

Trials Success for Fusion Positioning and Telemetry System

Fusion acoustic positioning and telemetry systems from Sonardyne International Ltd, UK, have been used successfully in the Gulf of Mexico during trials conducted by a major operator.

The Fusion systems were tested in conjunction with seafloor data acquisition packages that had been deployed by ROV in pre-determined locations and then acoustically commanded to record data. The trials were designed to demonstrate the quality of data that could be acquired in deep water (2,000 metres or 6,600 feet) and the efficiency of ROV deployment operations.

Sonardyne's integrated acoustic positioning and telemetry system, Fusion was fitted to the ROV and surface vessel. The system was fundamental to the survey and was required to perform multiple tasks. The ROV was navigated to the pre-plot co-ordinate for touch down and deployment of each seafloor package using USBL (Ultra-Short BaseLine) techniques. Simultaneously, the ROV's Tether Management System and the package deployment basket were positioned using the Sonardyne system.

Each seafloor package was fitted with a mini Compatt 5 transponder modem. This enabled both positioning and telemetry of data to and from the seafloor package. Once deployed, the vessel operator used acoustic telemetry to command each seafloor package to check its status, battery voltage etc, set-up parameters and start data acquisition. Once data was acquired, a short section of data was transmitted to the surface using high speed acoustic telemetry for quality control purposes. This enabled the surface operator to verify that the seafloor package was functioning correctly.

Compatt 5 transponders incorporate Sonardyne's latest wideband acoustic signal processing techniques. This offers significant operational advantages including hundreds of reply codes, impressive noise immunity, high speed telemetry and fast array calibration making it the optimum technology for use in complex offshore acoustic environments.

Once deployed, the acoustic transponder on each seafloor package enabled the baselines between each unit to be measured to accurately tie together the subsea network so improving the overall accuracy of the positioning solution.

In addition, the transponders enabled the final as-laid positions of the packages to be confirmed to an accuracy of better than +/-0.5 metre (1.6 feet) in 1,310 metres (4,300 feet) water depth. This was achieved by acquiring simultaneous range-range observations from the transponders to the surface vessel running simulated source lines.

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