

AWARION[®]

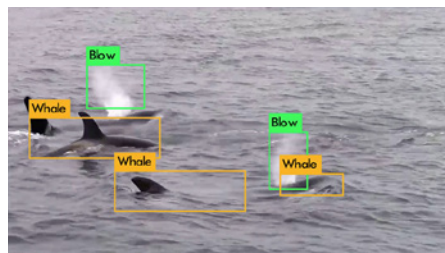
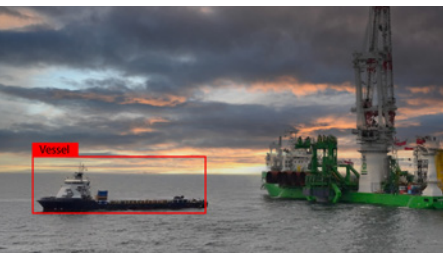
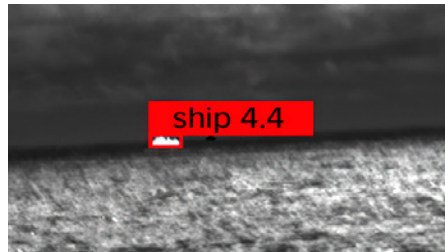
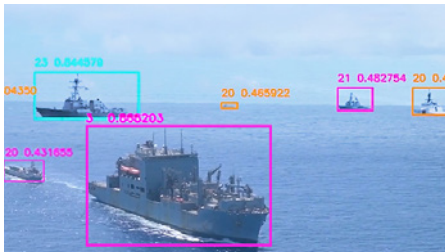
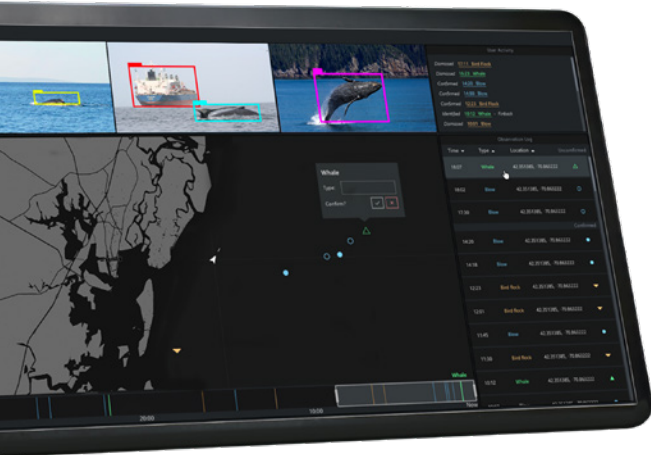
Autonomous Lookout System



Passive sensing and perception

The Awarion[®] Autonomous Lookout System uses advanced AI and computer vision to detect, classify, localize, and track obstacles 24 hours per day with infrared and visible light cameras. Our AI-powered software system transforms any camera into a smart camera by making sense of what it sees and sharing the information through a map-based user interface designed to help crews analyze video data faster and respond more efficiently. Awarion enhances situational awareness and decision-making for crewed, uncrewed, and autonomous vessels.

Human lookouts can suffer from fatigue and distraction. Awarion's algorithms never tire. They perform advanced analyses, including trajectory modeling and threat assessment.



Contemporary autonomous navigation approaches rely on active sensing modalities such as lidar, radar, and acoustics to gather observations of their environment. These modalities, however, can reveal both the vehicle's presence and capabilities to adversaries. Awarion enables safe and inconspicuous operations by vessels. Passive detections inform safer navigation and situational awareness to both human operators and autonomous algorithms.

Detecting what radar can't see

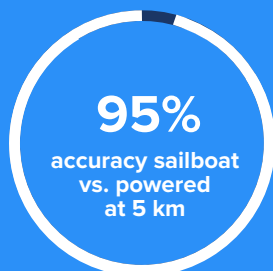
Electro-optical and infrared (EO/IR) methods provide much greater detail and resolution than radar. With EO/IR, Awarion can see what radar can't see, such as a whale's blow or surfacing, and can perform object classification in real time even through darkness, fog, or other conditions.



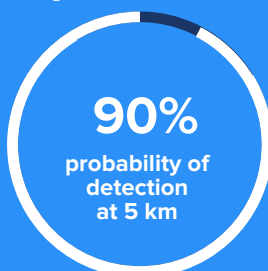
Performance metrics

Based on testing with real-world data and targets

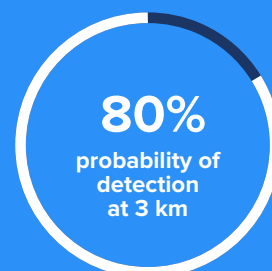
Vessel classification



Ship detection



Whale detection



Detection capabilities are affected by the type of camera used, weather conditions, and the size of the target.

Flexible configuration



Situational awareness analytics software

The Awarion product consists of a core software component, which can be delivered as a standalone product or as part of an integrated camera system.



Camera agnostic

Awarion has been run successfully on a variety of camera models (e.g., FLIR M-Series, SeaFLIR, Blackfly, Boson, Current Corp, and Carnegie Robotics).



Pointable smart camera software

In addition to analyzing video, Awarion can control a PTZ camera to regularly sweep 360 degrees and autonomously deliver follow-up observations.



Multi-camera integration

Multiple cameras with fixed views can have their output combined to form a constant 360-degree view.



Advantages of UI

Awarion's UI can be run locally or remotely and enables users to review and annotate objects of interest as the images are displayed on the map view.



Software updates

We regularly update Awarion's detectors with the newest deep neural network (DNN) architectures to improve accuracy and speed.

AI monitoring services for maritime and beyond

Maritime vessels need an accurate operational picture to navigate and ensure safety. Awarion complements and supports human lookouts and marine radar systems on military and commercial vessels in navigating safely and avoiding whales. Awarion's autonomous AI capabilities will help you avoid vessel strikes, reduce costs, comply with environmental requirements, and reduce crew time spent on highly manual and repetitive tasks.

Awarion's award-winning capabilities are now available for custom ground applications. We've applied Awarion's AI-driven perception to ground-based autonomous systems, enhancing personnel safety and situational awareness in military and security operations.