

The Agbami 3-D/4-C OBN Seismic Survey - SIMOPS in a Producing Deepwater Field

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This paper describes the planning and execution of simultaneous operations (SIMOPS) procedures to acquire a three dimensional (3D), four component (4C), ocean bottom node (OBN) seismic survey on the seafloor in the Agbami field, located in 1500 meters of water, 80 km offshore Nigeria. This 4C OBN survey is the first of its kind for both Chevron and Nigeria and only the second OBN survey utilizing separate node-laying and source vessels.

SIMOPS planning is done to assure incident free operations over an area with simultaneous production, tanker, drilling and seismic operations. Key elements of the SIMOPS plan are a multi-disciplinary risk assessment, an activity matrix and mitigation plans. Key inputs to the SIMOPS plan include 'dropped object' studies, facilities plans & vessel and equipment characteristics. Key outputs of the SIMOPS plan are 'activity' specific guidelines, maps and cross-sections depicting safe handling, prohibited, and restricted operations areas with altitude limitations & stand-off limits to existing facilities.

The SIMOPS plan was amended during the survey to address stakeholder concerns about the floating export tanker hook-up lines and the rig's hull-mounted acoustic transducer. All seismic equipment was successfully deployed and recovered from the seafloor, with only two dropped node 'incidents' both occurring within safe handling areas. Along with a balanced survey design, successful SIMOPS planning and execution are credited with completing the survey operation ~20 days ahead of schedule, using less than 50% of the allotted chargeable standby time. This was accomplished without incident to facilities, lost production, or serious human injury.

Lessons Learned

Create multi-functional team with SME's in seismic acquisition, subsea production and maintenance, FPSO facilities, Drilling and Marine

Communication - meet stakeholders in person

Start simple, build capability before complexity

Have contingency plans ready to implement

Best Practices to Share

Leverage vendors experience from previous surveys

SIMOPS plan can be shared with other subsea projects and updated for the Monitor Survey

Looking Ahead - Anticipating D&C schedule and Assessing Impact

Challenges Involved

Improve coordination with MODU and tankers