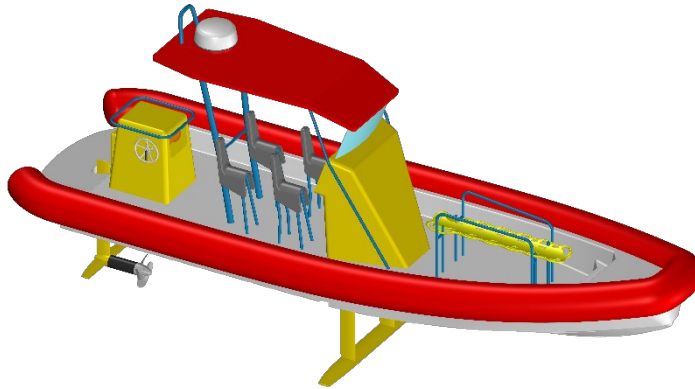


## Master Thesis Project(s) Proposal

### Hydrodynamic design, system design and control system for a model-scale foiling boat



A conceptual design for a foiling rescue boat

#### Background

The Swedish Sea Rescue Society, SSRS, along with partners SSPA and others, are exploring foiling to enable electrification of our rescue boat fleet while hopefully gaining greater comfort/reduced accelerations for our voluntary rescue boat crews.

In parallel with current half- and full scale developments, we would like to develop a model-scale boat platform for enabling easier experimentation with different foil concepts, mechanical solutions and control systems.

This is likely several separate but interconnected projects depending on the number of students interested, their backgrounds, etc.

#### Objective

Possible scopes for one or several projects might include:

- Develop a hydrodynamic design for a model scale (ca 1-2 m) foiling test platform (with feedback support from SSPA)
- Design the mechanical propulsion- and foil systems with possible sensor systems in mind
- Build the physical test platform (SSRS can assist)
- Design, implement and test a control system, including suitable sensors. Consider using open source Ardupilot or PX4 autopilot flight stacks as starting points as these might offer a lot of the infrastructure needed, while needing modifications to function for a foiling boat.

Target group: Naval Architecture, Mechanical Engineering, Automation & mechatronics, Engineering Physics, MPSYS

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