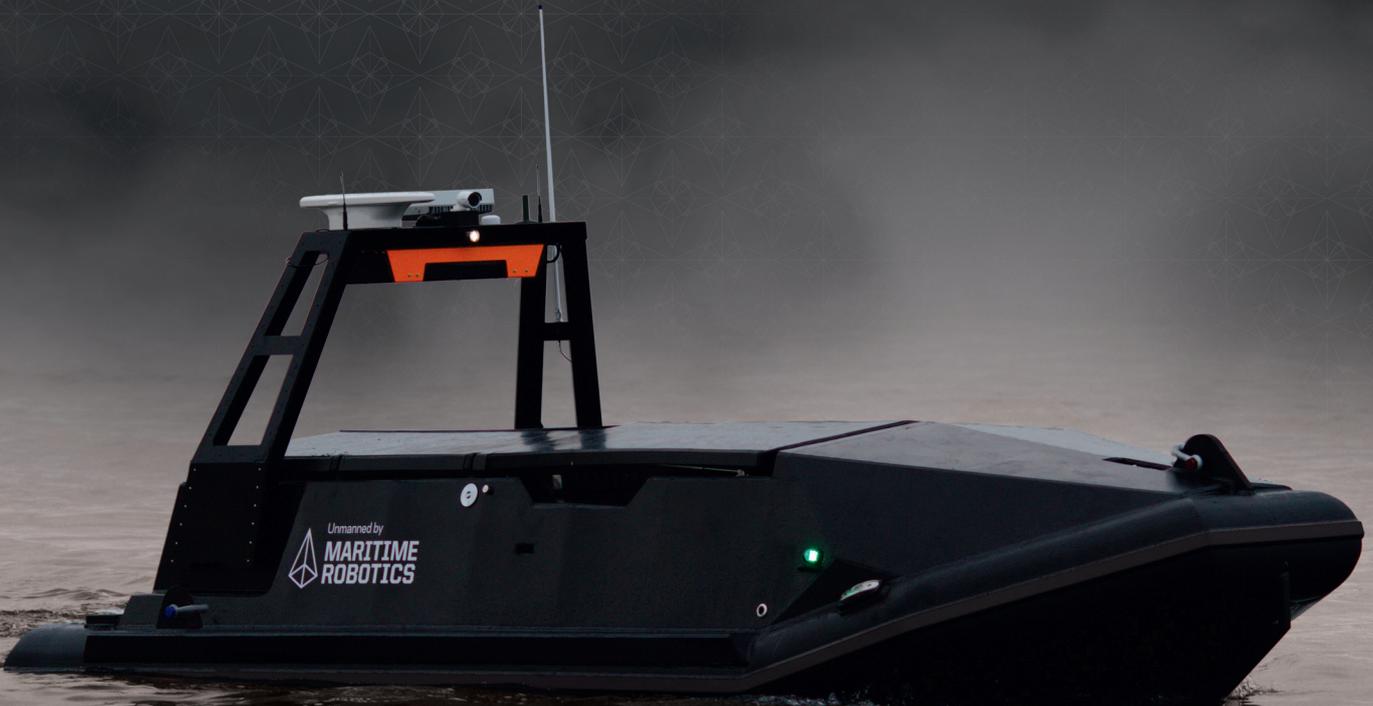
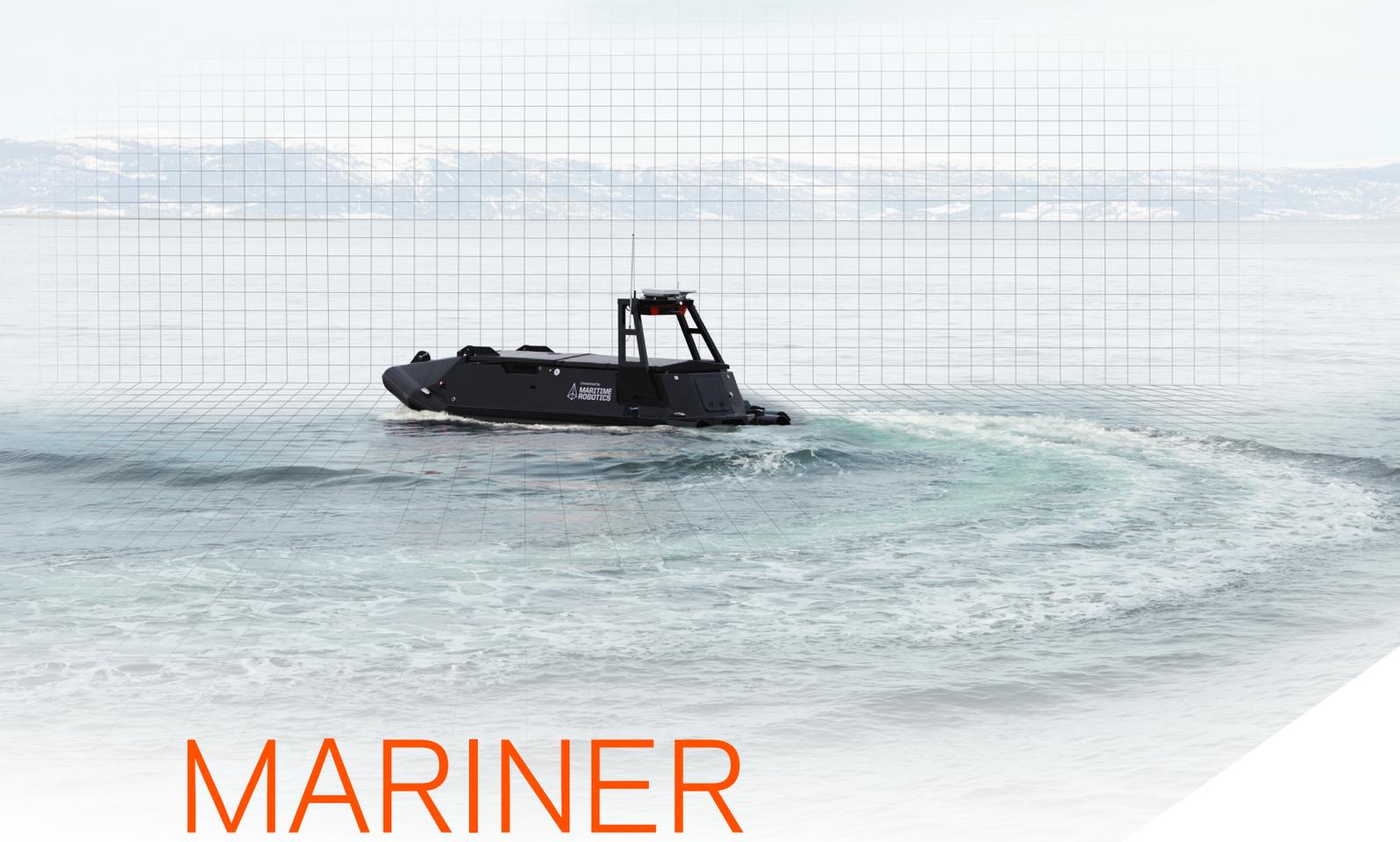


