
MARINE TECH
RSV
Remote Survey Vehicle

# INNOVATION & EXPERTISE

Based on expertise gained from operations in several countries, MARINE TECH engineers use this feedback to design an efficient, reliable and robust solution: the RSV - Remote Survey Vehicle.

RSV are able to carry out oceanographic missions in shallow water or offshore areas and any other operations requiring the deployment of remote sensors.

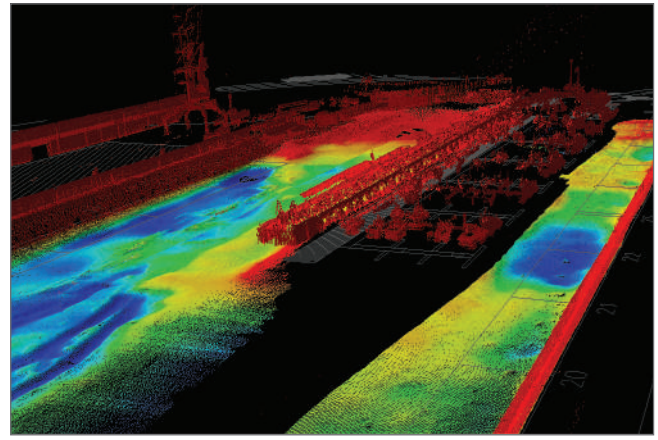
This is a patented technology (FR1301643) made in France.

# APPLICATIONS

## MARINE SURVEY AND 3D SCAN

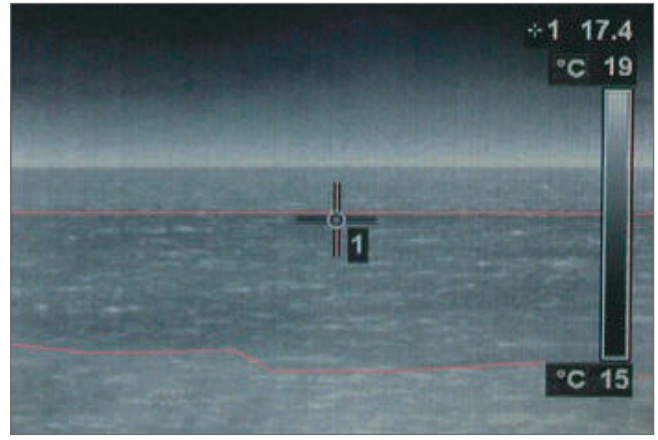
- 2D / 3D Bathymetry.
- Objects detection (shipwreck, pipeline, mines,...).
- Geophysical survey.
- Salinity measurement.
- Sea current measurement.
- Subsea works monitoring and observation.
- Aerial inspection of works.
- 3D digital twin.

## POLLUTION RESPONSE



- Access to restricted or contaminated areas (pollution sites, offshore oil platforms,...).
- Atmospheric gas and chemical measurements.
- Surface contamination measurements.
- Infrared video monitoring.
- Detection of leak.

