

## The intelligent transformative robotic system

The Sabertooth is a hybrid AUV/ROV capable of working in deep water either as an autonomous vehicle, or via a tether. Its power, tether-free operation and its 360° hovering manoeuvrability make the Sabertooth an ideal option for autonomous inspection or maintenance and repair tasks as well as offshore survey work.

The Sabertooth is available as a single hull or double hull vehicle capable of operating at depths of 1200m or up to 3000m for the double hull vehicle.

The double hull Sabertooth can be based at a remote location docking station ready to be launched on pre-programmed or man-controlled missions, including inspection, repair and maintenance, research tasks and environmental monitoring. Tooling packages can be stored at the docking station, batteries recharged and data transferred via satellite or cable to shore.

The vehicle can reside in the docking station for more than six months without maintenance, reducing the cost of surface vessels.



### Versatile

A hybrid vehicle that can work over a long excursion range either autonomously or manually via a tether.

### 360° manoeuvrability

A powerful vehicle with six thrusters and a number of advanced autopilot features provide six degrees of freedom, station keeping and obstacle avoidance.

### Flexible

A range of tooling and sensor packages are available for the Sabertooth. These tooling packages can also be stored in the underwater docking station.

## System Overview

- The surface equipment for the Sabertooth includes a surface control unit comprising a computer with the graphical interface software displayed on a monitor and a fibre optic receiver for communication between the surface and a tethered vehicle.
- Additional operator equipment includes a keyboard and mouse.
- A WLAN Access Point with an antenna is used when the vehicle is in autonomous mode.
- A battery charger fitted in a mobile case can recharge the vehicle at the surface. The unit provides a charging power of 3.3 kW (lower power when the input voltage is below 200 VAC) with an input power of 100-264 VAC (single phase).
- An automated tension control winch is used in conjunction with a tether when working in manual mode.
- The operator's monitor runs the graphical user interface (GUI) for vehicle power and control, system diagnostics including remote access for technical support, create mission plans, and display data and video transmitted via the Fibre Optic receiver and tether for manual mode or via the WLAN antenna for autonomous mode.
- The Sabertooth vehicles are rated to a depth of 1200 m. The Double Hull version also has a 3000 m depth rated option. Both vehicles are fitted with six thrusters; four SM4s and two SM9s on the Single Hull whereas there are six SM9s on the Double Hull.
- The vehicles are fitted with an electronics pod with a Phins INS incorporated, LED lights, cameras, a depth sensor, sonar options, a Doppler Velocity Log (DVL), a Sound Velocity Profiler (SVP) and a communication unit.
- Advanced autopilot features are heading, depth, pitch, roll, stabilisation, altitude, station keeping, vector transition, obstacle avoidance and sonar target tracking.



## Technical Specifications

Specifications	Sabertooth Single Hull	Sabertooth Double Hull
System Power Requirements	3-phase, 380-480 VAC at 50/60Hz	3-phase, 380-480 VAC at 50/60Hz
Depth Rating	1200 m	1200 m (3000 m)
Length	3600 mm	3700 mm (4094 mm)
Height	450 mm	450 mm (670 mm)
Width	660 mm	1400 mm (1350 mm)
Launch Weight	Approximately 650 kg	1200 kg (1500 kg)
Forward Speed	5 knots	4 knots
Thrust Forward	100 kgf	100 kgf
Thrust Lateral	40 kgf	90 kgf
Thrust Vertical	80 kgf	160 kgf
Battery Capacity	10 kWh	30 kWh
Endurance	> 8 hours	> 14 hours



## Options, Tools and Accessories



High resolution colour or monochrome cameras



Low light camera options available.



Profiling Sonar for obstacle avoidance during autonomous operations.



Bathymetric system for side-scan imagery, sub-bottom profiles and bathymetric data.



Doppler Velocity Log used for Station Keeping.



Hydro-Lek five-function manipulator.



Cleaning brush incorporating a heavy duty brush and thruster motor fitted.



Cathode Potential Probe with either contact or proximity probe options available.



Battery-operated Xenon emergency strobe used to locate the ROV.

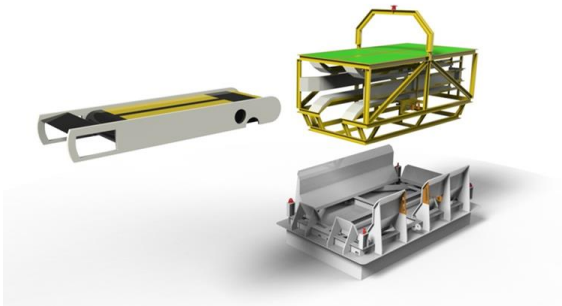


Acoustic navigation and communications instrument options.

## Deployment Systems and Control Cabins



Winch options available including automatic tension control for the fibre optic winch.



Underwater docking station rated to a depth of 3000 m providing a battery recharging facility and protection for the vehicle for over six months.

world leader in electric underwater robotics