



INNOVATION TO IMPROVE THE CATCH FOR FISHERMEN



In the waters surrounding Finland, fishermen and seals have an interest in a common resource, Fish. Annually seals cause lost catch for fishermen and damages to fishing gear. Hunting seals is not desired, and the society is looking for ways to allow for coexistence of seals and fishermen without harming the animals. The seals unfortunately also get stuck in the traps from time to time causing them to anxiety and harm to their life. Therefore we need an innovative solution to keep seals away from the fishing equipment.

The main method for doing this at the moment is by using high frequency soundwaves which cannot be heard by the fish but are unpleasant for the seals. The cost of each seal scarer is around 12 000-15 000 euros and each fisherman needs multiple devices, due to the range being in the tens of meters. To increase the effective range of the seal repeller one option is to build an autonomous surface vessel that drives around the area that needs to be protected and thus greatly increases the area that can be seal free with only one unit.

This project needs a product development team with a diverse background and has plenty to offer for students of Design, Business and Engineering.

For engineers: Maritime engineering, hydrodynamics, mechanical design, stress analysis, risk analysis etc.

For designers: Design system level function of the device especially the interaction with the fishermen. User testing, close interactions with the end users (fishermen), stakeholder analysis, user experience design, non-human centric design etc.

For business students: investigate business case for such a solution and determine the fishermen's resources and eventual cost of system. Should the device be sold as a unit or provided as a service with a monthly fee?

Elements that are desired:

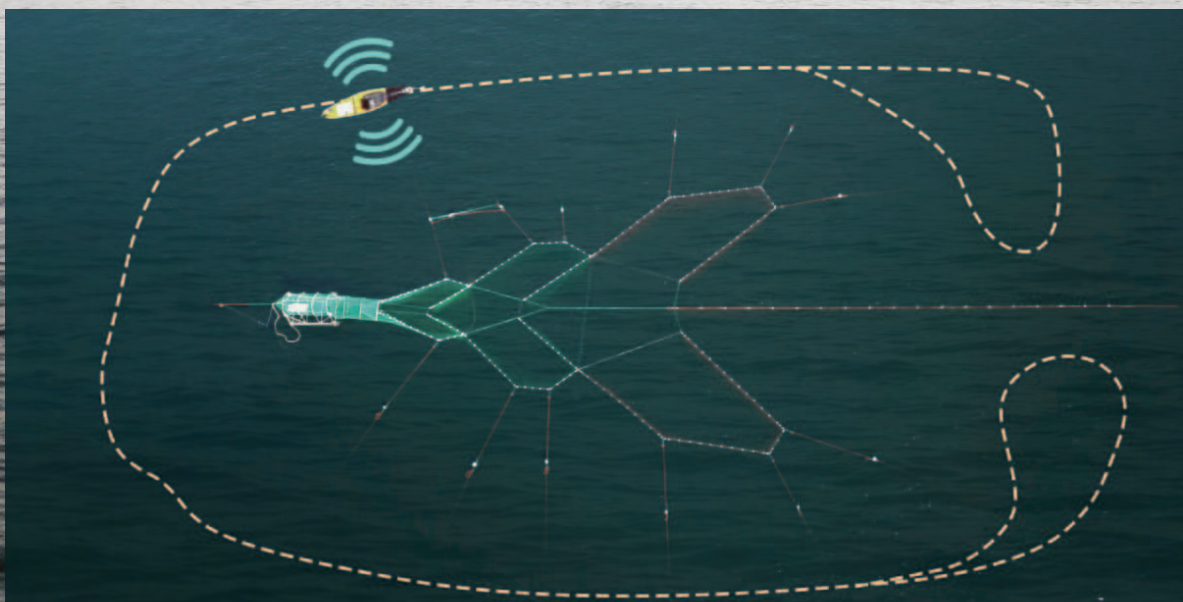
-Generate, prototype, and test a concept of how the fishermen are to interact with the vessel. What user interface would best serve the purpose and what features are a must and what would be nice to have(s).

-The vessel is to operate at sea under conditions that can at times be very harsh. Heavy storms and rain present a challenge. How will the vessel be able to operate during these while keeping costs and maintenance requirements down?

-Investigate and document the knowledge that the fishermen have of the problem through visits and interviews with key fishermen and fish farms.

-Build a working prototype(s) of the vessel. The navigation system, energy storage and generation concept as well as propulsion devices are being developed at Design Factory separately and a good outcome would be the integration of these components with the vessel(s) that the PDP team creates. Think single hull vessel, pontoon boat, trimaran etc.

There will be plenty of support available for the team both from LUKE as well as Design Factory.



Contact:
Luke: Esa Lehtonen
esa.lehtonen@luke.fi
DF: Albin Weckström
albin.weckstrom@aalto.fi