## SURVEILLANCE AND SECURITY

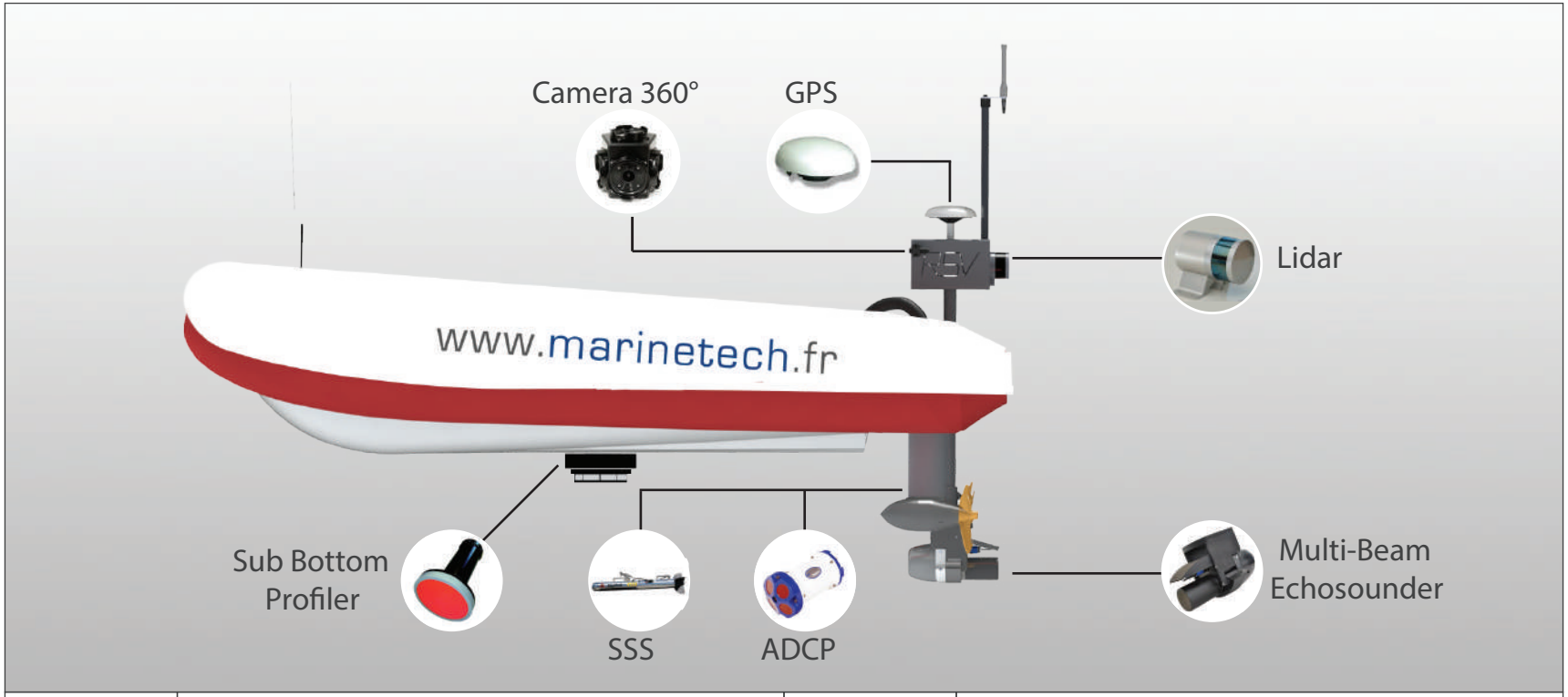



- Surveillance / Inspection day and night.
- Coastal surveillance and alert.
- Data acquisition in hostile environment.
- Message and signal transfer.
- Monitoring of submarine activity.
- Data transmission to a control center.

# OCEANOGRAPHY

With its ability to carry on multiple sensors, the RSV can record several measurements at the same time.

The communication system allows a long range control and data transfer in real time.
This is a major advantage in matter of time saving and data processing.




| SENSORS | | USES | |
|---|---|---|---|
| | Lidar | | 3D imaging of the environment |
| | Camera 360 Degrees | | Give a complet field view |
| | Multibeam Echosounder | | Seabed mapping |
| | Sub Bottom Profiler | | Sediment profiling |
| | ADCP | | Current profiling |
| | Side Scan Sonar (SSS) | | Bottom inspection |

# RSV *ScanDrone*

The RSV Scan drone allows the deployment of an ROV and a captive aerial drone.

Designed for the inspection of offshore structures,
the RSV Scandrone allows the creation of a 3D digital twin (outer shell) with a single vehicle (USV).

The aerial drone platform is designed to facilitate docking and allow for offshore operations.

