



Situational Awareness Object Detection and Classification

Knut Eilif Husa / Henrik Foss

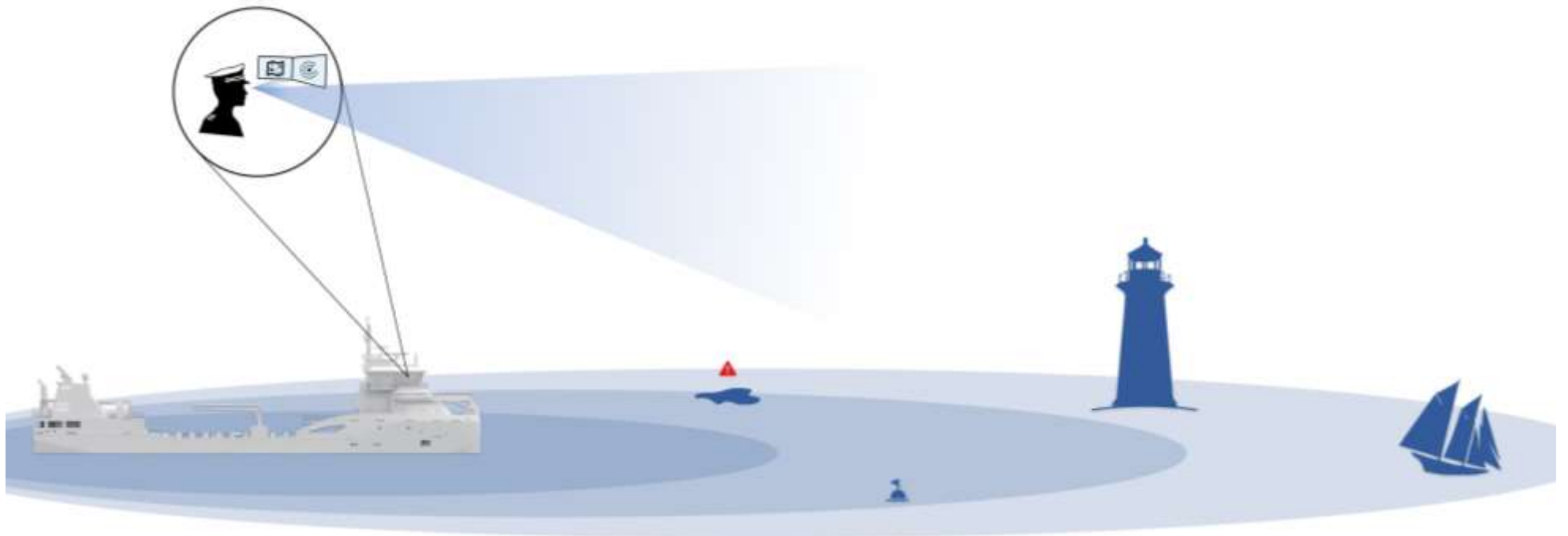
Navigating the Future of European Waters with Autonomous Innovation

