



Pigging Industry News

the newsletter of the Pigging Products & Services Association

THE PRESIDENT'S LETTER

By Michael Rapp, ROSEN Group, Germany

To commence, I welcome our new PPSA members and wish all of us a happy and healthy new year! Looking at the Chinese calendar, in which 2019 is the year of the pig, it shall be an especially prosperous year for PPSA and all its members.

The expected updates to the U.S. regulatory framework and a trend towards new pipeline construction across the globe are positive indicators for an increasing demand in pigging products and services. Next to further expanding its geographical reach, I envision PPSA developing towards a valuable platform for networking and best-practice sharing. As our products and services will collect an increasing amount of integrity-relevant data, it lies in our hands to make the most out of it towards reaching our industry goal of 'zero incidents'.

This theme was also present during our 2018 PPSA pigging seminar that took

place in Aberdeen, U.K., in November: eight technical papers were presented alongside an exhibition. Papers and presentations can be downloaded at: <https://ppsa-online.com/papers.php>

Looking ahead, our annual PPSA golf tournament will be taking place on Monday 18th February at the BlackHorse Golf Club in Houston. Thanks to all our sponsors we can enjoy this amicable event with food and beverages along the holes, also a great opportunity to take clients along.

Next to this, I encourage all members and Young Pipeliners to pass by the PPSA Annual General Meeting (AGM), commencing at 3 PM at the Marriott Marquis Hotel in Houston on February 19th, a great opportunity to receive an update on our Associations' activities and participate in shaping the future of PPSA. We will

NEW Members

Full

Western Bell International Limited, Nigeria

CNOOC Technical Inspection Co. Ltd, China

also be announcing the result of the new PPSA directors to the Board. Don't forget to vote if you are a Full member of PPSA.

At the PPIM conference at George R Brown Convention Center you will find our exhibit at the traditional booth #716. Looking forward to promoting our members there and meeting up with other industry folks.

While this is my last President's letter, I will continue to serve PPSA for another year as Director on the Board. It has been an honour to serve the Association and I like to thank you all for the opportunity. Finally, I welcome Jessica Nichols, our new and first female President, to take over following the AGM. ●

Thanks to all our golf tournament sponsors

Come and join the fun at the PPSA golf tournament that will be taking place on Monday 18th February at the BlackHorse golf Club in Houston, USA.

As well as some great golf rivalry there will be some food and beverages to sample on the way round. And as usual there will be the Closest to the Pin and Longest Drive competitions. We still have places left for players and sponsors. Everyone is welcome (teams and individuals of all standards). Please see more details at <https://ppsa-online.com/golf>



Rough bore flexible riser pre commissioning – EVO-pig field report

Aubin Group was approached to provide a dewatering solution for rough bore flexible risers with helical internal carcasses, each connected to a subsea pipeline. This task was performed at 900m water depth offshore West Africa. The longest single dewatering run performed was in a 3 km rough bore riser and a 6.5 km long subsea pipeline.

Factory Acceptance Tests were used to select the best dewatering solution. The agreed dewatering train consisted of 4 slugs of MEG batched by pigs (Fig. 1) pushed by nitrogen, ultimately being removed from the line by extruding out a 3” port in the absence of any pig receiver.

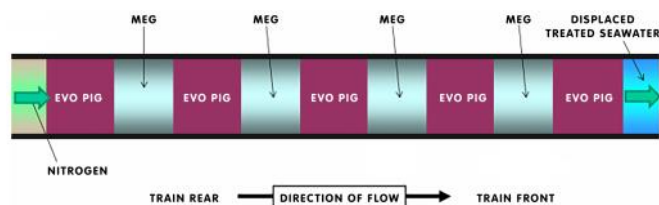


Fig. 1: Dewatering pig train

The deformable nature of EVO-Pig allows it to traverse “unpiggable” or “difficult to pig” pipework such as hard 1D 90 degree corners and diameter restrictions of up to 50% (Fig 2). The flexible nature, the ability to extrude through small orifices and the environmentally friendly composition of EVO-Pig make it ideal for dewatering.

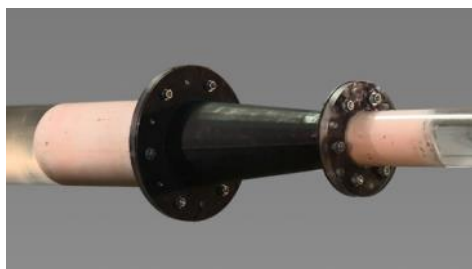


Fig. 2: 8” EVO-Pig returning from a 4” section back up to its original 8” with no loss of integrity or drive

Factory acceptance tests were performed to compare the dewatering capability of EVO-Pig with that of a medium density foam pig and a standard disc type pig. This testing, coupled with the requirement to extrude the pig at the end of the line confirmed that EVO-Pig was the best candidate for this scope of work. As can be seen by Figure 3, very little water was left in the riser after EVO-Pig passage.