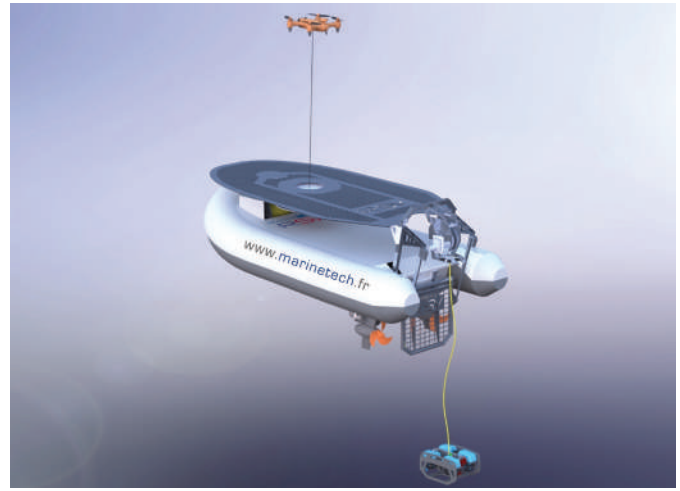
The RSV Scandrone is a structural anomaly inspection solution (rust, deformation, degradation) allowing cost reduction, risk reduction, time saving and a better data analysis and processing.


# 3D DIGITAL TWIN

Thanks to its photogrammetry cameras, Scandrone is able to take georeferenced photos of a structure.

The collected data is processed and a 3D point cloud of the analysed structure is created. This allows the structure's 3D digital twin to be generated and used for inspection or maintenance work.

Coupled with CMMS software, anomalies can be analysed from an off-site centre with improved traceability.




| | | | |
|---|---|---|---|
| SENSORS | ROV / UAV | USES | Subsea and Aerial inspection |
| | Photogrammetry camera | | Georeferenced image |
| | Lidar | | 3D imaging of the environment |

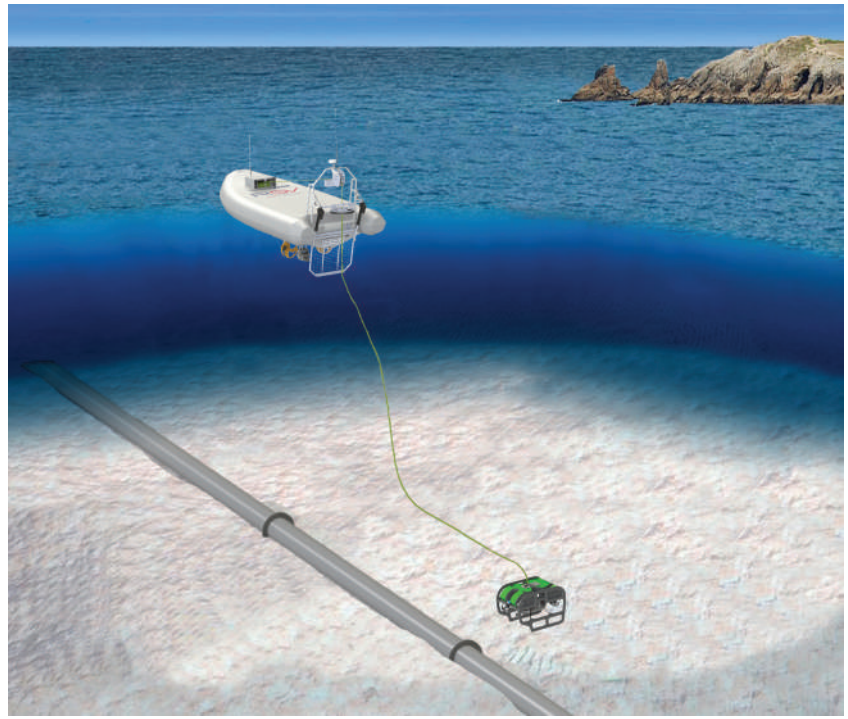
# RSV *Sea Observer*

The RSV Sea Observer is designed to welcome and deploy a ROV onboard coupled with an automatic tensioning winch.

As a fully equipped platform to assist marine works and diving operations, the RSV Sea Observer is a user-friendly and cost effective solution compared to conventional supply vessel.

Thanks to its latest generation of batteries, the system offers an autonomy of 24 hours, with the possibility to increase it up to 48 hours.

