

HAUV

Hovering Autonomous Underwater Vehicle



**BLUEFIN
ROBOTICS**

Applications:

Ship Hull & Infrastructure Inspection

Port & Harbor Security

Mine Countermeasures (MCM)

Unexploded Ordnance (UXO)

Scientific Research

HAUV is a two-man-portable hovering AUV designed for ship hull inspection. Equipped with a high-resolution imaging sonar, it surveys ship hulls and other structures with minimal prior knowledge. While surveys are executed autonomously, the operator can manually control the vehicle to further observe features of interest identified in the real-time data.

- **CONTACT RELOCATION** – HAUV can autonomously locate and relocate contacts on a ship's hull with a precision of better than 2 meters CEP 50.
- **EASE OF OPERATION** – The system can be unpacked, checked out and launched from a small boat or pier in less than 30 minutes, and the field-swappable battery and removable data storage module enable rapid turnaround between missions. An intuitive mission planning tool enables dives to be planned in a matter of seconds, and data retrieval and reporting occur automatically.
- **HIGH-QUALITY DATA** – The integrated ARIS EXPLORER™ sonar provides high-resolution sonar images that can be viewed in real time over the vehicle's fiber optic tether. Data can also be post-processed into near-photo-quality images or mosaics using third-party software.
- **PRECISE MANEUVERABILITY** – HAUV uses thrusters to hover, rotate in place and translate in any direction, enabling operations in confined areas. A fiber optic tether allows remote manual control of the vehicle for added maneuverability.

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Technical Specifications

- **Dimensions:**
 - 52.5 x 36.75 x 15 inches
 - (133 x 93 x 38 cm)
- **Weight (Dry):** 166.5 lbs. (72.6 kg)
- **Buoyancy:** 1 to 2 lb (500 g to 1 kg) net positive
- **Lift Points:** 4 handles for two-man portability
- **Depth Rating:** 100 ft (30 m), 200 ft (60 m) (optional)
- **Endurance:** Up to 3.5 hours with standard payload (no current)
- **Speed:** Up to 1 knot
- **Energy:**
 - 1.5 kWh of total energy
 - One 1.5 kWh battery pack
 - Lithium-polymer, pressure-tolerant
- **Propulsion:** Five thrusters for propulsion and control
- **Navigation:**
 - Contact location / relocation;
 - 2 m CEP 50, 1 m CEP 50 (optional)
 - IMU, DVL and depth sensor
 - Hull-relative or seafloor-relative navigation
- **Communications:** Real-time Ethernet via fiber optic tether; Ethernet via shore power cable
- **Safety Systems:** Emergency location transponder (optional)
- **Software:**
 - GUI-based Operator Tool Suite
 - Third-party mosaicing software (optional)
- **Data Management:** 4 GB removable data storage module (RDSM)
- **Standard Payload:** Sound Metrics ARIS Explorer 3000 Imaging Sonar (1.8 MHz, 3.0 MHz)

System Package

The HAUV comes as a part of a comprehensive system package primarily consisting of the vehicle, support equipment, spares, software, training and 1-year warranty.

Operator Tool Suite

Each system includes an intuitive software package that provides the interface between the AUV and operator for all phases of a mission, including planning, monitoring and execution, data management, and post-mission analysis.

GENERAL DYNAMICS

Mission Systems

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