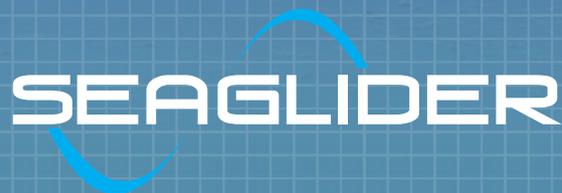


# Fastwave



## COST EFFECTIVE, AUTONOMOUS MARINE DATA ACQUISITION

Seaglider is an autonomous underwater vehicle (AUV) developed for continuous, long term measurement of oceanographic parameters. Rather than an electrically driven propeller, the vehicle uses small changes in buoyancy and wings to achieve forward motion. The vehicle attitude is controlled using adjustable ballast (the vehicle battery). The Seaglider moves through the water in a saw-tooth like pattern and surfaces often to determine its position and to transmit collected data and receive commands via satellite telemetry. Navigation is accomplished using a combination of GPS fixes while on the surface and internal sensors that monitor the vehicle heading, depth and attitude during dives.

Seaglider is a powerful data collection tool and incorporates external sensors that constantly scan the ocean to determine water or environmental properties.

The Seaglider System is sold and supported in Australia by Fastwave, on behalf of Kongsberg Underwater Technologies Inc.



KONGSBERG



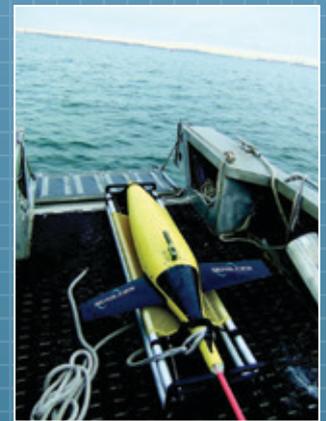
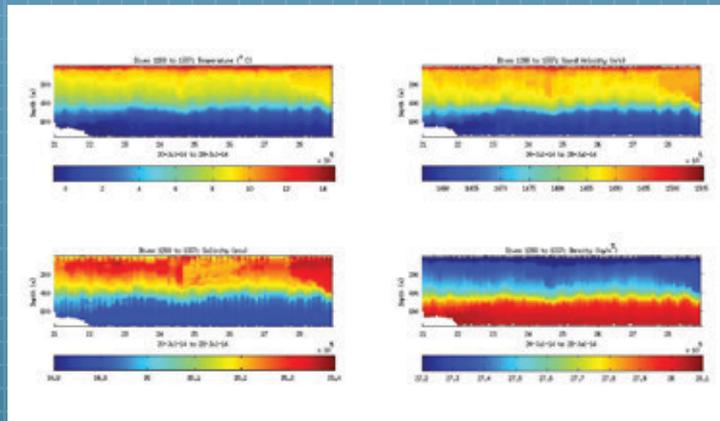
## SEAGLIDER CAPABILITIES AND FEATURES

- Extended duration deployment, up to 10 months
- Up to 4,600 km range (650 dives to 1km depth)
- Significantly lower capital and deployment costs compared to conventional vessel based data acquisition
- Provides temporal and spatial scales not possible with research vessels or traditional AUVs
- Typical mission of 120 days, will yield approximately 2 million data points (3 dives per day, 5 second sampling, 3 sensors)
- Data is retrieved in near real time via satellite telemetry
- Vehicle is piloted remotely via the internet and satellite link
- Detailed flight model allows current profiling
- Proven, robust design with no external moving parts
- Wide range of sensor payload options

## TYPICAL APPLICATIONS AND SENSOR PAYLOADS

Hydrocarbon Detection	Fluorometer, turbidity, backscatter, O <sub>2</sub> , CO <sub>2</sub> , pH, physical sample collection
Seismic Operations	CTD, Passive Acoustic Monitoring (PAM) package
Metocean	CTD, ADCP, turbidity, backscatter
Water Quality and Carbon Cycle Studies	Fluorometer, turbidity, backscatter, O <sub>2</sub> , CO <sub>2</sub> , pH, physical sample collection
Marine mammal detection and subsea noise monitoring	Passive Acoustic Monitoring (PAM) package
Data Gateway	C-NODE Acoustic Telemetry

Customised sensor payloads can be integrated for specific Seaglider missions and applications.



## MODES OF OPERATION

- SURVEY** Transits a sequence of waypoint targets
- VIRTUAL MOORING** Continuously profiles at target location
- LOITER and DRIFT** Maintains neutral buoyancy at any depth or can park on the seafloor
- SUB-SURFACE FINISH** Vehicle performs multiple dives before surfacing
- SURFACE** Positions antenna mast for GPS/RF data telemetry

## SPECIFICATIONS

<b>Body Length</b>	1.8 – 2.0 meters	<b>Typical Speed</b>	25 cm/sec (0.5 kts)
<b>Body Diameter</b>	30cm max.	<b>Glide Angle</b>	16° - 45° (1:3.5 to 1:1)
<b>Weight</b>	52kg	<b>Max. Travel Range</b>	4,600km <i>Equivalent to 650 dives to 1,000m</i>
<b>Antenna Length</b>	Standard: 1m Optional: 43cm	<b>Battery Type</b>	Lithium primary
<b>Operating Depth Range</b>	70* - 1,000m <i>Dependent on environmental conditions</i>	<b>Battery life</b>	Up to 10 months <i>Dependent on vehicle configuration and mission parameters</i>

# Fastwave

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