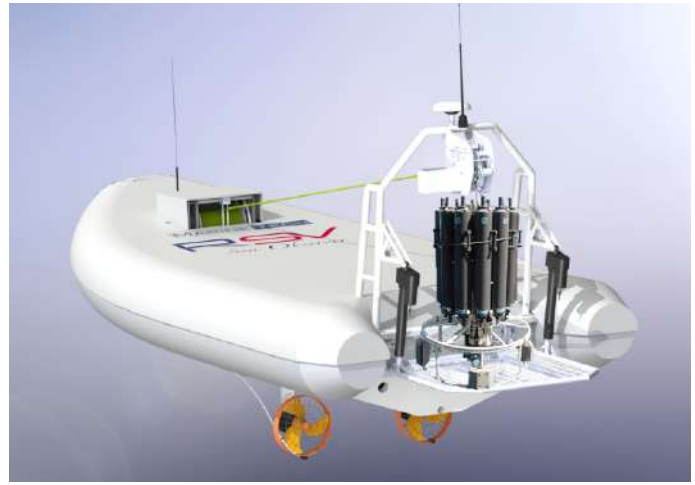
Only two operators are required to operate the RSV Sea Observer.



# SUBSEA MONITORING

Its motorized winch allows the deployment of a payload such as an inspection class ROV. An umbilical tensioning system provides a perfect winding.

Coupled with an articulated bracket at the back of the RSV, the ROV is launched and recovered easily and safely. In transit, the ROV is kept in a stable and secure position.



| SENSORS | USES |
|---|---|
| ROV | Subsea monitoring / Inspection |
| Multibeam Echosounder | Seabed mapping |
| Side Scan Sonar | Bottom inspection |

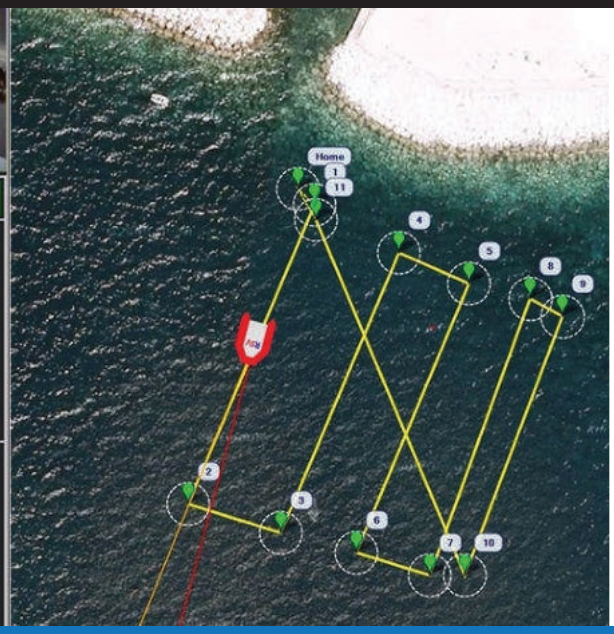
# RSV *Orca* & *Sea Observer Compact*

Designed for open sea applications, the RSV Orca and the RSV Sea Observer Compact are reliable and cost effective solutions for high-resolution survey.

Their rugged design and stability allows these RSV to achieve missions in up to 1.5 m swell and 35 knots wind.

The built-in autopilot and keeping station mode make any survey missions easier.

The RSV Sea Observer Compact also allows for the deployment of a light ROV.


