

# FoxBathy

## The fully automated lightweight bathymetric catamaran

FoxBathy is an automatic catamaran with double electric propulsion which grants productivity and safety in bathymetric surveying. Following precisely predetermined profiles FoxBathy ensures full safety of the operator who may just monitor the operation remotely from the bank. With fully automated steering FoxBathy operates with GNSS centimeter accuracy positioning based on the RTK feature of DroneBox RTK. FoxBathy ultimately delivers perfectly georeferenced 3D water bottom data ready to be processed by any hydrographic software suite such as HYPACK, QGIS or others.



### Lightweight

- Less than 6kg fully loaded
- Dismountable
- Less than 10 minutes setting up

### Fully automated

- Hazard free jobs
- Automated navigation over predetermined profiles
- Automatic return to the bank

### Direct Georeferencing

- GNSS L1/L2 geo obtic position
- RTK/PPK feature with DroneBox RTK
- 3D centimeter accuracy

# FoxBathy

## Powered by DroneBox RTK

DroneBox incorporates the navigation function with GNSS and inertial sensors, the communication modules hosting the powerful firmware for all critical functions such as navigation management, sensors and communication management, as well as.

DroneBox is the "plug & play" precision navigation and measurement device usable across the Hélicéo product range. Moving a single DroneBox around allows to optimize the investment performing data acquisition with multiple vehicles and sensors.

FoxBathy is equipped with DroneBox RTK for centimeter GNSS positioning allowing direct georeferencing without need for ground control points (GCP).



Features	DroneBox RTK
<b>Hardware</b>	
o Material	Composite & ABS
o Dimensions	130 x 170 x 270 (mm)
o Weight	0,667 Kg
o Temperature range	-10 °C to +60°C
<b>Navigation</b>	
o Satellites	Dual band L1/L2 GPS/Glonass
o RTK	Yes
o PPK	Yes
o Precision	0,03 m X-Y; 0,05 m Z
o IMU	MEMS 3D Attitude 1 °
<b>Firmware</b>	
o Navigation management	Autopiloting, navigation, flight plan change, ...
o Communication management	Positions, depth, time, inertial data and others.
o Data logging	On-board autopilot, Telemetry, GNSS, ...

## Features

### Key features

- Fully automated hydrographic drone
- Portable shallow water survey system
- GNSS centimeter accuracy with DroneBox RTK
- Versatile choice of echo-sounders



### Operation

<b>Type</b>	Catamaran
<b>Navigation</b>	Full Automatic (or manual)
<b>Dismountable</b>	Yes
<b>Setting up and start</b>	Less than 10 minutes
<b>Endurance</b>	Up to 5 hours <sup>(1)</sup>
<b>Cruise speed</b>	1.0 to 2.0 m/s typical (3.9 knots)
<b>Maximum speed</b>	2.5 m/s (4.9 knots)
<b>Radio link range</b>	Up to 2 km (1.08 nmi) <sup>(2)</sup>
<b>Crossing distance</b>	Up to 18 linear km (9.7 nmi)
<b>Resistance to water run</b>	1.5 m/s maximum (2.9 knots)
<b>Temperature range</b>	- 10 °C to +45°C (air)

### Hardware & Communication

<b>Material</b>	EPP foam, Composite structure
<b>Dimensions</b>	820 mm x 1130 mm x 755 mm
<b>Weight c/w standard echo-sounder</b>	5.8 kg
<b>Motors</b>	2 underwater engines 350w
<b>Standard Echo-sounder (please ask for alternatives)</b>	
o Frequency	235 KHz
o Beam width @ -3 dB	7.0°
o Depth	100 meters
<b>Batteries</b>	4 Lithium - 16Ah
<b>Radios</b>	
o Remote	2.4 GHz and others (please ask)
o Telemetry	433-868-933 Mhz and others (please ask)
o Video (FPV)	5.8 Ghz and others (please ask)
<b>Mission modes</b>	Manual ; Auto ; RTL

### Data collection & Software

<b>Typical surveying area (1.6 m/s)</b>	18 ha / h (45 acres / h)
<b>Software</b>	
o Mission Planning	HASK - Planner
o GNSS Processing	HASK - Geoprocessor
<b>Output data</b>	Latitude, Longitude, Altitude - WGS 84

(1) Weather, current, and sounder dependant

(2) Terrain profile dependant