DEFENSE & SECURITY

USV (Unmanned Surface Vehicles) are remote control or autonomous intelligent water surface robots which are able to fulfill multiple tasks.

These are modular designed with multiple functions and safe replacement for human's work.

Autonomous Navigation & Intelligent Obstacle Avoidance
- Autonomous Navigation Control system with intellectual property right
- GNSS autonomous navigation due to obstacle avoidance technology and advanced navigation algorithm

Hull Material
- Composite materials of carbon fiber, fiberglass and Kevlar fabric
- Separated cabin design; Water Proof , Anti-sinking , Anti-Capsizing

Data Communication
- Long distance radio communication
- Real time data and video transmission

Multi-Mission Platform
Universal Data interface, power supply and mechanical structure

Intelligent Control Terminal
- Base Station-Map download, Mission planning and monitoring, Survey data acquisition, Boat control
- Remote Controller / Manual control, Mission and boat status

Green Energy
- High Capacity lithium ion polymer battery
- Long endurance and safely packed

View USV in our web pages

WHY USV IS A BETTER OPTION?

Wider application
Unmanned surface vehicles can work in diversified water environments and assist in different survey missions due to a lower draft and flexible equipment capability

Lower cost
The application of unmanned surface vehicles save largely in labor and fuel costs as well as employee expenses as there is no need to carry surveyors on board

Better data quality
The unmanned surface vehicle's unique hull design and propeller system enables it to sail in high accordance with the planned route to generate accurate data reports.

Higher efficiency
Unmanned surface vehicles allow you to survey autonomously and continuously in addition to being easy to transport from site to site, which significantly improves working efficiency.

Safer
Safety is increased while surveying dangerous areas and complex routes due to the elimination of individuals on the vessel.

Remote Control Survey Boat SL20Y

The most affordable minimum size surveying USV for one-man operation

Specifications

Hull Material **Carbon Fiber**
Hull Length **105*55*35 cm**
Draft **0.15 m**
Weight **14 kg**
Payload **10 kg**
Motor **Water jet propeller**
Moon Pool **=<190 mm**
Remote Control **Radio Frequency**
Remote Control Frequency **900 MHz/ 868 MHz**
Remote Control Range **1 km**
Data Telemetry Frequency **900 MHz/ 868 MHz**
Data Telemetry Range **2 km**
Survey Speed **1-2.5 m/s**
Top Speed **4 m/s**
Endurance **2 hours @ 2.5m/s**
Battery Pack **1 x 33V 40Ah / Quick Battery Replacement**

Instrumentation

Sontek RiverSurveyor S5/M9
Teledyne RD Instruments Workhorse Rio Grande
Teledyne RD Instruments River Ray
Teledyne RD Instruments River Pro
Teledyne RD Instruments Rio Pro
Teledyne RD Instruments Stream Pro
Linkquest Flow quest
Real time video monitoring

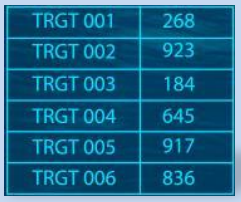
Options **ADCP telemetry module**

Flexible operation with remote controller
The SL20Y USV is controlled by a remote controller so that the operator can enjoy a higher level of flexibility and safety in harsh working environment

Compact and portable
The SL20Y USV weighs only 15kg and is 105cm long, so it can be carried by one person and transported around in the trunk of a car

RIVER SURVEYOR M9 ADCP

RIVER RAY ADCP



High speed and tangle free
The innovative propeller system allows the SL20Y USV to sail at 5m/s at highest without worrying about being entangled by water plants or rubbishes

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MTR 2018
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IEC CERTIFIED
FCC CERTIFIED
CE CERTIFIED
QMS CERTIFIED
ISO 9001 CERTIFIED
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Autonomous Survey Boat SL20

A compact and portable unmanned surface vessel for hydrographic and bathymetry surveying

Specifications

Hull Material **Carbon Fiber**
Hull Length **105*55*35 cm**
Draft **0.15 m**
Weight **(Exluding ADCP) 17 kg**
Payload **8 kg**
Motor **Water jet**
Moon Pool **177 mm**
Remote Control **Radio Frequency**
Remote Control Frequency **900 MHz / 2.4 GHz**
Remote Control Range **1 km**
Data Telemetry Frequency **2.4 GHz / 5.8 GHz**
Data Telemetry Range **2 km**
Survey Speed **1 - 2.5 m/s**
Top Speed **5 m/s**
Endurance **2 hours @ 2.5m/s**
Battery Pack **1 x 33V 40Ah / Quick Battery Replacement**

Instrumentation
Instrumentation Sontek River Surveyor S5/M9
Teledyne RD Instruments River Ray
Teledyne RD Instruments River Pro
Teledyne RD Instruments Rio Pro
Teledyne RD Instruments Stream Pro
Link quest Flow quest
Options **ADCP telemetry module**

The SL20 is designed for water discharge measurement and hydrographic survey.
Is compatible with different brand ADCP and single beam sonar, like ROI, Sontek, Linkquest and etc ..
The boat is maneuverable with compact design, which make them easily be operated by just one person.
It could also be carried on the back of a SUV or a trunk.
The maximum speed can reach 5.5m/s and 2km control range, so that the boats are suitable for most water current environment.

Auto-pilot And Real time Data Telemetry
The SL20 USV supports both remote control mode and auto-pilot mode, performs great line tracking capability. The base station can be easily set up on field, data can be transmitted in real time.

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RIVER SURVEYOR M9 ADCP

RIVER RAY ADCP

TRGT 001	268
TRGT 002	923
TRGT 003	184
TRGT 004	645
TRGT 005	917
TRGT 006	836

Adaptable to extremely shallow water
With an extremely low draft of 15cm, the SL20 USV allows you to survey freely on offshore coasts, shoals and reefs where traditional manned vessel unable to enter

High Speed and Well Protected Propeller
Waterjet propulsion system drives the maximum speed to 5m/s
Safety protection avoids the propellers being intertwined with water plants or water debris.