User friendly autopilot interface


Fast and easy ROV deployment

## NAVIGATION SYSTEM

Multi configuration control system

Motion sensor

GPS

Control Command

## COMMUNICATION SYSTEM

Data Communication Box

Data Transmission


Remote Control

## DEPLOYMENT

Classic Boat Trailer


Truck

Basket

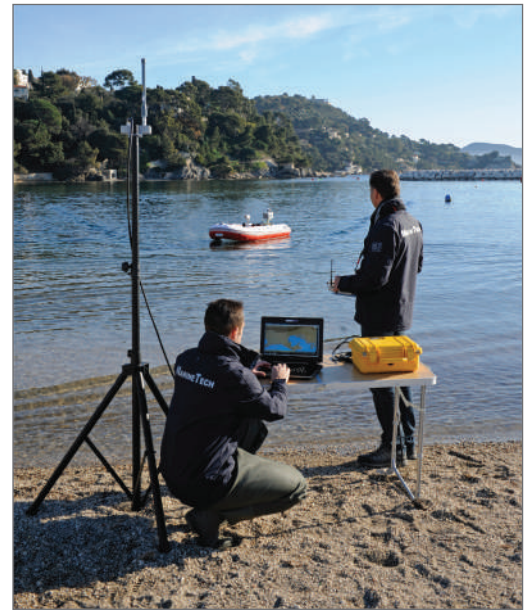
# RSV *Dolphin*

The RSV Dolphin is a compact and affordable solution for occasional missions.

Designed for data acquisition in restricted access areas, such as rivers, ports, landfalls, lakes, dams, shallow water, the RSV is the perfect tool.

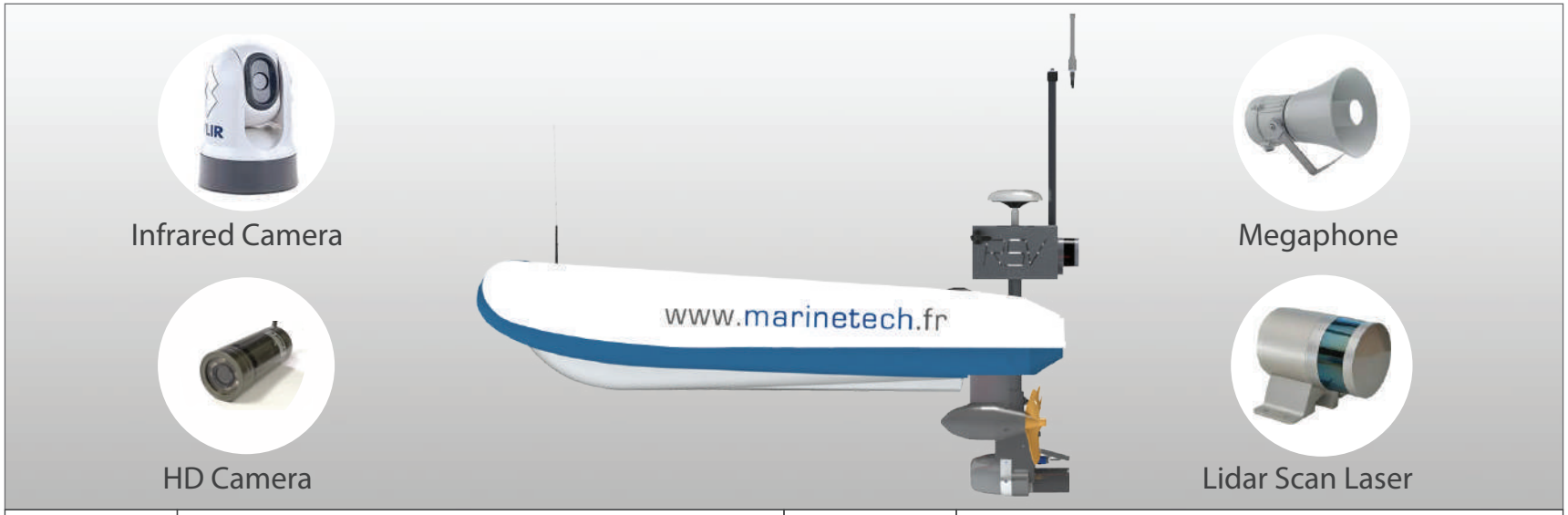
Composed of 3 modules of 30 kg each (control and electronic, hull, engines), the system is easy to transport and deploy.

Fitted with robust engines and quick charge battery, the RSV Dolphin represents a reliable and flexible solution.



