deepwater fields, will need to be brought to market.

Africa in particular will benefit from this increase in the unconventional oil and gas supply. The huge reserves found in ultra-deepwaters offshore West Africa, in particular Angola, are expected to drive ROV demand growth at a higher rate than in any other region. The Latin American market, which has undergone substantial growth over the last five years, is expected to see demand flatten off going forwards, with the financial difficulties facing Petrobras contributing to delays in investment. Within the North American market, Infield Systems expects activity to decline, predominantly as a result of the removal of IRM targets through shallow and mid-water decommissioning activity. Indeed, by the end of the decade, the USA will represent just 15% of the global vessel based ROV market; down from 29% in 2015.

Infield Systems' analytical tool can be used to examine all relevant parts of the ROV sector. The granularity of data behind this enables an accurate forecast how the market will change over the coming five years. The ROV market will weather the current downturn, the oil industry will adapt to lower prices and deepwater reserves will buoy ROV demand in the longer term.



ROV Market Share (Days %) by Country 2011 – 2020 Excluding Wells/Rig based Demand
(Source: InfieldAnalytics – ROV)

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QSTAR: PROVIDING STELLAR ROV TRAINING

By Jose María Sepúlveda López, General Manager of QSTAR ROV Training & Subsea services

Photo: Francis Pérez

THE COMPANY

Established in 2007, QSTAR ROV Division and Subsea Services are based jointly out of Las Palmas, Canary Islands and Barcelona, Spain. The vision behind QSTAR was to offer services for offshore and onshore industries that need effective solutions for subsea projects. We have achieved this through the use of our fleet of ROV and experienced qualified personnel.

QSTAR has come a long way since its initial inception. We originally provided oceanographic research for several governmental agencies, and this has led to the company gaining a reputation as a reliable reference for underwater robotics and hydrographic surveys.

QSTAR's philosophy is simple: we provide the highest quality service and the all-important attention to safety aspects for both personnel and equipment. Our goal is to deliver the best possible service, without accident or incident.

Over the years QSTAR has grown in the Spanish market. Now we're expanding even further into international markets, while simultaneously investing in R&D and training qualified personnel.


Courtesy of QSTAR

INVESTING IN THE FUTURE

In 2012 QSTAR SLU saw the need to introduce ROV training both nationally and internationally from a strategic location. Consequently, we expanded our ROV division with the opening of an ROV Training Center (www.rovs.eu) and became a Training Establishment Member of the IMCA (International Marine Contractor Association). This was very exciting as it allowed us to become the first established ROV training center in Spain.

Accordingly, the QSTAR ROV training program is built on (though not limited to) IMCA guidelines. This has meant that our trainers can provide real-world knowledge and skills for students in compliance with the actual requirements of today's oil and gas offshore industry. This is in addition to expertise in other sectors such as search and rescue, oceanography and marine research, marine archaeology, hydrology, subsea operations, and aquaculture.

Besides being able to provide the highest quality training based around IMCA guidelines, we provide real working conditions on board active work vessels. This allows students to work as part of on ROV team on board an actual ship, and provides the best training assessment for a newly qualified ROV pilot.

Since the creation of the ROV Training Center division, QSTAR has trained more than 200 students of various nationalities and backgrounds, and many of those have gone on to secure places with the world's best ROV operating companies.

CORPORATE ONSITE TRAINING

In addition to providing high quality training courses, QSTAR specialises in supplying corporate training. We also offer certification for ROV personnel from different companies worldwide by performing specific on-site training, tailored to the company's individual needs. Furthermore, QSTAR have been undertaking ROV installation and commissioning projects internationally, from both offshore vessels and onshore operating bases.

In 2014, QSTAR SLU – represented by its General Manager, José María Sepúlveda – became part of the IMCA ROV TSG (Training Steering Group). This places our training program firmly alongside the big players of the ROV industry.

TSG includes individuals from IMCA member companies of all types: contractors like Fugro, Bibby, i-Tech 7, Subsea 7 and Saipem; training providers including MTCS-England, The Underwater Centre-Scotland, School of Ocean and Technology, QSTAR ROV Training-Canary Islands/Spain; and suppliers and manufacturers such as SMD, SAAB Seaeye, Schilling, and Forum; with the IMCA technical adviser Neil Evans. Over the past year, the committee has been working on the drafting of new documents and guidelines that will facilitate a more global approach to the development of ROV training.

