

»» REMUS 600

**Autonomous
Underwater
Vehicle**

Deep Operations

Modular Design

Increased Payload

**600, 1500 or 3000
Meter Depth Rating**




HYDROID

Discover » REMUS 600

Hydroid, LLC was founded in 2001 by the inventors of REMUS to allow this remarkable technology to reach a wider market and to provide for continuous product development. REMUS is the product of years of leading edge research and development, which has culminated in the world's most capable family of AUVs.

Hydroid has grown at an amazing rate and to support this growth, Hydroid now has a staff of over twenty full- and part-time employees that continuously strive for the highest level of product quality and support. This team is enhanced by the organization's growing representative network, which provides local sales and support in nearly 30 nations around the globe.

Hydroid is located in a brand new, state-of-the-art facility located on Cape Cod in Pocasset, Massachusetts. This facility has been uniquely designed to support Hydroid's growing product offerings.

Since its inception, Hydroid has delivered a continuous stream of products through a highly efficient and well organized manufacturing system, which allows for volume production of REMUS vehicles, tracking transponders, and other system components. The result is a highly repeatable system that produces quality products in a timely and efficient manner.

Hydroid's products are backed by the organization's skilled customer service staff, which provides on-site training, system commissioning, and continuous product service and support.



HYDROID

REMUS 600

FEATURES

GO DEEPER: The slightly buoyant REMUS 600 has been designed to operate to depths of 600 meters, allowing for greatly increased operational scope. This highly versatile system can also be configured for 1500 or 3000 meter operations.

GO FURTHER: The REMUS 600 delivers unprecedented endurance, with mission duration capability of up to 70 hours. Upon mission completion, simply recharge the internal battery, or swap out the battery section.

FULLY MODULAR: The REMUS 600 has been designed with modularity in mind. The vehicle can be easily reconfigured for a wide variety of customer configured payloads. The vehicle is comprised of a series of hull sections that are quickly separated for vehicle reconfiguration, maintenance, and/or shipping.

INCREASED PAYLOAD: The REMUS 600 has been designed to be an autonomous workhorse. Its increased size and power capacity enable it to carry large, power-hungry payloads to meet your increasing mission demands.

EASE OF OPERATION: The REMUS 600 includes the same proven Vehicle Interface Program (VIP) as the popular REMUS 100 AUV. The highly refined graphical user interface (GUI) that makes vehicle maintenance/checkout, mission planning, and data analysis fast and easy. Windows® operation, quick look indicators, quality control checks, and a sophisticated data export capability round out this proven software package.

PROVEN REMUS TECHNOLOGY: The REMUS 600 is based on the same leading edge technology that has brought the REMUS 100 to the forefront of autonomous operations. With tens of thousands of REMUS mission hours to date, Hydroid has become the industry's leading supplier of autonomous products and technology.

SENSORS AND PAYLOAD

STANDARD SENSORS

- ▣ Acoustic Doppler Current Profiler (ADCP)
- ▣ Inertial Navigation Unit
- ▣ Side Scan Sonar
- ▣ Pressure
- ▣ Conductivity & Temperature
- ▣ Iridium
- ▣ GPS

OPTIONAL SENSORS

- ▣ Dual Frequency Side Scan Sonar
- ▣ Synthetic Aperture Sonar
- ▣ Fluorometers
- ▣ Acoustic Modem
- ▣ Video Camera
- ▣ Acoustic Imaging
- ▣ Electronic Still Camera