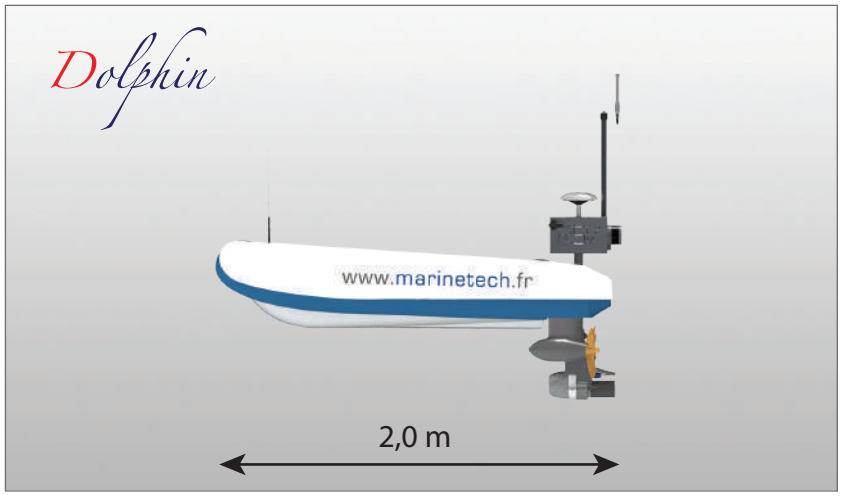
# SURVEILLANCE & SECURITY

Noiseless, compact and taking advantage of its real time data transfer, the RSV represents a discreet solution for sensitive missions.

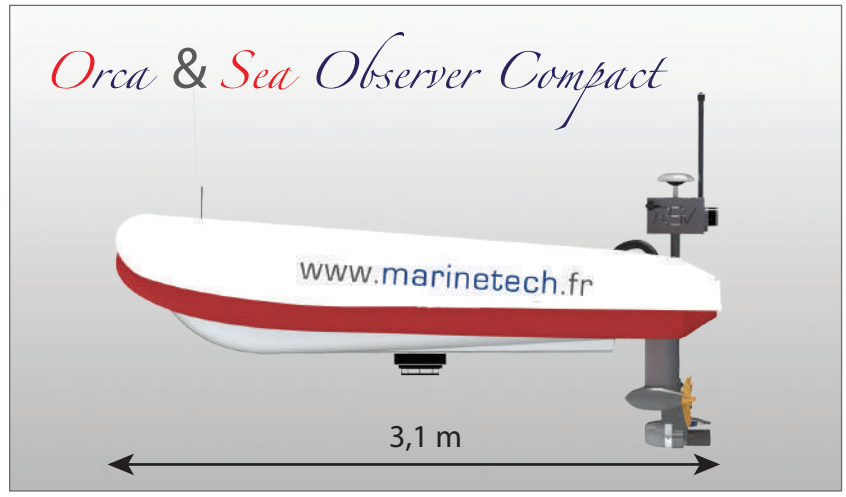




| SENSORS | | USES | |
|---|---|---|---|
| | Megaphone | | Warning |
| | HD Camera | | Surveillance of suspicious activities |
| | Infrared Camera | | Detect heat sources |
| | Lidar Scan Laser | | 3D Imaging of the environment |

