Teledyne Webb Research

Slocum G2 Glider

Autonomous Underwater Vehicle

Flexibility to Support Changing Mission Requirements

Slocum G2 glider

A versatile remote sensing AUV for ocean research and monitoring. Buoyancy driven, the long range and duration capabilities of Slocum gliders make them ideally suited for water column observation at the regional scale. Slocum gliders can run preprogrammed routes, surfacing to transmit data to shore while downloading new instructions at regular intervals; at a substantial cost savings compared to traditional surface ships. The small relative cost and the ability to operate multiple vehicles with minimal personnel and infrastructure will enable fleets of gliders to study and map dynamic (temporal and spatial) ocean features around-the-clock and calendar.

Recovery of first trans-Atlantic Slocum glider off the coast of Spain.

PRODUCT FEATURES

- Exchangeable 6L payload capacity
- Independent processor for data acquisition
- Customized for a variety of acoustic, optical and chemical sensors
- Multi-depth capability with a single glider: User exchangeable nose pump sections result in quick optimization for changing mission depths

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A Teledyne Marine Systems Company

Slocum G2 Glider

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ADDITIONAL FEATURES

- User exchangeable depth section
- Nose recovery system
- Recovery strobe light
- Extendable payload bay for sensors or additional energy requirements

SENSOR OPTIONS:

Previously integrated sensors

- Acoustic Bioprobe
- Acoustic Doppler Current Profiler (ADCP)
- Acoustic Modem
- Acoustic Mammal Detection
- Bathyphotometer (bioluminescence)
- Beam Attenuation Meter
- CTD Pumped
- Fish Detection
- Hydrophones
- Nitrate
- Optical Backscatter
- Optical Attenuation
- Optical Fluorometer
- Oxygen
- PAR
- Radiometer
- Spectrophotometer for harmful algal blooms (e.g., Red Tide)
- Turbulence

CAPABILITIES

- Waypoint transect
- Water column monitoring
- Virtual mooring
- Gateway glider acoustic link
- Storm sampling
- Coordinated fleet
- As part of Teledyne Marine, access to engineers and technology for advanced sensor capability and future sensor developments

General Specifications

Deployment	Versatile, maneuverable deployment with 1-2 people
Power	Alkaline (A) or Lithium (L) batteries
Range	600 - 1500 km (A) / 4000 - 6000 km (L)
Deployment Length	15-50 days (A) / 4 - 12 months (L)
Configuration Options	(4 to 200m) or (40 to 1000m) operating depth range*
Navigation	GPS Waypoints, Pressure Sensor, Altimeter
Communication	RF Modem, Iridium (RUDICS), ARGOS, Acoustic Modem
Speed	.35 m/s (0.68 knot) Average Horizontal
Mass	54 kgs
Dimensions	Vehicle Length: 1.5 meters; Hull Diameter 22 cm

* Depth section dependent

Note: Endurance and range dependent on sensors and sampling frequency, energy source and communications.

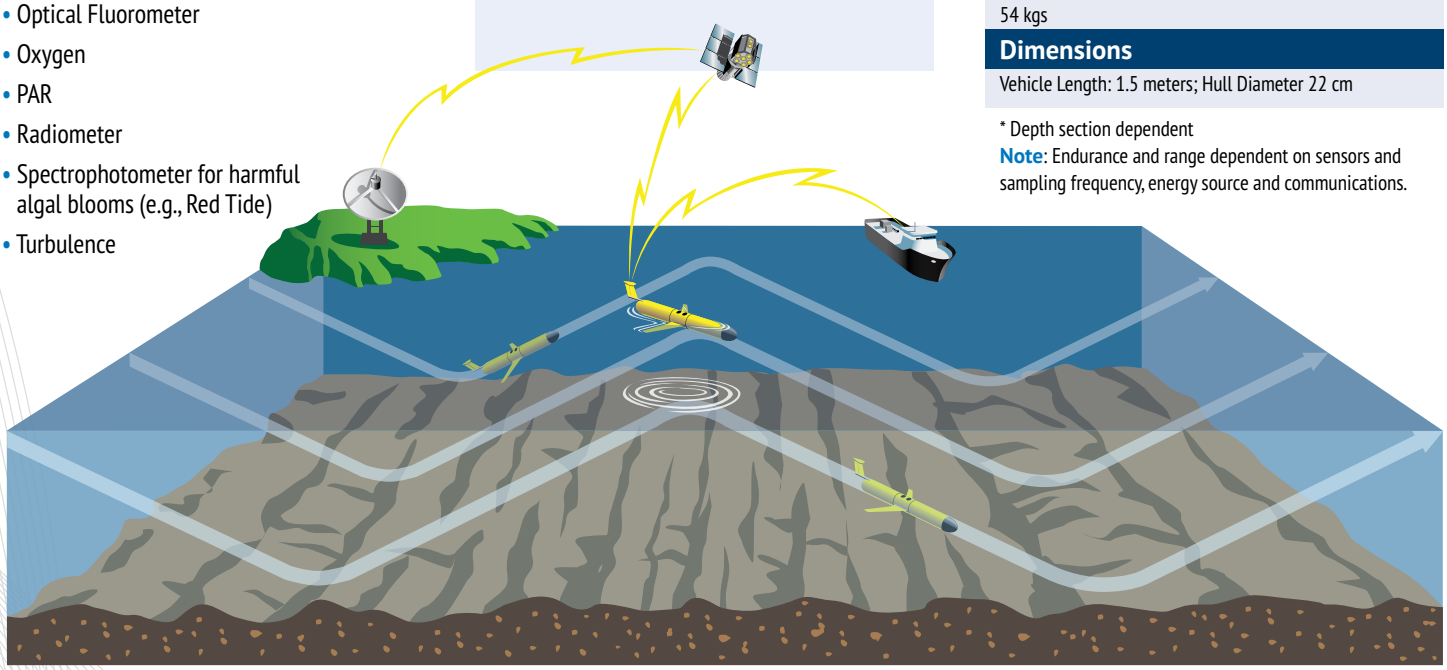

Figure 1. The Slocum glider uses hydraulic buoyancy change to alter the vehicle density in relation to the surrounding water thereby causing the vehicle to either float or sink. Given an appropriate dive or climb angle, the wings and body lift convert some of this vertical motion into a forward sawtooth horizontal motion. Altimeter or pressure inflects the glider in relation to the bottom or a specified depth as it undulates throughout the water column collecting sensor data. Per pre-programmed mission, the glider periodically surfaces, inflating an air bladder to raise the tail fin antennae out of the water. The glider then calls via Iridium Satellite Phone (anywhere in world) or Free Wave RF Modem (line of sight) in to Dockserver (auto attendant computer) to relay navigational fix, data and receive further instructions for command and control. Gliders can be flown in a coordinated fleet to meet a spacial and temporal objective, along transects, or as virtual moorings.

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