The companies involved contribute with their experience and by updating the competency schemes in order to fulfil their operational requirements. The QSTAR ROV Training center has recently become an IADC (International Association of Drilling Contractors) member, with the aim of having a more focused involvement in offshore drilling.

LOCATION

As previously stated, QSTAR SLU Subsea Services and the ROV Training Center's headquarters are located in Las Palmas de Gran Canaria, Canary Islands: a strong reference point for both the offshore and maritime industries. QSTAR's operations are also firmly established in Barcelona, where ROV training courses and subsea services are on-going.

'This location was one of the reasons for developing the training center [in the Canary Islands].', explains Technical Manager, Victor Javier. '[The] Islands are a strategic location between three continents: Europe, Africa, and America. We are in the middle of the offshore industry's routes.

'The Canary Islands [have] cheap flights and very good connections heading all over the world, and the island of Gran Canaria offer a great variety of industrial services for the offshore industry, not only sun and holidays.'

The fortuitous nature of this location has allowed for connections with other regions of interest, bringing in the island's port rigs, drilling, and construction vessels from all over mid-Atlantic and Mediterranean. This composition gives our students a rich and in depth experience of the offshore industry. We are even able to set up visits to specific vessels and rigs.

However, the surrounding area isn't simply swathed in floating steel and plastic, florescent-coloured boats. The local government takes stringent care of its tropical resources. These include crystal clear waters with sudden depths of up to 3,000m. This is yet another reason why the region is the perfect location for ROV training as we can lead practical ROV piloting in both shallow and very deep waters.

The training center itself is approximately 100 km from the African coast and relatively close to the main and second reserves of West Africa, Nigeria, and Angola. Out of consideration for the geopolitical environment of the location, QSTAR offers European quality, safety, and security to the offshore sector of the African continent. Recent reports have indicated approximately 55 oil rigs operating in this area, in addition to vessels performing exploration, survey, and construction activities.

Another fantastic feature of this sunny locality is the region's weather has previously been referred to as the best in the world: minimum-maximum temperatures lie between 18 and 28 degrees Celsius year round, and wind conditions are mainly calm. These conditions are ideal for living in the area. and are definitely conducive to conducting offshore operations.

This is a virtue for QSTAR as it enables us to give our students coastal and offshore training experience in a safe and pleasant environment, before taking their experience onboard their own multipurpose vessel, the 'Atlantic Explorer'.

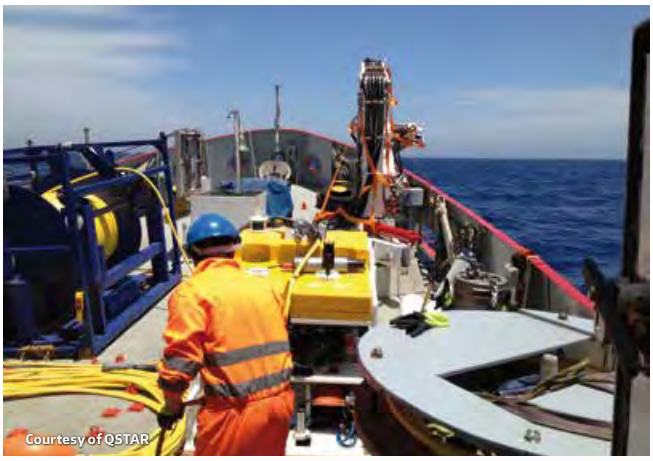
The Government of the Canary Islands – through the Canary Islands Hub (www.canaryislandshub.com) – is proud to have a strategy to promote these ideal conditions and many other attractive aspects of this region around the world, further positioning the Canary Islands as an international hub in the offshore industry and other sectors.

TRAINING AND FACILITIES

The QSTAR ROV courses are designed in accordance with industry requirements. The students are briefed about working offshore and the relevant safety regulations, and here they can gain skills in ROV maintenance and operation. The classes offer theoretical and practical input – depending on the students' or company's needs – with the goal of preparing them for real-life situations.