MARINER

UNMANNED SURFACE VEHICLE [USV]

COST-EFFECTIVE AND RISK-REDUCING MARITIME DATA ACQUISITION





MARINER

The Mariner Unmanned Surface Vehicle (USV) is a multipurpose unmanned vehicle for offshore and coastal applications.

The Mariner MK II is an enhanced version of our field proven original Mariner USV.

The Mariner USV's polyethylene construction is stable, unsinkable and near maintenance-free. It is built for use and practicality with a design that fits easily into a standard 20 ft container and simplifies transportation.

The Mariner has a diesel-powered propulsion system with a waterjet. Optionally, the USV can have a diesel-electric propulsion system with two electric Torqeedo thrusters and a generator in addition. This gives it a minimum of 50 hours endurance at 5 knots.

The Mariner contains a large payload room, which can be equipped with a variety of surface and subsea sensors and payloads. For example: EO and IR cameras, radars, oceanographic instruments, hydroacoustic positioning systems, echo sounders: single and multi-beam sonar systems. The subsea sensors can be mounted through a moonpool in the mid portion of the craft and users have the option to install an elevator mechanism for lowering the sensor under the hull.

The USV operator uses the Vehicle Control Station (VCS) to monitor the Mariner and the data being collected from its installed payloads. The VCS features nautical charts, AIS, and radar overlay, which can be augmented with AIS and radar-based collision warnings.



PRODUCT COMPONENTS

01



Mariner USV

02

-  MBR: 30km range
SatCom/Iridium: Global range
-  25kn max speed
-  Diesel: 50hrs (5kn)
Electric: 8hrs (5kn) extended with generator
-  1,900kg
-  Launch and Recovery System
-  Bow thruster
-  Moonpool