Fig. 3: Dewatering test of EVO-Pig in rough bore flexible riser

Five EVO-Pigs with four slugs of MEG between them (Fig 3) were deployed. The EVO-Pigs were launched through a temporary pig launcher and the dewatering operation was performed with a pig train speed of 0.5 m/s. After navigating the riser and pipeline, the pig train navigated a 6” to 4” diameter reduction before being extruded through a 3” hot stab.

During the dewatering process an ROV collected samples of MEG as shown in Figure 4. The last sample of MEG collected had a purity of at least 95%, indicating successful dewatering.



Fig. 4: ROV Footage from successful dewatering showing pig extrusion



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We've come a long way baby, and this is only the beginning!

February 19th, 2019 the PPSA welcomes their new President, Jessica Nichols, to the chair. Jessica will be the first one to tell you that she's come a long way since her entry-level job as Sales Coordinator for **Inline Services** back in 2007. Since then both, Jessica's life and career has changed drastically, but one thing remains the same; her passion to be a catalyst for positive changes within the pipeline pigging industry. As the first female PPSA Director, then Vice President and now President, while also being the Sales Manager of Inline Services, she is no doubt, heading in the right direction! So, what does the first female President of PPSA think about the past, present and future of the pigging industry? Let's find out...

Q: What changes in the industry have you witnessed over the 7 years that you've been involved with PPSA that you're most excited about?

A: By far, the regulations put into place in 2012 mandating inspection of all liquid and gas lines have been the most exciting. The most obvious reason being the safety aspect. The U.S. alone has over 2.4 million miles of pipeline. Maintaining these lines is in the best interest of everyone. The second, and probably equally obvious reason these regulations were exciting was because my employer is a pig manufacturer. Of course there was the potential to sell more pigs, but more importantly it created a wave of innovation. Companies like Inline were suddenly challenged to develop innovative new pig designs that could effectively clean pipelines that were never pigged before, or were not designed to be pigged at all. Also, there is a new generation of workers entering the industry creating a different culture. This new generation is excited about change and excited about making their mark. They research and challenge existing processes to identify where improvements are possible. They're not only looking for opportunities to advance technology and cleaning methods for safety reasons, they are hyper-efficient and seeking-out ways to "cut the fat" and save money.

Q: What changes are you most concerned about?

A: Without question, it's the succession plan and the transfer of knowledge in every aspect of the industry. There are so many positives about the fresh perspective and focus on safety the next generation brings to the table, but there is a tremendous amount of intelligence that has been gathered through years of experience by those preparing to exit the industry. Intelligence related to creating the most effective cleaning plans, to when to use what type of pig, how often to pig a line, and what pig configuration works best in a certain area of the line, to knowledge specifically related to the asset condition, such as areas of corrosion throughout the line. Documenting this information in such a way that frequently changing owners or maintenance crews can access it when

coordinating cleaning runs would be invaluable. Although I am excited and hopeful about what the new generation of Pipeliners brings to the industry, I am equally concerned about the years of experience that may leave along with their owners in retirement bliss, lost forever.



Q: What do you think is in-store for the pigging industry in 2019?

A: With all the new-comers to the industry, I believe there will be significant technological advancements in the areas of intelligent pigging equipment and pigging tools that clean high velocity lines. There is tremendous potential here because of the new emphasis on efficiency and safety. As an example, Inline Services will be announcing exciting updates to our Speed Control Pig this year. The way new technology will change pigging in 2019 will surprise and delight everyone.

Q: Last Question: What advice would you like to give the new PPSA VP?


A: PPSA is all about the continuous improvement of the industry through communication. Don't be afraid to speak up! An idea you may think is too simple to mention, can evolve into something magnificent. As an industry, look at what we've already achieved. We've come a long way baby, and this is only the beginning! ●

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T.D. Williamson introduces 4-inch inspection tool for small diameter, low pressure pipelines

On January 14, 2019, **T.D. Williamson (TDW)**, commercialized a 4-inch magnetic flux leakage (MFL) + deformation (DEF) + internal versus external discrimination (IDOD) tool that helps ensure pipeline integrity by detecting pitting and general corrosion as well as interacting features such as dents with metal loss in small diameter, low pressure pipelines.

The tool produces accurate and comprehensive metal loss and geometry data in a single run, reducing inspection costs and time. Its innovative design ensures the tool performs within the optimal inspection velocity range, producing high-quality survey results with reduced flow conditions. The tool generally requires a minimum operating pressure of 20.7 bar (300 psi), although it is capable of lower pipeline operating pressures and flows on a case-by-case basis. According to Tod Barker, Senior Product Manager, Pipeline Integrity, the 4-inch tool overcomes challenges associated with conventional MFL inspections, such as difficulty navigating tight bends and speed excursions that limit data accuracy.

