

Project Elwood – electric steering system

Elwood Boats Oy is a young and innovative company located in Kuopio and established in 2019. Elwood designs and manufactures unique handcrafted 100 % electric wooden boats for new kind of elegant and smooth leisure boating.

www.elwood.fi



Steering systems in small and middle sized boats are mostly mechanical or hydraulic. Applying power steering and/or autopilot mainly requires hydraulic system and increases system's complexity and cost.

The objective of the project is to create reasonably-priced full electric steering system. The system reads the input (from helm, joystick, plotter etc.) and commands the actuator (electric cylinder, linear motor or such like) to turn the rudder or outboard motor. Profits of full electric steering system are many, like ease of installation, free of oil and leakages, possibilities to easily expand the system for example by additional steering point, autopilot, speed sensitive response, remote control etc.

Basic hydraulic steering system costs around 600-1000 € without power steering or autopilot. When autopilot is applied, the system price increases to around 3000 € and upwards, because of required pump and other additional components. The target price tag for full electric steering system is about same, because it is applicable for autopilot with less additional components and installations. The electric steering systems already on the market are very expensive and thus not attractive for smaller boats. We believe that an interdisciplinary team of Aalto students will uncover the real user needs and develop ideas, concepts and prototypes to be tested with us and our clients.

Reference products:

<https://www.dometic.com/en-us/outdoor/power-and-control/marine-steering-systems/electronic-power-steering/actuators/dometic-optimus-outboard-electric-steering-actuator-246353>

<https://global.yamaha-motor.com/business/outboards/products/accessories/hm-ex/>

