

AUTONOMOUS SURFACE VESSELS

OIL SPILL RESPONSE USV RANGE

Purpose-built unmanned surface vehicles for oil spill detection, monitoring, containment and response — engineered for the North Sea & Baltic Sea.



DETECT

Identify oil spills in real time using advanced onboard sensors



RESPOND

Support rapid containment, skimming and recovery operations



PROTECT

Minimise environmental impact on sensitive coastal waters



PERFORM

Operate reliably in harsh, GNSS-challenged conditions

OIL XPLORER 1 · HARBOR

OIL XPLORER 2 · OFFSHORE

RAPID. RELIABLE. RESPONSIBLE.

Engineered in Europe. Operated anywhere.

Commercial Proposal
Prepared for [Buyer / Organisation]

01 BUILT FOR THE NORTH SEA & BALTIC SEA

Engineered to operate in the unique and challenging conditions of Northern Europe — from busy shipping lanes and offshore energy infrastructure to sheltered harbours and archipelagos.



Harsh Environments

Built to withstand cold, wind, rain, sea spray and icing.



Low-Temperature Operation

Reliable performance in temperatures down to -20°C.



Saline Corrosion Protection

Marine-grade materials and coatings for a long service life.



Designed & Tested in Northern Europe

Field-proven in the North Sea and Baltic Sea.



AREAS OF OPERATION

Specifically designed for operational oil spill response in the coastal, archipelago and offshore environments of the North Sea and Baltic Sea.



Offshore Oil & Gas



Coastal Waters



Archipelago & Islands



Ports & Harbors



Rivers & Inlets



Compliant with IMO, SOLAS, MARPOL & COLREGs frameworks for commercial maritime operation.

MEET THE RANGE

A complete solution for every mission — from offshore detection to harbor-side recovery.



OFFSHORE RESPONSE USV

OIL XPLORES 2

BUILT FOR OPEN SEA MISSIONS.

- ▶ Long endurance & extended range
- ▶ Built for open sea conditions
- ▶ Persistent situational awareness
- ▶ Advanced sensors & autonomy
- ▶ Supports large-area monitoring and incident response

7.2 m	12+ hrs	35+ kts	150 kg
Length	Endurance	Speed	Payload



HARBOR RESPONSE USV

OIL XPLORES 1

COMPACT. AGILE. READY WHEN IT MATTERS.

- ▶ Compact & highly manoeuvrable
- ▶ Operates in tight & confined spaces
- ▶ Silent electric performance
- ▶ Rapid deployment
- ▶ Ideal for marinas, ports & coastal operations

1.6 m	6+ hrs	6 m/s	30 kg
Length	Endurance	Speed	Payload



Modular Payloads

Interchangeable mission modules



Autonomous

Remote & autonomous operation



GNSS-Challenged

Operation with or without GNSS



Secure by Design

Encrypted communications



TASK THEM TOGETHER, OR ALONE

Run Oil Explorer 1 and Oil Explorer 2 as independent single-vessel deployments, or link them as a coordinated two-vessel response for full offshore-to-harbor coverage — see page 11.

ONE ECOSYSTEM. TWO PLATFORMS. ENDLESS POSSIBILITIES.

XPLORES 2
OFFSHORE RESPONSE

OFFSHORE RESPONSE USV

OIL XPLORES 2

OFFSHORE OPERATIONS. EXTENDED RANGE. MAXIMUM IMPACT.

Engineered for offshore oil spill response in open-sea conditions, the Oil Xplorer 2 delivers persistent situational awareness, oil detection, gas monitoring and autonomous operations — even in GNSS-challenged environments.

KEY FEATURES

- **Long Endurance & Extended Range**
12+ hours on station with 100+ nm operational range.
- **Low Acoustic & Visual Signature**
Electric propulsion for discreet, low-disturbance operation.
- **Advanced Sensor Integration**
EO/IR, radar, gas and oil-detection payloads fused in real time.
- **Real-Time Data & Secure Comms**
2.4GHz RC, 4G/5G and optional SATCOM links.
- **Autonomous / Remote Operation**
Configurable autonomy from manual control to full mission execution.