“In-line inspection using MFL technology is one of the most common non-destructive inspection methods utilized for the detection of general and pitting corrosion in pipelines,” Barker said. “The difficulty associated with conventional 4-inch MFL designs is, to sufficiently saturate the pipe wall with magnetic flux, the brushes must be short and thick. This creates drag that makes it more difficult for the tool to traverse the pipeline at optimal velocity. Slowing down, speeding up and stops and starts can all negatively affect the quality of the inspection data. The 4-inch tool significantly reduces that risk.”

TDW validated the reliability of the 4-inch tool in liquid and gas, at pressures as low as 13.78 bar (200 psi).

“In a recent low flow liquid pipeline inspection, the TDW 4-inch MFL+DEF+IDOD performed within the recommended speed of 3.05 meters (10 feet) per second or less for 100 percent of the inspection,” Barker said. With extensive verification testing during tool development, and more than 430.9 km (268 miles) in 31 customer pipeline inspections, this tool is well prepared to provide high quality pipeline inspection data for many pipeline conditions.

The 4-inch MFL+DEF+IDOD tool is available worldwide.



TDW's 4-inch MFL+DEF+IDOD tool

NDT Global's 34 inch high-resolution circumferential crack inspection

On 13th December 2018 **NDT Global** announced the successful completion of the first 34" UCcx pipeline inspection.

“At NDT Global we have a clear purpose - to ensure a safe environment through precise measurement. This first 34" high-resolution UCcx inspection was successfully completed for one of our long standing North American customers. UCcx is a high-resolution circumferential cracking inspection robot which delivers greater inspection accuracy by recording more data points across the entire length of the feature.”

“We are delighted to announce another major milestone advancement in our technology and robotics development, as we continuously work towards our long-term goal of no pipeline failure due to material defects.” commented Ralf Schmidt, Vice President Robotics, “This is another important step in our high-resolution crack detection technology.” For further information on our circumferential cracking detection solutions please visit: <https://www.ndt-global.com/solutions/pipeline-crack-inspection/circumferential-crack>

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Dacon Inspection Technologies enter a strategic cooperation agreement with India's Corrttech Energy Ltd.

Dacon, Asia's leading 'Inspection Services & Technologies' provider, has entered into a cooperation agreement with **Corrttech Energy Ltd.** Corrttech, India's foremost 'Cathodic Protection' service provider within the oil and gas industry, will stand alongside Dacon as they further expand into India's ILI (In-Line Inspections) market.

Corrttech, who also specialise in pipeline construction and 'Horizontal Directional Drilling', bring a 40-year history of excellence and trust within India's oil and gas industry to the newly minted agreement. Dacon bring innovation, cutting-edge ILI tools and tech, and 23 years of global operational experience.

Dacon's agreement with Corrttech means Indian companies will no longer have to look outside of India to meet their ILI demands. Mrs. Mallika Kaekla, Chief Executive Officer at Dacon Inspection Services said, "We know our existing and potential customers in India understand the incredible benefits of having a local entity provide ILI services. Cutting down the lead time for logistics and having the latest tools and tech stationed in India to serve the local market is a need that will now be met by Dacon and Corrttech".

The Dacon – Corrttech agreement will see India's inspections market profit from Dacon's raft of pipeline inspections and data analysis services, particularly its specialist capabilities in 'Inline inspection technologies'. Dacon will build a comprehensive 'Pipeline Test Yard' at Corrttech's 10,000 m² state of the art facility in Ahmedabad, Gujarat. Dacon's test yard will be the first of its kind in India, enabling Indian businesses to see the latest ILI tools and their capabilities demonstrated on home soil. The test yard will provide all tanks, pumps, and calibration equipment needed to build any test scenario, demonstrating to clients exactly how Dacon's ILI tools and tech can satisfy their specific needs.

Mrs. **Mallika Kaekla**, Chief Executive Officer at Dacon Inspection Services said, "There's a synergy in Dacon and Corrttech's business models. Corrttech provide a reliable cost-effective service. They, like

Dacon are customer centric and committed to technological development and change. Dacon are known to be innovators in terms of tech, we deliver the quickest turnaround times, and provide the best in inspections and safety in the industry. The agreement between ourselves and Corrttech allows us to optimise resources in our specialisms, bringing added value to our customers. We look forward to consolidating our footprint in India and facing the projects and challenges ahead together. ●

SoniTrack XLR budget-friendly geophone pig tracking with built-in FM transmitter

CDI introduces their latest product, SoniTrack XLR. The SoniTrack XLR is an acoustic geophone pipeline pig tracking system that includes a powerful computer-controlled audio amplifier.

SoniTrack XLR allows an operator to quickly and easily listen for pigs moving within a pipeline over several kilometers. In addition to industry-standard headphone and AUX outputs, SoniTrack XLR includes a built-in, digitally-tuned FM transmitter allowing for quick and easy wireless broadcast to any number of surrounding vehicles or radios.

Waterproof connections and a durable, gasketed, waterproof enclosure ensure that SoniTrack XLR will be chasing pigs with their owners for years to come!

