



Ladar™
by *Ladar Ltd*



IN BRIEF

TARGET APPLICATIONS

✂ Maritime security and safety surveillance:

@ ocean surface – floating containers, rouge waves, ocean currents, fishing nets, markers and other smaller objects

@ water column – reefs, shoals, ice floes, pipes, chains, mammals, fish stock, swimmers, scuba-diver

✂ Offshore operations (oil & gas); oil spills (at surface or in the water column), gas leakages (in the water column)

✂ Fishery; fish stock, inventory monitoring, mammals

✂ Environmental monitoring; ocean waves, currents, winds, sea ice floes

✂ Dredging, offshore wind farms, airborne surveillance

BENEFITS

✂ Increase of situational awareness at close range at the surface layer and underneath

✂ Assistance in decision making - crew can act instead of react

✂ High precision/resolution of observations in real-time

✂ Certified (DNV-GL) for maritime /offshore deployment

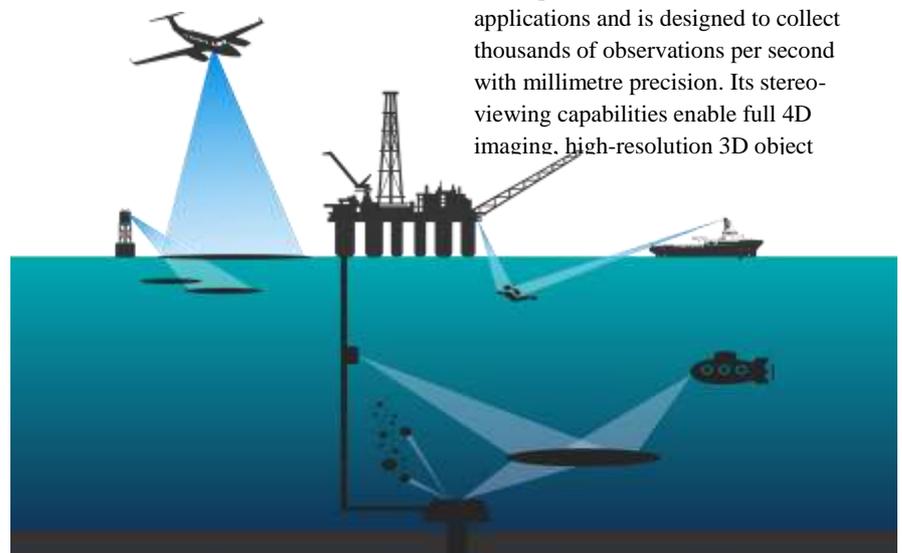
Overview

The ladar system is specifically designed for maritime and offshore operations and enables accurate and real-time surveillance of the ocean surface layer, the water column and the seafloor.

The ladar system detects, characterises, classifies and tracks various types of objects in real time, ranging from humans to ice floes, floating debris and oil spills. Due to its unique characteristics, the ladar system is suitable for a wide variety of applications and deployments.

Deployment

There are several ways to deploy the ladar system: on a vessel, offshore platform or structure on the ocean surface; on a structure or ROV (remotely operated vehicles) in the water column; at a well or along a pipeline at the seafloor, or on an aircraft or UAV (unmanned aerial vehicle, drones). The most suitable type of deployment depends on the application at hand. For a full list see www.LADAR.co.uk



Key features

- **Water penetration** - Ladar penetrates the ocean surface into the water column, which makes it possible to detect various types of submerged objects
- **4D Imaging** - gathering spatial observations allows tracking in real-time
- **High-resolution** - spatial and temporal
- **Speed independent surveillance** - speed of light through water (unlike sonar which is severely restricted by speed)
- **All weather and sea state observations**

Technology

Ladar is an acronym for 'light detection and ranging' and is also known to many as 'lidar'. A ladar system sends laser pulses with a specific frequency and measures the travel time and intensity of the reflected laser pulse to determine the distance from the sensor to the object (which reflected the pulse) and its characteristics.

The Ladar Ltd system is specifically developed for maritime and offshore applications and is designed to collect thousands of observations per second with millimetre precision. Its stereo-viewing capabilities enable full 4D imaging, high-resolution 3D object