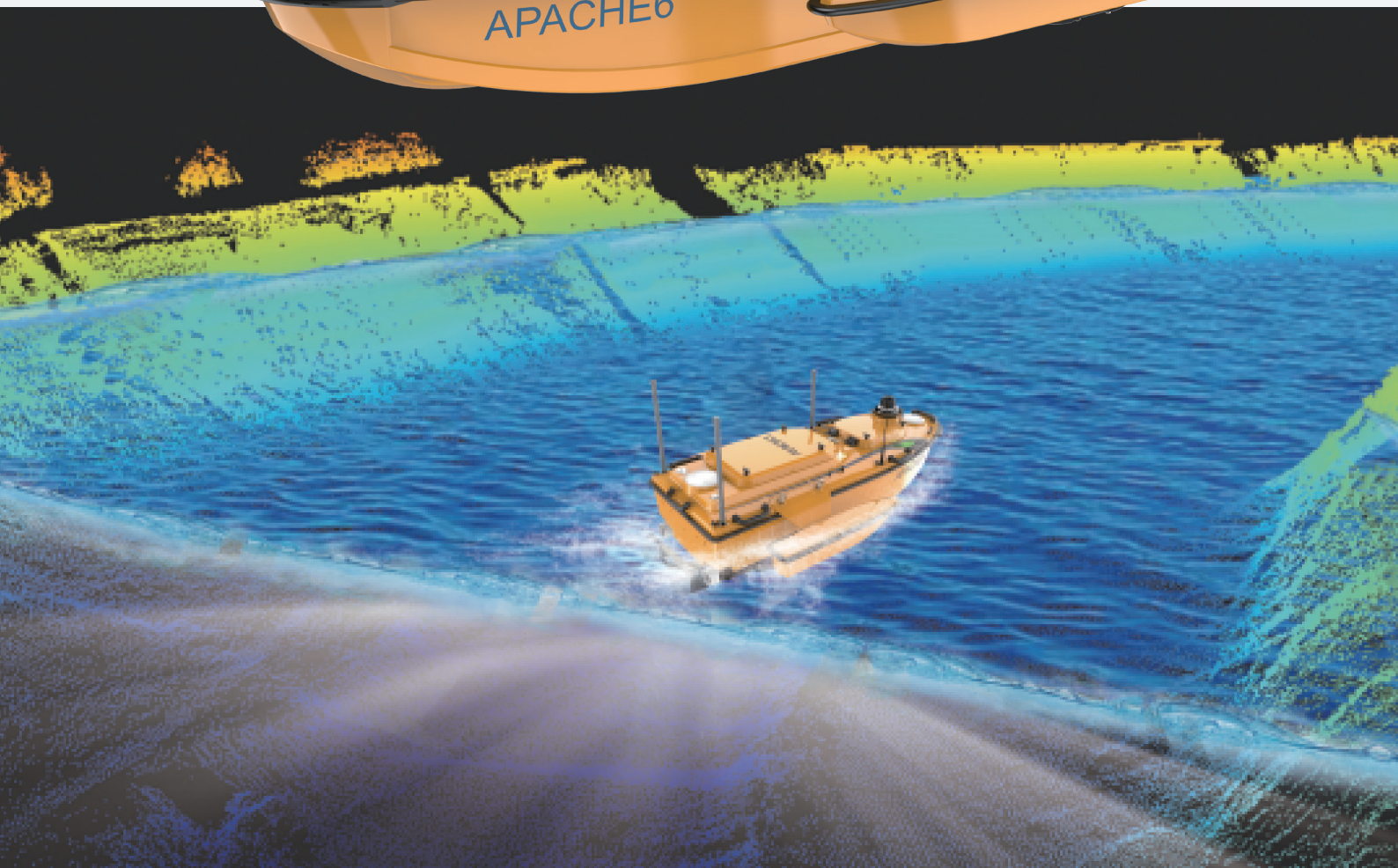
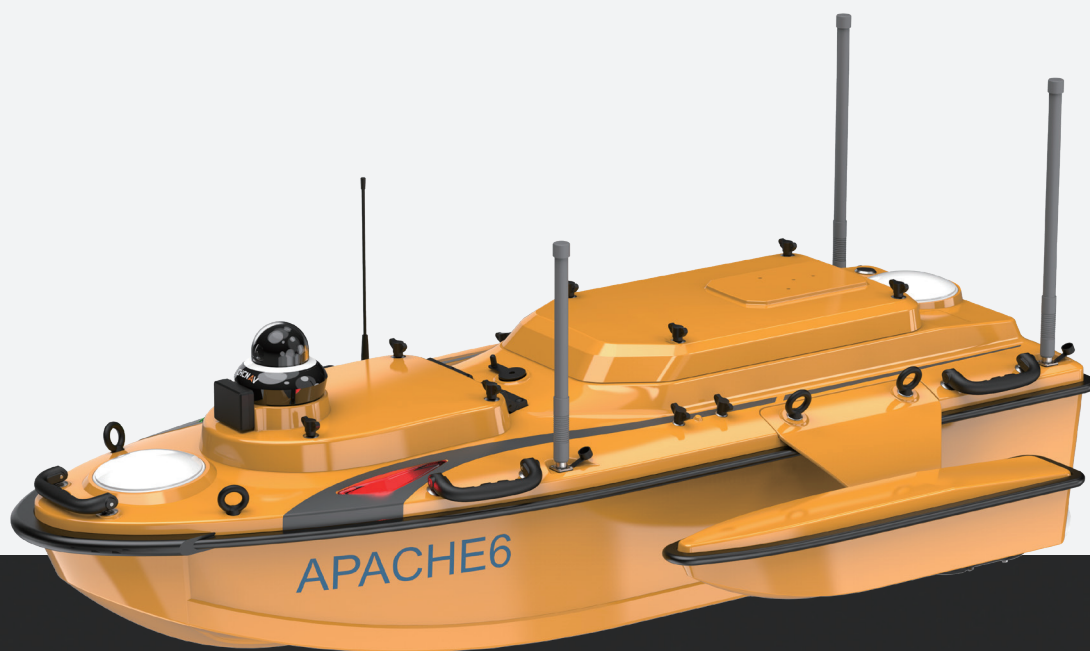