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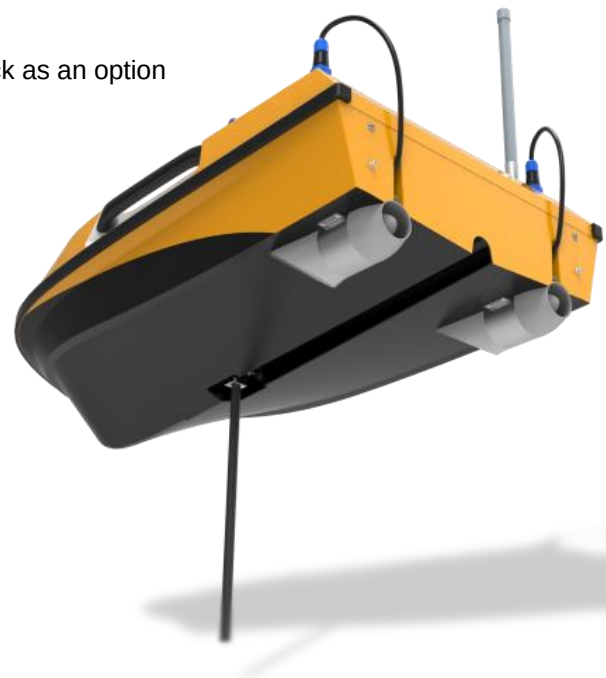
Remote controlled water sampling boat SS20Y

The USV can collect 10L water samples from one spot 0.5m under the water's surface

Specifications

Hull Material	Carbon Fiber
Weight(excl.ADCP)	14kg10kg
Payload	Waterjet propeller
Motor	Radio Frequency
Remote Control	2 km
Remote Control Range	2 km (2.4G wireless Ethernet as option telemetry range
Data Telemetry Range	2km @ 2Mbps)
Survey Speed	2-5knots(1-2.5m/s)
Top Speed	10 knots (5m/s)
Battery Endurance	2 hours@2.5m/s
Battery Pack	1x33V 40Ah
	Quick Battery Replacement
	*Higher capacity battery pack as an option
Option	Real time video monitoring
	ADCP telemety module



Flexible operation with remote controller
The USV is operated by remote controller so that the operator can enjoy higher levels of flexibility and safety in harsh working environments..

High speed & tangle free
The innovative propeller system allows the USV to sail at a speed up to 5m/s and to avoid being entangled with water plants and rubbish.

Compact and portable
This USV only weighs 15kg and is 105cm long, so it can be carried by one person and transported in the trunk of a car.

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Specifications

Dimensions **1150*750*430 mm**
Weight **31 kg**
Material **Fiberglass composite with Kevlar & Carbon fiber**
Obstacle Avoidance **10 m**
Communication Range **Autopilot: 2 km / Remote Control: 1 km**
Sampling Capacity **4 x 1.8 L**
Draft **0.25 m**
Water Sampling Depth **0.5 m**
Water Monitoring **Temperature, pH, DO, conductivity, turbidity, etc.**
Depends on sensor configuration
Maximum Speed **1.5 m/s** - Endurance **+3 hours**

Autonomous water sampling and monitoring boat is extended version of sampling boat by adding online monitoring function with ability to integrate multi-parameters probe. Mostly applied in lake, river, estuary and costal area. It brings great efficiency in surface water quality monitoring and mapping.

- Automatic Multi-point water samples taking and water quality monitoring
- Each Sample's volume is configurable between 0-1800ml
- Able to integrate with water quality probe for online monitoring
- Parameters such as, Temperature. PH, DO, Conductivity, Turbidity, Chlorophyll, BGA, Chloride, Nitrate etc.
- Water quality monitoring data output and mapping
- Video monitoring and ultrasonic obstacle avoidance

Multi-spot water sampling
The ESM30 USV can collect 4 bottles of 1.8L water samples from different spots 0.5 m under the water's surface.
It has 4 separated tunnels to avoid cross pollution

Automatic Mission Planning
Both the USV and the surveying instruments are controlled by a base station.
The USV can autonomously conduct surveys and send back data in real-time.
User can also drive the USV manually by a remote controller.

Intelligent collision avoidance
With the ultrasonic sensors, the ESM30 USV can detect and bypass obstacles 10 meters ahead to avoid collision. In manual mode, user can observe water environment by the real-time video feed to better avoid obstacles

Autonomous Sampling Boat SS30

An intelligent solution to collect your water samples from multiple spots

Specifications

Dimensions **1150*750*430 mm**
Weight **31 kg**
Material **Fiberglass composite with Kevlar & Carbon fiber**
Obstacle Avoidance **10 m**
Communication Range **Autopilot: 5 km**
Remote Control: 2 km
Sampling Capacity **4 x 1.8 L**
Draft **0.25 m**
Water Sampling Depth **0.3 - 0.5 m**
Maximum Speed **1.5 m/s**
Endurance **+3 hours**

Multi-spot water sampling
The SS30 USV can collect 4 bottles of 1.8L water samples from different spots 0.5m under the water's surface. It uses 4 separated tunnels to avoid cross pollution.

Flexible operation with remote controller
The USV is operated by a remote controller so user can enjoy a higher level of flexibility and safety in harsh working environment.

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Autonomous Survey Boat SL40

Unique waterjet hydrographic surveying USV platform

Specifications

Dimensions **1650*700*400mm**
Weight **35kg**
Material **Carbon fiber**
Communication **Radio and network**
Communication Range **Remote control 1km**
Data Telemetry **2km**
Maximum Speed **5m/s**
Payload **15kg**
Video Monitoring **Yes**
Collision Avoidance **Yes**
Multi Missions **Yes**

Intelligent collision avoidance

With the ultrasonic sensors, the SL40 USV can detect and bypass obstacles 10 meters ahead to avoid collision.
In manual mode, user can observe water environment by the real-time video feed to better avoid obstacles.

Higher speed & tangling free

The innovative waterjet propeller allows the SL40 USV to sail at 5m/s and effectively avoid being entangled by water plants or rubbishes.

Stable sailing

The trimaran hull design highly improve the sailing stability in high speed.

Rapid installation with ADCP and echo sounder

ADCP | ECHO SOUNDER | SIDE SCAN SONAR

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Remote Control Survey Boat SL40Y

Waterjet high speed platform for water discharge and bathymetry measurement

Specifications

Dimensions **1650*700*400mm**
Weight **32kg**
Material **Fiberglass composite with Kevlar & carbon fiber**
Communication **RF point to point bidirectional communication**
Communication Range **RF point to point bidirectional communication**
Maximum Speed **Remote control 2km**
Autonomous navigation 5km
Endurance **5m/s**
Payload **15kg**

ADCP

ECHO SOUNDER

SIDE SCAN SONAR

TRGT 001	268
TRGT 002	923
TRGT 003	184
TRGT 004	645
TRGT 005	917
TRGT 006	836

Flexible operation with remote controller

The USV is operated by the remote controller, user can enjoy a higher level of flexibility and safety in harsh working environment.