IDEAL FOR

OFFSHORE OIL & GAS

COASTAL PATROL

WIND FARMS & ENERGY

GNSS-DENIED OPS

7.2 m

Length

12+ hrs

Endurance

35+ kts

Max Speed

150 kg

Payload

100+ nm

Range

TECHNICAL SPECIFICATIONS

DIMENSIONS & PERFORMANCE

Length	7.2 m
Beam	2.3 m
Displacement	~1,600 kg
Draft (no payload)	0.35 m
Payload Capacity	Up to 150 kg
Endurance	12+ hours
Max Speed	35+ knots
Cruise Speed	20–25 knots
Range	100+ nm

SYSTEMS & SENSORS

Propulsion	Twin electric drives
Power	Dual 12/24 VDC circuits
Control	2.4GHz RC / 4G/5G / SATCOM (opt.)
Autonomy	Level 2–4 (configurable)
Navigation	GNSS / INS / DVL / LIDAR
Sensor Suite	EO/IR, radar, gas, oil detection, AIS
Operational Temp.	–15°C to +50°C
Hull Material	Marine-grade composite
IP Rating	IP67

CORE PAYLOAD SYSTEMS



EO/IR Camera



Maritime Radar



Comms Suite



Autonomous Systems

KEY MISSION CAPABILITIES

OIL SPILL DETECTION

SITUATIONAL AWARENESS

GNSS-DENIED OPERATION

HAZARDOUS GAS ASSESSMENT

ENVIRONMENTAL MONITORING

WATER RESCUE (OPT.)



BUILT FOR GNSS-DENIED OPERATION

INS/DVL/LIDAR fusion maintains navigational accuracy under jamming, spoofing or signal loss.

Specifications subject to change. Custom configurations available on request.

OIL XPLORED 1

HARBOR RESPONSE

HARBOR RESPONSE USV

OIL XPLORED 1

COMPACT. AGILE. READY WHEN IT MATTERS.

Purpose-built for harbor and port environments, the Oil Xplorer 1 enables rapid deployment for oil spill detection, containment, recovery and monitoring — with silent, electric performance.

KEY FEATURES



Long Endurance & Extended Range

6+ hours continuous operation with integrated Li-ion power.



Low Acoustic & Visual Signature

Silent electric drives for sensitive port & marina work.



Advanced Sensor Integration

IR/UV oil detection and modular recovery payloads.



Real-Time Data & Secure Comms

2.4GHz RC with optional 4G/5G connectivity.



Autonomous / Remote Operation

Manual to fully autonomous mission control.

IDEAL FOR

MARINAS & BERTHS

PORTS & TERMINALS

INLAND & RIVERS

FUEL JETTIES

1.6 m

Length

6+ hrs

Endurance

6 m/s

Max Speed

30 kg

Payload

<35 kg

Weight

TECHNICAL SPECIFICATIONS

DIMENSIONS & PERFORMANCE

Length	1.6 m
Width	0.9 m
Height	0.45 m
Draft (no payload)	0.20 m
Weight (no payload)	< 35 kg
Payload Capacity	≥ 30 kg
Endurance (w/ MBES)	≥ 6 hours
Max Speed	Up to 6 m/s

SYSTEMS & PAYLOAD

Propulsion	Dual integrated electric drives
Power	Dual 12/24 VDC circuits
Battery	Li-ion, integrated in hull
Control	2.4GHz RC / 4G/5G (opt.)
GNSS Antenna	Integrated
Oil Detection (opt.)	IR/UV & fluorescence sensors
Recovery System (opt.)	Skimmer / absorbent / storage
Operational Temp.	-10°C to +45°C
IP Rating	IP67

CORE PAYLOAD SYSTEMS



Skimmer Module



Absorbent Deployer



Sample Collection



Oil Detection Sensor

KEY MISSION CAPABILITIES

HARBOR & PORT SPILL RESPONSE

MARINA & BERTH CONTAINMENT

VESSEL LEAK MONITORING

ENVIRONMENTAL SURVEILLANCE

POST-INCIDENT ASSESSMENT



BUILT FOR CONFINED-WATER WORK

Compact hull and dual electric drives allow safe, silent manoeuvring in tight quarters.

Specifications subject to change. Custom configurations available on request.

