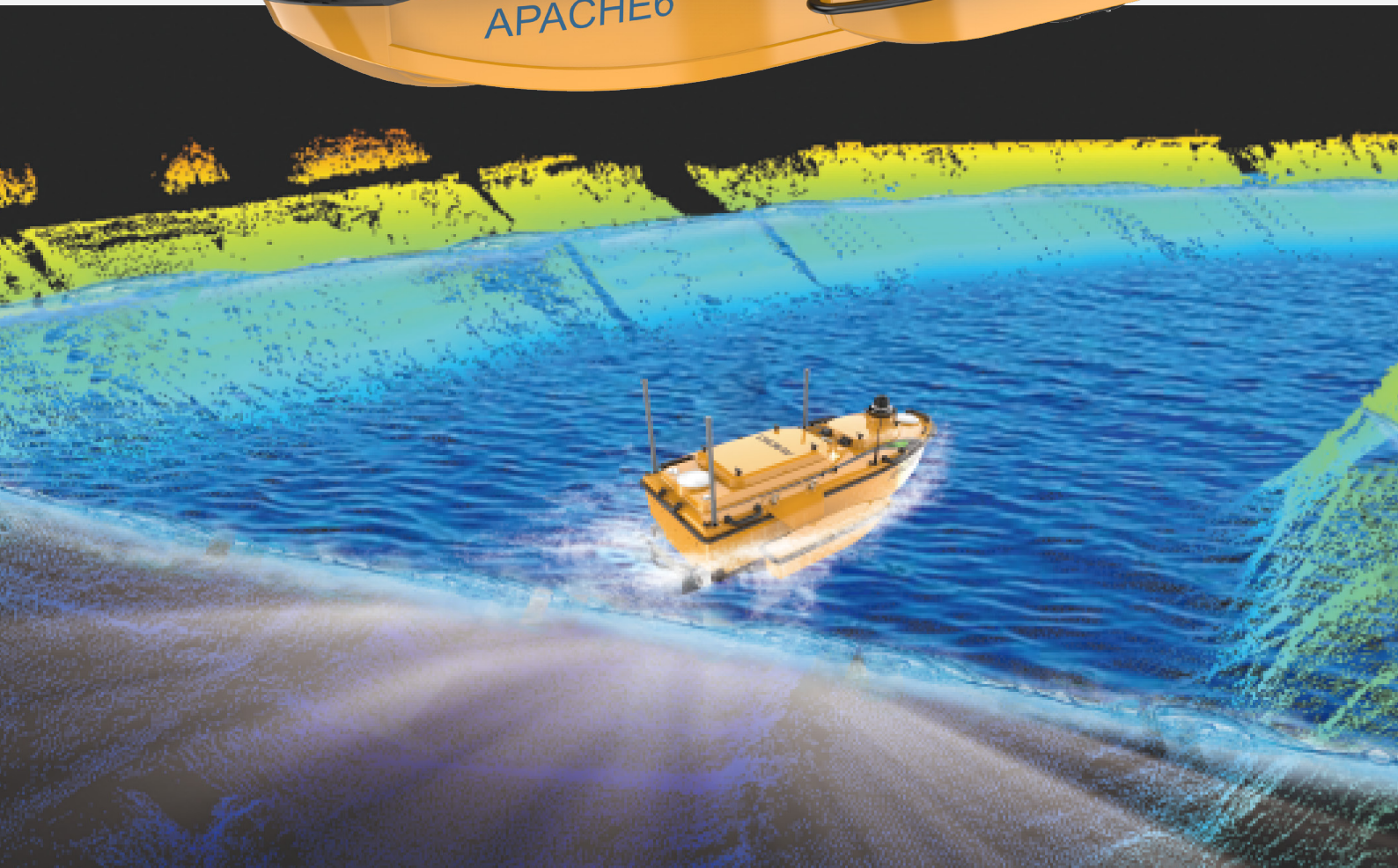
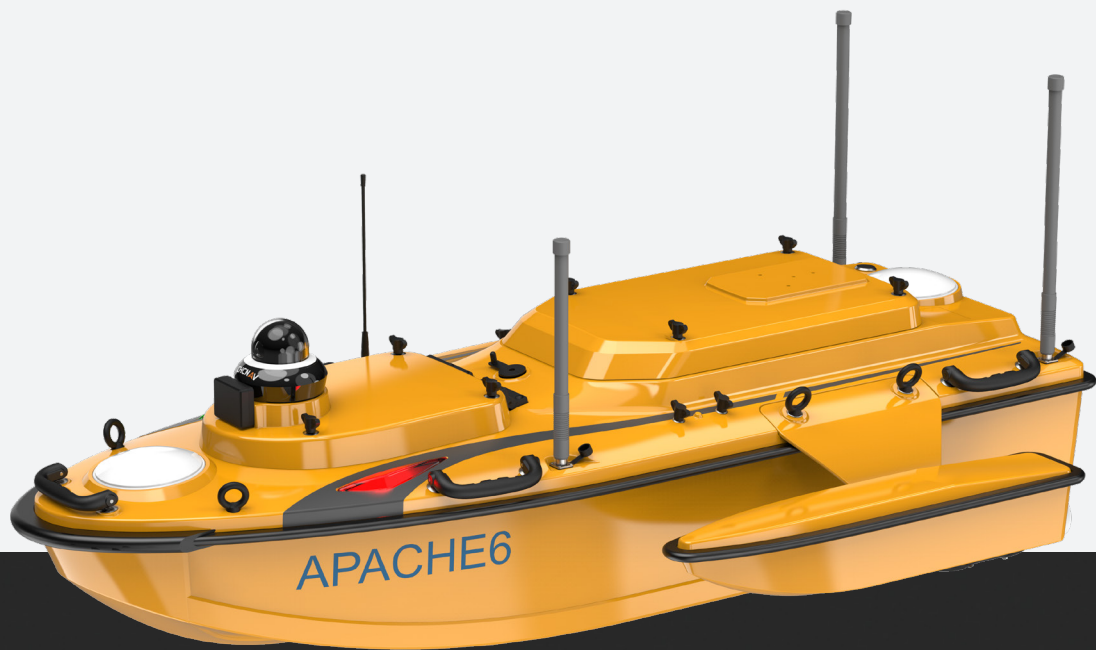


