UD-GARC UNMANNED SURFACE VESSEL

- **Turnkey system ready for hydrographic survey, metocean data acquisition, ROV tending and more**
- **Capable, rugged, and proven for inland, coastal and offshore service**
- **Hull optimized for speed, endurance & stability allows surf zone and heavy weather operations**
- **Large adaptable & modular payload bay with moon pool and hull mounting available**
- **MAPC2 Control System provides intuitive & safe remote control, route following, and supervised autonomy with advanced perception and collision avoidance options**
- **Available for lease or purchase with operations, maintenance, and training services available**

UD-GARC KEY SPECIFICATIONS

Hull Dimensions:	15'8" (4.8M) Length Overall x 5'5" (1.65M) Beam Overall
Full Load Displacement:	3,600 lbs. including fuel and payload
Payload Capacity:	1,000 lbs.
Diesel Fuel Capacity:	100 Gallons Standard (150 and 200 gallon options available)
Propulsion Systems:	Volvo Diesel, 170 HP D3 with DPS Outdrive, standard (140-220 HP range available) • Gasoline and waterjet propulsion (optional)
Speed & Range:	30+ knots top speed, 400+ nm range @ 30 knots, 700+ nm range @ 6 knots
Transportability:	Trailerable, Fits in 20' ISO Container, Shipboard Launch and Recovery Compatible
Control System:	MAPC2 Unmanned Control System with multiple control modes (see reverse page) • Open architecture integrates easily with 3rd party software and hardware • Optionally Manned variant available
Communications:	• Line-of-Sight IP Radios offers up to 10 nmi range at up to 50 Mbps 1) • Satellite Radio offers global coverage at up to 4 Mbps • Layer-3 Router with automatic fail-over capability for redundant communications 1) Range and throughput is dependent on radio selection and antenna placement
Power Generation:	• 12V & 24V DC power up to 4.2kW available (standard) • High power DC, Hydraulic PTO and high voltage AC and DC systems (optional)
Payload Options:	• Survey Equipment: Side-Scan Sonar, MPES, MBES, Bathymetric, Sub-Bottom Profiler • CDT Profiler, LiDAR, Acoustic Marine Mammal Detection, Other Metocean Sensors • Inspection ROVs, Unmanned Aviation Systems, Unmanned Underwater Vehicles

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MAPC2 Control System Overview

MAPC2 consists of modular, open architecture software and hardware components available in a turnkey system on UD-GARC or as a retrofit kit for your preferred vessel.

Hardware includes redundant, safety critical autopilot controller and hull machinery and electrical (HM&E) controller plus actuators and electronics interfaces to SAE J1939, NMEA0183/2000, CANbus, Ethernet and other analog and digital systems typical of commercial vessels. All components are built to stand up to the harsh marine environment.

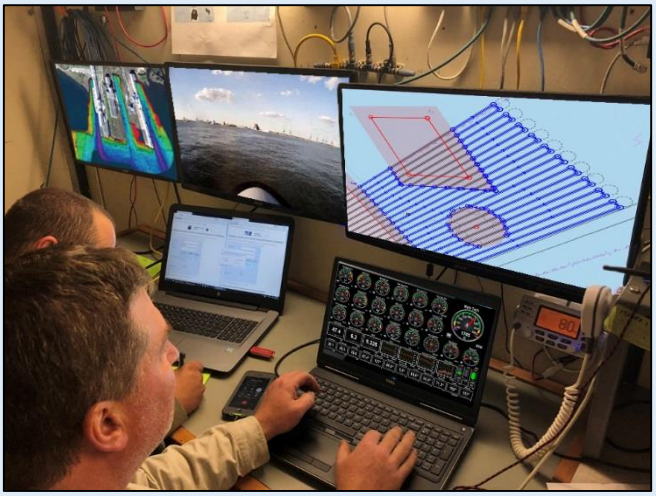
The Command and Control elements include the MAPC2 software running at a remote command station and ISO 13849 PLd Cat 3 wireless emergency stops and hand controllers to ensure safe operation during at sea launch and recovery and for close quarters maneuvering.

The system can be used from the Command Station for remote control, route following, loitering modes and more, with real-time situational awareness data streamed for safe navigation. Advanced perception, collision avoidance, and autonomous behaviors to minimize operator workload are available options.

Compatibility	• **Open architecture software easily integrates with 3rd Party Payload & Mission Planning Softwares** • **Compatible with leading hydrographic survey software such as HyPack.**
Onboard Sensors	• **GPS, DGPS, Inertial Measurement Unit, Radar, AIS, Meteorological Station, Health & Status** • **360° Cameras & Stabilized EO/IR Camera** • **LIDAR & Other Advanced Sensors Available**

Case Study

MAPC is partnered with **IP Subsea** to provide hydrographic survey services using Optionally Manned GARCs (pictured below) configured with a hull mounted Edgetech 6205 MPES sonar and other sensors. The system enables cost effective wide area surveys to be conducted with one or more GARCs in very shallow to deep water while transmitting real-time Bathymetry, dual frequency side-scan, and backscatter data to the operator in a single pass. The system features IHO Special Order compliant swath coverage over 9x water depth. The MAPC2 Control System integrates with HyPack survey software so operators can plan and execute survey routes, monitor real-time data, process collected data and control the vessel from a remote Command Center aboard a ship or on land.



IP SUBSEA AUTONOMOUS FORCE MULTIPLIER

Visit www.mapcorp.com or www.ipsubsea.com for more information

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