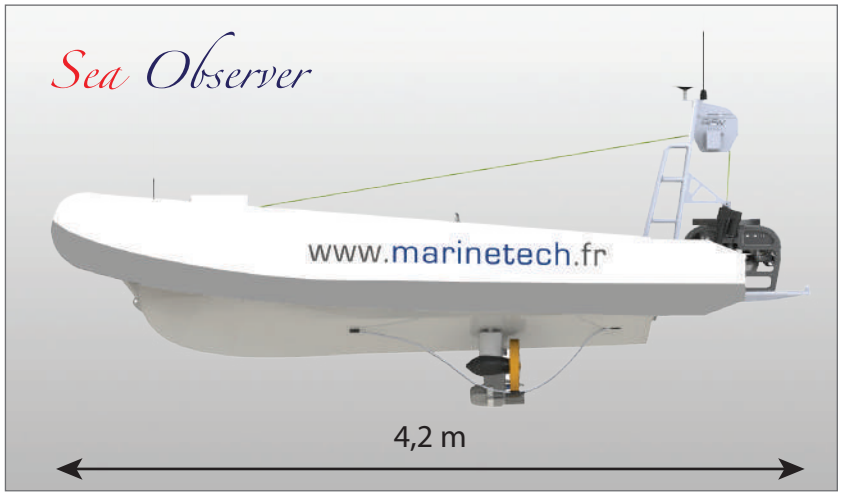
# PRODUCT LINE



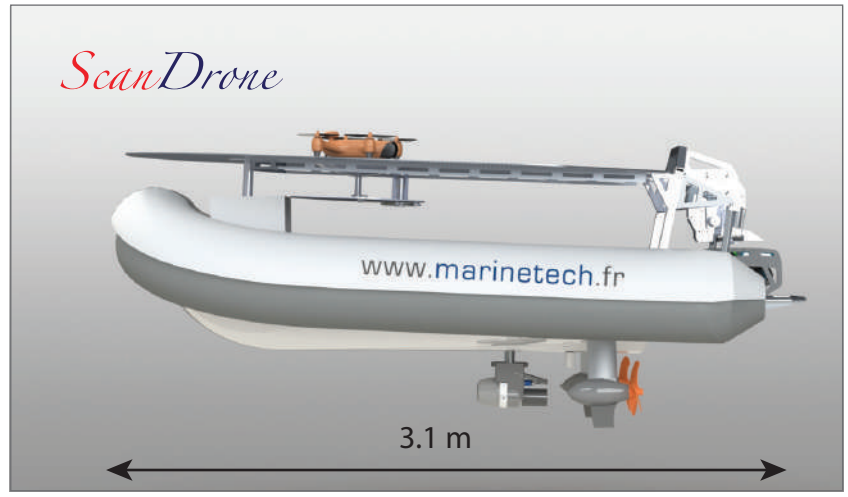

The RSV Dolphin for harbour, river and lake.




The RSV Orca for coastal and offshore operations, ROV deployment with the Compact.




The RSV Sea Observer for offshore operations and ROV deployment.




The RSV Scan Drone for offshore aerial and submarine inspection.

# TECHNICAL SPECIFICATIONS

| FEATURES | RSV DOLPHIN | RSV ORCA & COMPACT | RSV SEA OBSERVER | RSV SCANDRONE |
|---|---|---|---|---|
| Length | 2,0 m | 3,1 m | 4,2 m | 3,1 m |
| Width | 1,2 m | 1,7 m | 2,1 m | 1,7 m |
| Height | 1,2 m | 1,2 m | 1,7 m | 1,2 m |
| Draft | 0,4 m | 0,4 m | 0,5 m | 0,4 m |
| Weight | 90 kg | 250 kg | 700 kg | 250 kg |
| Engine | 2 x 1 kW (electric) | 2 x 2 kW (electric) | 2 x 4 kW (electric) | 2 x 2 kW (electric) |
| Payload | 20 kg | 150 kg (80kg+ROV for the compact version) | 250 kg | 230 kg |

| SENSORS | | | | |
|---|---|---|---|---|
| Camera / Measure | HD Camera & Video<br>Lidar / Infra-red camera | | | |
| Data correction | Gyrocompass / Motion-Sensor | | | |
| Positioning | D-GPS / GPS-RTK | | | |
| Marine sensors | Single Beam Echosounder<br>Multibeam Echosounder<br>CTD / ADCP | Single Beam Echosounder<br>Multibeam Echosounder<br>CTD / ADCP<br>Sub Bottom Profiler<br>Side Scan Sonar<br>ROV (COMPACT only) | Single Beam Echosounder<br>Multibeam Echosounder<br>ROV<br>Sub Bottom Profiler<br>Side Scan Sonar / ADCP | Single Beam Echosounder<br>Multibeam Echosounder<br>ROV<br>UAV<br>Photogrammetry Camera<br>Side Scan Sonar / ADCP |

| PERFORMANCES | | | | |
|---|---|---|---|---|
| Speed | 0 - 6 knots | 0 - 10 knots | 0 - 8 knots | 0 - 10 knots |
| Endurance (standard) | 4 hours | 12 hours | 24 hours | 12 hours |

| NAVIGATION | | | | |
|---|---|---|---|---|
| Average sea conditions | Sea State 2 | Sea State 3 | Sea State 4 | Sea State 3 |
| Control | Up to 5 km | | | |
| Autopilot | Unlimited range | | | |