DEPLOYMENT OPTIONS

- ▣ Launch and Recovery System
- ▣ Operations Van

SHIPBOARD DEVICES

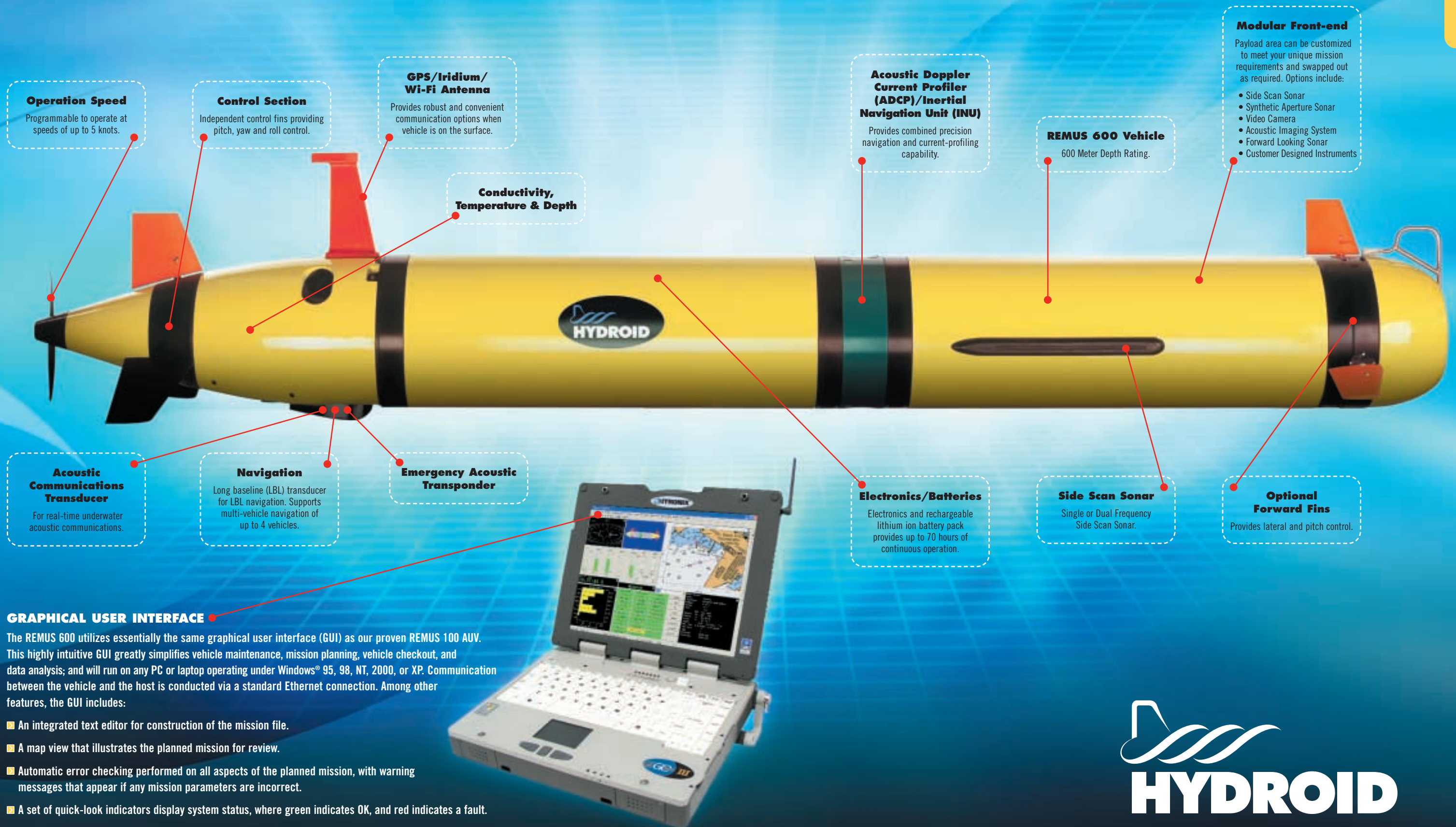
- ▣ Acoustic Transducers
- ▣ GPS Antenna
- ▣ Iridium Base Station
- ▣ Wi-Fi Base Station

The REMUS 600 AUV was designed through funding from the Office of Naval Research to support the Navy's growing need for operations requiring extended endurance, increased payload capacity, and greater operating depth. The result is the REMUS 600. The REMUS 600 boasts the same proven software and electronic subsystems found in our highly successful REMUS 100 AUV, with a depth rating and increased capabilities that take autonomous operations to the next level.

