

Title: **Comparative Investigation on Influence of the Positioning Time of Azimuth Thrusters on the Accuracy of DP**

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Abstract

The Voith Schneider Propeller (VSP) allows extremely fast thrust variation [1]. Contrary to all other types of azimuth thrusters (thrust changes accordingly to polar coordinates), the thrust is varied on the basis of X/Y logic. Fig. 1 (see paper) shows both thruster types; the Voith Radial Propeller (VRP) is an azimuth thruster developed by Voith Turbo Marine. As a result, ships with VSP can be kept stable in dynamic positioning (DP) mode, while the rolling motion of the vessel can also be reduced. DP capabilities and good sea handling are very important for the offshore industry.

In 2003, Voith Turbo Schneider Propulsion started to carry out intensive research programs aimed at making the VSP available to the offshore industry as an efficient propulsion system. These R & D activities focused primarily on the development of the Voith Roll Stabilization (VRS), model tests and CFD calculations on the interaction between the ship's hull and the propulsor ([2], [3] and [4]).

The first VSP-driven platform supply vessel is the Edda Fram of Ostensjö Rederi AS. In the meantime, the vessel has demonstrated the successful application of VSPs in offshore service in over 35 000 operating hours. The Voith Schneider Propeller enables the ship to perform very safe DP operations, lowers fuel consumption and ensures excellent sea behavior - the latter especially because of the Voith Roll Stabilization (VRS).

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