Gentle and effective fishing with new and innovative trawl gear

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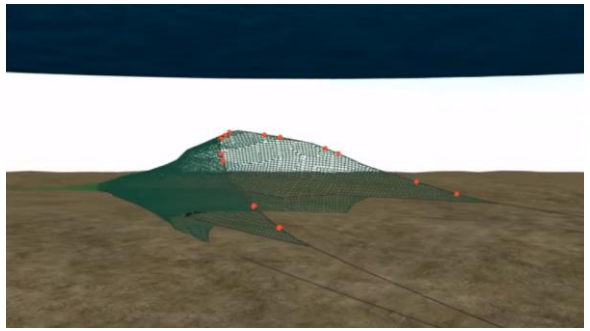
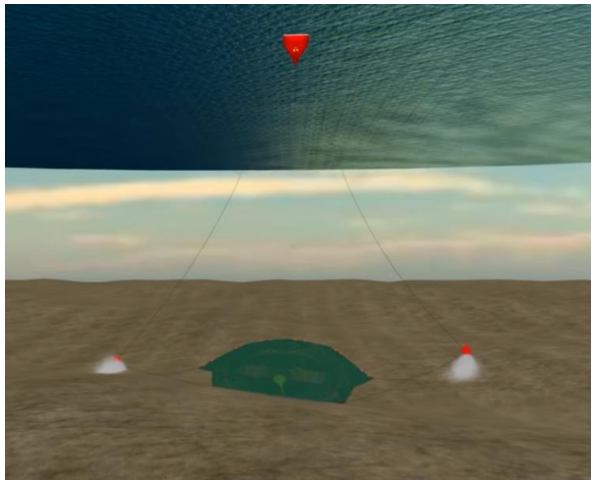
This project was initially financed by the Norwegian Research Council, Norwegian Seafood Fund, Rolls Royce Marine AS, Mørenot Fisheries AS. It was carried out in a collaboration between SINTEF Ocean, the Arctic University of Norway, NTNU, University of Massachusetts, Memorial University of Newfoundland, Rolls Royce Marine, Mørenot Fishery AS.

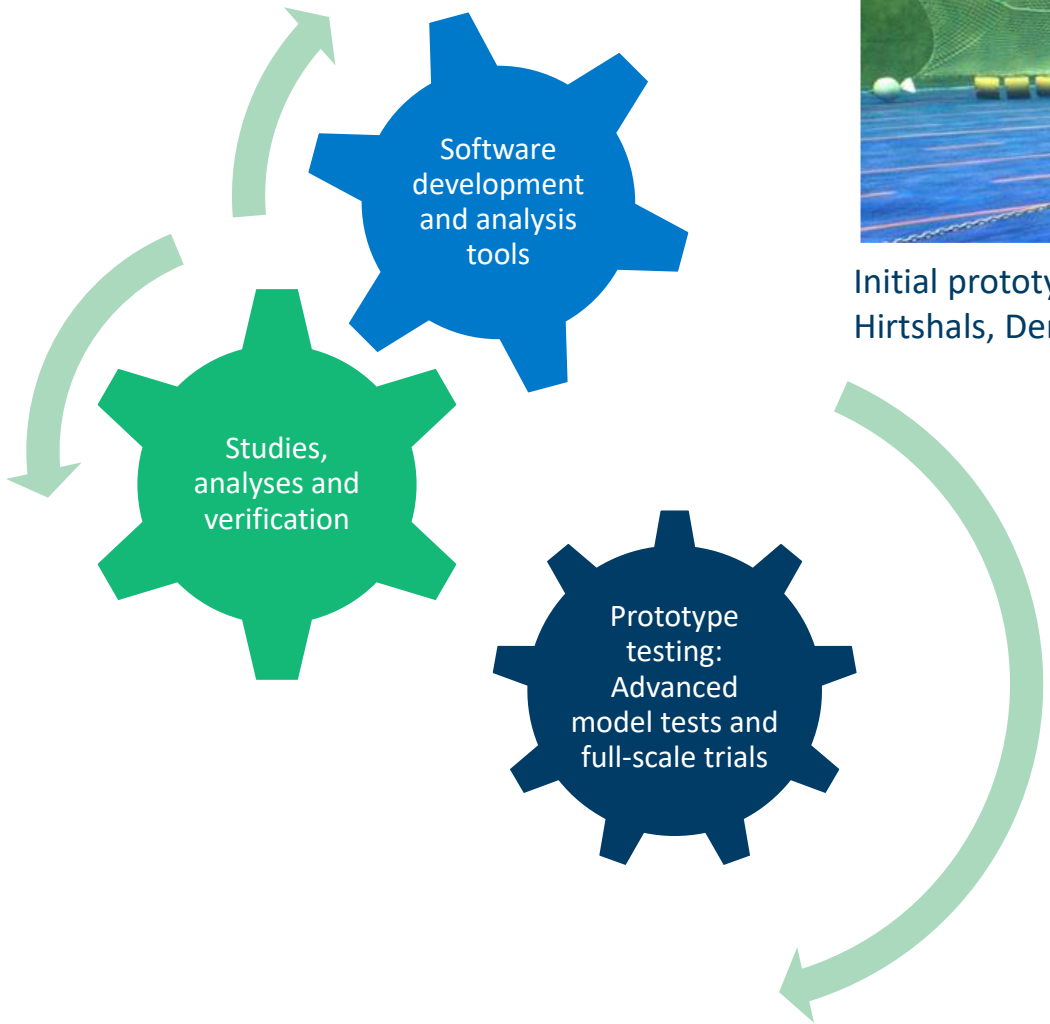
De-risking innovations:

