

## **National matters – Sweden**

### **1. Project started for building of a new icebreaker**

The project to build a new icebreaker together with HD Hyndai Heavy Industries is now started and currently in engineering phase with a basic design followed by a detailed design. Steel cutting will start in Sept. 2027 and the new ship will be ready for delivery in 2029.

The new Icebreaker with its length of 126m over all, will be 16m longer than its predecessor and also slightly wider with a width of 28m and capable to make a channel 32m wide.



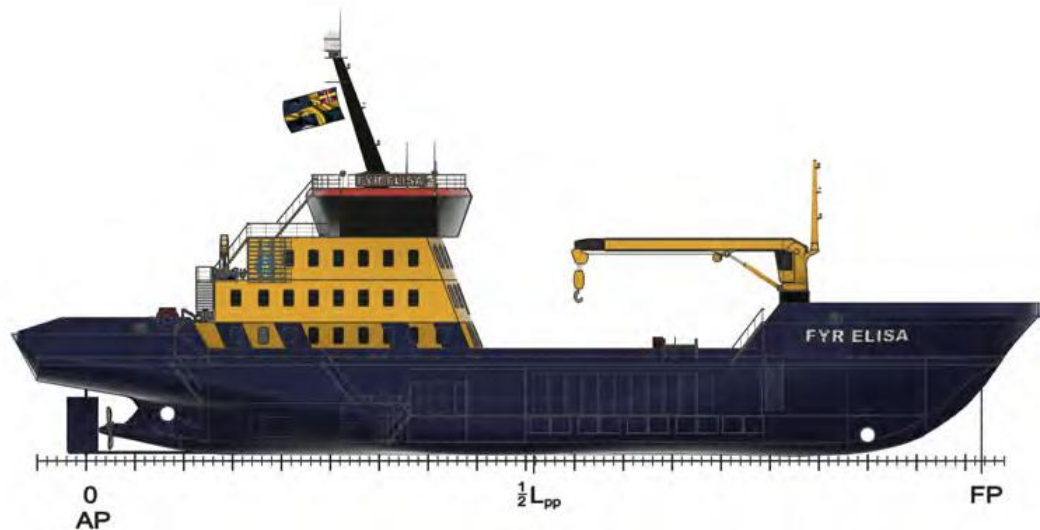
Even though its greater capacity the new ship will consume 40% less energy compared with the old icebreakers, and is preprepared to run on renewable electricity, methanol and HVO-fuel, securing environment sustainability.

## 2. Funding for additional icebreakers

In April, the government of Sweden announced funding, subject for Parliament decision, of 400M€ for additional icebreakers replacing the older vessels. The funding may be used for one large class icebreaker or alternatively two smaller midsize class units. The direction is not yet decided.

## 3. Design project for two new fairway vessels

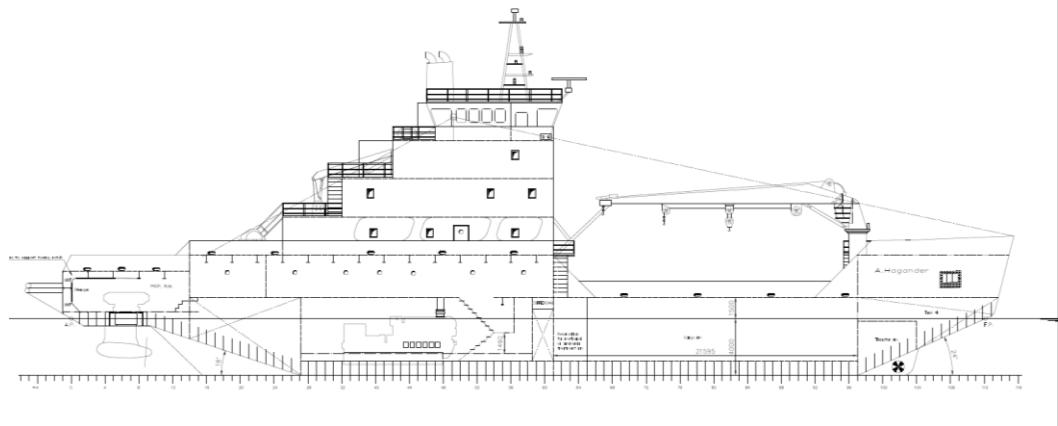
The project to design two new fairway vessels as replacement for Baltica and Scandica, now. 44 and 43 years old respectively has now been initiated and started. The project will in 2027 deliver a design specification for procurement of the two vessels as the next phase



*Design created by student project<sup>1</sup> at Chalmers university*

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<sup>1</sup> [Fyr Elisa](#)