SPECIFICATIONS

Vehicle Diameter	32.4 cm (12.75 in)
Vehicle Length	3.25 m (128 in); length varies depending upon module configuration
Weight in Air	240 kg (530 lbs)
Max Operating Depth	600 meters (1500, and 3000 meter configurations available)
Energy	5.2 kWh rechargeable Lithium ion battery.
Endurance	As long as 70 hours. Subject to speed and sensor configuration.
Propulsion	Direct dive DC brushless motor to an open two bladed propeller
Velocity Range	Up to 2.6 m/s (5 knots) variable over range
Control	3 independent control fins providing yaw, pitch, and roll control. Altitude, depth, yo-yo, and track-line following provided. Optional forward fins available for lateral and pitch control.
On/Off	Magnetic Switch
External Hook-up	Two connectors, one for shore power, and one for shore data. Alternatively, 802.11B wireless network provided via dorsal fin antenna.
Casualty Circuits	Ground fault, leak and low voltage detection, housing leak detection, all sensors and systems have operational go/no-go fault indicators.
Navigation	Inertial navigator, Long Baseline (LBL) acoustic, WAAS GPS, Ultra Short Baseline (USBL)
Transponders for LBL	9-16 kHz operating frequency range
Tracking	Acoustic transponder, acoustic modem, Iridium modem
Communication	Acoustic modem, Iridium, Wi-Fi-2.4 GHz, 100 base-T Ethernet
Standard Sensors	Acoustic Doppler Current Profiler (ADCP) Inertial Navigation Unit (INU) Side Scan Sonar Conductivity & Temperature
Software	REMUS Vehicle Interface Program (VIP) GUI-based laptop interface for programming, training, documentation, maintenance and troubleshooting

» THE ANATOMY OF VERSATILITY



Operation Speed
Programmable to operate at speeds of up to 5 knots.

Control Section
Independent control fins providing pitch, yaw and roll control.

GPS/Iridium/Wi-Fi Antenna
Provides robust and convenient communication options when vehicle is on the surface.

Conductivity, Temperature & Depth

Acoustic Doppler Current Profiler (ADCP)/Inertial Navigation Unit (INU)
Provides combined precision navigation and current-profiling capability.

REMUS 600 Vehicle
600 Meter Depth Rating.

Modular Front-end
Payload area can be customized to meet your unique mission requirements and swapped out as required. Options include:

- Side Scan Sonar
- Synthetic Aperture Sonar
- Video Camera
- Acoustic Imaging System
- Forward Looking Sonar
- Customer Designed Instruments

Acoustic Communications Transducer
For real-time underwater acoustic communications.

Navigation
Long baseline (LBL) transducer for LBL navigation. Supports multi-vehicle navigation of up to 4 vehicles.

Emergency Acoustic Transponder

Electronics/Batteries
Electronics and rechargeable lithium ion battery pack provides up to 70 hours of continuous operation.

Side Scan Sonar
Single or Dual Frequency Side Scan Sonar.

Optional Forward Fins
Provides lateral and pitch control.

GRAPHICAL USER INTERFACE

The REMUS 600 utilizes essentially the same graphical user interface (GUI) as our proven REMUS 100 AUV. This highly intuitive GUI greatly simplifies vehicle maintenance, mission planning, vehicle checkout, and data analysis; and will run on any PC or laptop operating under Windows® 95, 98, NT, 2000, or XP. Communication between the vehicle and the host is conducted via a standard Ethernet connection. Among other features, the GUI includes:

- An integrated text editor for construction of the mission file.
- A map view that illustrates the planned mission for review.
- Automatic error checking performed on all aspects of the planned mission, with warning messages that appear if any mission parameters are incorrect.
- A set of quick-look indicators display system status, where green indicates OK, and red indicates a fault.



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