The standard SoniTrack XLR kit includes the SoniTrack XLR receiver, wide temperature geophone probe, headphones, AUX cable, cigarette lighter 12VDC power cable as well as a durable Pelican® brand carrying/shipment case.



CDI's SoniTrack XLR ●

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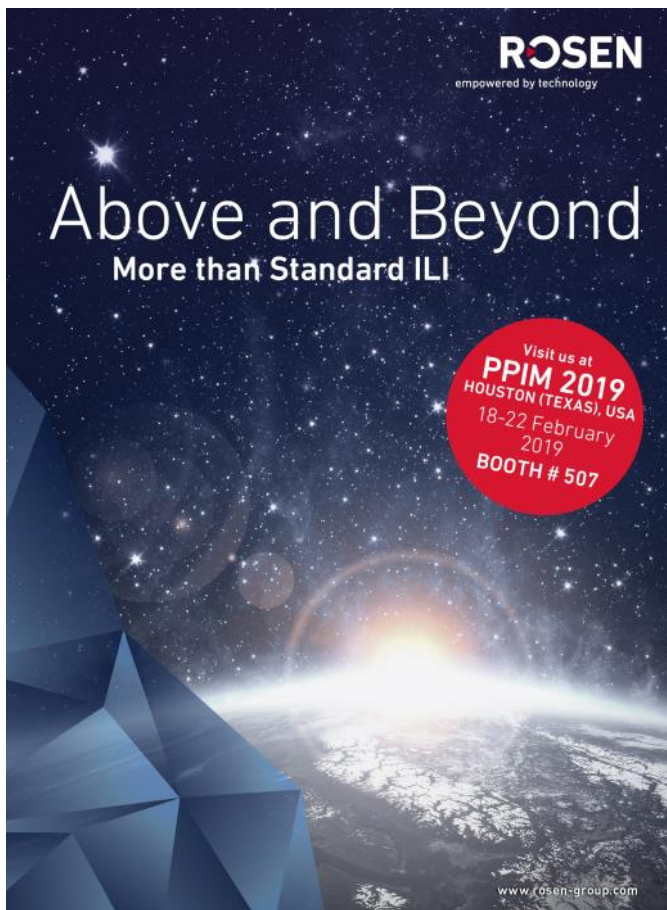
Competency Standards – what are they, how did they come about, and why do we need them?

In a nutshell:

Regulations are necessary and everywhere in the pipeline business – and they consistently state that all our engineers must be both “competent” and “qualified” to do their jobs. The problem is... we have little guidance on how to prove that our engineers are in fact competent and qualified. Same goes for our standards: most pipeline standards state that all staff working on a pipeline should be competent and qualified to do their jobs but do not explain how to demonstrate this. This means organizations in the pipeline business must define their own competency standards for engineers. This leads to difficulties: there is no benchmark to compare these standards to and no agreement on process or quality. Time for change?



Elements that comprise competency



“Competence” – briefly defined

“Competence” is a combination of skills (the ability to perform a task), knowledge (the ability to understand and explain a task), experience (the type, years, supervision committed to obtaining said knowledge) and behavior.

An individual’s competencies are assessed against a so-called competency standard. Competency standards provide a common definition of a competency and contain the required skills, knowledge and experience.

“Qualified” means a competence has been assessed (evaluated). Clearly, to be called qualified in a competency, an individual must pass an assessment.

Standardizing competence

The competencies of field operators and technicians are detailed in standards (e.g. the American standard ASME B31Q), but there are no generally recognized competency standards for engineers. The Education Systems and Services Group at ROSEN has now begun to fill this gap by creating the Competency Standards Manual for engineers specializing in pipeline integrity management.

This manual lists 51 competencies at various competency levels. Each competency standard consists of:

- An identifier.
- A title (for example “Pipeline Inspection and Surveillance”).
- A competence level (such as awareness, foundation, practitioner or expert).
- A basic description of the competency requirements and the competency gained.
- A purpose/goal of the standard.
- The specific skills and knowledge elements of the competency.
- An outcome that states what the individual with this competency should know, understand, value or be able to do once he/she has gained this specific competency.
- Any academic or professional qualifications required before this competency can be gained.
- Any pre-requisites or co-requisites needed before attempting this competency.
- Any training, mentoring and/or experience recommended to gain the competency.

The various elements of each competency are described in the manual. Competence levels, for example, are identified to have 4 stages, which include: Awareness, Foundation, Practitioner, and Expert.

The development of these competency standards took place in conjunction with the so-called Competence Club (<http://qualificationpanel.com>). An integral element of this club is the collaborative work with the independent qualification panel, which consists of a group of individuals that are all experts in their respective field and all independent from any pipeline operator. This allowed for a more holistic approach

when creating the requirements published in the Competency Standards Manual. In turn, the Competence Club provides a platform for learning and assessing the defined standards.