7 November 2023, Rotterdam

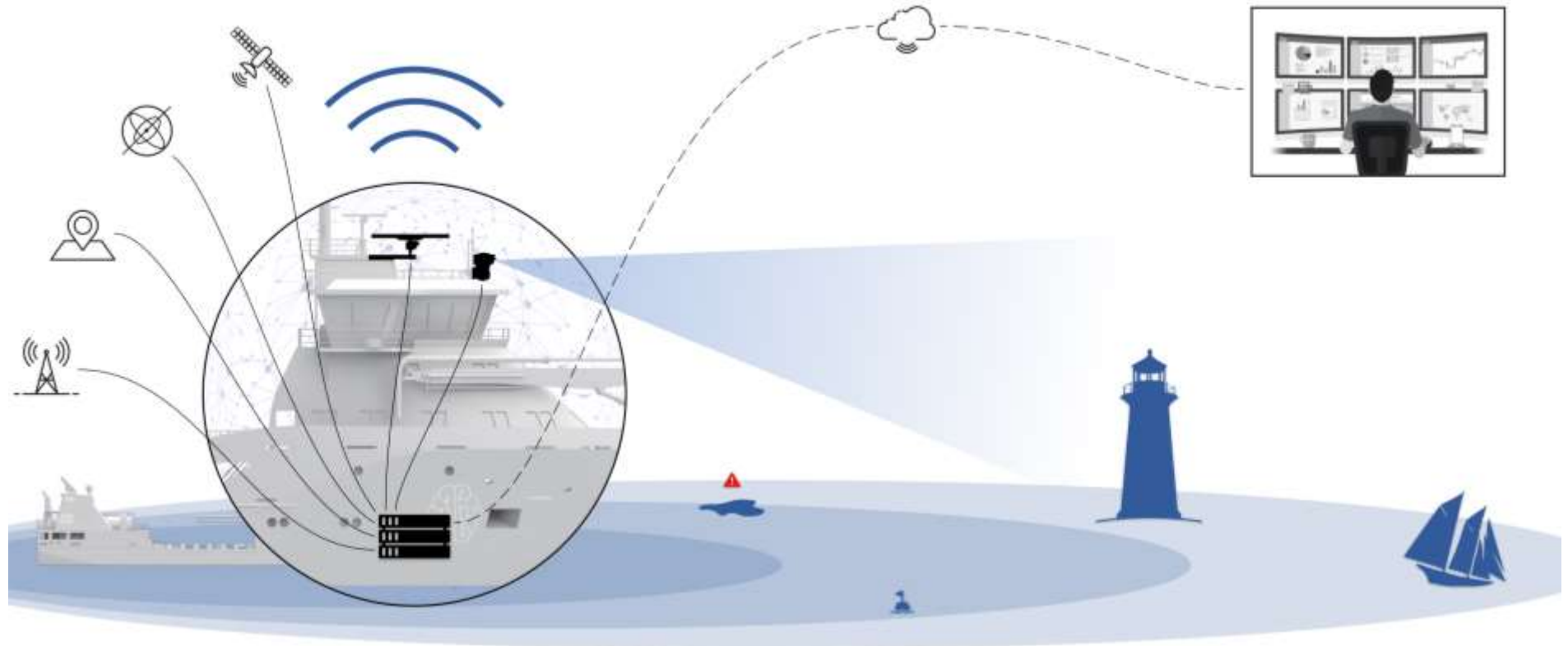


These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreements N° 815012, 859992, 861678.

