Efficient planning of operations, hours and days ahead: OCTOPUS-Operational Forecast

One of the extensions within OCTOPUS-Onboard is the operational forecast functionality. The OCTOPUS-Operational forecast gives offshore vessels a complete and total safe time window including a motion and DP Capability forecast for their weather-sensitive operations. A forecast is given if the vessel does not exceed her maximum allowable motions and if it is capable of maintaining her position and heading in changing environmental and weather conditions, hours and days ahead.

For vessels equipped with a Dynamic Positioning system, the OCTOPUS-Operational forecast includes a prediction if the vessel is capable to maintain her DP position during an operation. This leads to maximized workability, less fuel consumption and more productive hours during operations where the DP system is used. The calculations are based on the thruster properties in combination with measured environmental conditions and weather forecasts which are an integral part of OCTOPUS. The system calculates an onboard forecast of the mean and slowly varying forces acting on the vessel due to currents, wind and waves.

The calculations are based on measured environmental conditions and on weather forecasts, which are an integrated part of OCTOPUS-Onboard. OCTOPUS calculates how the expected forces will influence the ship and if these forces would bring it out of position during an operation at sea for any available thruster configuration. The thruster properties are used as input. The DP forecast indicates which headings the vessel is able to keep or not, based on the available and required thruster power. There is no direct link with the DP-system itself. With the obtained information, it easy to judge for which DP thruster configuration the vessel is resistant against expected forces or that it is better to stop and start the operation at a different time. Safe heading sectors are given in Polar Plots.

References
“OCTOPUS-Onboard is a really valuable tool for us during offshore construction projects.”
Teun Hofman, Offshore Construction Manager at Jumbo Shipping.

The Tideway fall-pipe vessel Rolling Stone

The Seven Borealis offshore construction vessel from Subsea 7
A total and complete overview of operational windows during offshore operations.

**Benefits**

With the OCTOPUS-Operational Forecast the crew can easily see if it is sensible and efficient to start or go on with the operation at sea. Or is it better to start (again) at a different time?

The benefits are clear:

- A clear and complete indication of the operational windows for weather-sensitive operations at sea
- Reduced fuel consumption because of efficient usage of DP thrusters.
- Better and efficient preparation and execution of projects
- Less damages and stress to the vessel
- Optimal use of man and machine in a safe environment, leading to significant cost reductions.

For more information, please contact

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