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Ocean Surface Layer Observations

Results in Brief


Detection of objects on and beneath the ocean's surface

The world's oceans contain many objects floating in the surface layer, putting ships and offshore platforms at risk. An EU-funded initiative developed a state-of-the-art system capable of clearly detecting these threats.



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Most objects above the surface layer can be detected, identified and tracked by satellites, ships and offshore platforms using radar and other sensing systems. However, objects in the surface layer, such as small boats, swimmers, buoys and debris cannot be properly observed by any of the conventional sensor technologies, particularly in rough seas.


The [OSLO](#)  (Ocean surface layer observations) project developed a prototype sensor technology for surveillance of the ocean surface layer. The prototype demonstrated a number of scenarios that reflected the needs of end users. These were converted to a list of functional requirements, resulting in the chosen system architecture.

Key to the development process was the ability to understand the challenges facing the different sensors that could be added to support the main laser radar (LADAR)

sensing system. This was particularly true for the most demanding requirements like all-weather/all-day operations and sensing very long distances from a ship.

Project partners created a demonstration system and tested it for safety, security and navigational applications. The results were far beyond the capabilities of conventional sensors. One vital requirement was that the LADAR system needed to be safe for the eyes.

Following various trials all functional units, including the main laser sensor, were installed on a large commercial vessel and successfully integrated and tested with other maritime sensors. Researchers focused on the system's ability to detect and track very small targets on the water and to locate underwater test objects at various depths beneath the surface.

OSLO also filed three patents: a system for monitoring the maritime environment, a laser detection and ranging device for detecting an object underwater and a system for detecting an object on the water surface. A video demonstrating the system can be viewed at [here](#) .

Keywords

Sensing systems, OSLO, ocean surface layer, laser radar, lidar, lidar

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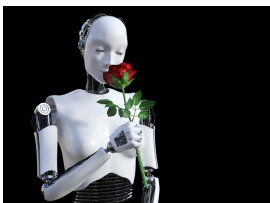




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Project Information

OSLO

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[Project website](#) 

Project closed

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