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Robots Poised To Change The Face Of Offshore Operations

Judy Murray Senior Contributing Editor, Offshore, E&P Hart Energy Wednesday, June 20, 2018 - 7:10am



Eelume is developing another version of its snake-like underwater robotic intervention vehicle. (Source: Eelume)

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Automation has been part of offshore operations for decades. Dynamic positioning was introduced on a drillship in the 1970s, and equipment like the iron roughneck, which today is commonplace, has been around since the 1990s. Over the years, the industry has gradually adopted a range of onboard automated functionality that has enabled greater efficiency and enhanced safety.

Today robotics is taking automation to the next level. In about 18 months, a group that includes Total, The Oil & Gas Technology Centre, Austrian manufacturer Taurob and the Technische Universitaet Darmstadt (TU Darmstadt) in Hessen, Germany, intends to introduce a mobile robot for autonomous operational inspection of offshore platforms.

The idea was conceived by Taurob and TU Darmstadt, which collaborated to win Total's Autonomous Robots for Gas and Oil Sites (ARGOS) challenge in 2017. The prototype, which received ATEX certification— meaning it conforms to the ATmosphere EXplosible directive for equipment working in flammable environment—can perform visual inspections, read dials, and measure gas concentration, temperature and level gauges and valve positions. It is mobile enough to move through narrow pathways, travel up and down stairs and detect and navigate around obstacles and humans.

In the next year and a half, the ATEX-certified, autonomous robot will be enhanced, and an additional two versions will be developed with more robustness, greater reliability and improved functionality. The resulting devices, which will be deployed on an offshore platform in the North Sea for the first offshore trial, are intended to be simple enough for workers to operate without the need for onsite robotics experts.

Another robot that also is at the prototype stage is a "snake," developed by Eelume—a company established in 2015 as a spinoff from the Norwegian University of Science and Technology—in cooperation with Statoil and Kongsberg Maritime.

RELATED: [Eelume Aims To Go Deeper With Robotic Subsea Snake](#)

Eelume describes the vehicle as a modular combination of joints, thrusters and various payload modules. Sensors and tools can be mounted anywhere along the flexible body. A dual-arm configuration is achieved by mounting tooling in each end and forming the vehicle body into a U-shape. One end of the arm can grab while the other end carries out inspection and intervention tasks. The unit also can be fitted with a camera on one arm to provide a view of tool operations being carried out on the other end.

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Judy Murray has nearly 20 years of experience writing about oil and gas and has worked in both the drilling fluids and seismic sectors of industry. [See full bio](#)

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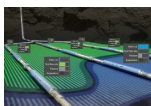
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