Just a heads-up

Of course there is even more to it than the Competency Club and The Competency Standards Manual. These are only building blocks. The 51 competencies can be grouped to create a set of requirements for specific roles within the industry. Taking this one step further, again with the help of the qualification panel, an initial list of six grouped competencies came to fruition – these are called Qualification Descriptors. Each of these descriptors has a dedicated list of competency standards. Up to this point, there has been very little guidance on how to ensure and prove staff are competent and qualified, the Competence Club, Competency Standards Manual, and the Qualification Descriptors are a beginning. ●

TDW closure gets the ProSeries™ Advantage

The D2000 Quick-Actuating Closure from T.D. Williamson (TDW) had a lot going for it: Market-leading sales and a solid track record of providing safe and efficient access to pipelines worldwide.

But the global pipeline services provider found a way to make it even better. In November 2018 TDW commercialized the D2000 with what it calls the ProSeries™ Advantage, strategically standardizing materials and processes. Now, the product operators know and trust meets more specifications, fits more applications, complies with more codes as standard and is available with a shorter lead time—just four weeks for 4-inch through 30-inch sizes.

In addition to meeting operators' needs, the D2000 also complies with the stringent requirements of the American Society of Mechanical Engineers (ASME) and Department of Transportation (DOT). This is accomplished through a split-code approach that satisfies both the ASME and DOT criteria. With the ProSeries Advantage, the D2000 is:

- Available in 600-pound pressure class and both 0.5 and 0.6 design factors.
- Manufactured from NACE-MRO175-compliant material.
- Compliant with CSA Z662 Category 1 and ASME B31.4/31.8
- Standard ASME BPVC Sec. VIII DIV 1 U-Stamp on door
- Standard operating temperature range is -45°C to +121°C (-50°F to + 250°F).

The ProSeries Advantage doesn't change the way the D2000 looks or functions—for example, it can still be opened or closed in a single motion while the operator

stands safely to the side. Quality and reliability are also as high as ever, said Troy Geren, Senior Product Manager, Pigging Products.

“The D2000 is a trusted, robust and high integrity product that is preferred because of its performance and longevity,” Geren said. “The ProSeries Advantage takes it to the next level, ensuring consistent quality throughout the manufacturing process and giving operators exactly what they want, when they want it.”

According to Geren, ease of use, safety and simple maintenance have made the D2000 the leading closure on the market for years. For example, while it takes two or three people to operate most other closures, the D2000 is opened and closed by a single operator. In addition, the D2000 closure's pressure warning system signals the presence of pressure in the trap.

The D2000 is also designed for straightforward cleaning and lubrication, with important parts in plain view and readily accessible.



TDW's D2000 Quick-Actuating Closure ●

Pipeline Technology Conference announces Keynote Speakers

From 18-21 March 2019 Europe's leading pipeline conference & exhibition, the Pipeline Technology Conference, will take place for the 14th time. The conference program comprises a series of plenary sessions, panel discussions, technical sessions, side conferences, seminars, workshops and round table talks. More than 800 delegates from 50 different countries and 80 exhibitors will attend ptc 2019. The following pipeline operators will give keynote speeches at the conference: Nord Stream 2, TurkStream, TANAP, Open Grid Europe, Gascade, OMV, Shell, BPA, Eni, Petrobras. A total of 35 international pipeline operators have already confirmed their participation as delegate - many more will follow during the next weeks. For more information on the conference setup and the accompanying exhibition please visit <https://www.pipeline-conference.com>. ●

CPP carries out 28” hot tapping and plugging project in Thailand

CPP has successfully carried out a 28” hot tapping and plugging project without shut-down on a natural gas pipeline operating at a pressure of 620psig in Thailand.

The client, **PTT Public Company Limited (PTT)**, intends to reroute approximately 15km of pipeline while keeping it in service. CPP has completed the work overcoming several difficulties, such as verification of plugging isolation for long pipeline section, limited Right of Way (not enough space for the work operation) along the high way and unfavorable climate for welding.

“This project is greatly significant to safe operation of existing pipeline and to the completion of whole 1st Transmission pipeline Life Extension Project (PLLEP)”, said PTT Vice President Acting Project Director. “The management style and organization, zero-leak sealing effect and dedicated attitude shown in this project are impressive.”

The high quality and punctual completion of this project not only demonstrates CPP capability in hot tapping and plugging, but also signals a milestone for CPP to cover the Southeast-Asia market.



Worksite photo in Thailand ●

3X Engineering protects 16 inch Nigerian pipeline from corrosion

In August 2018 **3X ENGINEERING (3X)** and its local distributor **SAVIC**, performed work to protect a 16” water pipe from an aggressive environment on several long sections (for a total of 70-meter length). The reinforced protection was performed in a yard, prior to on-site assembly, using a **BOBiPREG®** machine. This specific machine, designed by 3X, allows a quick and regular impregnation of the Kevlar® tape with the resin before application.