03 MISSION CAPABILITIES

One integrated platform for the full oil-spill response lifecycle — from first detection through to post-incident reporting.



Oil Spill Detection

Detect and classify oil on water using advanced onboard sensors.



Situational Awareness

Real-time data, mapping and incident visualisation.



Hazardous Gas Assessment

Measure hazardous gases before personnel deployment.



Environmental Monitoring

Water quality, weather and marine life protection.



Containment Support

Deploy and monitor booms and containment lines.



Recovery Support

Skimmer and absorbent deployment, with continuous monitoring.



Water Rescue (Optional)

Support SAR operations with thermal and visual detection.



Post-Incident Assessment

Document and report for compliance and analysis.

DETECT → ASSESS → CONTAIN → RECOVER → REPORT

Every capability above is available across both platforms and can be tasked independently or as a coordinated two-vessel response — see *Coordinated Operations*, page 11.

4–6

Sensors fused per mission

8

Capabilities, one hull

SAR

Optional water-rescue role

6

Response steps, start to finish

04 SENSORS & PAYLOADS

Modular. Integrated. Mission focused — quick interchange of sensors and payloads to match mission requirements.

DETECTION & SURVEILLANCE



EO/IR Camera

Day & night situational awareness



Marine Radar

Surface target detection



Oil Detection Sensor

IR/UV & fluorescence oil-spill detection



AIS Receiver

Vessel tracking & identification

ENVIRONMENTAL & SAFETY



Gas Detector

H₂S, VOC, O₂/O₄ hazardous gas



Water Quality Sensor

pH, turbidity, temp, dissolved oxygen



Weather Sensor

Wind, temp, humidity, barometric pressure



GNSS Antenna

RTK/PPK high accuracy

RESPONSE & PAYLOAD OPTIONS



Skimmer Module

Optional recovery payload



Absorbent Deployer

Optional recovery payload



Sample Collection Module

Optional recovery payload



Boom Deployment Support

Optional recovery payload



MODULAR DESIGN

Quick interchange of sensors and payloads to match mission requirements — one hull, many configurations.

05 CONTROL & AUTONOMY

Flexible control for every operation — from full manual override to high-autonomy mission execution.

CONTROL MODES



Manual Control

Full operator control in real time.



Assisted Control

Auto heading, speed hold and position hold.



Waypoint Navigation

Pre-planned routes with automatic execution.



Supervised Autonomy

USV makes decisions, operator stays in the loop.



Fully Autonomous

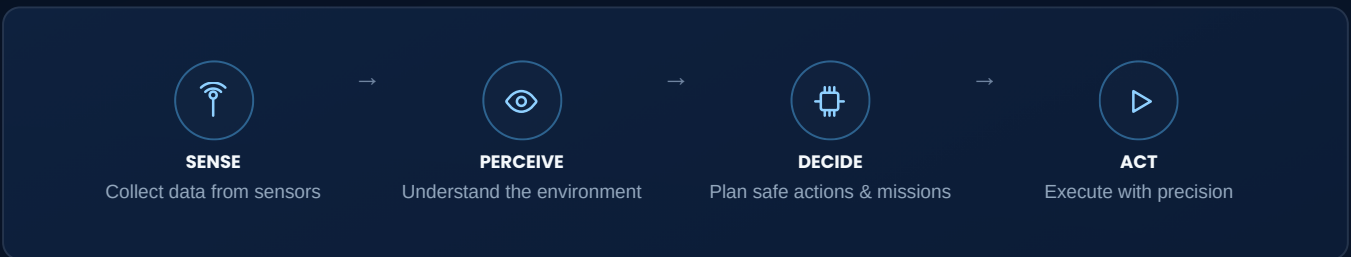
Mission executed autonomously end-to-end.



