

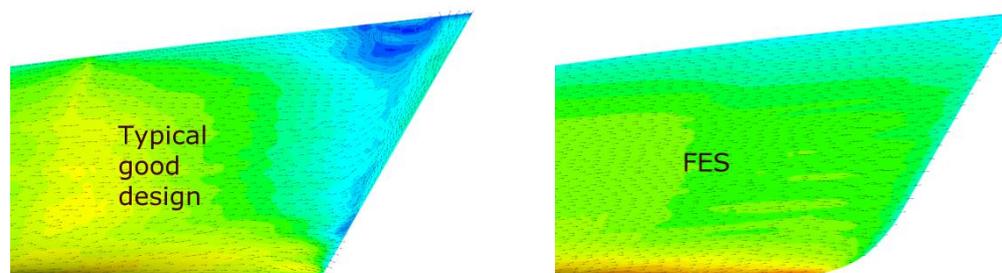
PRESS RELEASE
JUNE 7, 2011

NEW ENERGY SAVING SKEG CONCEPT FROM FORESHIP

Within an extensive research and development project Foreship has developed a new type of central skeg for cruise ships and ferries. This FES, Foreship Efficiency Skeg, will provide approximately 2% reduction in propulsion power compared to a good typical central skeg shape. The attached figure presents surface velocity and velocity vectors on the surface of typical good design and FES.

The development and verification is based on the full scale RANSE-CFD simulations (CFD stands for Computational Fluid Dynamics and RANSE for Reynolds Averaged Navier-Stokes Equations), including the effect of propulsion. The FES is applicable both for conventional shaft lines and podded propulsion. Conversion projects are also possible, as a FES can be prefabricated to enable fast installation.

The FES can be applied for a new building as well as for existing ships. In case of existing ships, only part of the skeg ahead of the trailing edge will be replaced by the new shape. The improvement compared with the existing skeg shape can be verified by RANSE-CFD and no model tests are needed.



RANSE-CFD calculation results for typical good design and optimized FES design.

Foreship Ltd.

Foreship is a well known and highly respected ship design and engineering company providing a broad range of services to the shipping industry. Foreship has more than 40 employees working on all areas of ship design, including Naval Architects, Marine Engineers, Structural Engineers, Interior Architects, Electrical Engineers and Interior and HVAC designers. Foreship offices are located in Helsinki and Turku, Finland.

Foreship is known for challenging large scale conversion projects, structural engineering, newbuilding concept designs and expert hydrodynamics. Our customers include the largest cruise lines and other shipowners, shipyards and maritime suppliers worldwide, our turnover distributed between these three areas. Turnover of the company in 2010 was 3.7 MEURO.

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