Higher speed & tangling free

The innovative waterjet propeller allows the USV to sail up to 5m/s and effectively avoid being entangled in water plants or rubbishes.

Stable sailing

The trimaran hull design highly improve the sailing stability in high speed.

Rapid installation with ADCP and echo sounder

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Autonomous Survey Boat ME40

One-stop hydrographic surveying solution

Higher speed, less maintenance

With a plug and play design, its high speed outboard motor is easy to maintain.

Specifications

Dimensions **1630*710*370 mm**
Weight **33 kg**
Obstacle Avoidance **10 m**
Material **Fiberglass composite with Kevlar & Carbon fiber**
Communication **RF point to point bidirectional communication**
Communication Range **Remote control 1km**
Data Telemetry **2km**
Maximum Speed **5m/s**
Endurance **4 hours @ 1.5 m/s**
Payload **15 kg**

Autonomous survey platform ME40 is designed for hydrographic survey with great efficiency.

By replacing conventional workboat, autonomous platform is able to acquire bathymetry data without time-consuming and human safety risk.

Mission planning, navigation control and real-time data acquisition are integrated in one package software, offering maximum efficiency to surveyors.

- Mission planning and autonomous survey
- Existing GNSS instrument can be installed
- Data acquisition integrated in USV software
- Customized option for other instruments
- Maximum 5m/s speed
- Excellent performance in shallow water

Intelligent collision avoidance

With the ultrasonic sensors, the ME40 USV can detect and bypass obstacles 10 meters ahead to avoid collision.
In manual mode, user can observe water environment by the real-time video feed to better avoid obstacles.

Rapid installation with ADCP and echo sounder

ADCP | ECHO SOUNDER | SIDE SCAN SONAR

TRGT 001	268
TRGT 002	923
TRGT 003	184
TRGT 004	645
TRGT 005	917
TRGT 006	836

Automatic mission planning

User can pre-program the survey mission with the base station on the bank.
The USV and instruments can conduct surveys autonomously and send back real-time data. User can also drive the USV manually by a remote controller.

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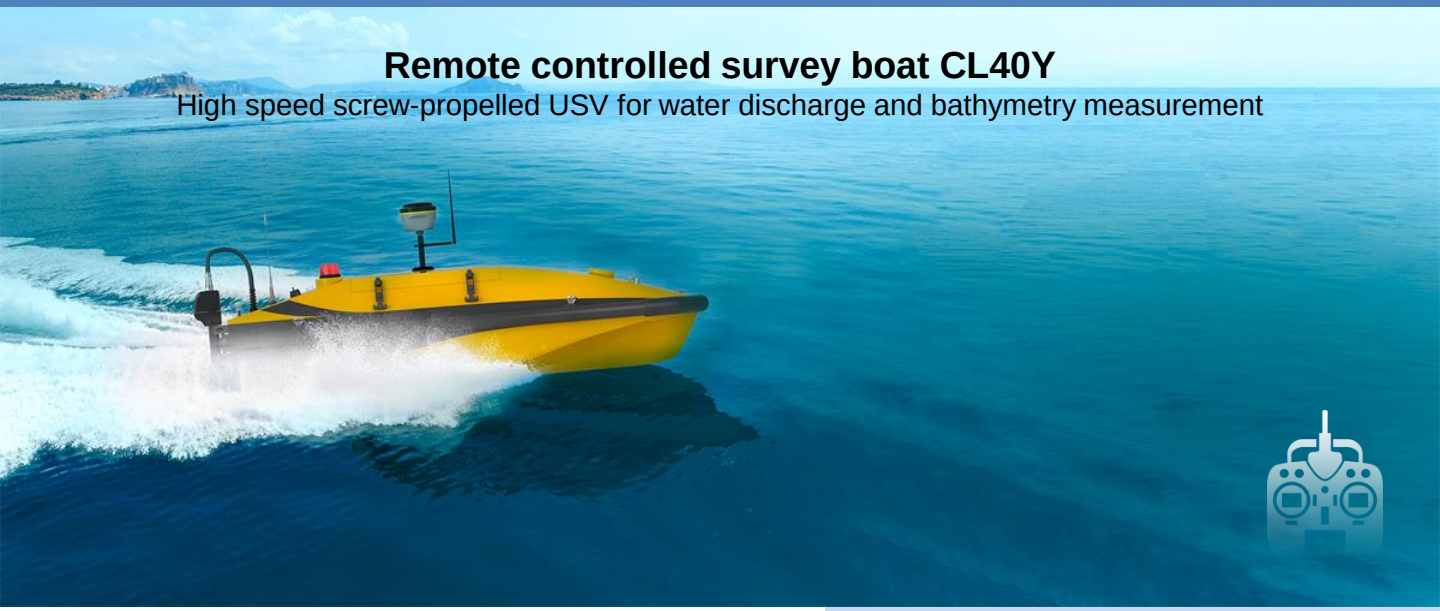
Remote controlled survey boat CL40Y

High speed screw-propelled USV for water discharge and bathymetry measurement



Specifications

Dimensions **1630*710*370 mm**
Weight **33 kg**
Material **Fiberglass composite with Kevlar & Carbon fiber**
Communication Range **Autopilot: 2 km**
Remote Control 1km
Maximum Speed **1.5 m/s**
Endurance **3 hours**
Payload **15 kg**

The SL40Y is designed for water discharge measurement and hydrographic survey.

Is compatible with different brand ADCP and single beam sonar, like ROI, Sontek, Linkquest and etc.

The boat is maneuverable with compact design, which make them easily be operated by just one person.

It could also be carried on the back of a SUV or a trunk.

The maximum speed can reach 5.5m/s and 2km control range, so that the boats are suitable for most water current environment.

Stable sailing

The trimaran hull design highly improve the sailing stability in high speed

Higher speed, less maintenance

With a plug and play design, its high speed outboard motor is easy to maintain.