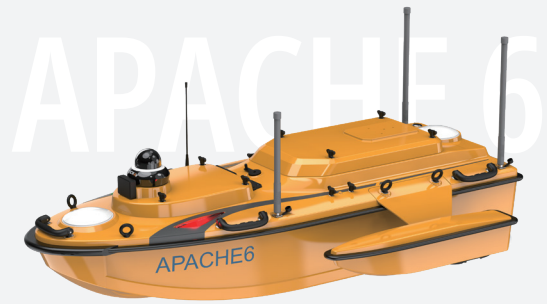
APACHE 6

MULTIBEAM BATHYMETRIC SURVEY USV



► Highlights

The APACHE 6 USV is an integrated solution for 3D bathymetric surveys, underwater object positioning, offshore construction, underwater archaeology, and wreck salvage. Built with a triple-hull design and optimized for the Norbit™ multibeam echo sounder series, it provides stable and precise operations in challenging marine environments. The fully autonomous survey mode, powered by CHCNAV's absolute straight-line technology, ensures the USV follows a predetermined path with precision, even in strong currents.



► Key feature



Carbon Fiber Hull:
Lightweight and durable



Modular Three-Part Design:
Easy to transport



Smart Rotating Thruster:
Superior maneuverability



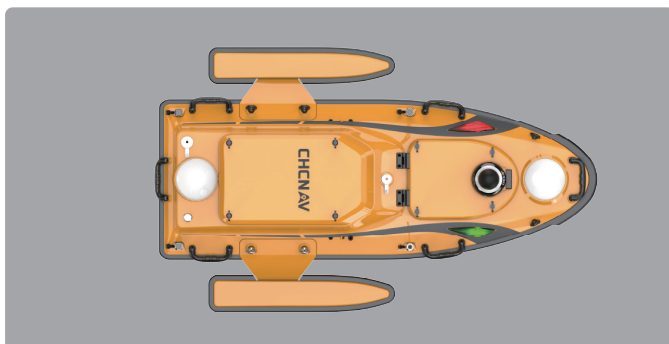
Integrated SVP Launcher:
All-in-one solution

► Lightweight Carbon Fiber Construction



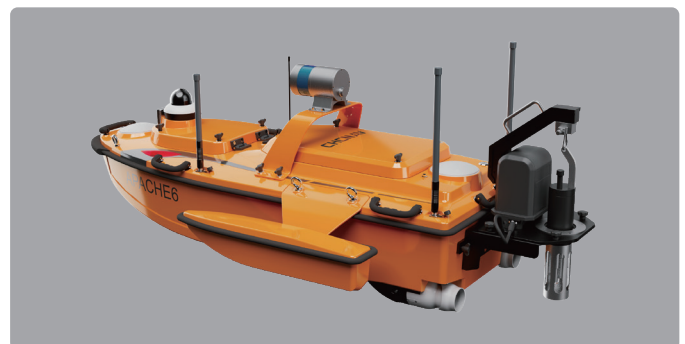
A 15 kg carbon fiber hull delivers strength, stability, and easy handling.

