



Using QSHIP designers can concentrate on what matters

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To support designers and engineers in evaluating design concepts efficiently, MARIN has developed the hydrodynamic suite QSHIP.

Hydrodynamic considerations in design have a significant impact on the operational performance of a ship. Moreover, seakeeping improvements may have a major impact on design aspects such as capacities and general arrangements. Therefore, it is desirable to integrate ship motions and the workability analyses as early as possible into the design process.

QSHIP provides a graphical user interface and workflow around the well-known MARIN codes, SHIPMO and WASCO, and its pre- and post-processing tools, ConvertHullForm, RAO-viewer and Operability Viewer. It facilitates an easy comparison between different ship configurations, loading conditions and sea states. SHIPMO is MARIN's implementation of linear strip theory and includes theoretical and empirical formulations for the estimation of viscous roll damping. The result of a SHIPMO calculation is the Response Amplitude Operators (RAO) of motions, accelerations and many others. In the RAO-viewer the RAO can be visualised in an intuitive way. Starting from the RAO of ship motions, WASCO calculates the significant values for motions, accelerations and relative wave elevation covering a broad range of wave periods and significant wave heights. In the

Operability Viewer these data can be combined with wave scatter diagrams to calculate the downtime due to exceeding predefined criteria.

Time-to-market faster QSHIP automates data exchange between all analysis programs and therefore, reduces the time-to-market for new designs. This enables designers to concentrate on analysing different design concepts in an efficient way, without the hurdle of having to check the consistency of data when passing it from one application to the other.

Using QSHIP, seakeeping analysis can now be easily applied in all stages of the design process.

First QSHIP user group meeting

Last October, MARIN had its first QSHIP user group meeting. In this constructive meeting QSHIP users received first hand information from the developers on the new features and improvements of the codes. In return, they gave feedback on QSHIP that will be taken into account in any future developments. Due to its success, MARIN is planning to make this meeting an annual event to keep users up-to-date with developments. ▢

