

Range prediction on a battery powered rescue boat

(Scientific fields: Human machine interface, naval architecture, electrical engineering, risk management, programming)

Background

The Swedish government has set a target to become climate neutral by 2045. The Swedish Sea Rescue Society (SSRS) together with several partners is developing the world's first rescue boat prototype with zero greenhouse gases, intended for launching in 2023. Funding is provided by Postkodlotteriet and Energimyndigheten¹. The boat will be using a fully electric drivetrain powered by batteries. There is an urgency and interest to know more on how to present an operator with information to conduct operations efficiently with a significantly reduced range and lack of charging points.

Aim and approach

The overall aim of the thesis is to develop and design the interface presented to the operator. In collaboration with an industry leader in marine equipment there is also the possibility to program and integrate the developed interface for testing. Implementation can be significantly influenced by the students' own interest, work, and perspective. Main input parameters of the electric drivetrain and mission profile will be provided.

The project is underway, the thesis workers will be given a contact point within the project group.

Tasks

The suggested tasks to complete the work involves:

- Literature study on challenges of using battery power for transport
- Analysis of current human machine interfaces on battery powered boats and the SSRS mission profile
- Description and identification of key information and how it can be presented effectively
- Development of an interface which clearly informs the operator with estimated remaining range
- Writing the thesis report and presenting it to involved parties

Supervisor:

TBD

Co-supervisors:

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TBD

¹ <https://www.energimyndigheten.se/forskning-och-innovation/projektdatabas/sokresultat/?projectid=32583>