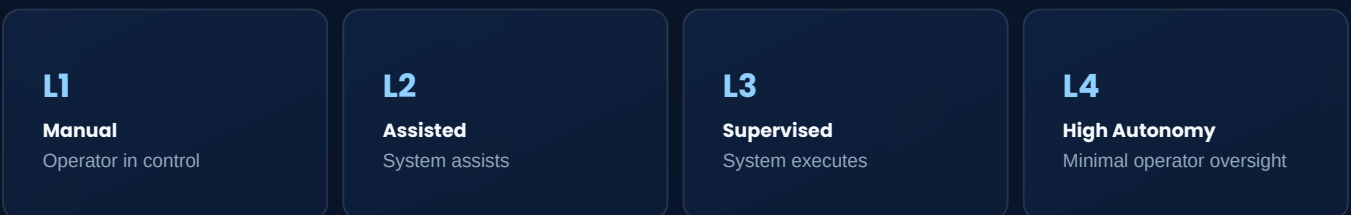
Return to Home

Automatic safe return on fault or low battery.

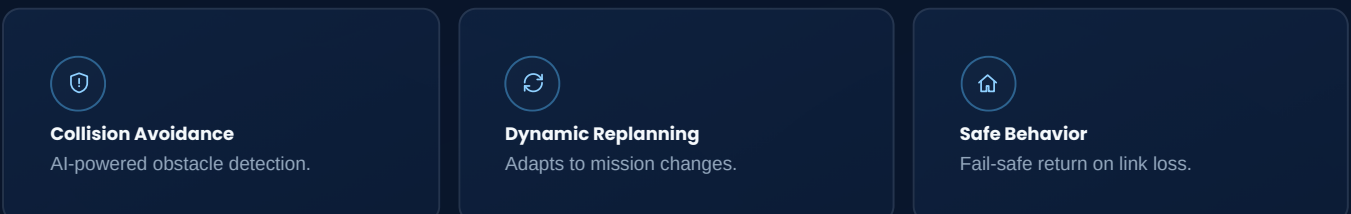
AUTONOMY ARCHITECTURE — SENSE · PERCEIVE · DECIDE · ACT



AUTONOMY LEVELS



Designed for mission continuity even in GNSS-challenged environments.



06 COORDINATED OPERATIONS

Two USVs. One team. Oil Xplorer 2 provides wide-area detection and persistent situational awareness; Oil Xplorer 1 supports local response, containment and recovery in ports, marinas and coastal waters.

OIL XPLOER 2 ROLES

- ▶ Large-area surveillance
- ▶ Oil spill detection & tracking
- ▶ Environmental monitoring
- ▶ Incident command support
- ▶ Data relay & communications

OIL XPLOER 1 ROLES

- ▶ Close-up inspection
- ▶ Containment support
- ▶ Skimming / recovery
- ▶ Sampling & monitoring
- ▶ Port & marina operations



Real-Time Data Sharing



Coordinated Operations



Extended Coverage



Mission Efficiency



Rapid Incident Response

MISSION WORKFLOW — FROM DETECTION TO RESPONSE



1. Detection

Oil spill detected by sensors or reports.



2. Assessment

Analyse extent, drift & environmental risk.



3. Planning

Define mission, assign USVs & tasks.



4. Deployment

Launch Oil Xplorer 2 and/or Oil Xplorer 1.



5. Response

Contain, monitor and recover.



6. Reporting

Generate reports and share data.

WHY SUBSEA XPLOER

A COMPLETE OIL SPILL RESPONSE ECOSYSTEM

- ✓ Field-proven design for the North Sea & Baltic Sea
- ✓ Modular payloads — one hull, many mission configurations
- ✓ Autonomous operation, including GNSS-denied navigation
- ✓ IP67-rated, marine-grade construction throughout
- ✓ Two platforms engineered to operate as one coordinated system

BUILT FOR THE DIGIMARIS PROJECT

Meeting the operational requirements of the Kymenlaakso Rescue Department, Finland, for oil spill response in the North Sea & Baltic Sea.

Delivered under the Interreg Central Baltic Programme · co-funded by the European Union.

IMO COMPLIANT

SOLAS

MARPOL

COLREGS

IP67

OIL XPLOER 2 · AT A GLANCE

12+ hrs

Endurance

35+ kts

Max Speed

150 kg

Payload

OIL XPLOER 1 · AT A GLANCE

6+ hrs

Endurance

6 m/s

Max Speed

<35 kg

Weight

Let's talk deployment.

Contact us to arrange a technical briefing, live demonstration, or discuss configuration options for your fleet.

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