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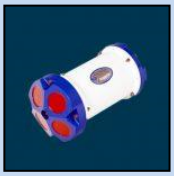
Rapid installation with ADCP and echo sounder



ADCP

ECHO SOUNDER

SIDE SCAN SONAR

TRGT 001	268
TRGT 002	923
TRGT 003	184
TRGT 004	645
TRGT 005	917
TRGT 006	836

Flexible operation with remote controller

The USV is operated by the remote controller, user can enjoy a higher level of flexibility and safety in harsh working environment.

Hydrographic Unmanned Surface Vehicle ME120

Convertible catamaran USV platform for hydrographic survey

Specifications

Dimensions **2.5*1.4*0.7 m**
Weight **150 kg**
Battery weight **60 kg**
Payload **45 kg**
Material **Carbon fiber**
Communication Range **2 km (RC) / 5 km (Auto)**
Max.Speed **5 m/s**
Survey Speed **2 m/s**
Endurance at Survey Speed **8 hours @ 2 m/s**
2 hours @ 5 m/s
Video Monitoring **Yes**
Collision Avoidance **Yes**
Multi Missions **Yes**
Automatic Transducer Lifter **Yes**

Autonomous survey boat ME120 is a medium sized platform designed for hydrographic survey in harbor and costal area.

With catamaran design and flexible payload for instruments, ME120 is developed to provide surveyors and Service Company with multi-mission work in harbors or inland waters.

Navigation control and real-time data acquisition are easily operated at base station computer.

ME120 is also a universal deployable platform to execute other mission like water quality monitoring and harbor surveillance.

- Mission planning and autonomous survey
- 60Kg/25Kg(ME120/ME70) payload for flexible instrument options
- Applied in river or costal area
- Customizable for various equipment (Muti-parameter probe, CCTV camera, ADCP, Side Scan sonar ..etc.)

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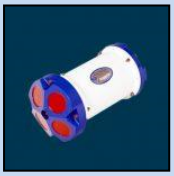
Rapid installation with ADCP and echo sounder



ADCP

ECHO Sounder

Side Scan Sonar

Multi beam ECHO Sounder

3D LiDAR scanner

Water quality sonde

Forward looking sonar

The USV and instruments can conduct surveys autonomously and send back real-time data.
User can also drive the USV manually by a remote controller.

Quick assembly and easy transportation
The ME120 utilizes a detachable catamaran design, making it easy for van transportation and for two people to assemble and disassemble.

Replaceable equipment cabin
The payload cabin of the ME120 USV is replaceable, user can freely change and install different instruments according to mission requirements.

Automatic mission planning
User can pre-program the survey mission with the base station on the bank.

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Autonomous Hydrographic Survey Boat M40

A state of the art hydrographic platform designed for multi beam survey

Automatic Multi-purpose Survey

Both the USV and the survey instruments are operated by the base station. Navigated by the GNSS positioning system, the USV can autonomously conduct pre-programmed multi-purpose surveying missions and send back data in real-time.
Operators can also control the USV manually within a distant of 2 km by using a remote controller.

Specifications

Dimensions **3.3*1.9*1.45m**
Weight **525kg**
Draft **0.4m**
Power **Electric propulsion**
Endurance **8 hours**
Payload **60 kg**
Survey speed **4.5 knots**
Max. Speed **7 knots**
Sea State **Operation SS-3**
Communication Range **5km**
Camera **YES**
Collision Avoidance **YES**
Automatic winch **YES (Optional)**

Autonomous survey boat M40 is a medium sized platform designed for hydrographic survey in coastal area and deep ocean water.

With modular catamaran design and flexible payload for instruments, M40 is developed to provide high performance survey with multi beam sonar and different kinds of hydrographic and monitoring instruments in ocean.

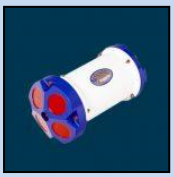
- 5kg payload, compatible with multi-beam sonar
- Automatic lifting system, fully protect the transducer

Lower Noise and Higher data quality
The innovative wave-piercing bottom of the M40 USV can slice through waves to reduce shaking and noise during sailing which allows instruments to collect data of higher quality.

High power electric propeller
The M40 USV is driven by lithium polymer batteries and is able to reach the speed of 7 knots in full payload.

Collision Avoidance System
Collision avoidance system can detect obstacles in 50 meters ahead to avoid collision
User can observe the water environment around the USV via 2 onboard cameras.

Modular Wet/Dry Payload Bay



ADCP

ECHO Sounder

Side Scan Sonar

Multi beam ECHO Sounder

3D LiDAR scanner

Water quality sonde

Forward looking sonar

Sub-bottom profiler

Automatic Lifter For Wet Payload
A build-in automatic lifter can lift and drop the instrument depending on whether the USV is sailing or surveying, which can protect transducers and save energy correspondingly.

Flexible Transportation & Maintenance
Both the component system and the mission system utilize a modular design, making it easy to switch between different mission deployments and maintain the USV.

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Long Endurance Multi-Function USV M40P

The M40P can carry a wide range of equipment to conduct bathymetry, seabed mapping, and geological hazard inspection.

Specifications

Hull Material: Aluminum alloy
Dimension: (L)4.5 m *(W)2.33 m*1.9m（H）
Weight: 1400kg
Payload: 80 kg
Draft: 40 cm
Propulsion: Electric propulsion with differential steering
Communication Range: 10 km
Max. Speed: 7 knots
Survey Speed: 4-5 knots
Endurance: 24hrs at Survey Speed
Video Monitoring: Yes
Multi Missions: Yes
Automatic Payload Lifter: Yes
Operation Sea State: SS3

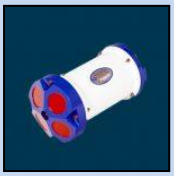
Autonomous Navigation: Piloted by autonomous navigation algorithm, M40P can carry out round-clock inspection according to the preset route, greatly reduces the workload of and safety threats to personnel.

Superior Stability: M40P's unique hull catamaran design structure design provides exceptional performance even in turbulent waves, significantly reducing swaying and spray foam, providing a stable and quite working condition for acoustic equipment

Quiet and Clean: Powered by a diesel generator, the M40P has a single lifetime of up to 24 hours, while it can operate continuously for weeks by refueling.
The generator can be turned off when surveying to provide a quiet and zero-emission operating environment for the equipment to guarantee data accuracy.

