

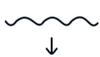
GIRONA 500

Flexible and stable hovering AUV for the most challenging payloads

Seabed mapping and inspection for the most challenging applications.



BASIC SPECIFICATIONS



Depth
500m



Endurance
6-8h



Velocity
0-2 knots



Weight
140-200Kg



Length
1.5m



Width
1m



Height
1m



Hull diameter
0.30m



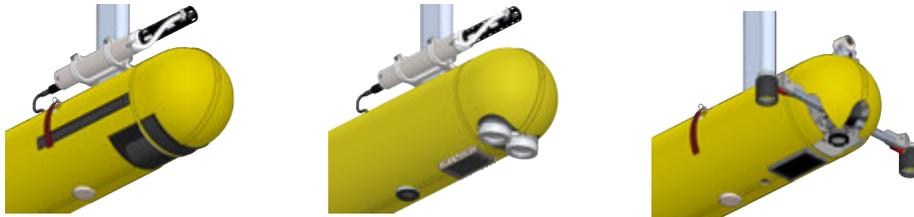
Payload
35 liters

Hovering medium size AUV for a maximum depth of 500 meters. Conceived for integrating the more complex payloads with enhanced stability. Full hovering for accurate trajectory control while able to survey the seabed with efficient hydrodynamics.

KEY FEATURES

Configured to fit your applications

From the basic platform, the vehicle can be configured with the most appropriate equipment for navigation, communication, safety and perception. The company has extensive experience integrating oceanographic equipment from reputable suppliers. Specific equipment can also be integrated to maintain compatibility with existing systems. The frontal payload area of the lower hull is a wetted volume that allows for the easy integration of transducers, optical sensors, and water parameter measurement sensors to adapt the vehicle to each customer's application.



Medium size for extended equipment capacity

The GIRONA 500 can accommodate up to 35 liters of payload equipment in the lower hull, maintaining high stability due to its design. It can even integrate elements outside the hull to accommodate the most challenging applications. The total weight can range from 140 kg to 200 kg depending on the configuration. It must be deployed and recovered using a vessel equipped with a crane or A-frame. Its high maneuverability allows its teleoperation around the support vessel. A two-person team can handle all operations.

Hovering capability in a three-body hydrodynamic hull configuration

With a unique three-body hull design and integrating up to six thrusters on the three axes, the vehicle can perform full hovering to accurately perform complex trajectories. The three-body hydrodynamic design also enables efficient surveying down to a depth of 500 m.

Navigation accuracy adapted to your needs

GIRONA 500 can be equipped with a different suite of navigation sensors according to the application requirements, from MEMS-based navigation to high-grade FOG INS systems.

Competent operational performance

GIRONA 500 provides a level of endurance, autonomy and adaptability that make it well-suited for a wide range of applications. It is a versatile vehicle that can operate reliably underwater, thanks to its streamlined control and safety mechanisms.

Connectivity options for every scenario

GIRONA 500 offers a range of connectivity options to suit various operational needs. An acoustic modem ensures periodic data exchange while the vehicle operates autonomously underwater. Additionally, it includes an umbilical cable for indoor testing and high-speed data transfers, a surface WiFi buoy for real-time sensor data monitoring in shallow waters, and an RF controller for reliable long-range communication and robust control during deployment and recovery.

Advanced planning and monitoring software

Using the IQUAview interface and its plugins, missions for GIRONA 500 can be easily planned and monitored. IQUAview offers a high degree of flexibility in terms of mission customization and adaptability and handles the interplay with the vehicle before, during and after the execution of a mission.

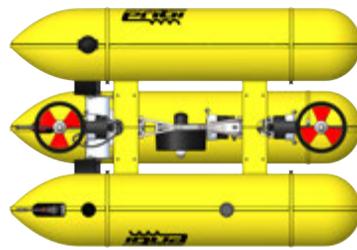
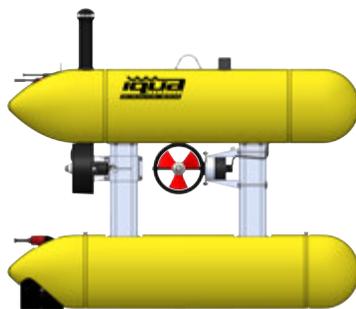
Quick mapping software to speed up the evaluation of collected data between missions

Sonar and image data collected with GIRONA 500 can be rapidly processed into informative products using SoundTiles or OpticTiles. This enables swift review of mission data, reducing the downtime between successive missions and maximising the vehicle's operational efficiency.