► Detachable three-body design



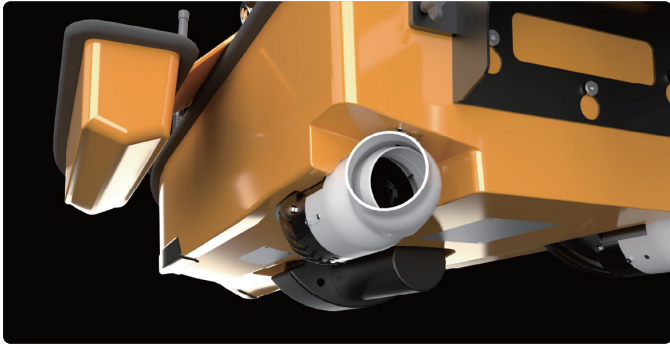
Designed for easy transport and reliable performance in demanding near-shore conditions.

► Auto SVP Launcher



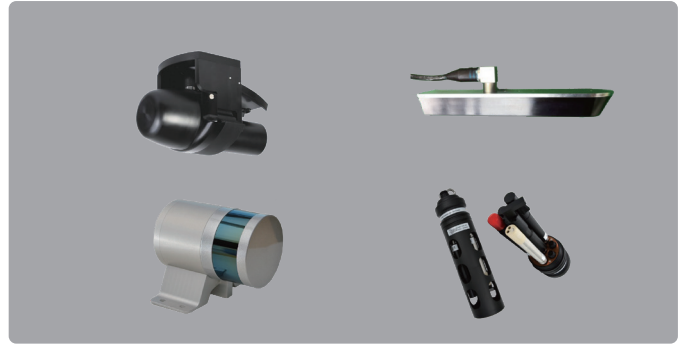
Integrated SVP enables completion of multibeam surveys in a single, seamless deployment.

▶ Titanium Alloy Rotary Thruster



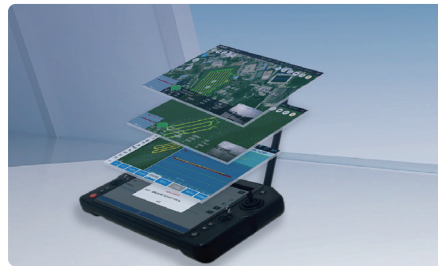
Turning radius as small as 2 meters, enabling more agile steering and effective operation in narrow waterways.

▶ Compatible with a wide range of sensor options



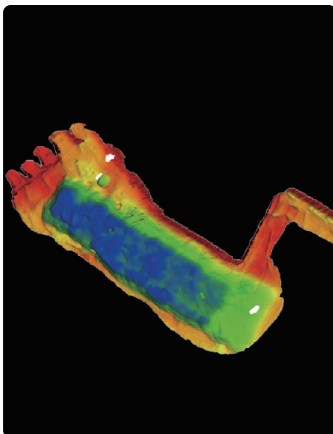
Multibeam echo sounders, 3D laser scanners, water quality meters, side-scan sonar, and other survey instruments.

▶ EasySail All-in-One Android Software

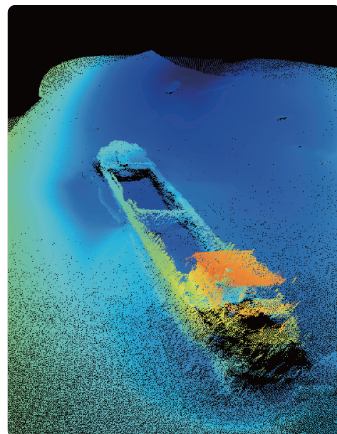


- Integrated display, control, and data acquisition streamline operation - no external laptop required.
- Remote controller with 4G and radio links for real-time video and data streaming.

