

Pin-Point Positioning

DeepLand is a new-generation on-board software tool developed by MCS for use during the installation of subsea equipment. It allows accurate determination of the relative positions of the drilling and production risers and subsea equipment such as trees, manifolds and jumpers as this equipment is being installed, and highlights potential clashing or interference issues during these operations.

BY DONOGH LANG

DeepLand combines an intuitive, simple and clear on-board operator interface with advanced analytical capabilities. The operator interface comes from an existing program from the MCS suite called DeepDrift. DeepDrift is on-board software for DP drillships that lets operational personnel perform drift-off analyses based on prevailing or forecast metocean conditions.

Originally developed in association with GlobalSantFe (GSF), DeepDrift software is currently in use on five of GSF's drilling rigs. The DeepLand analysis capabilities are based on the MCS DeepRiser program; this is an integrated engineering tool designed specifically for the design and analysis of deepwater risers, in particular deepwater drilling risers. All the programmes are based on MCS' widely-known and much-validated

Flexcom finite element (FE) analysis engine, the industry standard for many years in rigid and flexible riser analysis.

Below is an example of the DeepLand user interface. Here you see a plan view of the field, showing the subsea infrastructure, the drilling rig and the current locations of the equipment being installed and equipment already installed. On the right-hand side of the screen are the various data input dialog boxes. Overall the display is clear, concise and easy-to-understand.

Full-Featured

DeepLand provides an on-board 3D analysis capability allowing the simulation of a number of riser and equipment installation scenarios. These analysis capabilities allow the operator to assess the potential for clashing between the

riser/casing as it is being run and in-situ drilling and production risers and other subsea equipment.

DeepLand's analysis engine is based on the industry-standard finite element (FE) modelling capabilities of Flexcom and DeepRiser, and the software is equipped with an intuitive, simple and clear on-board operator's interface that requires the minimum of input data and that presents results in a clear, easy-to-understand layout. This includes the possibility of configuring the software to interface with real-time riser response data for use in on-board analysis.

The software computes the recommended rig position for landing subsea equipment and risers at the required locations in prevailing or forecast metocean conditions. DeepLand can also be configured to obtain real-time measured ocean current data from an ADCP system for use in on-board analyses. Alternatively, analyses can also be carried out with forecast or default non-exceedance ocean current data.

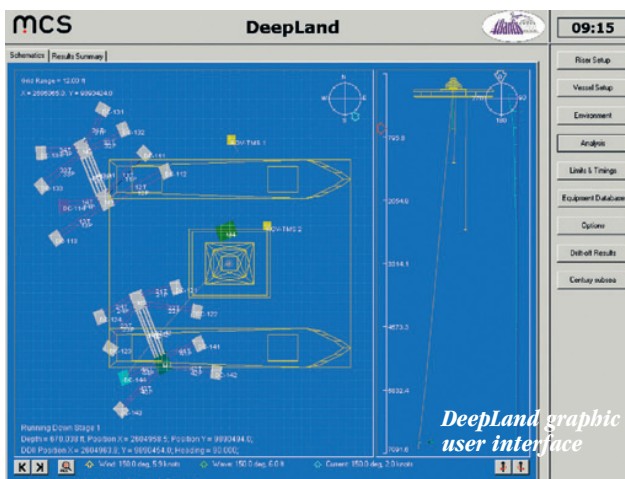
Benefits

Using DeepLand means an increased confidence in installation operations brought about by detailed planning and analysis of the equipment installation. This means an increased operating window brought about by the ability to analyse installation opera-

tions in prevailing or predicted metocean conditions on-board a vessel with DeepLand.

DeepLand improves the ability to monitor installation operations, leading to a reduction in unplanned incidents and improved safety and integrity. There is also the potential for considerable financial savings due to reduced operational downtime by using DeepLand to identify potential problems.

Visit www.mcs.com for additional information about entire range of MCS software. ■



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Donogh Lang is currently Senior Consultant and Group Software Business Development with MCS. Since 1997, Mr. Lang has worked for the Software Department of MCS in Galway. His responsibilities have included design and development of state-of-the-art simulation software for offshore systems used by the Oil and Gas industry, including software used on-board offshore drilling rigs.