Miros Oil Spill Detection

Early On-Site Oil Spill Detection and Efficient Response

Miros Oil Spill Detection (OSD) is optimized for both oil spill surveillance and oil spill response delivered as a dual-mode system. Miros OSD is thoroughly verified in oil-on-water exercises and used by major oil operators and authorities around the world.

The OSD Surveillance mode is designed to provide automatic alarms and situational awareness when an oil spill appears on the ocean surface. The system automatically detects oil spills and shows them alongside AIS targets and IR/daylight camera views. Offshore installations and vessels, as well as coastal and port sites, are given early warning capabilities, where data is provided to support response decisions and planning.

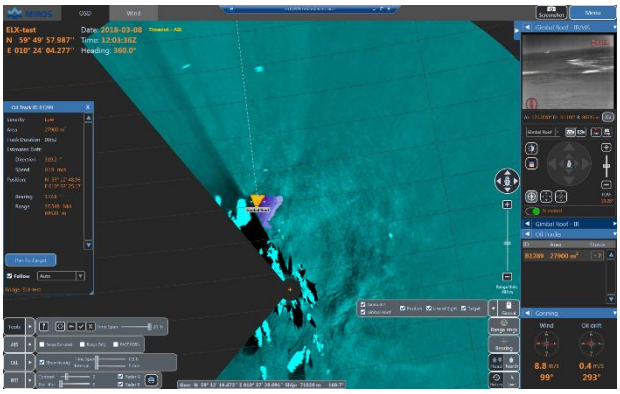
Miros OSD in Recovery mode will guide the response vessel towards the part of the oil slick where the highest recovery efficiency is obtained. The thicker part of the oil slick is identified with support of IR and visible spectrum sensors, aiding correct positioning of booms, skimmers and dispersant application.

Key Features:

- Automatic detection with high detection rate and low false alarm rate, day & night
- Up to 8 cameras with 2 video streams each,
- Up to 2 X-band radars
- Historical data with playback mode
- Camera tracking of detections, AIS targets and drift buoys
- Oil drift prediction, AIS targets, wind, current, wave and ice data

Essential For:

- Continuous surveillance with low manual interaction
- Efficient day and night oil surveillance & recovery operations
- Spatial positioning and thickness estimation
- Efficient field solutions with multi-clients and remote operation
- Post-incident analysis



The display shows present and historical oil spill detections, wind, sea current data and oil drift direction and speed. Wave and ice information can be included as an option.

Positions and shapes of radar detections are overlaid by AIS targets and drift buoys, with historical and present positions and short-term drift prediction.

Optionally, IR and visual cameras aid the operator in oil spill verification, identification of the thicker part of the oil spill and estimation of the oil spill thickness and volume.

The Miros OSD system receives data input from X-band marine radars, IR/Daylight cameras and from existing wind, GPS, gyro and AIS sensors.

Alarms are managed with configurable thresholds, operator acknowledgement and alarm history.

SPECIFICATIONS

Miros Oil Spill Detection v5.9

Detection Mode	Characteristic
Surveillance mode:	Low false alarm probability
Recovery mode:	High detection probability

Detection range by radar Typical range depending on antenna height and wind (Operational within 2 – 12 m/s):

Radar pulse mode	Pulse length	$Range_{max}$
Short pulse:	50 - 80 ns	2 – 4 km
Medium pulse:	250 - 300 ns	4 – 7 km

IR camera range: Typical range depending on camera height and atmospheric conditions:

Target	Size	$Range_{max}$
Oil	-	0,9 – 6 km
Detect Person:	1,8 x 0,5 m	0,8 – 1,2 km
Detect Boat:	4,0 x 1,5	2,2 – 3,9 km

Tracking:

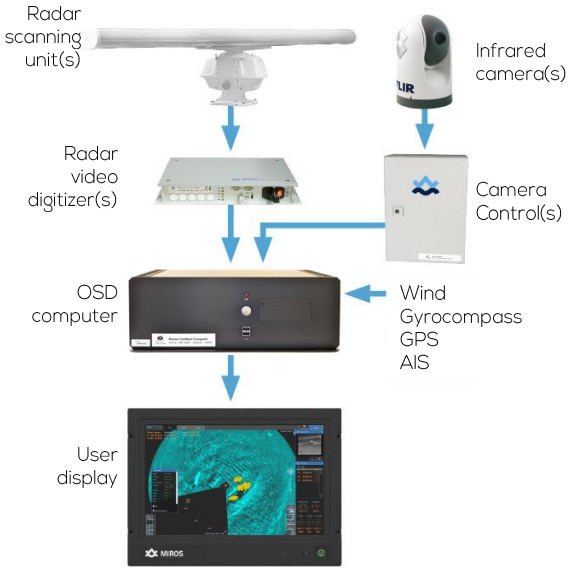
Radar:	Multiple oil spill targets
Camera:	Multiple oil spill targets, AIS targets and drift buoys

Input Interfaces:

Gyro Heading:	NMEA-0183
GPS Position, time:	NMEA-0183
Wind:	NMEA-0183
AIS	NMEA-0183

X-band radar interface:

Ant. Beam Width:	1.3° or less (6 feet or more).
Ant. Rot. Speed:	> 15 RPM.
Ant. Mount. Height:	> 15 m above sea level.
Pulse Mode:	Short pulse (50 - 80 ns) or Medium pulse (250 - 300 ns)
Pulse Rep. Freq.:	1000 Hz or higher.
Output Power:	10 kW or more.
Radar Signals:	Raw video, sync, heading marker and azimuth.
Antenna Polarization:	Vertical (preferred) or Horizontal



Ouput interfaces:

Data:	Ethernet; ftp on TCP/IP
Alarm:	Visual, sound

Environmental specifications outdoor equipment:

Temperature:	-30°C to +50°C
Humidity:	0 – 100 %RH condensing
IP (outdoor equipment):	56

Electrical Data:

Supply voltage:	100-240 VAC 50-60 Hz
Power consumption:	Nom: 250 W, max 300 W (basic system)

Ordering information:

Basic System	OSD using 1 existing radar
Additional Radar Option	Integration of 2nd existing radar
IR Option	Up to 8 gyro-stabilized, dual cameras with IR and daylight sensors
Dedicated radar	Horizontal or vertical antenna polarization, 12 kW or 25 kW transceiver, 6,5' or 8' antenna(s), 24 RPM or 42 RPM
Software options	Multiclient system, Wave measurement, Ice detection

Specifications are subject to change without prior notice.