This pre-preg system was very convenient for this case because the **REINFORCEKiT® 4D-EC** application should be carried out as fast as possible. The reinforced protection was performed following 4 stages:

- Surface preparation of the pipe using sandblasting to get at least 60 µm roughness and thus ensure a good bonding between the pipe and the composite.
- Kevlar® tape impregnated with R3X1060 resin using **BOBiPREG®**.
- Wrapping around the pipe using 3X specific handles to ensure proper tensile strength during application. This device will facilitate and speed-up the wrapping step. Four layers were applied to guarantee an optimal protection.
- Finalization of the protection with reference plate positioning for traceability purpose.

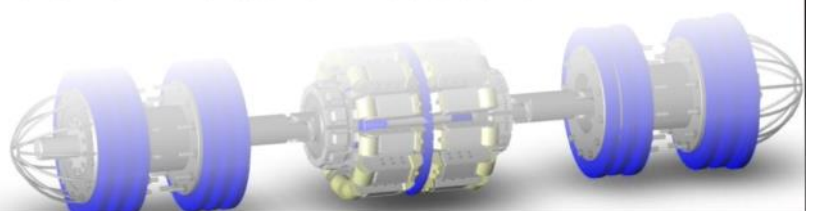
Initially developed for subsea application, **BOBiPREG®** machine is proving to be also very efficient in this onshore configuration. This application method added to onsite conditions offer many benefits:

- easier logistic and safer environment (implementation environment performed in a yard rather than a platform)
- efficiency increased and cost effective (the wrapping was performed four times faster than with traditional method). ●



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For the past few years i2i has been disrupting the pipeline inspection industry by offering smart in-line inspection solutions packaged into simple utility tool designs. Our aim has been to simplify pipeline inspection, so it becomes a low risk, low cost and non-disruptive activity that leads to increased inspection frequency and the collection of big data that benefits from digital resources.

To go alongside the simple but innovative Pioneer™ technology, i2i is offering a simplified pricing structure based on a Pipeline Subscription Plan (PSP). The PSP is based on an annual fixed charge per pipeline rather than the typical industry standard of a charge per inspection run. For a fixed fee per pipeline i2i will supply a Pioneer smart pig that can remain onsite at all times

- That can be run up to 6 times in any one pipeline within a 12-month period.
- There needs to be a minimum of 5 pipelines within the plan and a maximum of 2 different pipe sizes between 3inch and 24inch within the bundle.
- The minimum subscription period for each pipeline bundle is 3 years and the more pipelines included into the subscription plan reduces the overall cost per pipeline inspection.
- i2i will mobilize a technician at the start of the PSP period to train local technicians to run the Pioneer pigs efficiently and safely and then provide ongoing support as and when needed.
- Typically, inspection reports will be issued 10 days from receipt of data.

The Pioneer pigs will be supplied fully made up for operations plus an additional spare set of pigging disks and sensor heads. Additional pigging disks and sensor heads can be purchased separately if required. All charges and pipelines inspected are based on the standard Pioneer™ design for that size of pipe. ●



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World record in tethered pigging

Applus RTD is involved in an inspection project in Africa where Applus RTD's tethered Pipeline Inspection Tool is used. The scope of the project is the inspection of several pipelines with a diameter of 48". For this project the Pipeline Inspection Tool with rotating ultrasonic head was selected which provides full and detailed inspection coverage with 960 measurements in the circumference of the pipe every 3 to 4 mm of axial movement. The various pipelines of this project start from offshore facilities as well as from onshore terminals. In one of the subsea pipelines Applus RTD has established to inspect the pipeline over a length of 21.3 km (13.2 miles) from one entrance point! The previous record was established in 2016 in South East Asia at 17.7 km (10.9 miles). It is likely that this latest record will be improved soon because several longer pipelines than 21.3 km will be inspected later in the year.



Applus RTD's long distance tool ●

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Pipeline Integrity – Of course but low priced, please!

Pipeline integrity is a crucial topic that goes hand in hand with the need to operate and maintain a pipeline to ensure continued, safe and efficient performance. This article deals with pipeline integrity and the internal cleaning management of a pipeline during its lifetime.

A common issue with Pipeline Integrity is that often a pipeline operator will focus mainly on inspection data collection and pre-inspecting cleaning at planned intervals in time rather than implementing an effective production pigging strategy that will maintain an acceptable level of internal cleanliness to support successful inspection at any time. The key to a successful inspection is the regular and continuous use of appropriate mechanical cleaning tools that will clean the line to the required level and maintain that level of cleanliness throughout its operational lifetime. A consideration not always given when resource and budgets are tight.

Reinhart Hydrocleaning SA (RHC SA) is a family business based in Switzerland that has been providing a range of innovative, hydromechanical pipeline cleaning tools for over 65 years. Designed and manufactured in house, the unique technology for pipeline cleaning can be applied to a broad range of industries and includes pipelines manufactured from steel, cast iron, PVC, Flexibles, etc..

