Total Invests in Offshore Robots

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Robots could soon be working autonomously alongside humans on a North Sea platform as part of a world-first project from the Oil & Gas Technology Centre, Total E&P and taurob, in partnership with Germany's Technische Universitaet Darmstadt.

The 18-month project will develop and trial a mobile robot for autonomous operational inspection of facilities on Total's onshore Shetland Gas Plant and offshore Alwyn platform. The trial is the first time an autonomous ground robot will be used on an operational oil and gas installation.

The robot developed by taurob and TU Darmstadt is ATEX-certified, can perform visual inspections, read dials, level gauges and valve positions, navigate through narrow pathways and up and down stairs, measure temperature and gas concentration and detect and navigate around obstacles and humans.

The companies previously collaborated to win Total's ARGOS (Autonomous Robots for Gas and Oil Sites) challenge in 2017. The challenge involved developing an autonomous robot that could perform routine tasks and respond to challenges in a simulated oil and gas operational environment.

The current project will develop a further two versions of the ARGOS robot that are more robust and reliable, have improved functionality and can be operated by workers offshore without the requirement for onsite robotics experts.

The project team hopes to start a revolution in robotics offshore that improves safety, enhances productivity and reduces costs. Dave Mackinnon, Head of Technology & Innovation for Total E&P UK, said: "Total believes that robots have the potential to play an important role on offshore platforms. We are on the cusp of delivering technology that will improve safety, reduce costs and even prolong the life of North Sea operations. Robots represent an exciting new paradigm for the oil and gas offshore industry and Total is proud to be part of it."

Jean-Michel Munoz, Next-Generation Conventionals Manager for Total S.A., said: "Surface robotics has the potential to completely change the way we operate and design facilities in the future. Implementing this technology on our sites will bring benefits in terms of operation safety and cost optimization. This development of a fully autonomous robot for operator rounds and anomaly detection is the first step in implementing robotics solutions at industrial scale."

Earlier this year, a separate initiative was launched with nearly $19 million in funding from the U.K. Industrial Strategy Challenge Fund (ISCF). The Edinburgh Centre for Robotics – a partnership between the University of Edinburgh and Heriot-Watt University – will develop robots for inspection, maintenance and repair tasks offshore.

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