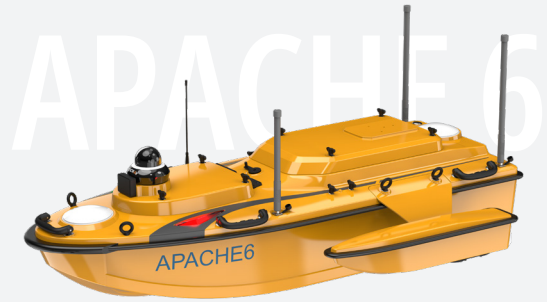
# APACHE 6

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



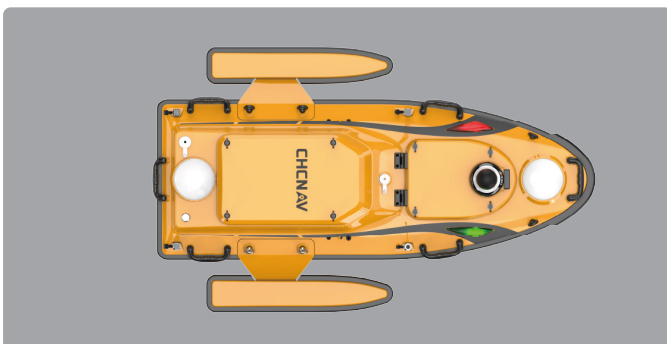
Integrated SVP Launcher:  
All-in-one solution

## ► Lightweight Carbon Fiber Construction



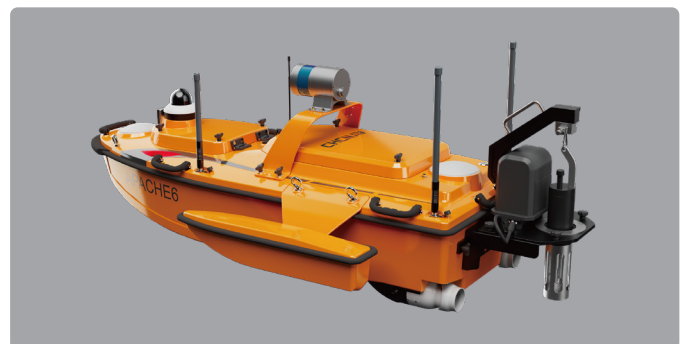
A 33 lb carbon fiber hull delivers strength, stability, and easy handling.

