



# OCEAN<sup>®</sup> VISUALS

**OWL<sup>™</sup>** and **OWL MAP<sup>™</sup>** -  
integrated sensor system  
and software for real-time  
oil spill detection

# OWL™ and OWL MAP™

Ocean Visuals has developed integrated solution for real-time detection of oil spills in marine environment. Our technology is based on 25 years of R&D and is patent-pending.

**OWL™** is essentially based Hyperspectral Laser Induced Fluorescence (HLIF) based lidar (LiDAR i.e. Light Detection and Ranging). As oil is intrinsically fluorescent and emits light in blue-green spectral range when illuminated by UV light, the oil is easily distinguished from other substances in the water. Using the Hyperspectral curve of the emitted light, we can “fingerprint” the sample, and thus receive an accurate identification of oil category and type (crude oil, hydraulic oil etc) in real-time on the spot, with no samples or lab analysis required.



**OWL™** is the world’s smallest HLIF LiDAR weighing 40 kg with dimensions of 30x40x60 cm and with measurement range of 15-30 meters. The detector is weatherized to withstand harsh weather such as extreme cold and is well suited for arctic conditions.

The data is visualized on **OWL™ MAP** - a map-based graphic user interface in real-time and is available on web and iOS platforms and as desktop applications (Windows, Linux). The map user interface is built to handle low bandwidth situations, with possibilities for offline maps combined with online up to date information. The solution can be used on workstations onboard the vessels or oil rigs as well as being a strategic management tool on shore. The **OWL™ MAP** allows to set alerts on different user levels and easy reporting. The data is securely stored in a cloud database.



# CUSTOMER BENEFITS

All current technologies used for oil spill detection have their limitations. There are no other technologies capable of detecting oil in icy Arctic conditions. OWL™ allows customer to:

- Detects oil between the ice floes, ice slush and camouflaged oil, thus especially suitable for Arctic conditions
- Classifies type of oil in the water (crude oil, hydraulic oil etc)
- Measures the thickness of the oil on water
- Detects oil under the water surface (submerged oil)
- Operates in light and complete darkness and in harsh weather conditions
- No false alarms due to the fact that OWL™ detects oil specifically by sensing direct light response induced by laser beam hitting oil molecules in water
- Parts per million (ppm) measurement sensitivity level suitable for post-cleaning monitoring
- Can be used for produced water monitoring
- Real-time data feed
- Complete solution consisting of oil detector and oil spill management software

Technology is patent pending.

# USE CASES

OWL™ can be mounted as a fixed installation:



**On the side of a ship/vessel**



**On offloading buoy**



**On an oil storage facility**



**On an oil rig**



**Produced water discharge area**



**Any other floating production facility**

# REFERENCES

Technology has been tested with:



KYSTVERKET

The Norwegian Coastal Administration vessels O/V Skomvær and O/V Utvær patrolling in Norwegian waters



HURTIGRUTEN

Hurtigruten ASA on board of a coastal cruise ship



In joint projects together with US Coast Guard, CEPPOL (France), Grand River Authorities in Ontario and Estonian Border Guard



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