

SEAGLIDER



KONGSBERG



PHOTO: Dr. Vernon Asper, University of Southern Mississippi.

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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). 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. Potential applications include physical/chemical/biological oceanography, tactical oceanography, intelligence/surveillance/reconnaissance, environmental monitoring, fisheries research and many more.

THE SEAGLIDER ADVANTAGE

- Extended duration deployment, up to 10 months
- Low capital cost
- Deployment costs are significantly less than traditional means of obtaining the data that is gathered
- Resulting data provides good temporal and spatial scales not possible with research vessels or traditional AUVs
- Data is retrieved in near real time via satellite telemetry
- Vehicle is piloted remotely via the internet and satellite link
- Detailed flight model allows estimation of depth averaged current
- Robust design with no external moving parts



STANDARD PROFILE
For general oceanography applications



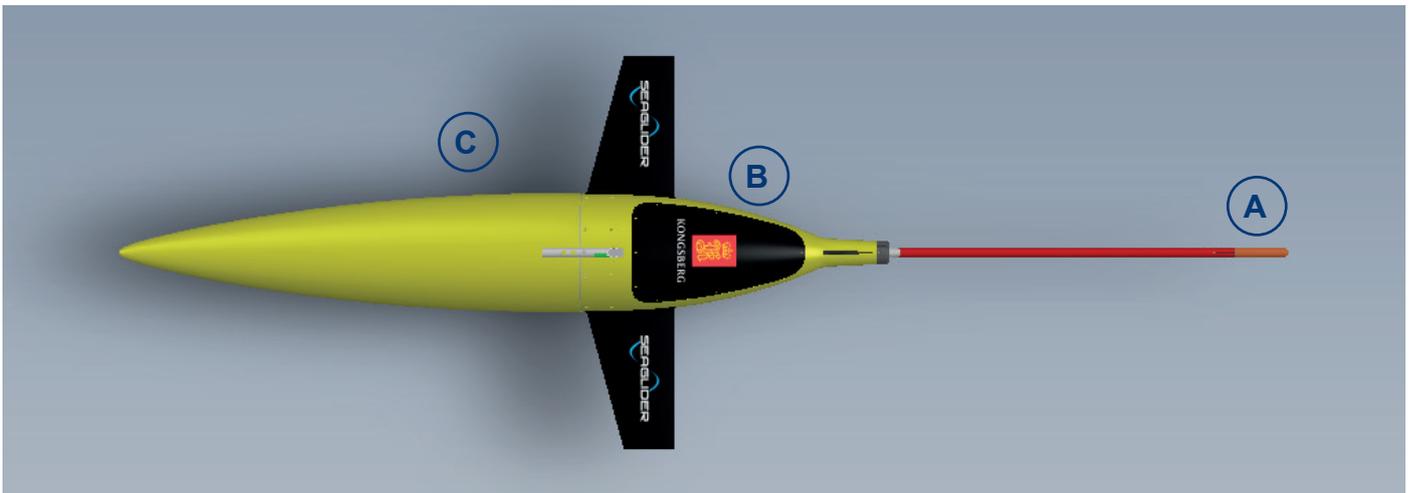
OGIVE PROFILE
Increased payload volume for more demanding sensor configurations

FEATURES

A: Communications Mast

B: Sensor Payload Bay

C: Low Drag Protective Faring



TECHNICAL SPECIFICATIONS

Weight and Dimensions

- 1.8 - 2 m long (configuration dependent)
- Vehicle maximum diameter 30 cm
- Weight 52 kg (dry)
- Wing span 1 m
- Antenna mast length between 43 cm and 1 m (configuration dependent)

Maximum travel range/duration

- 4,600 km (650 dives to 1 km depth)

Operating depth range

- 50 to 1000 m

Speed

- Typical speed 25 cm/s (0.5 kt)

Variable buoyancy volume

- 850 cc

Glide angle

- 16-45° (1:3.5 to 1:1 slope)

Battery Endurance

- Lithium Sulfuryl chloride primary batteries 17 MJ
- Up to 10 Months (dependent upon configuration, sampling rate and operational area)

Guidance and control

- Dead reckoning between surface GPS fixes using a 3-axis digital compass
- Kalman filter prediction for mean and oscillatory currents
- Bathymetry map system and acoustic altimeter for near bottom dives
- Data can be transmitted after every dive
- Web-based interface
- Control and system commands can be transmitted before each dive

Electrical features

- Ultra-lower power micro-processor
- High-capacity compact-FLASH memory
- 4 open serial channels for sensors
- 1 open frequency channel for sensors

Mechanical features

- Isopycnal pressure hull
- No external moving parts
- Low drag, flooded fiberglass composite firing

Supported sensors

- CTD
- Dissolved oxygen sensors
- Fluorometer/backscatter/turbidity
- PCO2 optode
- Microstructure turbulence
- ADCP
- Photosynthetically Active Radiation (PAR)
- Echo sounder
- Other sensors upon request

Specifications subject to change without any further notice.