Many of QSTAR's alumni have great things to say about the time invested with our group. 'The ROV career is the shiny star of offshore', opines engineer Christian Gurgu, a QSTAR ROV instructor from Romania. '[Working] independently of


Courtesy of QSTAR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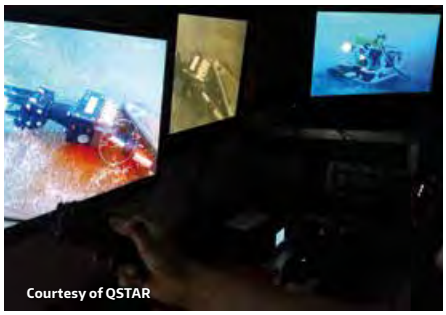
the offshore industry's phases, doing what you like (and) what you are good at, brings reliability and satisfaction.
He goes on to discuss his own experience working with QSTAR. 'Working offshore for years, I've been contributing to the global supply of oil, gas, energy. Presently, as (an) ROV Instructor, the value of contribution feels even more intense by giving... the experience and knowledge to the new entrants in the industry. Shaping people's future is what we do at QSTAR, shaping for the brightest.'
Someone else with a high opinion of QSTAR's training opportunities is Marius Molstad, an ROV pilot and technician from Norway. 'The ROV course opens lots of opportunities in my country and internationally.' says Molstad. 'Personally, QSTAR gave me the most complete education. I got to refresh my electronic background and [awarded me] new competencies that make me feel prepared for even the hardest technical and operational challenges offshore.'
He goes on to say 'The center's facilities and local climate – as in weather, social vibe – is the perfect environment for an international study. For all these reasons I also chose to do my apprenticeship for ROV Pilot Technician, Grade I, with QSTAR.'

QSTAR'S IN-HOUSE RESOURCES INCLUDE:

- Spacious facilities of 2,500 m²;
- Accommodation;
- Teaching classrooms;
- Electrical, Electronics, Hydraulics, High Voltage, and Fibre-Optic Workshops;
- Training pools (open and closed);
- Work class ROV simulators;
- A large fleet of ROVs;
- An ROV control room;
- A work class 7-function manipulator;
- A multipurpose vessel for coastal and offshore training;
- Subsea tooling and sensors;
- Academic and industry experienced personnel;
- English and Spanish speaking staff.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Candidates who complete the course are provided with all the relevant documentation to present to existing and potential employers. After successfully completing the theory, workshops, practical training, and exams the students are provided with an IMCA ROV Personnel Logbook and the QSTAR competency certificates.
Furthermore, from October 2015 QSTAR will be organizing via an OPITO Training Center for BOSIET and HUET, offshore survival training courses. These courses are very important to all those working in this offshore industry. QSTAR will start including these OPITO courses as part of a full premium package together with the ROV training courses, so as to give a full qualification. Offshore medicals will also be available through QSTAR SLU.
The course coordinators at QSTAR ROV's Training Center endeavour to make sure that course content is kept up to date with the offshore and other ROV industries. This helps ensure that we maintain the very highest standards and retain our place as one of the industry leaders in ROV training globally. What's more, we are also offering an internship program with ROV operating companies worldwide, so that our trainees can have their first experience as part of an ROV team.
All of these reasons combined mean that the Canary Islands are the perfect location for somebody just starting out in their ROV training. It's possible to do everything that you need to in order to become a qualified ROV Pilot Technician trainee and more, and all set against a picturesque backdrop in one of the best climates in the world.


Courtesy of QSTAR

ROV Training courses are held every month. Check out our web site to see the full training schedule and special offers. WWW.ROVS.EU

Apply now with the following code and get an extra discount for the ROV Premium Pilot Course: ROVPLANET2015

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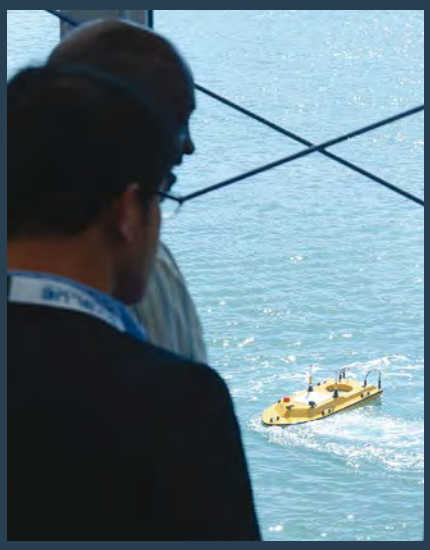

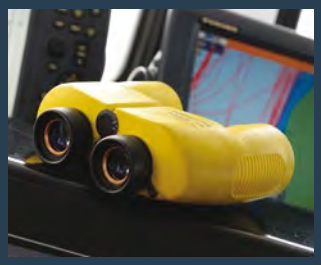

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