



# SWALE OCEANOGRAPHIC

## Unmanned Surface Vehicles - USV

(Autonomous or Remote Control)



This **OceanAlpha** range of boats allows efficient and safe monitoring, surveying and water-sampling. Several sizes (~1 – >5.0m, 10 – >300kg) are available with a choice of optional features and functions, suitable for the required task and intended location. An ADCP, Side Scan Sonar or Multi-Beam may be fitted to the hull and water quality sensors may also be included. In addition, a programmable sampling system can collect water into several bottles held on-board, contained in an easily removable carry-case. The quiet electric motors which can be turned off, make them ideal for noise monitoring amongst other applications.

### Intelligent navigation system

- Simple way-point programming
- Autonomous navigation algorithm
- High accuracy GNSS (RTK-GPS)
- High accuracy gyro for inertial navigation system
- Automatic obstacle detection and avoidance

### Handheld remote-control

- Real-time communication
- Manual operation
- Mission assignment
- Status monitoring

### Real-time communication

- Operation, attitude and mission status of USV
- Data acquisition of hydrographic, water quality etc.
- Data and video telemetry via WiFi or 4G LTE

### Professional hull design

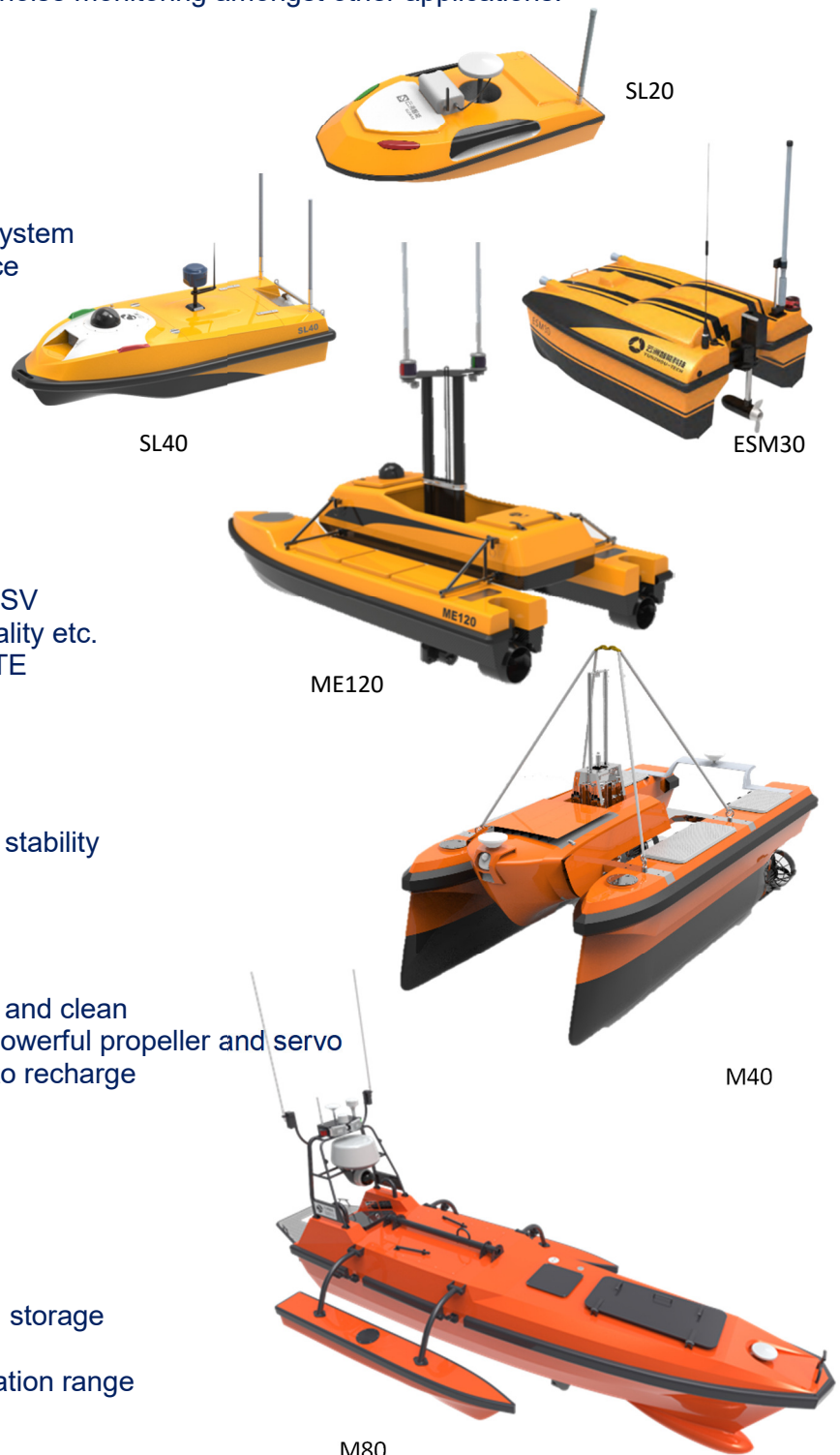
- Use of computational fluid dynamics
- Carbon fibre or aluminium hull
- Catamaran or Trimaran hull design ensure stability
- Anti-corrosive, sealed & waterproof
- Compact, light, reliable and convenient