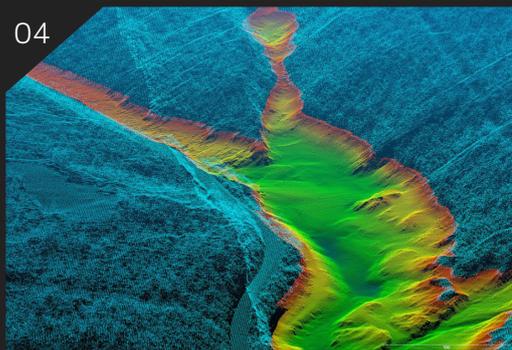
03



Vehicle Control Station

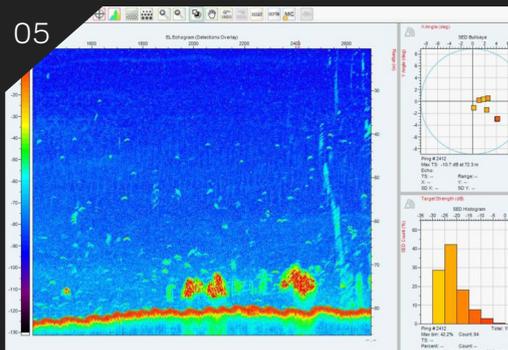
Specifications

04



Bathymetry

05



Environmental Monitoring

06



Hydroacoustic Communication

01 MARINER UNMANNED SURFACE VEHICLE (USV)

The Mariner USV is a cost-effective system for maritime data acquisition that is adept in both offshore and coastal scenarios.

02 SPECIFICATIONS

The Mariner is a versatile USV that allows for both high speed patrolling and low speed surveying. The vessel has a practical design that can easily be shipped worldwide in a standard 20 ft container and allows for integration of a large variety of payloads and sensors.

03 VEHICLE CONTROL STATION (VCS)

The USV operator interacts with the Mariner through the Vehicle Control Station usually located on shore or on a mother vessel. The intuitive graphical user interface with nautical charts, AIS, video and radar overlay can also be augmented with AIS and radar-based collision warnings.

04 BATHYMETRY

Ultra compact single-beam and multi-beam sonar systems are available for integration. Unmanned Surface Vehicles offer a great advantage in repetitive and tedious missions. Bathymetry is one such application where there is great potential for a seabed-mapping USV.

05 FORCE MULTIPLIER

The Mariner USV is ideal to deploy from an existing fleet of vessels to work as a force multiplier. Scouting for fish, environmental mapping or conducting bathymetry survey, with a significantly reduced headcount. This enables the fleet to extend their footprint at minimal cost when compared to a manned vessel.

06 AUV AND ROV OPERATIONS

Robots helping other robots is the next frontier. With the cost-effective capabilities of having a USV as a communication relay and support platform on the sea surface, underwater Remotely Operated Vehicle (ROV) and Autonomous Underwater Vehicle (AUV) operations can be simplified and improved.



MARINER SPECIFICATION

MARINER

DIESEL



MARINER

DIESEL ELECTRIC



Length x Width x Height	580 x 207 x 200cm 228.3" x 81.5" x 78.7"	
Draft	80cm, 31.5"	
Dry Weight	1900kg, 4189lbs	2000kg, 4409lbs
Hull material	Polyethylene	
Propulsion	Yanmar diesel engine coupled with Hamilton Jet Fuel Tank: 200liters	Additionally: Torqeedo Cruise electric thrusters
Endurance	Up to: 50 hours @ 5kn	Additionally: 8 hours @ 5kn (extended with generator)
Control Station	Laptop/Desktop ▪ Industrial remote for launch and recovery	
AIS	✓	
Camera	✓	Thermal and infrared optional
High-bandwidth comms	✓	
SVP winch	Optional	

Add Ons	Multi-beam sonar sensors from the Norbit iWBMS family	Ecotone Underwater Hyperspectral Imager	On-board software for correction services over NTRIP protocol
	PingDSP 3DSS-iDX sonar	BioSonics MX Echosounder (habitat system)	UHF modem for RTK corrections from GNSS Base Station
	SVP winch with the AML Base X2 or Valeport Swift SVP	Biosonics DT-Extreme Echosounder (fish prospecting system)	Knudsen Single Beam Echosounders
	Kongsberg EM2040		

A LEADER IN UNMANNED SOLUTIONS

Maritime Robotics is a leading provider of innovative unmanned solutions for maritime operations and data acquisition. The company develops and delivers Unmanned Surface Vehicle Systems (USV), Moored Balloon Systems (MBS) as well as Unmanned Aircraft Systems (UAS). Our main markets are geophysical surveying, oil & gas, environmental monitoring, and the defence/security market. With technology developed in close collaboration with civilian, governmental and military partners, Maritime Robotics focuses on delivering high-quality system solutions and products that are cost-effective, reduce HSE risk exposure and are highly deployable, in any conditions.



www.maritimeroobotics.com



Brattørkaia 11
7010 Trondheim, Norway



+47 73 40 19 00



info@maritimeroobotics.com