Situational Awareness



Situational Awareness



Topology



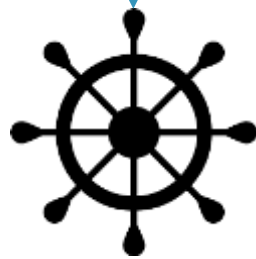
Radar

Electrooptical

AIS

Position & Attitude

SeaAware



Autonomous Navigation System

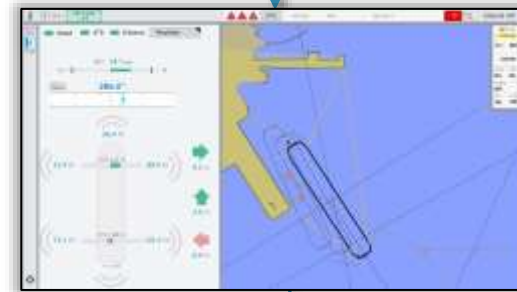


Chart Display w/instruments



Augmented Reality Display



Different levels of electronic lookout



Advisory
Increasing efficiency
and safety



Reduced Manning
Reduced manning on
bridge



Remote
Enabling SA for remote
vessel control through
ROC



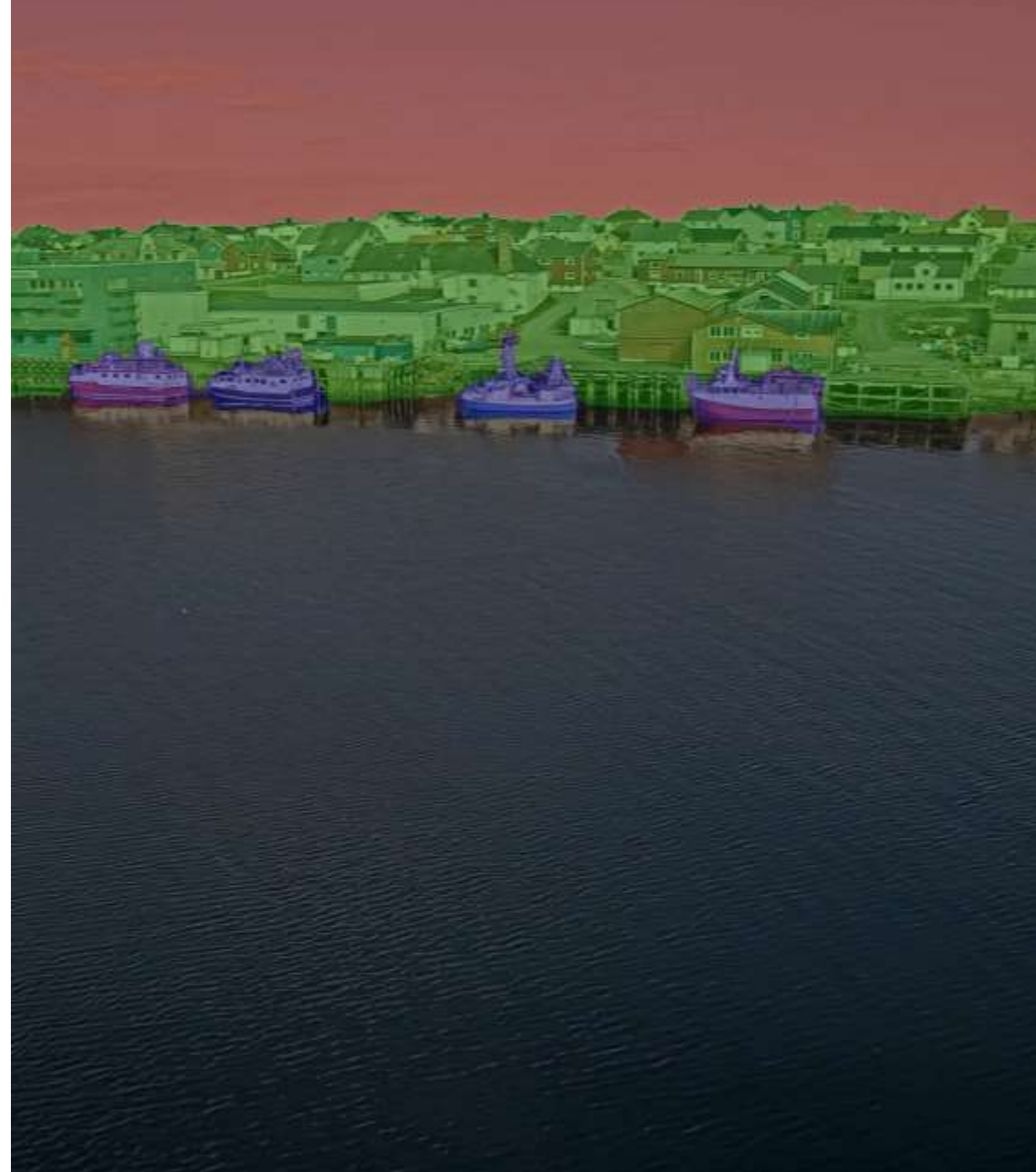
Autonomous
Enabling SA for
autonomous vessel
with ROC support