### Clean energy

- High capacity lithium polymer battery, safe and clean
- Modular design with patented, integrated powerful propeller and servo
- Long endurance (3-12 hours), convenient to recharge
- Fuel / Electric hybrid available

### Base Station

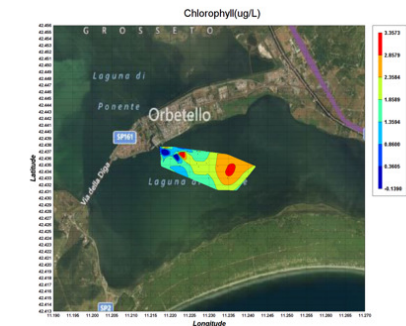
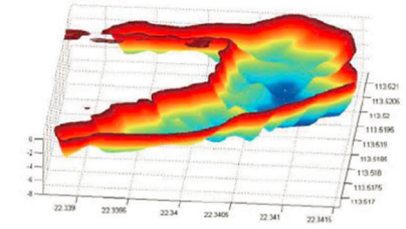
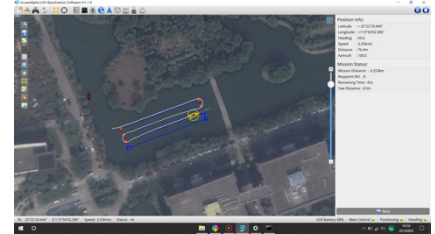
- Data storage and management
- Data analysis, automatic report generation
- Distribution mapping
- Measurement data acquisition, display and storage
- Mission planning & reporting
- Optional relay station to extend communication range
- Real-time multi-angle video
- Satellite map download and management



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## Applications

Bathymetric survey  
 Flotsam collection  
 Hazard location  
 Hydrographic mapping  
 Radiation monitoring  
 River Discharge measurement  
 Security patrol  
 Under-water searches  
 Water quality / pollution monitoring  
 Water sample collection



## Features

Autonomous navigation by GPS waypoints  
 Compatible with ADCP and single beam sonar  
 Deployable by 1 -2 people.  
 Inland water or Coastal applications  
 Live video telemetry  
 Manoeuvrable, compact, light and robust.  
 Collision avoidance  
 On-board instrument / sampling bay  
 Real-time data  
 Strong carbon-fibre hulls



Model	Length x Width	Draught	Sea State (operational)	Top Speed	Endurance	Payload
SL20	1.0 x 0.6 m	15 cm	< 0.3m	10 knots	6 Hrs @ 3 knots	10Kg
SL40	1.6 x 0.7 m	15 cm	< 0.5m	10 knots	6 Hrs @ 3 knots	15 kg
ESM30	1.2 x 0.8 m	15 cm	< 0.5m	3 knots	3.5 Hrs@ 2.5 knots	15 kg
ME120	2.5 x 1.4 m	30 cm	< 0.8m	10 knots	8 Hrs @ 4 knots	45 kg
M40	3.5 x 1.7 m	40 cm	< 1.25m	8 knots	6 Hrs @ 6 knots	65 kg
M80	5.7 x 2.4 m	45 cm	< 1.5m	12 knots	50 hrs @ 6 knots	150 kg

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