

## SeaExplorer Multi-Mission Glider

*New Generation Glider Technology designed for Scientists*



### Application fields:

- Oceanography & Science
- Environmental Protection & Monitoring
- Oil & Gas
- Defense & Security

### Key features & benefits:

- 2 months of endurance, 1 200 km with one single battery charge
- Rechargeable Lithium batteries – refueling time 20 hours
- Large dedicated and interchangeable payload sections
- Wet & dry payload sections including 4 puck ports
- Wingless concept: no break, nor entanglement
- High speed
- Internal actuators (Leak-safe)
- Extraordinary maneuverability
- Propulsion: hydraulic driven ballast
- Shallow and deep water operations
- Affordable: battery replacement every 10 years



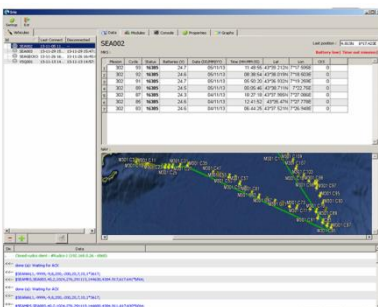
### General principles:

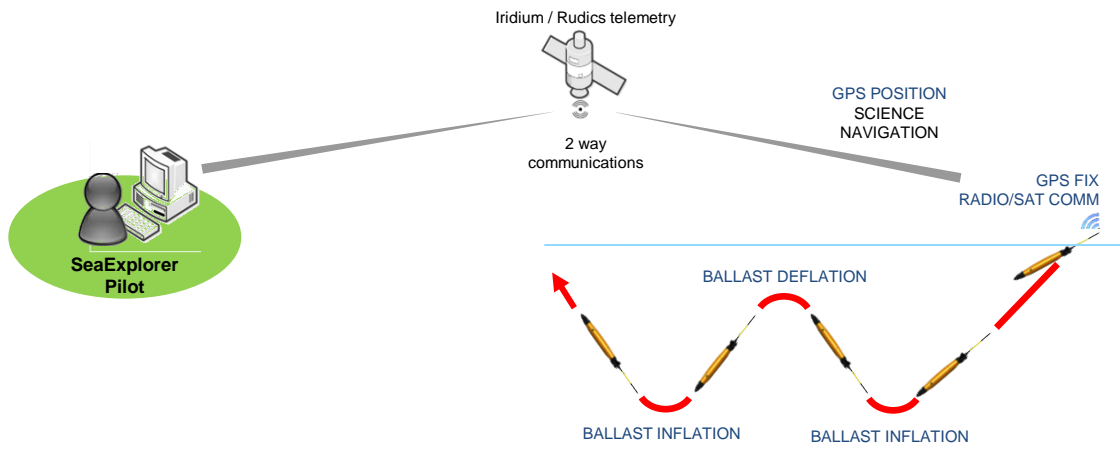
The vehicle is a powerful autonomous sensing platform dedicated to collecting water column data profiles with very large spatio-temporal coverage (from regional to local scale).

Driven by changes of buoyancy, the glider delivers very long endurance and silent actuation. The vehicle glides without wings, facilitating launch and recovery operations, avoiding wing break and limiting miscellaneous entanglements (plastic debris, seaweed, fishing nets...).

The modular design allows fast and easy change of the payload by just replacing the vehicle nose section. The payload bay offers large volumes in wet and hyperbaric sections.

An integrated hardware and software suite allows constant supervision and mission control of the vehicle from any place in the world by using a server 24/7 available for vehicles calls. When the SeaExplorer surfaces, it sends ashore its GPS position, collected data and receives new mission commands via Iridium telemetry.





## General Design:

Payload sections:

- Wet payload (3Kg)
- Dry payload & electronics (5Kg)

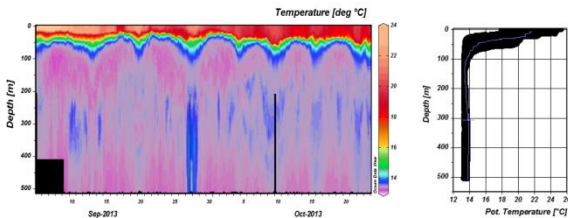
Vehicle section:

- Actuators, navigation, communication and energy

## Interchangeability of payload:



## Example of raw data acquired:



## System Package:

- Glider(s)
- Software
- Training
- 1 - Year warranty

## Specifications:

|                      |   |
|----------------------|---|
| Body size: (DxL)     | 0.25 m x 2 m<br>+ 0.7 m foldable antenna  |
| Wingspan:            | 56.5 cm. Wingless for extended survivability: no break at launch & recovery, entanglement with plastic debris, seaweed, fishing nets...                 |
| Weight:              | 59 kg in air  |
| Ballast volume:      | 1L (+/-500ml)   |
| Speed:               | Up to 1 knot horizontal   |
| Payload:             | 9 L / 8 kg in two sections (wet/dry)  |
| Architecture:        | 2 separated low power CPUs for payload & navigation   |
| Embedded software:   | Payload: Opensource C++ / Linux<br>Navigation: Proprietary  |
| Depth rating:        | 700 m (850 m survival)  |
| Pitch in navigation: | +/- 15 to 40° (+/- 20° typical)   |
| Turn radius:         | 20 m (allows virtual mooring)   |
| Battery              | Rechargeable Li-ion   |
| Battery endurance    | Up to 2 months with self logging GPCTD  |
| Recharging time      | 20 hours  |
| Local Radio range:   | 1km @ 902 to 928 MHz (Subject to ship antenna and sea conditions)   |
| Satellite comms:     | Worldwide (Iridium)   |
| Data format:         | Compressed CSV (native)   |
| Safety:              | Autonomous Drop-weight<br>Option: Locator Pinger and/or Argos   |
| Sensors:             | 4 "puck type" ports available<br><br>CTD (SeaBird)<br>DO (SeaBird)<br>Turbidity (WetLabs)<br>Chlorophyll, CDOM, Phycobilins (WetLabs)<br>CDOM (WetLabs) |
| Optional sensors:    | Hydrocarbon MiniFluo (ACSA)<br>Acoustic recorder (ACSA)<br>Acoustic positioning (ACSA)<br>Altimeter<br>Others on request                                |