

# HydroBoat 990

## Vehicle Specifications

Hull dimension (L x W x H)	1035mm*560mm*345mm
Material	Carbon fiber, Rubber Bumper
Anti-wave & Wind	3rd wind level & 2nd wave level
Waterproof	IP67
Indicator light	Two-color light
Camera	360° omnidirectional video
Anticollision sensor	Detection distance 5-30 meters
Propeller type	Brushless DC
Direction control	Veering without steering engine
Maximum speed	6m/s
Battery endurance	10 hours@1.5m/s(two batteries)

## Controller

System	Android 7.0, storage 5GB; SD Card supported
Software	SLHydro USV, an Android software for users field job
Display	7 inches
Waterproof	IP67
R/C communication	2.4 GHz
Transmission range	2 km, RF point to point in real-time
Navigation mode	Manual or Auto-Pilot

## GNSS Performance

Satellite system	BDS B1/B2/B3, GPS L1/L2/L5, GLONASS L1/L2, Galileo E1/E5
Channel	432
Single point position(RMS)	±0.5m + 1 ppm
DGNSS positioning accuracy	±0.25 m + 1 ppm
RTK Positioning accuracy	H: ±8 mm + 1 ppm RMS V: ±15 mm + 1 ppm RMS
Heading accuracy	0.2° @1 m baseline
Data formats	RTCM V3.0/3.2 input NMEA 0183 output NTRIP, TCP/IP

## Single Beam Echo Sounder

Depth range	0.15 m - 200 m
Accuracy	±0.01 m + 0.1% x D (D is the depth of water)
Frequency	200 kHz
Beam angle	5±0.5°

## Software

	Project management: support project creation, application etc.
	Coordinate system: built-in coordinate system worldwide, support coordinate transformation and grid
	Mission planning: planning waypoints/lines, setting boat speed etc.
SLHydro USV	Auto-pilot: auto course and auto return
	Echogram: automatic tracking depth, echo real-time display
	Data acquisition: real-time acquisition of positioning and bathymetry data
SLHydro Sounder	Data post-processing software. Support import SLHydro USV project, analog signal superimposed digital bathymetry, feature point sampling, data correction, and output of various data formats

# HydroBoat 990

An Android-powered USV system for bathymetric surveys



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USVs (Unmanned Surface Vehicles) are widely used in hydrographic surveys, environmental monitoring, and water search and rescue. The most used and developed field of USV is hydrographic surveying. Hydrographic surveys face many uncharted waters, often require long navigation times, and have high demands on accuracy. These have higher demands on the quality of surveyors and challenge the safety and health of surveyors.

The hydrographic survey USV combines various complex systems to give the user the simplest mode of operation. With advanced hull design, USV combines the GNSS system, bathymetry system, communication system, autonomous navigation system, HydroBoat 990 ensures both efficient surveys and safe navigation.

## Top 3 Challenges about USV



### Reliability

**First**, it is important to avoid these situations for the boat - sinking and being wrecked.  
**Second**, for such a complex system, every part should be maintained in good quality.



### Usability

It is costly to repeat the unnecessary steps for 1000 times.



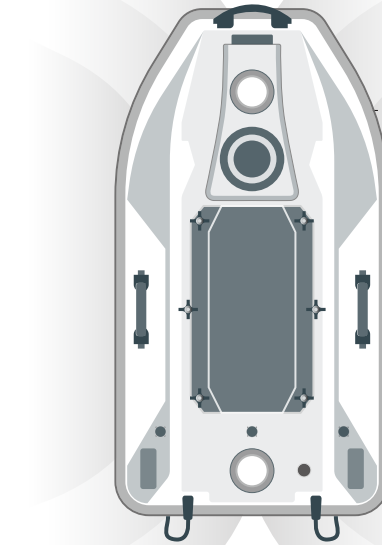
### Functionality

Abundant functions make the measurement more comfortable and the boat can be used in various environments.



## HydroBoat 990 Solution

### Solution of efficiency and reliability



- 1 Advanced pilot system for auto and manual mode, safeguarded by radar avoidance and hovering system. Stable hull design for standing waves, IP67 wind-resistant, and rugged body with collision durability.
- 2 One key setup with just a powerful controller, and the auto-connection makes it a direct-to-go system with a 2km operation range.
- 3 Advanced Android app for hydrography and pilot control, making the task easier to be done on the smart controller.



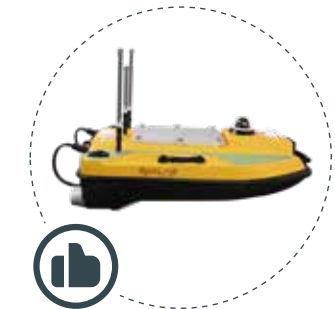
### Usability

- Operate in One App Only
- Time-saving Turn on and Survey
- Communicate without Base Station
- Integrate with GNSS and SBES
- Satellite and Communication Light



### Functionality

- Stable Hovering
- Avoid Collision with Obstacles
- Video Patrol
- Automatic Reversing in the Shallows



### Reliability

- IP67
- Double Hull
- Anti-collision and Wear-Resisting
- IHO Standard
- Verified and Certified by CE
- Automotive Grade INS Integrated
- 4G Remote Control Redundancy
- Onboard Depth Logging Redundancy