When it comes to pipeline cleaning, low performance off the shelf standard utility pigs are commonly used for production or maintenance pigging. These pigs are sent more or less frequently until an inspection run, whether UT or MFL, is executed. In many cases the cleaning performance of these standard pigs is not monitored and or verified until an inspection is either due, or the run fails due to the internal condition of the pipeline.

A failed inspection or last-minute concerns around production cleaning pig performance and pipeline cleanliness will often result in the need to implement an expensive and time-consuming cleaning campaign to ensure a successful inspection run.

Compared to utility pigs, RHC SA's technology ensures cleaning performance is maintained over fewer runs. Throughput is maximized during continued operation and therefore provides long term cost savings. During the past 10 years, RHC SA have implemented production and maintenance cleaning programs in various pipelines in diameters ranging from 14"-34" with length of 15km up to 356km on a regular basis in the UKNS/Norwegian sector (single and multiphase, waxy pipelines, internally coated pipelines and the removal of Calcium Carbonate scale) using RHC Hydrocleaning tool technologies.

Maintaining pipeline condition by utilizing specialized mechanical cleaning tools on a regular basis as part of an operators ongoing production pigging and integrity management strategy keeps the pipeline in a clean condition throughout its operational life maximizing pipeline performance and corrosion management. The use of high-quality mechanical cleaning tools will reduce the frequency of regular production pig runs required to maintain a higher level of internal cleanliness when compared to running off the shelf utility pigs. It will eliminate the need for an extensive and costly cleaning program ahead of scheduled MFL or UT inline inspections in the future. RHC SA focus on achieving the highest standard of internal cleanliness by using the best technology for the application, not simply increasing the number and quantity of cleaning runs as some others might.

The provision of specialized high-quality RHC mechanical cleaning tools designed and manufactured to suit the pipelines operational conditions are used initially to clean the line to the required level and thereafter when used as part of the regular production pigging strategy, they will maintain operating performance of the pipeline and eliminate the need for extensive pre-inspection cleaning programs for future inspections. The number of production or maintenance runs necessary will be reduced and at the same time, the performance and cleaning effect of each individual cleaning run will be increased.

RHC SA is not just a company for "special cleaning jobs" but a company that is able to support and maintain long-term pipeline cleaning and integrity management on a regular basis throughout its operational lifetime.



Wax debris removal

42" hot tapping and plugging, Kuwait

STATS Group were contracted to provide hot tapping and plugging services on a 42" gas pipeline for a national oil company in Kuwait. In order to allow new fuel gas lines to be tied into existing infrastructure, STATS utilised two 42" BISEP® isolation plugs to provide a temporary midline isolation of the pipeline. To ensure production was maintained throughout the construction activities STATS created a temporary 30" bypass line around the 42" tie-in locations via two additional hot taps to ensure there was no shutdown or interruption to the gas flow. STATS BISEPs provided fully monitored, leak-tight double block and bleed isolations at 30 bar for over seven months. This isolation guaranteed welder and worksite safety during the construction.

The project began by excavating the 42" pipeline at the isolation location to allow four split-tee fittings to be welded onto the pipeline, two fittings – one at either side of the tie-in location. The two inner isolation fittings incorporated a 42" off-take to provide full bore access to deploy the BISEP isolation plugs, the two outer bypass fittings incorporated a 30" offtake which would maintain the supply of gas while the workscope was completed.

Once all four fittings had been welded to the pipeline and tested, STATS dual seal slab valves were attached to each of the fittings with the hot tap operations performed with a STATS ST1220 SureTap® Hot Tap Machine. The SureTap range of proprietary hot tapping machines provide performance and reliability for critical, high pressure hot tapping operations. Designed and built to incorporate industry leading features, the SureTap range incorporates a double block and bleed sealing configuration allowing taps to be performed safely on a wide range of pipeline materials and mediums, including use with sour (H₂S) products. A leak-test of the fitting, slab valve and hot tap machine was performed prior to conducting the hot tapping operation. The two 30" hot taps were completed with the pipe coupons recovered. With the slab valves providing isolation the Hot Tap Machine was disconnected and reconfigured to carryout the 42" hot tapping operations with recovery of the pipe coupons. With the hot tapping completed the 30" bypass pipework was installed and tested ready for the BISEP launchers to be fitted to the 42" slab valves.

With the bypass valves open STATS patented BISEPs were deployed into the flowing pipeline and hydraulically activated to provide fail-safe double block and bleed isolation with flow diverted via the bypass. The BISEP offers significant safety advantages over traditional line stop technology, the hydraulically activated dual seals provide fully proven and monitored isolation of the pipeline inventory throughout the entire project. Due to the leak-tight seals the isolation does not require any additional equalisation or bleed valves to be installed on the pipeline.