Exceptional Maneuverability: The configuration of twin engines and twin propellers, combined with the catamaran shape, elevates its maneuverability when navigating closely around foundations constructions for zoom-in inspection.
High-precision positioning and advanced navigation control algorithm minimize risk of collision

Modular Wet/Dry Payload Bay



ADCP

ECHO Sounder

Side Scan Sonar

Multi beam ECHO Sounder

3D LiDAR scanner

Water quality sonde

Forward looking sonar

Sub-bottom profiler

Fleet Collaboration

Multiple USVs can group up to form a fleet, navigating the same route while conducting varied inspections.
The fleet can be piloted by one workstation to conduct a large scale investigation of different dimensions, significantly reducing labor costs and improving operational efficiency.

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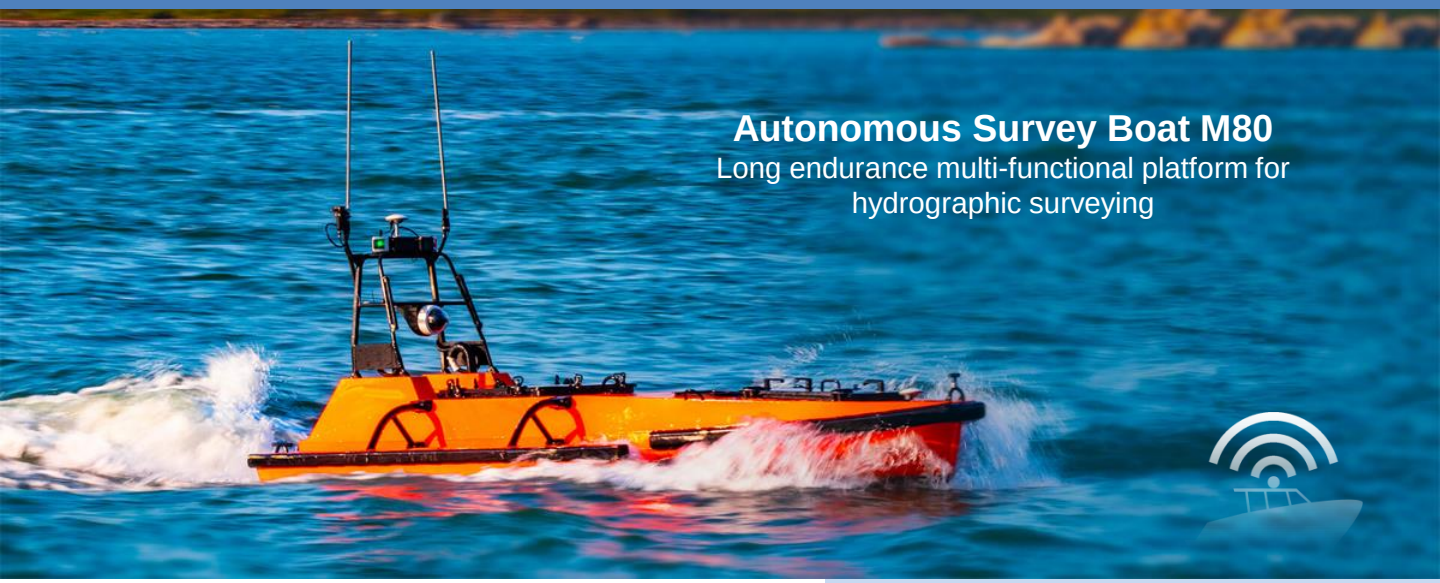

Autonomous Survey Boat M80

Long endurance multi-functional platform for hydrographic surveying

Specifications

Dimensions **5.65×2.4×2.9m**
Transport Dimensions **5.65×2.1×2.4m**
Designed Displacement **1250kg**
Sea State **Operational SS-3**
Survival **SS-5**
Maximum Speed **12 knt**
Operating Speed **6-8 knt**
Operating Range **20 hrs**
Max Payload **150kg (approx 0.9m³)**
Communication Range **15km**
Water Barrier Distance Detection **75m**

Better protection to equipment

A build-in automatic lifter can lift and drop the instrument depending on whether the USV is sailing or surveying, which can protect transducers and save energy correspondingly

Upper level of collision avoidance

Deployed with a 4G radar, an HD camera and a LiDAR, the M80 USV gives an excellence performance in collision avoidance.

Automatic multi-purpose survey

Both the USV and the survey instruments are operated by the base station.
Navigated by the GNSS positioning system, the USV can autonomously conduct pre-programmed multi-purpose surveying missions and send back data in real-time.
Operators can also control the USV manually within a distant of 2 km by using a remote controller.

Collision Avoidance System

Collision avoidance system can detect obstacles in 50 meters ahead to avoid collision
User can observe the water environment around the USV via 2 onboard cameras.

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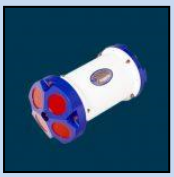
Modular Wet/Dry Payload Bay



ADCP

ECHO Sounder

Side Scan Sonar

Multi beam ECHO Sounder

3D LiDAR scanner

Water quality sonde

Forward looking sonar

Sub-bottom profiler

The M80 USV can carry up to 150kg of hydrographic & geophysical instruments to conduct multi- purposed hydrographic surveys on deep sea.

Communication Range 20Km
Operation range 120 NM (222 km)
Top speed 12Kn
Height 210cm
Width 240cm
Overall length 565cm