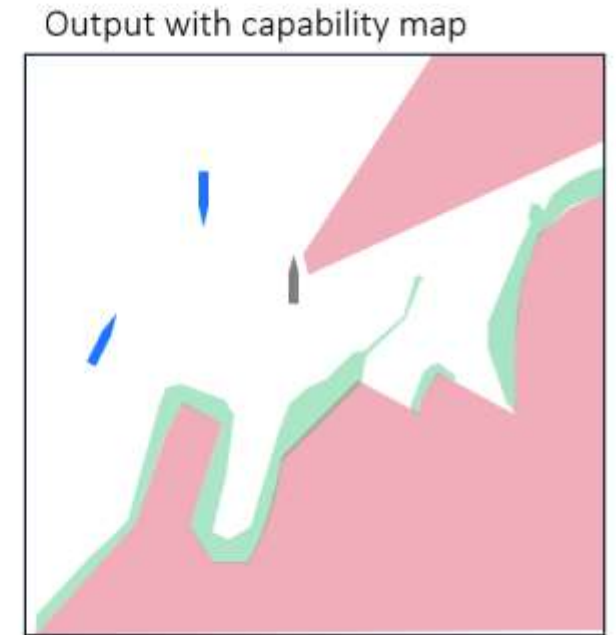
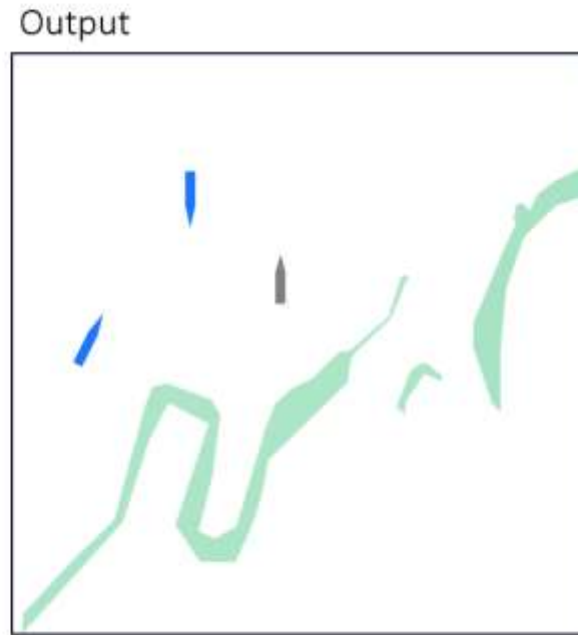
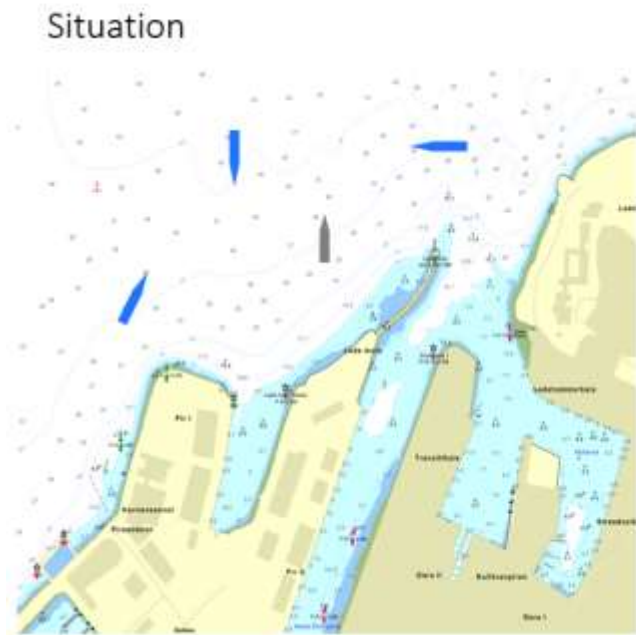


KONGSBERG SeaAware

- Obstacle Detection, Tracking and Classification (ODTC)
- Free space mapping
- Capability mapping



KONGSBERG SeaAware



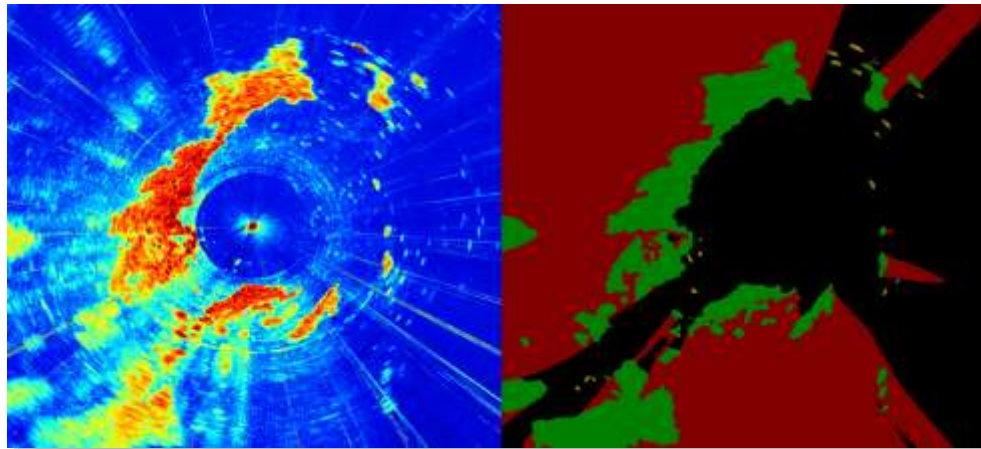
- Free space.
- Obstructed area.
- Unknown area.



KONGSBERG SeaAware



Radar



Camera





KONGSBERG ProximityView

- Reliable, bandwidth efficient transfer of visual situational awareness
- Overlay of relevant navigational information through augmented reality
- Electronically stabilized viewpoints







Thank you

Rotterdam Ahoy
7 November 2023



These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreements N° 815012, 859992, 861678.