

Unveiling innovation in CHC Navigation's Apache 3 Pro



CHC Navigation (CHCNAV), a leading manufacturer of uncrewed surface vehicle (USV) technology, has introduced the Apache 3 Pro – an advanced compact hydrographic drone engineered for autonomous bathymetric surveys in shallow waters. Boasting a lightweight carbon fibre hull (IP67 rating) and a semi-recessed motor, the Apache 3 Pro excels in both durability and manoeuvrability.

The drone is equipped with CHCNAV's proprietary GNSS RTK + Inertial Navigation sensor, ensuring consistent, high-precision positioning and heading data, even in challenging scenarios when the GNSS signal is temporarily lost, such as when navigating under bridges or in areas with obstructed satellite signals. The built-in CHCNAV D270 echosounder provides reliable depth measurements ranging from 0.2 to 40 metres.

"The Apache 3 Pro sets a new standard for shallow water bathymetric surveys. Its lightweight, rugged design, integrated navigation and enhanced obstacle avoidance enable efficient, high-precision data collection even in challenging conditions," emphasized Taxiya Wang, product manager at CHC Navigation. "With the D270 echosounder and seamless data connectivity, the Apache 3 Pro delivers outstanding performance and efficiency in bathymetric surveying."

Advanced positioning and versatility

The [Apache 3 Pro](#) is equipped with a millimetre-wave radar system that detects obstacles within a wide 110° field of view. Upon encountering an obstacle, the USV autonomously charts a new course to navigate safely around it. Weighing a mere 10kg, the Apache 3 Pro features a lightweight macromolecular polyester carbon fibre and Kevlar composite hull for exceptional resilience. Despite its fully integrated payload, the Apache 3 Pro can be effortlessly deployed and controlled by a single operator in various operating conditions.

The Apache 3 Pro ensures reliable communications through its integrated SIM and network bridge with automatic switching. Additionally, it features seamless cloud-based remote monitoring, providing real-time status updates that enhance control and security. Utilizing both 4G and 2.4G networks, the Apache 3 Pro eliminates range limitations and facilitates effective data transfer.

The semi-recessed brushless internal rotor motors of the Apache 3 Pro minimize drafts, improving the USV's manoeuvrability in varying water depths. The advanced propulsion design not only enhances manoeuvrability but also increases protection, reducing the likelihood of damage and extending motor life.

[CHC Navigation](#) (CHCNAV) is at the forefront of creating innovative mapping, navigation and positioning solutions to enhance the efficiency of its customers' work. Covering multiple industries, including geospatial, construction, agriculture and marine, CHCNAV's products and solutions are globally distributed in over 120 countries. With a workforce exceeding 1,700 employees, CHC Navigation stands out as one of the fastest-growing companies in geomatics technologies worldwide.



The Apache 3 Pro USV: a compact, high-performance marine drone equipped with a singlebeam echosounder and GNSS/INS technology, well-suited for diverse hydrographic surveys. (Image courtesy: CHC Navigation)