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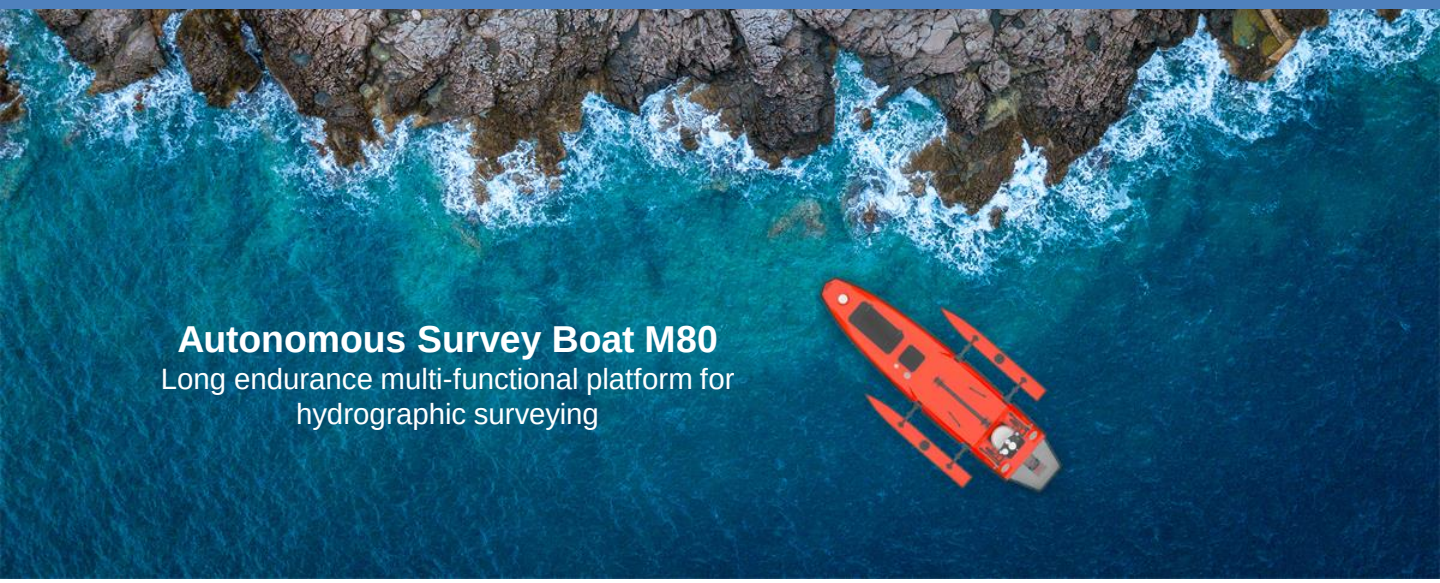

Autonomous Survey Boat M80

Long endurance multi-functional platform for hydrographic surveying

M80B unmanned survey boat platform is designed to meet high requirement in hydrographic and oceanographic survey, the stabilization wings offer the best stability in ocean environment with minimum size of the boat. M80B platform is able to deploy and integrate with variety of instruments such as multi beam sonar, side scan sonar, sub-bottom profiler, gravimeter and magnetometer, water quality sensors etc.

Autonomous navigation and obstacle avoidance provide efficient and safe operation.

Recommend Deployed Equipment

Signal Beam Echo Sounder
(Odom Echotrac CV200 / CV1 00 Haiying HY1601 / 1602 South SDE-18)

Multibeam Echo Sounder
(Reson T20, Odom MB1 / MB2)

ADCP
(Sontech M9/S5, DI Ruijiang, Linquest Nortek)

Side Scan Sonar
(Beijing Lanchuang Shark S450U)

Forward-looking Sonar
(BlueView M-450, Kongsberg M3)

Online Multi-Parameter / Water Quality Instrument
(HACH 0S5 / MS5, YSI EXO Series, Sailhero XHFP / XHMP)

Autonomous Surveillance & Rescue Vessel M75

High-speed surveillance and outstanding performance during night shifts

*Deployed with night search equipment and safe equipment, unmanned surface rescue boat can work **day and night 24/7** Cooperate with police/coast guards also*

Specifications

Size **5.27 m(L)*1.7 m(W)*2.1 m(H)**
Max Speed **30 kn**
Endurance **>120 nm**
Weight **1000kg**
Propeller **Water-jet**
Survival Sea State **SS-4**
Communication (LTE) **10 km**
Payload **200 kg**
Draft **0.4 m**

SURVIVAL Equipment parameters

Crew Onboard **6 Persons**
Package Dimension **0.46×0.8 m**
Weight **About 35 kg**
Dimension **1.82*1.82*1.2 m**
Items in Life Raft **Fresh water, food, medicine etc**

M75 is specified to apply in security, patrol, Search & rescue, investigation and evidence collection areas.

With high speed propulsion system, M75 could arrive target place at the first moment.

It is also available to switch between manned and unmanned mode, so that you can choose how to control it based on the situation.

LTE communication within 15km Using

LTE communication, the USV can interact with the base station within 15km and send back videos and data in real-time.

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Dedicated for maritime surveillance and rescue
The M75 is integrated with comprehensive searching, data, communication and rescue modules, making it an ideal vessel for maritime surveillance and rescue

Search Module

Information

Help Module

Outstanding performance at night
The photoelectric pod enables the USV to search at night and take high resolution photos for evidence.

Equipped with smart rescue equipment
The USV is deployed with smart rescue equipment like an ejectable life-raft, a remote controlled life bed and a lifebuoy.

Collaborative large-scale search and rescue missions
The USV can autonomously team up to conduct massive-scale search & rescue missions to locate victims.

Quick emergency response time
The USV runs on a high-speed water jet motor and can reach a maximum speed of 30 knots, allowing for quick emergency response times

Autonomous Firefighting Vessel L30

Fast-response in marine fire emergency

Parameters (L30 Model for the Fighting & Rescue Vessel)

Height **420cm**
Width **270cm**
Overall length **750cm**
Max Speed **46 knot**
Propeller **Outboard Motor**
Weight **3.75t**
Full load draught **0.6 m**
Sea State **4**
Communication **15km**
Endurance **300Nm.**

Water Cannon Parameter

Range **>30m**
Flow rate **40 (L/S)**
Working Pressure Range **0.8 MPa**
Maximum Spary Pressure **0.2 ~ 1.4 MPa**
Maximum Spray Angle **>=95 degree**
Pitching Angle **30 - 90 degree**
Horizontal Rotation Angle **360 degree**

Equipped with smart rescue equipment

The USV is deployed with smart rescue equipment
Multi-screen control base station

The multi-screen control base station can be deployed in a shore-based command center, on a mothership, or in a moving vehicle, depending on the scenario

L30 is a big platform for fire control on water. It carries professional fire water cannon equipment with 50m distance, and also life rafts & buoys.

The life raft could be released by remote control to rescue the drowning personnel.

There is a cockpit similar to a yacht which makes it available for 4-6 crews on board.