*Early design by the technical dept. of SMA shipping management.*

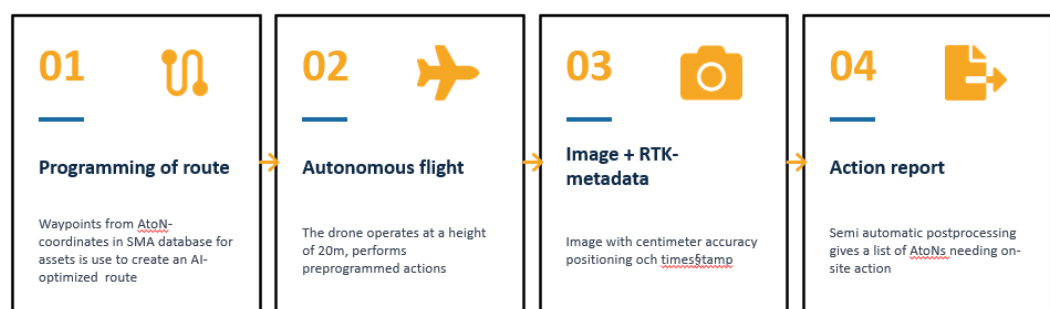
The design will make the vessels able to perform:

- Fairway work
- Ice assistance in light to moderate conditions
- Hydrographic surveying in open sea incl. ROV-operations

The new ships will be slightly larger than the old ones with at length of 65m (57m) and a width of 14m (12m), to increase the capability to carry more supplies for less need for port calls. The vessels will be environmentally sustainable in various aspects, including hull shape, propulsion, use of renewable fuels and recovery of energy for best efficiency.

#### 4. Position control of floating aids and light sectors by drones.

During the spring SMA has successfully performed proof of concept drone flights for positioning of floating AtoN and control of sector lights. The drone used has a flight time of approx. 45min, a speed of up to 30m/s giving it ~ 16Nm range. The drone is positioned using RTK giving it cm accuracy both horizontally and vertically.



*Process of operation*



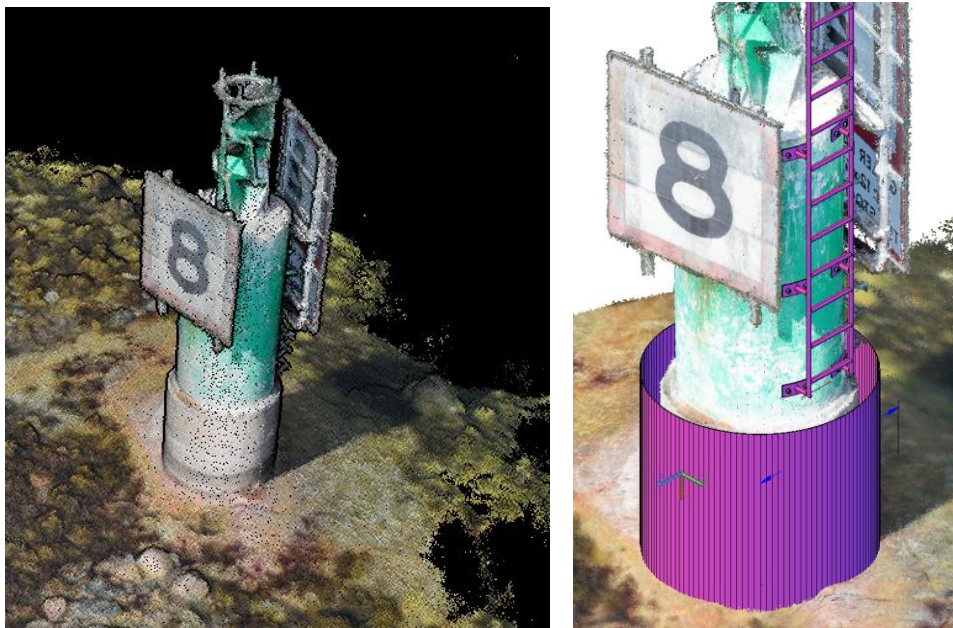
*Positioning of floating AtoN*



*Control of sector light*

The test flights indicate that a 92% reduction of CO<sub>2</sub>-emissions and about 1/3 of the time is saved if only position control is considered, since a smaller, lighter and faster workboat is used for the drone operation.

The drone has also successfully been used to map structures and make a 3D-model for re-construction measures.