## ► Detachable three-body design



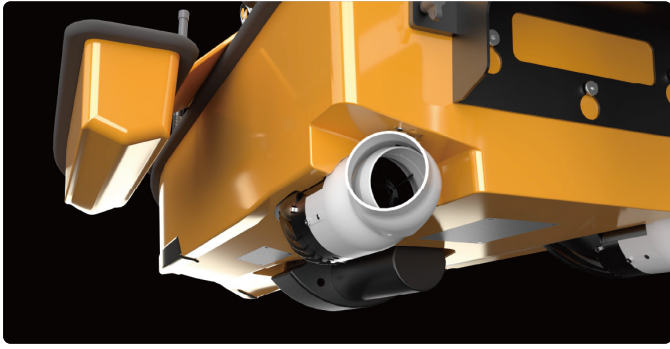
Designed for easy transport and reliable performance in demanding near-shore conditions.

## ► Auto SVP Launcher



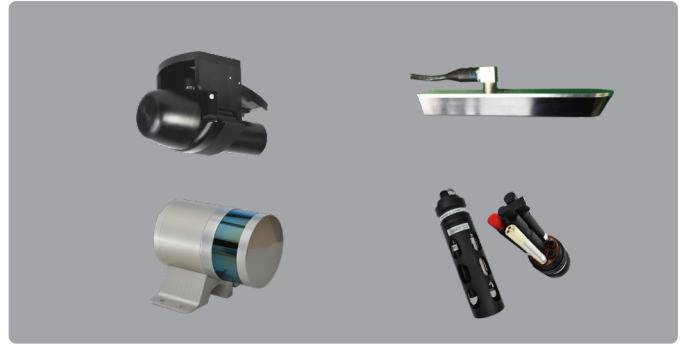
Integrated SVP enables completion of multibeam surveys in a single, seamless deployment.

► **Titanium Alloy Rotary Thruster**



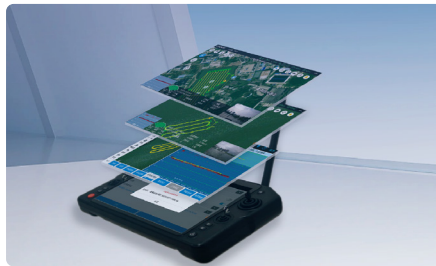
Turning radius as small as 6 ft, enabling more agile steering and effective operation in narrow waterways.

► **Compatible with a wide range of sensor options**



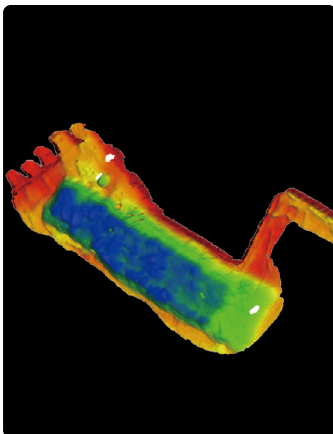
Multibeam echo sounders, 3D laser scanners, water quality meters, side-scan sonar, and other survey instruments.

► **EasySail All-in-One Android Software**

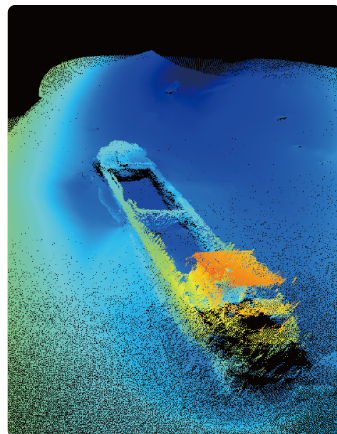


- Integrated display, control, and data acquisition streamline operation - no external laptop required.
- Remote controller with 4G and radio links for real-time video and data streaming.