# ADVANTAGES

USER FRIENDLY

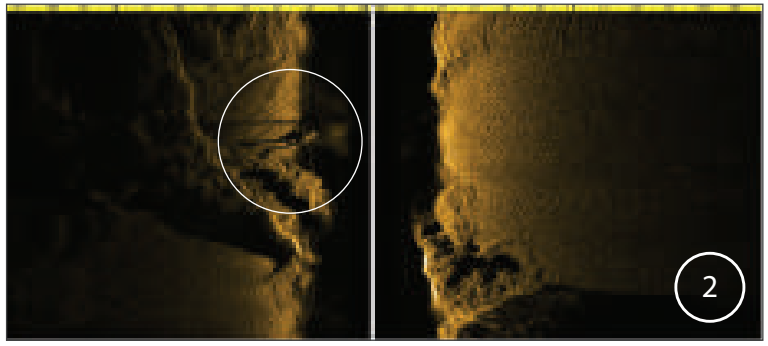
ENHANCED ENDURANCE

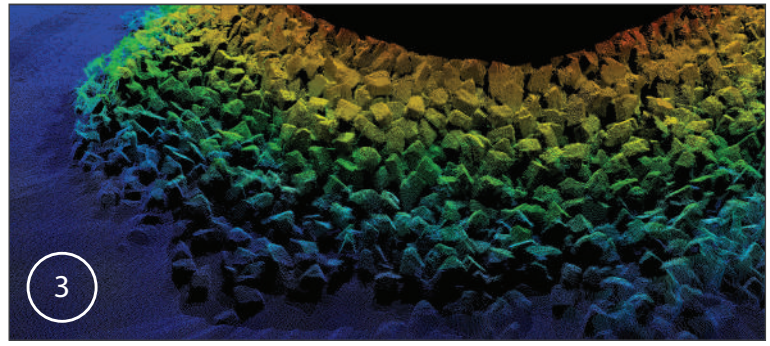
REAL TIME DATA TRANSFER

SEVERAL CONFIGURATIONS

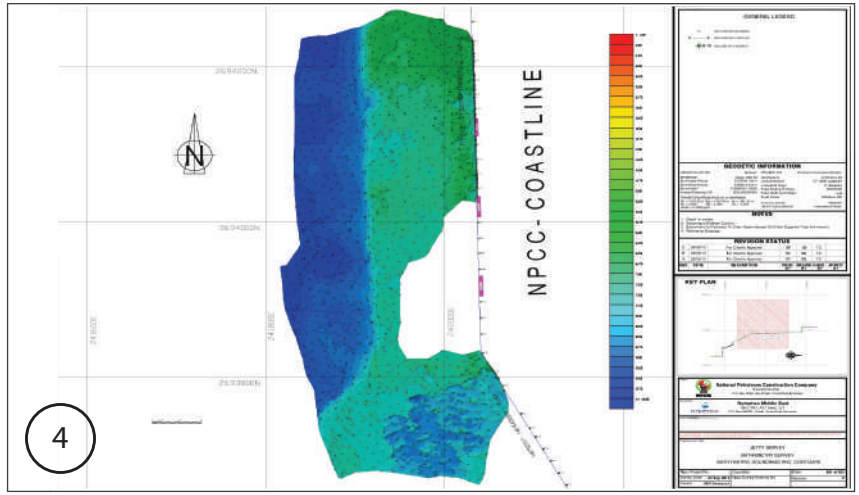
AUTOPILOT / REMOTE CONTROL

QUICK AND EASY DEPLOYMENT


1. RSV Orca - Acquiring bathymetry data
2. Diver localized with Side Scan Sonar
3. 3D Bathymetry - Multibeam Echosounder
4. 2D Bathymetry and contours



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