

Title: Onboard Tools for Planning and Optimizing SIMOPS

Authors: Donogh Lang and Gavin Rogers
MCC, Gallaway, Ireland

Alan Dougan
Fugro GEOS, Glasgow, United Kingdom

Abstract

Many latest-generation dynamically positioned (DP) drilling rigs are equipped with dual activity derricks and/or subsea cranes capable of deploying subsea equipment, such as trees and manifolds. This allows the performance of simultaneous operations (SIMOPS), such as drilling through the drilling riser while simultaneously running strings of casing or deploying subsea equipment. This can result in significant reductions in the time taken to drill wells with associated cost savings.

Careful planning of SIMOPS is required to eliminate the risk of clashing between equipment and the drilling riser through the water column, and also to optimize parameters such as vessel position and heading for specific operations. This paper describes an onboard simulation tool designed for use on DP drilling rigs that can be used to plan SIMOPS. The tool has been deployed on a number of deep water projects in the Gulf of Mexico. The simulator can acquire input data from relevant instrumentation and vessel systems, such as ADCP current meters and the DP system.

The simulator uses a fully-coupled 3D finite element (FE) model of the riser system, thereby allowing accurate determination of the riser response to current loading. The tool allows onboard personnel to check/confirm the feasibility of various SIMOPS using either prevailing or forecast metocean conditions or to optimize procedures to minimize risks. The key features of the onboard simulator are discussed, with particular emphasis on the potential to optimize operations. The benefits of the system in planning SIMOPS are illustrated by means of a casestudy.

Click below to:

[**Review the complete paper**](#)

[**Review the presentation**](#)

[**Return to the Session Directory**](#)