DEE1 15

Ocean Bottom Nodes – Past, Present and Future

C. Walker* (Seabed)

Summary

The first commercial use of ROV-deployed ocean bottom seismic nodes (OBN) was on the Cantarell/Sihil field offshore Mexico in 2003/4. The resulting data showed a clear uplift over that acquired previously using ocean bottom cable (OBC) equipment and was a forerunner to the extensive volume of OBN surveys that have been acquired worldwide in both deep water, using ROVs for deployment, and shallower water depths where both node-on-a-rope (NOAR) and node-on-a wire (NOAW) systems have been used employed.

The move towards OBN and away from OBC has been driven by the desire to improve operational performance and hence reduce ocean bottom seismic (OBS) survey costs. The larger spread geometries enabled by higher node inventories reduce the traditional duplicated shot overhead implicit in the limited number of receivers historically available on an OBC crew, due to the inherent technical reliability limitations of connectors, terminations, data telemetry and power distribution.

When coupled with recent advances in the data processing to de-blend so-called simultaneous sources, the resulting square kilometer rates for full azimuth/long offset OBN data are beginning to allow the technique to be considered for exploration in addition to the appraisal and development objectives that have traditionally been its focus.

In this presentation the technical evolution of OBN will be briefly described, the key aspects for improving survey efficiency explained and the likely future direction and application, especially in both the shallow and deep water offshore Mexico, highlighted.