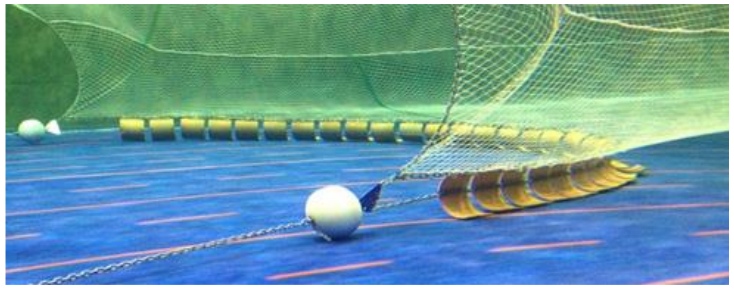
Model tests and numerical simulations – *advanced engineering processes*



Trawl system simulation using FhSim - simulation performance and marine systems modeling.







Initial prototype testing at the flume tank in Hirtshals, Denmark.

Full-scale testing on research and commercial vessels.

Preliminary tests 2013-15
Commercial product development and scientific testing/evaluation (2023-25)

- Tests 2013-2015 (research vessel) – promising results
  - Easy to rig and operate
  - Geometry was stable during towing
  - Good bottom contact and easily passed bottom obstacles (e.g., stones).
  - The size distribution of fish caught with the SCSG was like that caught with the rockhopper.
  - Apparently, more cod (over 65 cm) and more haddock (of all sizes) were caught.
  - Material wear is an issue to be addressed in the development of commercial products.
- November 2023 (commercial vessel)
  - 20-40 % more catch with SCSG than conventional rockhopper gear.
  - The gear overran less fish.
  - The new gear weighs 1/3 of the standard rockhopper gear.
  - Increased catch efficiency, shorter towing time, and **reduced fuel consumption**.
  - **Less impact and damage on the seabed**.

- Ongoing scientific tests and cooperation between The Arctic University of Norway, SINTEF Ocean, Institute of Marine Research, and the Norwegian Directorate of Fisheries.

https://thefishingdaily.com/latest-news/new-trawl-gear-demonstrates-catch-increases-and-less-impact-on-seabed/

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New Trawl Gear Demonstrates Catch Increases and Less Impact on Seabed

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References:

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- Larsen, R.B., Herrmann, B., Brinkhof, J., Grimaldo, E., Sistiaga, M. and Tatone, I. (2018), Catch Efficiency of Groundgears in a Bottom Trawl Fishery: A Case Study of the Barents Sea Haddock. Mar Coast Fish, 10: 493-507.https://doi.org/10.1002/mcf2.1004
- "Development of selection systems in cod trawls – National investment 2020–2023" and "Gentle and efficient trawling for whitefish".

The Semi-Circle Spreading Gear concept (SCSG) represents a promising step toward sustainable fishing practices, balancing ecological impact and operational efficiency.

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Technology for a better society