



METOCEAN



PASSIVE ACOUSTIC
MONITORING



SURVEILLANCE



MARINE SURVEY



WATER QUALITY



COMMUNICATIONS
GATEWAY



MARINE LIFE
MONITORING



AutoNaut

WAVE PROPELLED UNMANNED SURFACE VESSELS



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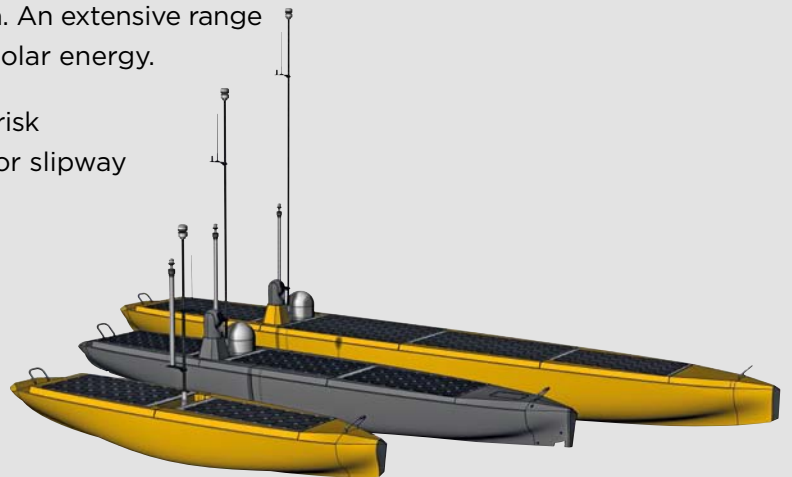
Extreme range and endurance • Zero carbon propulsion • Silence and minimal visibility
Persistent data gathering • Scalable • Remote guidance • Station keeping within 25m



AutoNaut

The AutoNaut is an unmanned surface vessel (USV) propelled forward by the motion of the waves. Patented *Wave Foil Technology* enables long-term mission duration. Powered entirely by renewable energy and with no requirement for offshore personnel the AutoNaut significantly reduces costs and safety risks at sea. An extensive range of sensors and equipment can be powered by solar energy.

- Unmanned operation: no offshore personnel at risk
- Simple deployment and recovery from vessel or slipway
- Powered by renewable energy: no emissions
- Mission duration of several months
- Speed up to 4 knots
- Station keeping within 25 metres
- Storm-proven robustness
- Flexible payload and sensor capacity
- Data transfer



These capabilities enable AutoNaut to operate as a versatile data collection platform in oceanic environments, including hostile and remote areas. A wide range of scientific and survey tasks can be conducted cost-effectively and with significantly reduced safety risk.

REMOTE OPERATION

AutoNaut can be operated from anywhere in the world over an internet connection, permitting deployment in the most remote and hostile areas. Command and control information is continuously transmitted via satellite from the onboard system to highly experienced remote operators at our specialist facility, or we can provide training. AutoNaut has inbuilt AIS collision avoidance and will circumvent any active target. The organisation follows the Code of Conduct set out by the Marine Autonomous Systems Regulatory Working Group (MAS-RWG).

WAVE PROPULSION

AutoNaut's unique *Wave Foil Technology* draws energy from the pitch and roll of the hull in waves. Through all wave directions the vessel is propelled forward by four keel-mounted foils fore and aft. In flat calm, the system can be assisted by an auxiliary propeller for a 1 to 3 knot speed. Extensive hydrodynamic testing has refined the technology and field-trials have proven its robustness in stormy seas.



APPLICATIONS

METOCEAN

AutoNaut enables the acquisition of data in otherwise unobserved regions. It can both hold station (operating as a conventional weather buoy) and conduct survey transects.

MARINE SURVEY

AutoNaut's persistence and manoeuvrability make it an excellent low-cost alternative to conventional vessels.

- Nautical charting
- Pipeline inspection
- Cable survey

PASSIVE ACOUSTIC MONITORING

AutoNaut is a near silent vessel that provides both mobility and high signal-to-noise ratio.

- Marine mammal monitoring
- Ambient sound measurement
- Sound source characterization (SSC)

SURVEILLANCE

AutoNaut enables persistent monitoring in hostile seas and is able to provide ground-truthing of satellite remote sensing.

- Countering illegal, unregulated and unreported fishing
- Maritime border patrol
- Intelligence, surveillance and reconnaissance
- Coast guard operations

WATER QUALITY

A range of water quality indicators help to ensure high environmental standards. AutoNaut acquires data for laboratory analysis and can act as an early warning system.

- Pollution monitoring
- Outflow monitoring
- Harmful algal blooms (HABs) detection

MARINE LIFE MONITORING

AutoNaut can unobtrusively monitor marine life such as seabirds, fish and marine mammals and help inform conservation management.

- Distribution surveys
- Population estimates
- Migration tracking

COMMUNICATIONS GATEWAY

The AutoNaut operates as an at-sea information hub. It links sub-sea assets such as seafloor nodes via underwater and satellite communications.

- Data harvesting
- AUV coordination





AutoNaut

AutoNaut Ltd has headquarters in Chichester, UK. The company has offices in Plymouth and Southampton and manufacturing facilities in Okehampton, UK. As part of the Seiche Group, the company also has bases in Houston, USA, Cape Town, South Africa and Stockholm, Sweden.



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