The speed of this vessel is up to 40 Knot, fast enough for most sea condition and emergency response

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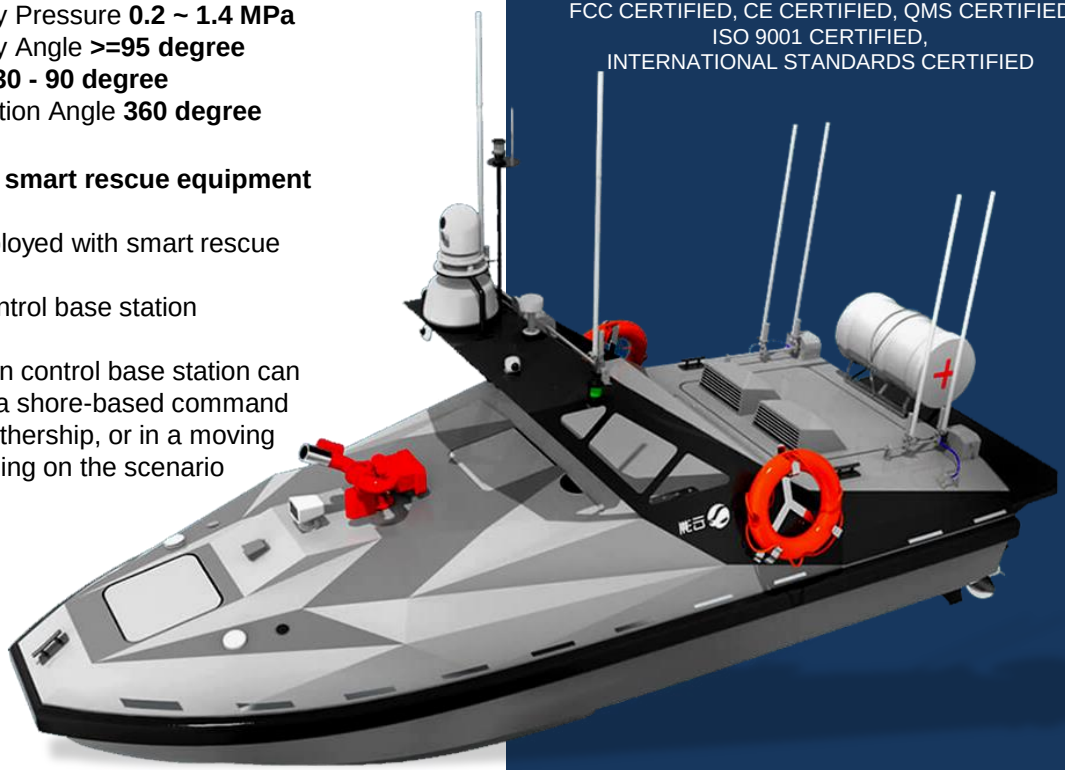

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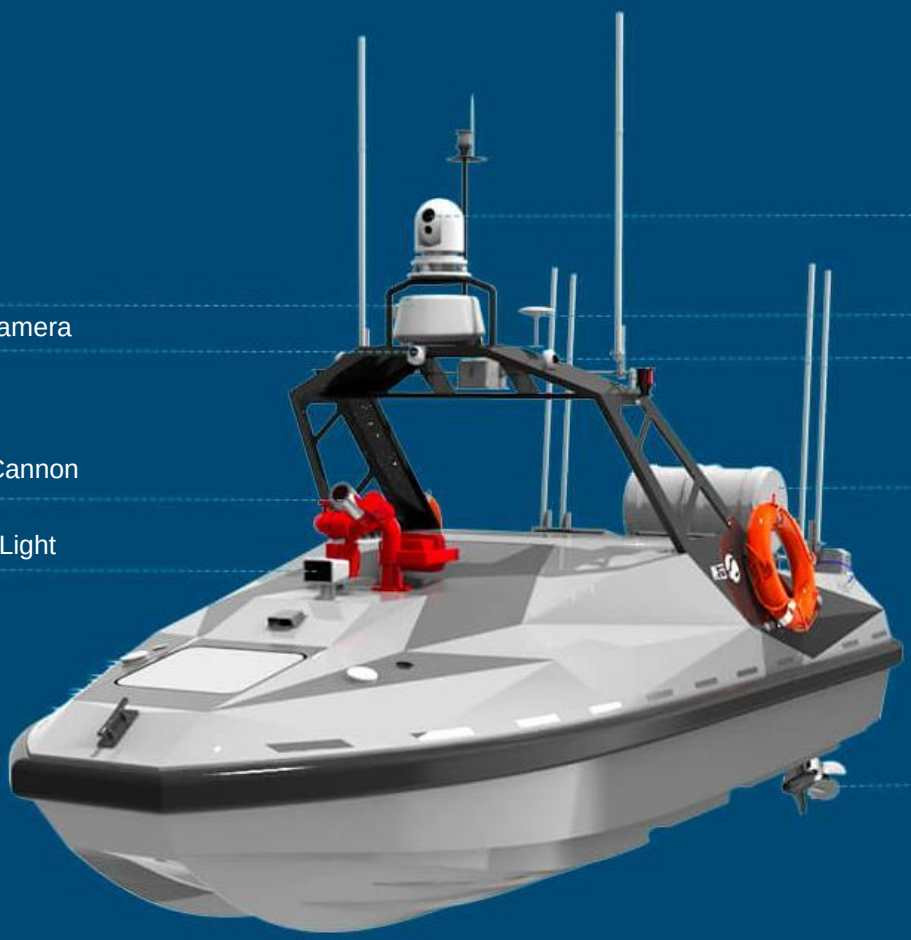
Autonomous Firefighting Vessel
L30
Fast-response in marine fire emergency



Unmanned firefighter
Equipped with a water cannon, the L30 USV can respond briskly to marine fire accident.

Quick response to emergency

The USV runs on a high speed water jet motor and the maximum speed can reach 30 kn, facilitating quick response to emergencies.

