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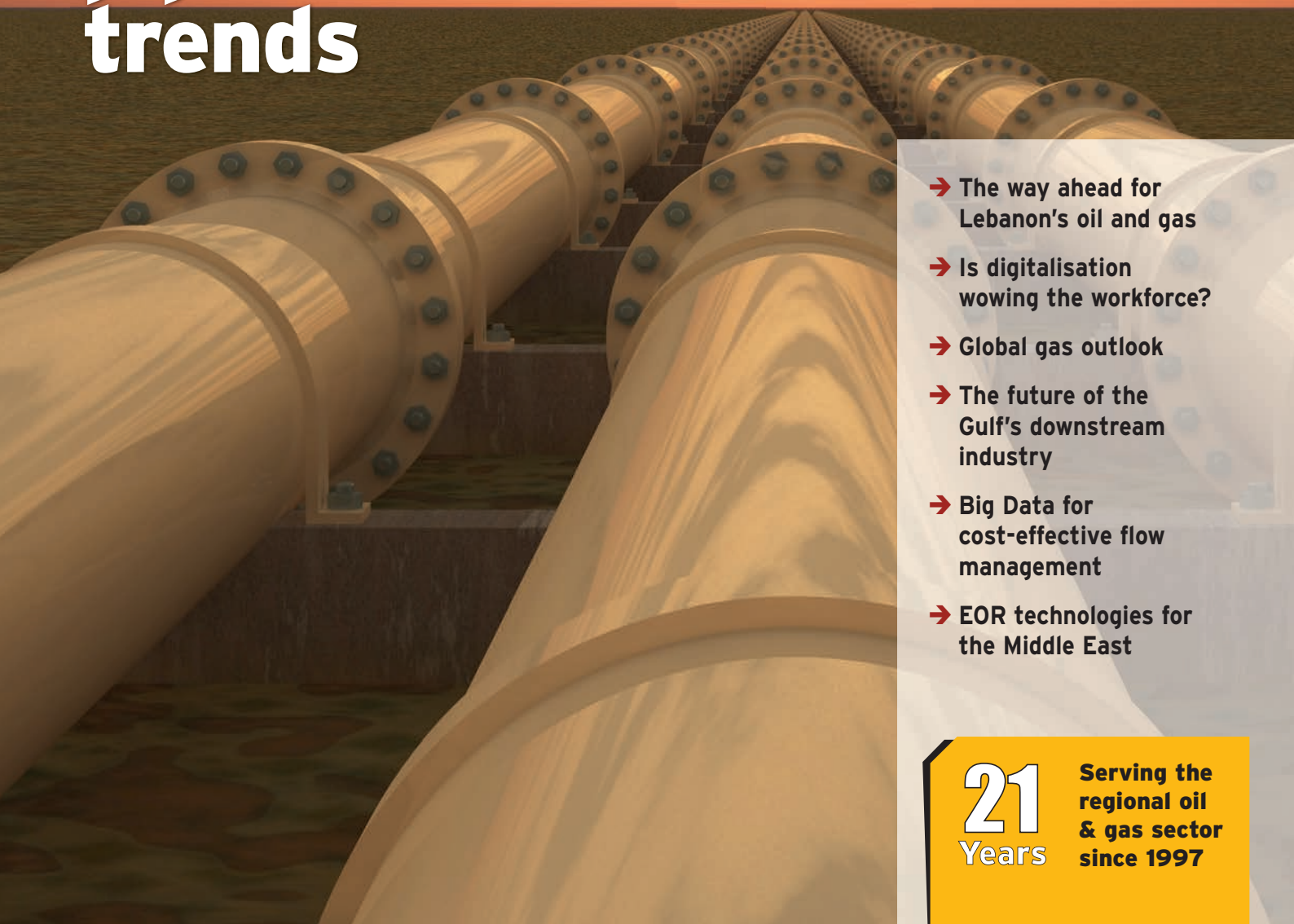
Middle East pipeline trends



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21 Years

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New leak detection and prevention technology

CANADA-BASED INGU SOLUTIONS has been selected to demonstrate its leak detection and prevention technology for oil and gas pipelines in the US state of North Dakota. Ingu will deploy its Pipers technology in operational pipelines during 2018. Ingu Solutions was chosen by iPIPE (intelligent Pipeline Integrity Program), a US$4 million research and development programme focused on advancing new technologies to prevent and detect pipeline leaks.

