

**Title:** Improved DP Capability with Tilted Thruster Units and Smart Control Algorithms

**Authors:** Nobert Bulten, Petra Stoltenkamp, Wärtsilä

**Abstract**

With the introduction of the 8° tilted thruster units, a large step forward has been made in the DP-capability of a vessel. The contribution of two main factors to the thrust loss, being hull-interaction and thruster-thruster interaction are now well understood. A third factor, which plays an important role is the algorithm for the thrust allocation of the various thrusters in operation. A virtual model has been made, in which the hull-interaction losses and the forbidden zones due to thruster-thruster interaction have been taken into account for a drill ship. Clear gains in performance can be obtained when a smart thrust allocation algorithm is used. In the paper the modern concepts (8° tilted units, smart controls) will be compared to conventional configurations to indicate the possible improvements.