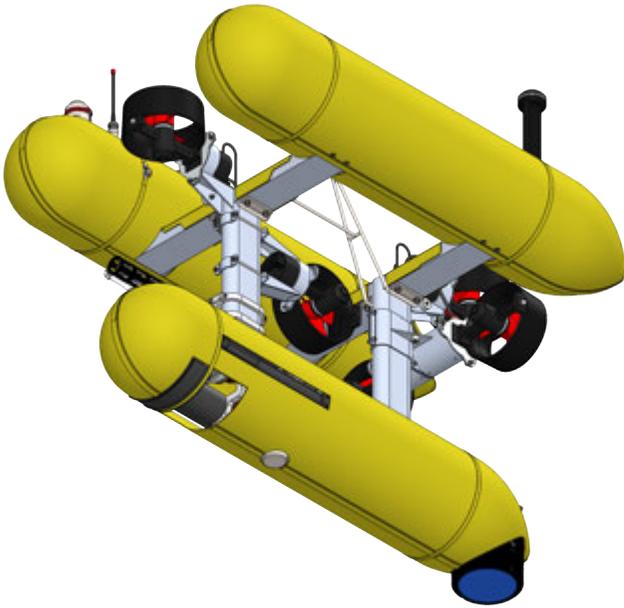
Open vehicle for new software and equipment integration

GIRONA 500 is an open platform that you can tailor to your applications. From integrating a new payload sensor to implementing a new advanced control behaviour, the vehicle can be adapted on the customer end. By having direct access to the hardware and the ROS-based software architecture you can customise the system to meet specific mission requirements, ensuring that GIRONA 500 remains a versatile and future-proof solution.

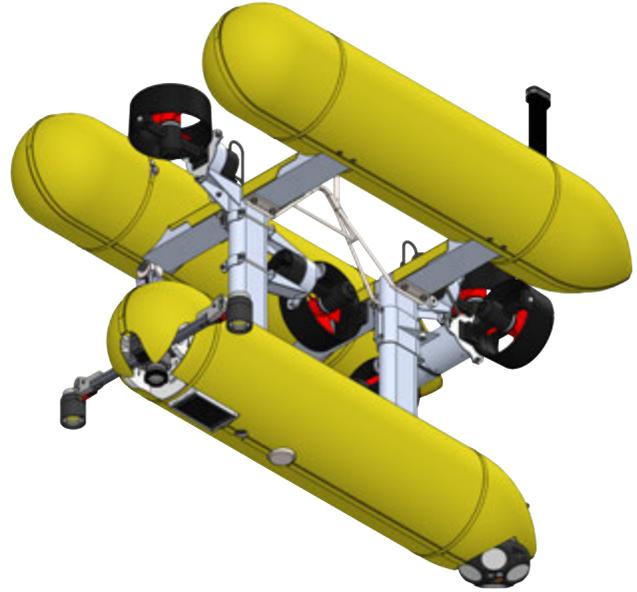
Size	1.5 x 1 x 1 m (Height x Width x Length), hull diameter: 300 mm.
Weight in air	140–200 Kg.
Depth rating	500 meters (pressure chamber certified).
Energy	2.9 kWh Lithium-Ion rechargeable battery (UN38.3 certified). Recharge time 6 hours.
Propulsion system	2x horizontal, 2x vertical and 1x transversal thrusters (brushless DC motors with magnetic coupling).
Degrees of Freedom	Surge, sway, heave and yaw. Hovering AUV, able to follow trajectories at low speed, keep position and move vertically.
Surge velocity	0–2 knots.
Endurance	6–8 hours, at 1–2 knots with standard payload.
Structure	Aluminum structure and watertight compartments with high-density syntactic foam and plastic outer skins.
Payload	35 liters of wet payload area for integration of sonar (side scan sonar, multibeam echosounder, forward looking sonar), optical camera system, CTD or water measurement sensors. Additional electronic board area in main electronics housing.
Payload interface	Gigabit Ethernet, RS-232 and DC-DC regulated voltages through underwater connectors.
Launch and recovery	Central hook for crane
Computer system	Embedded computer with Intel® Core™ i7 Processor, 1TB SSD and Dual-LAN Gigabit Ethernet.
Communications	15–35 kHz acoustic modem, 869/900 MHz radio, 2.4 GHz WiFi and Gigabit Ethernet umbilical cable.
Navigation	Based on DVL, IMU or INS, pressure sensor, GNSS and USBL.
Antenna mast	Wifi, radio, GNSS, location flashing light and power status lights.
Acoustic beacon	Independent acoustic pinger with external directional receiver.
Software	ROS-based software architecture for AUV control (navigation, guidance, control and security) running on Ubuntu Linux.
Safety	Leak sensors, software automated recovery actions, manual recovery actions through acoustic comms and hardware enabled recovery under software/computer fault.
Control station	Laptop computer for mission definition and monitoring using IQUAview Graphical User Interface (GUI) running on Ubuntu Linux. Accessories for control station integration in vessel: WiFi access point, modem/USBL, GNSS and teleoperation gamepad.
Radio controller	869/900 MHz license-free digital radio controller for AUV teleoperation at surface, telemetry reception and execution of basic vehicle commands. Independent portable weatherproof equipment powered by internal lithium-ion battery.
Accessories	(1) battery charger, (2) 50m Gigabit Ethernet umbilical cable, (3) WiFi surface buoy with 15m cable, (4) trolley and (5) transportation box.



ONE AUV, MULTIPLE PAYLOAD CONFIGURATIONS



Multibeam echosounder, dual frequency side scan sonar and CTD



Multibeam echosounder, forward looking echosounder and optical vision system



IQUA Robotics produces and commercialises hovering Autonomous Underwater Vehicles (AUVs) and related technologies for comprehensive underwater exploration, precise mapping, and detailed inspection of the seabed.

The company develops AUVs with a variety of sensor payloads according to the customer needs and provides technical support to ensure successful implementation and operation of the technology throughout its lifespan. End-users make profit from a complete solution that goes from the operation of the vehicle till the data post-processing.

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