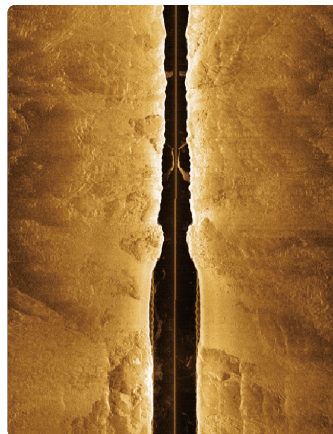
► **Use Cases**



Bathymetric Survey



Shipwreck Detection and Mapping



Underwater Topography Identification



Water Quality Monitoring

# SPECIFICATIONS

## ► Physical

<b>Hull Dimension (L x W x H)</b>	Without floats: 5.48 ft × 2 ft × 1.67 ft With floats: 5.48 ft × 3.28 ft × 1.67 ft
<b>Material</b>	High strength, high modulus carbon fiber
<b>Weight (w/o instrument and battery)</b>	33 lb
<b>Maximum Payload</b>	132 lb
<b>Hull Design</b>	Detachable triple-hull vessel
<b>GNSS</b>	Internal GNSS dual antenna
<b>Waterproof</b>	IP66
<b>Draft</b>	3.0 in (unladen)
<b>Indicator Light</b>	Two-color (positioning and differential signal)
<b>Camera</b>	360° omnidirectional video
<b>Obstacle Avoidance Distance &amp; Range</b>	0.6–131 ft (H: 112°, V: 14°)

## ► Propulsion

<b>Propeller Type</b>	Brushless DC
<b>Direction Control</b>	Supports both differential steering and servo steering modes
<b>Rated Motor Power</b>	800 W
<b>Maximum Motor Speed</b>	7200 ± 5% RPM
<b>Motor Installation</b>	Pluggable
<b>Li-ion Battery Capacity</b>	32.4 V, 23.1 Ah
<b>Battery Endurance</b>	6 h @6.6 ft/s (3 battery sets, expandable)
<b>Power Supply</b>	Single/dual balanced battery support
<b>Battery Replacement</b>	Hot swap supported
<b>Charging Time</b>	3 h
<b>Maximum Speed</b>	19.7 ft/s

## ► Remote Control

<b>Dimension (L x W x H)</b>	13.6 in × 7.7 in × 3.5 in
<b>Display Screen</b>	10 in
<b>Resolution Ratio</b>	1920 x 1200
<b>Internal Storage</b>	RAM: 4 GB, Storage: 64 GB
<b>Battery Endurance</b>	5 h
<b>Communication Frequency</b>	2.4 GHz
<b>Peripheral Interface</b>	USB, Nano SIM, TF card (up to 128 GB), Type-C

## ► Communications

<b>Data Communication</b>	Standard 4G and Remote control
<b>Remote Control Range</b>	0.6 mi (Remote); Unlimited (4G)
<b>SIM Card Slot</b>	Nano SIM
<b>Navigation Mode</b>	Manual or Auto-Pilot
<b>Data Storage</b>	Local (multi-channel) & Remote

## ► Software

<b>EasySail</b>	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.
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## ► Positioning

<b>Satellite System</b>	BDS B11/B2I /B3I, GPS L1C/A/L2P(Y)/L2C/L5, Galileo E1/E5a/E5b, GLONASS L1/L2, QZSS L1/L2/L5
<b>Single Point Position (RMS)</b>	Horizontal: 4.9 ft Vertical: 8.2 ft
<b>DGNSS Positioning Accuracy</b>	Horizontal: 1.3 ft + 1 ppm Vertical: 2.6 ft + 1 ppm
<b>RTK Positioning Accuracy</b>	Horizontal: ±0.31 in + 1 ppm Vertical: ±0.59 in + 1 ppm
<b>Radio Protocols</b>	Satel 3AS, CHC <sup>(1)</sup> , TT450, Transparent
<b>Heading Accuracy</b>	0.1 ° @ 3.3 ft baseline
<b>Inertial Navigation Stability</b>	6 °/h (accuracy attenuation 3.3 ft after 20 s)
<b>IMU Update Rate</b>	200 Hz

## ► D270 Single Beam Echo Sounder

<b>Data Type</b>	CHCGD <sup>(1)</sup> , NMEA SDDPT/SDDBT, original waveform
<b>Sounding Range</b>	0.3 ft to 656 ft
<b>Sounding Accuracy</b>	±0.03 ft + 0.1% x D (D is the depth of water)
<b>Resolution</b>	0.12 in
<b>Maximum Sampling Rate</b>	30 Hz
<b>Frequency</b>	200 kHz
<b>Beam Angle</b>	6.2° ± 1°
<b>Sound Velocity Adjustment Range</b>	4593–5577 ft/s
<b>Integrated Water Temperature Sensor</b>	-67°F ~ +212°F, real-time correction of the sound speed

\*Specifications are subject to change without notice.

(1) CHCGD & CHC protocol is CHCNAV format.

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