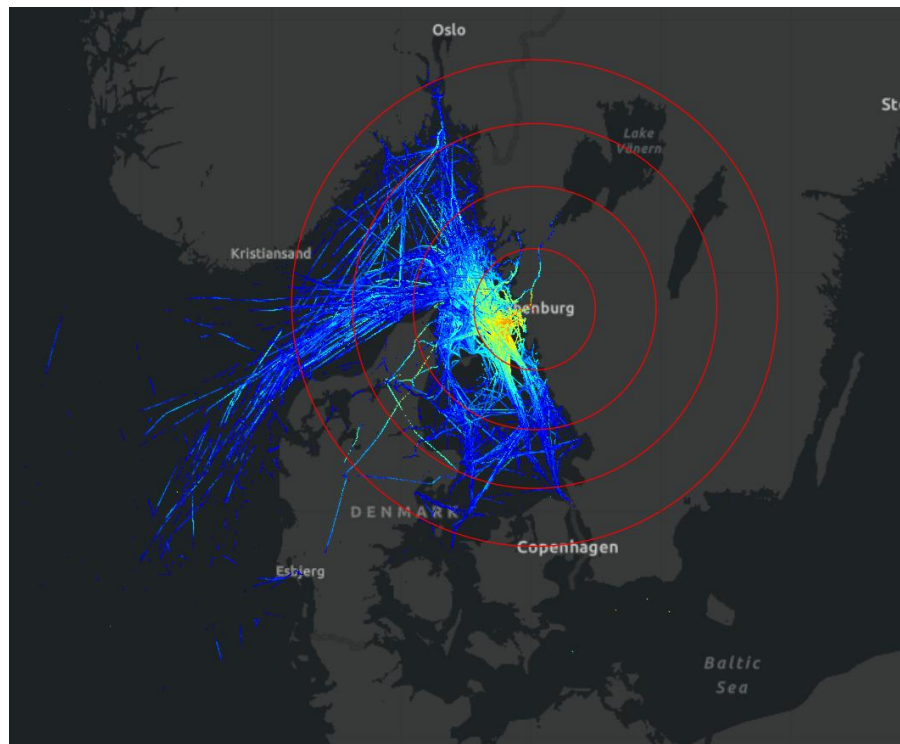


*Image mapping -> 3D-model used for re-construction*

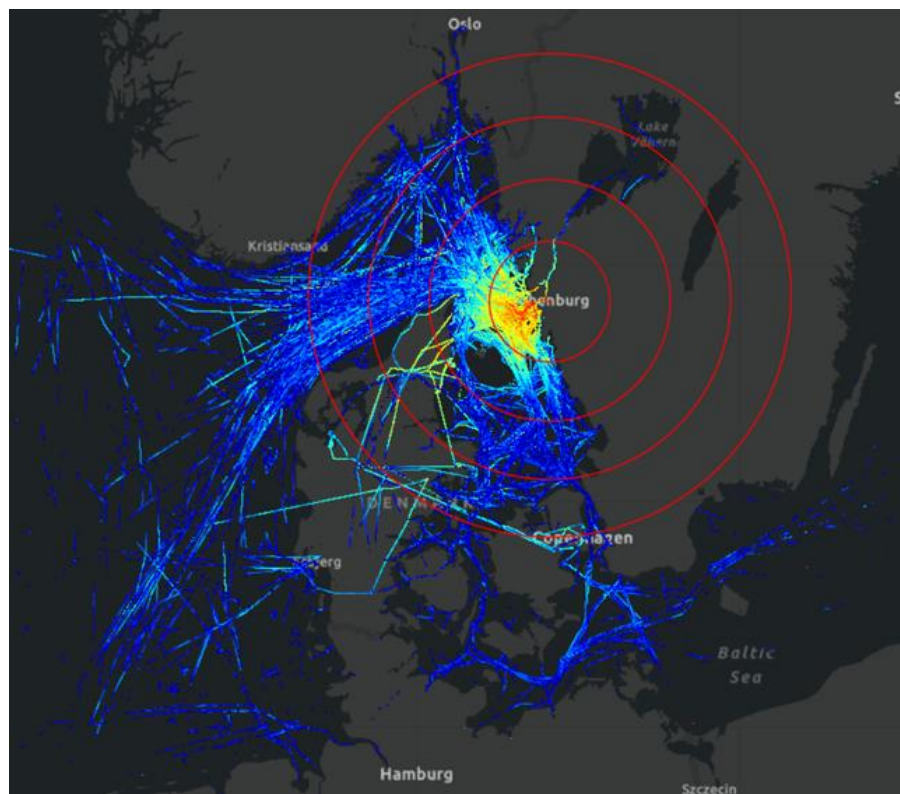
## **5. Renewal of AIS base stations**

A program to renew all AIS base stations to make them VDES ready is ongoing with a rate of 10-15 base station being renewed annually. The AIS base stations share infrastructure with coastal VHF radio and during the renewal the whole antenna arrangements are reviewed and overhauled using a new high-performance filter for channel separation. The result is showing a significant improvement in AIS-coverage. Systematic analysis will be done to gain knowledge how different elements of the renewal contributes to the increased coverage and overall performance.





*Coverage before renewal*



*Coverage after renewal*