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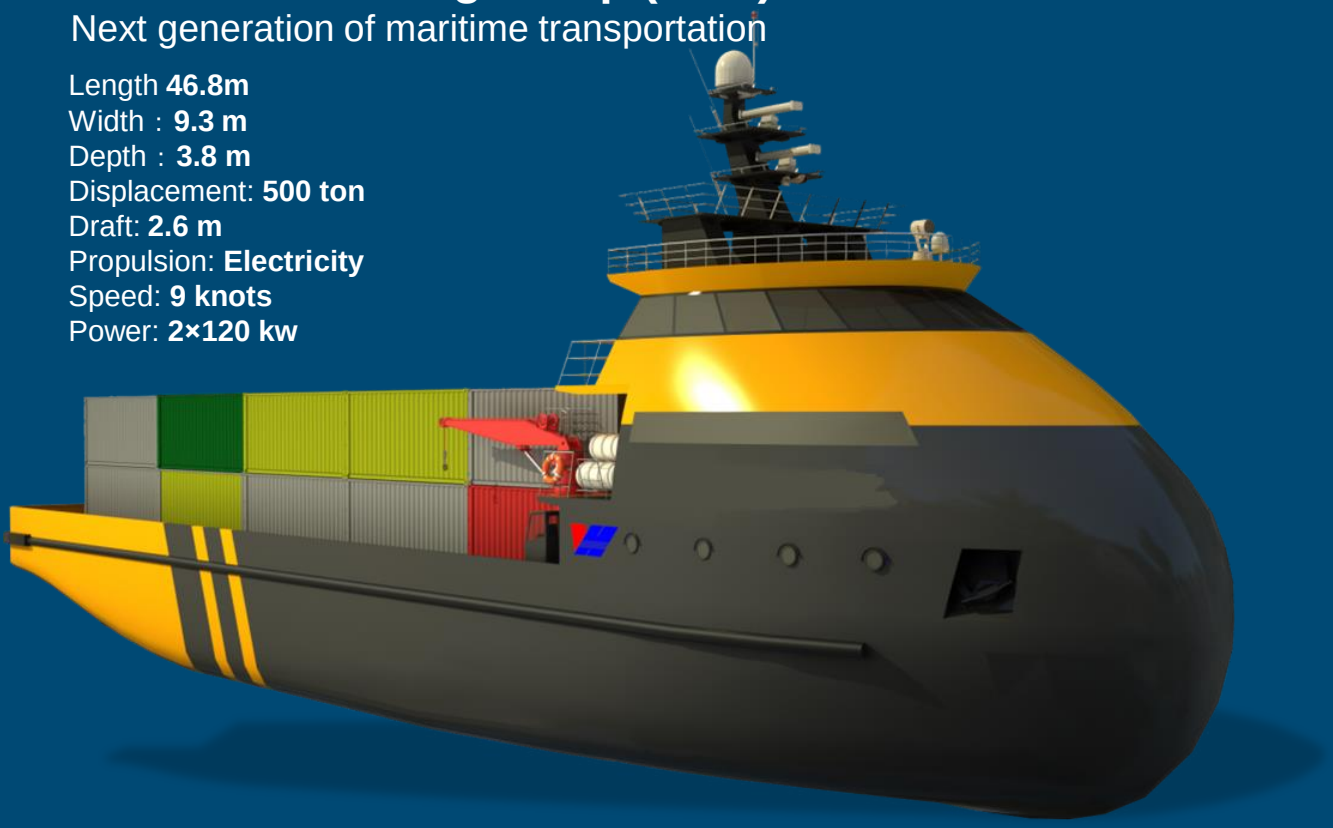
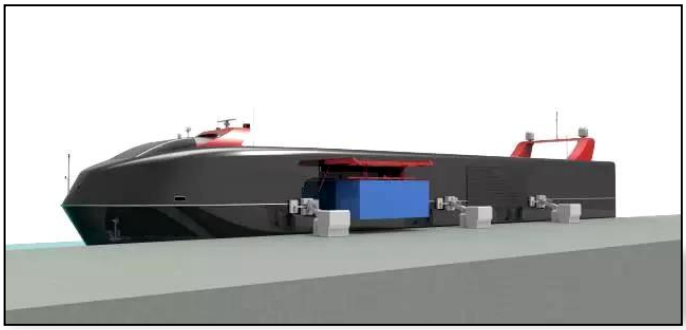
Autonomous Cargo Ship (ACS)

Next generation of maritime transportation

Length **46.8m**
Width：**9.3 m**
Depth：**3.8 m**
Displacement: **500 ton**
Draft: **2.6 m**
Propulsion: **Electricity**
Speed: **9 knots**
Power: **2×120 kw**



50m long, 500T displacement



Remote control center

By combining a wireless broadband private network with the public network, a command center can be built to connect multiple places to control the unmanned cargo ships remotely.

Automatic scheduling system

The ACS utilizes an automatic scheduling system, which will cut staff both on-board and ashore to reduce costs and improve efficiency.

Cloud big data

Merging with cloud big-data, the Cargo vessel will become a smart transportation solution for port logistics and shipping companies.

Autonomous Cargo Ship

Next generation of maritime transportation

In conjunction with China Classification Society (CCS), Zhuhai Municipal Government and Wuhan University of Technology, it has launched a project to develop a small unmanned surface vessel (USV) for commercial shipping purposes.

This smart vessel will be a 500-ton vessel with a hull length of 50 meters, and the use of electric propulsion will give it a range of 500 nautical miles.

Manufacturer hopes that the new technology will lower the number of human-error incidents at sea, reduce labor costs and cut emissions by using batteries instead of gas.

Sun Feng, vice president of China Classification Society, introduced the characteristics of the project to the media at the Shanghai Maritime Exhibition.

“It will be the first USV that is entirely domestically developed with Chinese technology and guided by the Bei dou navigation system,” said Sun Feng.

The small USV cargo ship was designed and constructed in full accordance with the unmanned cargo ship inspection specifications issued by China Classification Society and will mainly be used for inland navigation and island supply.

“Over 70 to 80 percent of incidents that happened in the sea are man-made, and 40 percent of the entire running cost goes to human labor. Using USVs can largely reduce the cost and incidents.

In support of the R&D testing needs of small unmanned vessels, the project team, with the support of Zhuhai municipal government, will establish an industrial ecological platform based on the ship’s pilotless operation.

This will include an unmanned maritime testing ground, automatic mooring terminals, maritime communications and network security and other infrastructure to meet different types of unmanned testing needs and provide data and operational support for future unmanned shipping.

Following Norway’s world-first unmanned marine test site, the Zhuhai Wanshan Islands unmanned marine test site is the second in the world, and the first in Asia.

Manufacturer has built a wireless broadband private network covering the Pearl River estuary of the Pearl River Delta. Combined with the public network, it forms a “long-range linkage platform” that connects many places so as to facilitate remote control of unmanned aerial vehicles.

In the future, with further progress of the project, the boat controllers from the Guangdong, Hong Kong, Macau and Tai Wan areas will be able to control the vessel remotely from the unmanned navigation control center.

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