Each BISEP was then subject to a test regime to independently test both the primary and secondary seals with full pipeline pressure, the cavity between the seals (annulus) was vented to ambient and verified as a zero-energy zone, providing double block and bleed isolation. Once the test regime was complete, an Isolation Certificate was issued to notify all parties of the safe isolation of the pipe section. Utilising the integrated offtakes on the BISEP launcher, nitrogen was injected into the isolated pipeline between the set BISEPs to purge and depressurise the pipeline prior to cutting and removing the required section. The BISEPs then remained in the pipeline for over seven months while construction activities including welding were conducted behind the BISEPs without the use of traditional secondary barriers (gas bags) to tie-in the newly laid pipelines. During this time the seal annulus on both BISEPs were monitored and remained leak-tight. Gas production was maintained through the temporary bypass line ensuring no shutdown or interruption to gas supply.

With the new pipelines welded into position a reinstatement leak-test of the new pipeline was conducted while the BISEPs remained isolating the pipeline. The BISEP is designed to be bi-directional so can resist pressure in the reverse direction enabling it to be used as a test boundary for the reinstatement test which proves the integrity of the new pipeline before the isolation is removed.

On completion of a successful reinstatement test of the pipelines the BISEPs were hydraulically unset and retracted back into the launchers. All four slab valves were then closed to shut the bypass line allowing the gas to flow through the new pipelines. With all four slab valves closed the BISEPs were removed and STATS ST1220 SureTap Machine was used to deploy completion plugs into the fitting offtake flanges. The pipe coupons that were cut from the pipeline during hot tapping were dressed and welded onto the completion plugs to act as pigging guides thereby ensuring the pipeline remained piggable. Once the completion plugs had been deployed and activated in the offtake flanges, the slab valves were removed from the pipeline and blind flanges bolted in place.



42 inch dual BISEP and Bypass Kuwait

Young Pipeline Professionals Europe

“Young Pipeline Professionals Europe has kicked off 2019 by appointing Daniel Molyneux as Chair and Marguerite Forde as vice-chair. It is set to be a year of exciting growth for this fledgling organisation, now entering its second year.

Following a proven successful model of Young Pipeline Professionals groups such as YPAC and YPP USA, YPPE aims to close the generational skills gap within the pipeline industry by engaging fresh faces and leveraging the experience and expertise of technical experts generously giving up their time.

YPPE would like to thank outgoing Chair Andres Gonzalez for being instrumental in setting up the group and wish him all the best in his next venture with ROSEN in the USA. To get involved, please visit <https://www.linkedin.com/company/yppe-young-pipeline-professionals-europe/> ” ●

Asia Pacific growth in STATS Group's sights

STATS Group is targeting further growth in the Asia Pacific region and has appointed Angus Bowie as regional director to spearhead its expansion plans.

Mr Bowie takes on the position, extending his existing role as regional director for the Middle East North Africa, which he has held for six years.

The company recently opened an operational base in Kuala Lumpur, Malaysia, and will combine its operational resources in the Middle East, which includes a 50-strong team, to bolster contract opportunities in Malaysia, China, Australia and the wider Asia Pacific region.

In addition, STATS has also appointed Sam McKinnon as business development manager for Australia and New Zealand. Based in Perth, WA, Mr McKinnon brings more than 25 years' experience in the Australasian oil and gas industry, including spells with Cameron and Baker Hughes.

STATS recently completed its first contract in Vietnam and other milestones in the region include the delivery of a major subsea intervention project in the South China Sea, and the successful execution of subsea pipeline repair projects in the East China Sea and Gulf of Thailand.

STATS has invested significant capital in developing its subsea BISEP® technology which is deployed when pressurised pipelines require to be isolated to allow repair, modification or tie-in activities, and this was recognised earlier this year with the award of the Subsea Pipelines Projects Award by the Pipeline Industries Guild. ●

Excell Battery develops new push button fuel gauge

Excell Battery with over 30 years' experience specializes in design and assembly of custom battery packs, predominately Lithium Primary and Li-ion. Acting as Master Distributor and Value Add assembler for several tier one cell manufactures. Packs are assembled in each of Excell's four ISO 9001 locations in North America – Houston, Vancouver, Calgary and Toronto. Excell Battery is heavily involved in supplying battery packs for Oil and Gas downhole applications, Pipeline Inspection, Mining, Metering, Asset Tracking, Data Collection and many other applications.

Excell's latest development offers major cost saving potential for Pipeline Inspection companies. Designed in-house, the push button fuel gauge allows a quick and definitive answer as to whether a battery pack can be used on a particular inspection run or should be stored for future use. The main benefit being packs do not need to be unnecessarily discarded. The LED screen displays capacity used with the simple push of a button.

The fuel gauge board can be used with any Lithium Primary battery pack, no programming is required. In addition a bank of LEDs shows the number of parallel strings connected in a pack, this offers a visual QC check to confirm all strings are functional.

Contact Excell today to learn more about this exciting new feature and how it can save your company money as well as make it easier for your technical teams to know the remaining capacity in every battery.



Excell Battery's new push button fuel gauge ●