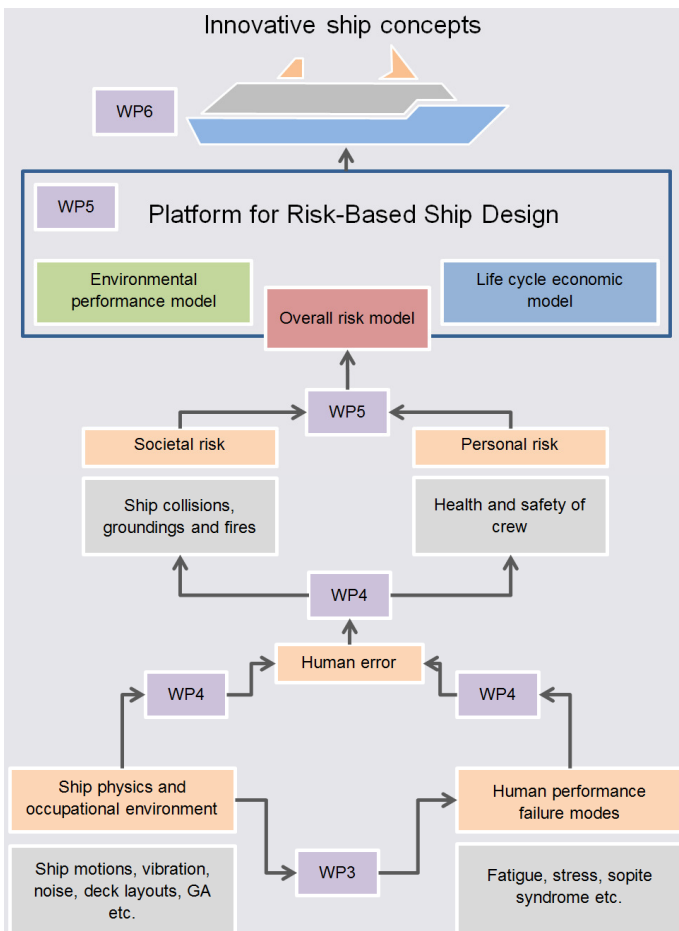


STRUCTURE

The **FAROS** project consists of 8 Work Packages (WPs), addressing performance studies, risk models, design optimisation, and validation. The five technical WPs are closely interlinked.



WP3: CREW PERFORMANCE STUDIES

The FAROS project will make use of previous research into the factors influencing crew performance and error making. An extensive literature survey will allow the incorporation of existing models for ship motions, vibration, noise, and the layout of overall decks and individual compartments.

WP5: RISK-BASED DESIGN IMPLEMENTATION

The performance and risk models developed in WP3 and 4 will be combined into overall risk models for passenger and cargo ships. Key to this task is the development of mathematical models that are straightforward both to comprehend and implement, to allow their integration with design tools.

WP4: RISK MODELS WITH CREW PERFORMANCE

The risks presented by human errors in ship operations can be considered as **personal**, affecting the seafarers themselves (injury, death and long term health deterioration), and **societal**, affecting the wider public and the environment, such as collisions, grounding, fires and explosions.

This WP will quantify both personal risks to seafarers and the wider societal risks. Risk models will then be developed that link human performance and errors to **Global Design Factors** (GDF), features of the design that influence human performance.

Physical and virtual experiments will be conducted to gather empirical data to populate the risk models.

WP6: DESIGN OPTIMISATION STUDIES













The overall risk models developed in WP5 are to be applied to both cargo and passenger ships. Parametric models of both ship types will allow design exploration and optimisation techniques to be applied to improve the performance of the designs as evaluated by the risk and conventional performance models.

WP7: VALIDATION

Optimised designs produced in WP6 will be assessed using physical and virtual experiments to confirm the performance improvements predicted.



CONSORTIUM

-  Aalto University
-  Alpha Marine Consulting Ltd
-  Brookes Bell LLP
-  CIS GALICIA
-  Deep Blue SRL
-  Hochschule Wismar, University of Applied Sciences, Technology, Business and Design
-  Lloyd's Register
-  Naval Architecture Progress
-  Tallink Group
-  Technical Research Centre of Finland (VTT)
-  University College London
-  University of Strathclyde

ABOUT

FAROS is an EC FP7 funded, three year project to develop an approach to incorporate human factors into Risk-Based Design of ships. The project consortium consists of 12 members including industry, academia and research institutes.

The project's **Advisory Board** comprises such European shipyards as Meyer Werft (Germany), STX Finland Shipyard, and Western Baltija Shipbuilding (Lithuania).

FAROS will use experimental data, simulations, parametric ship design models and optimisation processes to integrate human factors into the ship design process at a conceptual stage. This will include global and local ship design features.

This project builds on previous research and development of Risk-Based Design for ships which began with SAFEDOR, and now encompasses damage stability, fire safety, flooding control and environmental impact.

COORDINATOR

Dr Romanas Puisa
Research Project Manager
Brookes Bell R&D

T +44 141 428 3238
E romanas.puisa@brookesbell.com



Integrating Human Factors into Risk Based Design to improve the safety of cargo and passenger ships.



<http://www.faros-project.eu/>