Image credit: Nes Jerry/Adobe Stock

The solution will be deployed on pipelines in North Dakota

Ingu's Pipers solution uses miniaturised inline sensors to detect leaks, geometric defects and deposits that threaten pipeline performance and safety. Pipers eliminate the need for human intervention, reducing inspection costs, strengthening preventive maintenance, and lowering repair and replacement expenditures. Pipers are small enough to reach areas that are currently too difficult or expensive to inspect.

"We are changing the economics of pipeline inspection," said Ingu CEO John van Pol. "North Dakota offers us the opportunity to demonstrate how simple and efficient inline inspections can be using state-of-the-art technology small enough to fit in the palm of your hand."

White paper on ultrasonic inline inspection

NDT GLOBAL HAS published a white paper on *'The Evolution of Ultrasonic Inline Inspection'*, which can be downloaded at https://www.ndt-global.com.

Guaranteeing the safe operational conditions of pipelines is paramount to any integrity management programme. Intelligent inline inspection (ILI) tools are widely used throughout the industry for the early detection of potentially hazardous pipeline anomalies (e.g., metal loss) as well as their precise sizing, thus providing reliable input data for integrity assessment. Ultrasonic technology (UT) is the most accurate and reliable iteration of ILI technology available today. These inspection tools record data while travelling through the entire pipeline from launcher to receiver. For the inspection of liquid pipelines, ultrasonic tools offer specific advantages with regard to resolution as well as to measurement accuracy, and have been considerably improved by taking advantage of the progress in electronics, data processing technology, and data storage capabilities made available from other application areas. For example, the current achieved measuring resolution allows for the reliable detection of tiny pinholes at higher inspection speeds than previously available.

Corrosion protection solution

CORTEC HAS INTRODUCED its CorroLogic VpCI technology, a specialised product range for preventing corrosion of pipelines and extending a pipeline's structural life. Corrologic CorrCaps powered by Nano VpCI are heavy wall black polyethylene pipe caps containing proprietary Vapour phase Corrosion Inhibitors (VpCI). By providing multi-metal corrosion protection, CorrCaps protect pipe threads, pipe ends and other tubular objects from corrosion, mechanical damage, and contamination during transit, handling, and storage. CorrCaps are available in a variety of sizes to fit any standard pipe diameter.

Image credit: Cortec

The product range prevents pipeline corrosion and extends the pipeline's structural life

Corrologic Tube Strips powered by Nano VpCI are also designed for protection of tubes, pipes, or conduits in storage or during shipping. Using VpCI technology, Corrologic Tube Strips make it possible to protect the interior of a tube or pipe against corrosion without expensive internal coatings. The flexible strip has a 8.5 mm diameter. It is extruded from low density polyethylene containing a proprietary VpCI compound designed for protection of ferrous and non-ferrous metals and alloys. Tube Strips are especially effective on more expensive stainless steel and aluminum pipes. Tube Strip is placed inside the tube or pipe, which is then capped or sealed. Within hours, the vapours from the pipe strip saturate the enclosed air space. Even in the presence of water vapour (high humidity conditions), the VpCI vapours passivate the metal surface, thus halting the process of corrosion.

AUV with robot arm for subsea pipeline inspection

JAPAN'S KAWASAKI HEAVY Industries has signed a basic agreement with The Underwater Centre (TUC), a marine testing and training facility in Fort William, Scotland, UK, on conducting a verification test of a prototype AUV equipped with a robot arm for subsea pipeline inspection. The test, scheduled for October 2018, will be the first such test in the world, according to the company.

With a focus on the growing demand for pipeline maintenance in offshore oil and gas fields, Kawasaki has been developing leading-edge component technologies for AUVs, based on sophisticated submarine technologies fostered in-house over many years. Aiming at commercialisation in FY 2020, Kawasaki is currently developing an AUV capable of underwater charging and transferring of inspection data to the mother ship features that allow for longer deployment time —while autonomously locating and tracking pipelines at close range, including those buried under seabed sediment.

Image credit: The Underwater Centre

The AUV during testing

In November 2017, Kawasaki successfully completed a verification test at TUC for automated underwater docking of a prototype AUV to its charging station, involving contactless charging and large-capacity optical communication.

For the upcoming test, Kawasaki plans to use a prototype AUV equipped with a robot arm with an attached inspection tool unit (currently under development), to achieve autonomous locating and tracking of subsea pipelines. The test will focus on verifying the robot arm's capability to absorb the movement of the AUV due to tidal currents, and on verifying that the inspection tool unit can continuously track a pipeline under those conditions.