

ECA Deepwater Trials GoM

The offshore sea-trial using the Alistar 3000 Inspection AUV was designed by BP to evaluate this technology and will take place at the company's deepwater King Field (1,700msw) in the Gulf of Mexico. The trial will comprise three levels. Passive pipeline inspection: Alistar 3000 will locate and follow a pipeline at various altitudes above the pipeline whilst recording video, sonar data and actual position of the flowline. Active pipeline inspection: Alistar 3000, using on-board sensors that can automatically detect anodes or anomalies whilst tracking the flowline, will actively modify its mission to carry out closer General Visual Inspection (GVI) of the detected features. Structure inspection: Alistar 3000 will follow the flowline to a pipeline end-structure and process in real time, sensor information to manoeuvre around the structure to perform a GVI.

The ability to hover and manoeuvre close to subsea facilities differentiates this from previous commercial AUV inspection capability and will provide a step change in functionality. The Sea Trial, scheduled for autumn 2005, will take approximately two weeks. On completion the system will be available for extended trials or further capabilities-development, depending on customer requirements. Untethered operations using an AUV offer advantages over tethered vehicles in many areas of subsea operations, most derived from the elimination of, or minimal need for, a surface support vessel. This yields great flexibility in the way subsea operations can be planned and executed, and overall cost reduction. Compared to a tethered vehicle, an AUV operation also reduces the topsides installation footprint and overall weight requirements (no umbilical, TMS or winch), which makes installation on a FPSO or host platform much easier. Finally, data quality is also greatly improved by eliminating umbilical-induced underwater vehicle perturbation, especially for acoustic data. Automatic tracking of a flowline, developed by ECA since mid-2004, has become a basic requirement for AUVs. The capability of Alistar 3000 is not limited to the above task; it provides a platform for various other AUV applications to survey, inspect and execute autonomous touchdown monitoring during pipe-lay operations. It also offers precise positioning using the INS/DVL/USBL-filtered AUV navigation system.

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