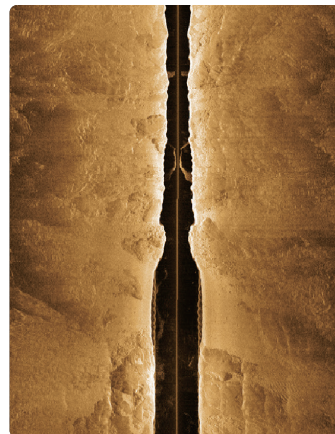
▶ Use Cases



Bathymetric Survey



Shipwreck Detection and Mapping



Underwater Topography Identification



Water Quality Monitoring

SPECIFICATIONS

► Physical

Hull Dimension (L x W x H)	Without floats: 1670 mm x 610 mm x 510 mm With floats: 1670 mm x 1000 mm x 510 mm
Material	High strength, high modulus carbon fiber
Weight (w/o instrument and battery)	15 kg
Maximum Payload	60 kg
Hull Design	Detachable triple-hull vessel
GNSS	Internal GNSS dual antenna
Waterproof	IP66
Draft	7.5 cm (unladen)
Indicator Light	Two-color (positioning and differential signal)
Camera	360° omnidirectional video
Obstacle Avoidance Distance & Range	0.2–40 m (H: 112°, V: 14°)

► Propulsion

Propeller Type	Brushless DC
Direction Control	Supports both differential steering and servo steering modes
Rated Motor Power	800 W
Maximum Motor Speed	7200 ± 5% RPM
Motor Installation	Pluggable
Li-ion Battery Capacity	32.4 V, 23.1 Ah
Battery Endurance	6 h @2 m/s (2 battery sets, expandable)
Power Supply	Single/dual balanced battery support
Battery Replacement	Hot swap supported
Charging Time	3 h
Maximum Speed	6 m/s

► Remote Control

Dimension (L x W x H)	346 mm x 196.5 mm x 89.4 mm
Display Screen	10-inch
Resolution Ratio	1920 x 1200
Internal Storage	RAM: 4 GB, Storage: 64 GB
Battery Endurance	5 h
Communication Frequency	2.4 GHz
Peripheral Interface	USB, Nano SIM, TF card (up to 128 GB), Type-C

► Communications

Data Communication	Standard 4G and Remote control
Remote Control Range	1 km (Remote); Unlimited (4G)
SIM Card Slot	Nano SIM
Navigation Mode	Manual or Auto-Pilot
Data Storage	Local (multi-channel) & Remote

► Software

EasySail	Route planning and autonomous navigation. Total mileage statistics, remaining mileage reminder, multi-angle video and online map display. Hull parameter control, physical & virtual joysticks, system self-check at power-on. Data collection and post-processing. Waveform overlay and attitude correction. Coordinate conversion, trajectory, water depth, waveform and hull parameter real-time display. Online software/firmware updates. Export via USB/Type-C.
-----------------	--

► Positioning

Satellite System	BDS B1/B2I /B3I, GPS L1C/A/L2P(Y)/L2C/L5, Galileo E1/E5a/E5b, GLONASS L1/L2, QZSS L1/L2/L5
Single Point Position (RMS)	Horizontal: 1.5 m Vertical: 2.5 m
DGNSS Positioning Accuracy	Horizontal: 0.4 m + 1 ppm Vertical: 0.8 m + 1 ppm
RTK Positioning Accuracy	Horizontal: ±8 mm + 1 ppm Vertical: ±15 mm + 1 ppm
Radio Protocols	Satel 3AS, CHC ⁽¹⁾ , TT450, Transparent
Heading Accuracy	0.1 ° @ 1 m baseline
Inertial Navigation Stability	6 °/h (accuracy attenuation 1 m after 20 s)
IMU Update Rate	200 Hz

► D270 Single Beam Echo Sounder

Data Type	CHCGD ⁽¹⁾ , NMEA SDDPT/SDDBT, original waveform
Sounding Range	0.1 m to 200 m
Sounding Accuracy	±0.01 m + 0.1% x D (D is the depth of water)
Resolution	3 mm
Maximum Sampling Rate	30 Hz
Frequency	200 kHz
Beam Angle	6.2° ± 1°
Sound Velocity Adjustment Range	1400–1700 m/s
Integrated Water Temperature Sensor	-55°C~+100°C, real-time correction of the sound speed

*Specifications are subject to change without notice.

(1) CHCGD & CHC protocol is CHCNAV format.

CHC Navigation Headquarter

577 Songying Road, Qingpu, 201703, Shanghai, China
MARKETING@CHCNAV.COM
+86 21 54260273

CHC Navigation Europe

Office Campus, Building A, Gubacsi út 6, 1097 Budapest, HUNGARY
+36 20 421 6430
Europe_office@chcnav.com

©2025 Shanghai Huace Navigation Technology Ltd. All rights reserved. The CHCNAV and CHCNAV logo are trademarks of Shanghai Huace Navigation Technology Limited. All other trademarks are the property of their respective owners. Revision December 2025.