SeaAware AR
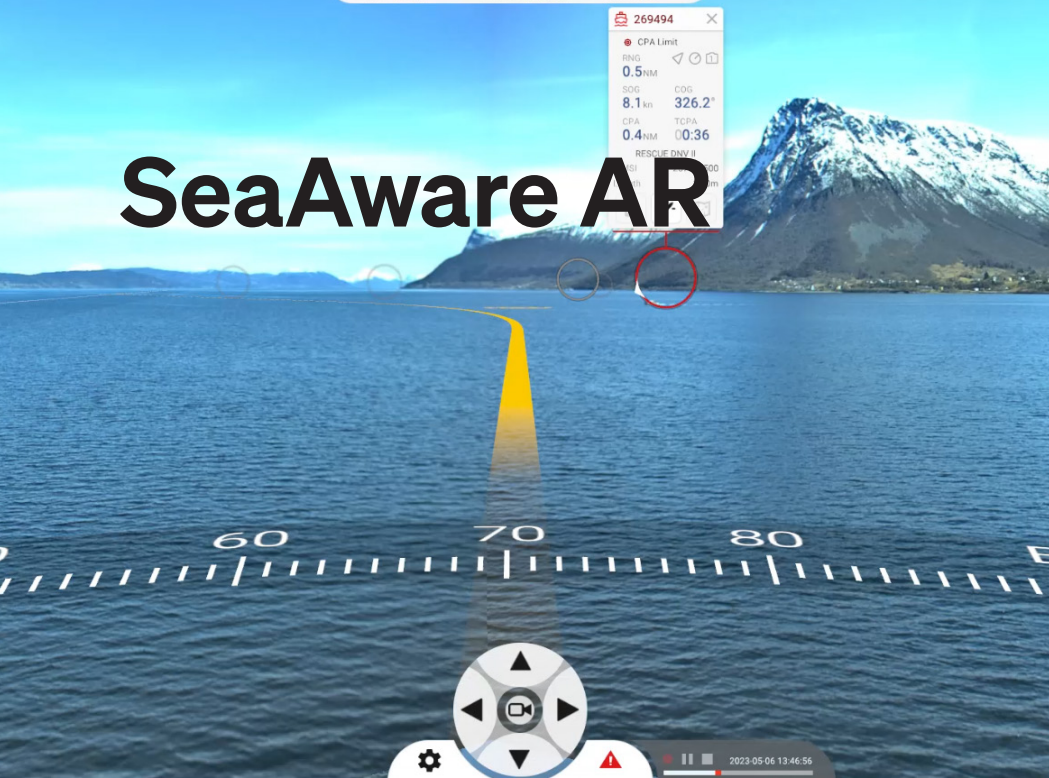

Perception system

SeaAware AR is a sensor fusion system that improves situational awareness for maritime operations. It consists of a Processing Unit including software, providing a clear view of a vessel's surroundings. The output integrates with bridge systems, Remote Operating Centres (ROC) or Autonomous Navigation Systems (ANS), supporting safer and more efficient operations.

The system combines data from multiple vessel sensors, including cameras, radar and AIS and creates a unified, real-time presentation of the vessel's environment based on the connected sensors. It integrates with existing chart and display systems onboard or at remote locations.

Artificial intelligence

SeaAware AR leverages deep neural networks to interpret visual data from both camera and radar systems, delivering a comprehensive understanding of obstacles, structures, terrain, and sensing capabilities. Our advanced radar processing directly accesses raw data from the radar antenna, enabling a deeper analysis of noise and false echoes. This approach eliminates the need for extensive manual tuning, providing a more accurate and reliable situational awareness.

Data recording

The system supports data archiving and event-based recording of sensor data. This allows operators to access past data for analysis and supports compliance and training needs.

Augmented reality

Experience enhanced situational awareness with dynamic Augmented Reality (AR) visualizations that display surrounding vessels, route guidance and hazard identification directly onto electronically stabilized camera feeds. This advanced overlay technology enables real-time visual assessment of navigational risks, empowering operators to make safer and more informed decisions.

FEATURES

- Multi-sensor obstacle detection, tracking & classification
- Steel-to-steel measurements from vessel to land/quay
- Raw radar processing, removing the need for manual tuning
- Interfaces a wide range of camera and radar systems
- The number and type of sensors and their placement can be adjusted to meet a wide range of coverage requirements
- Online capability awareness
- Server/client architecture, allowing multiple clients to independently operate their viewpoints, both locally and remotely
- Motion stabilized AR viewpoints
- "Smart binoculars" through Pan-Tilt-Zoom (PTZ) integration
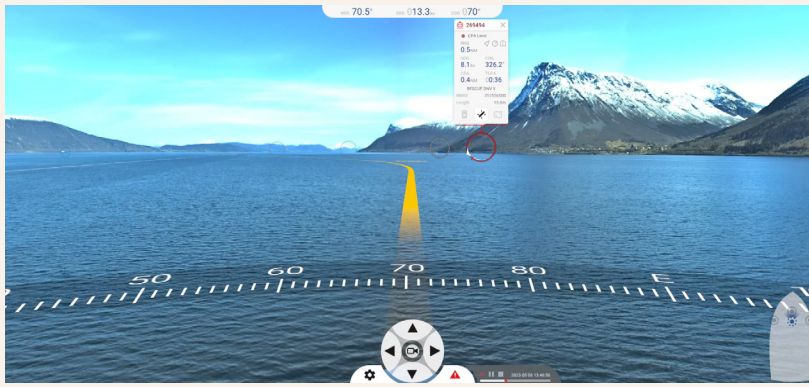
Technical specifications

SeaAware AR

Functionality
Detection and classification range depends on sensor setup.
Distance to land/quay depends on sensor setup.
Stitching of up to 16 camera sources.
Direct screen output through HDMI.
Remote screen output to Proximity View 100 Remote client.

Input/output
6 x Gigabit Ethernet on the rear I/O panel
2 x USB 3.0 headers for front panel access
6 x USB 3.0 ports on the rear I/O panel
1 x PS/2 KB/Mouse combo port on the I/O backpane
8 x DisplayPorts on the rear I/O panel

Weight and dimensions
Dimensions incl. handles	177 × 479 × 386 mm
Rack size	4 U
Weight	14.5 kg

Power specifications
Supply voltage	100 - 240 VAC, 50/60 Hz
Power consumption	1000 W, max.

Environmental specifications
Operating temperature	+5 °C - +55 °C
Storage temperature	-20 °C - +70 °C
Humidity	< 95 %

Standards and regulations
Electromagnetic compatibility, immunity/emission	IEC 60945/EN 60945, IACS E10

Product safety
Compliance to LVD	IEC 62368-1/EN 62368-1

Specifications subject to change without any further notice.