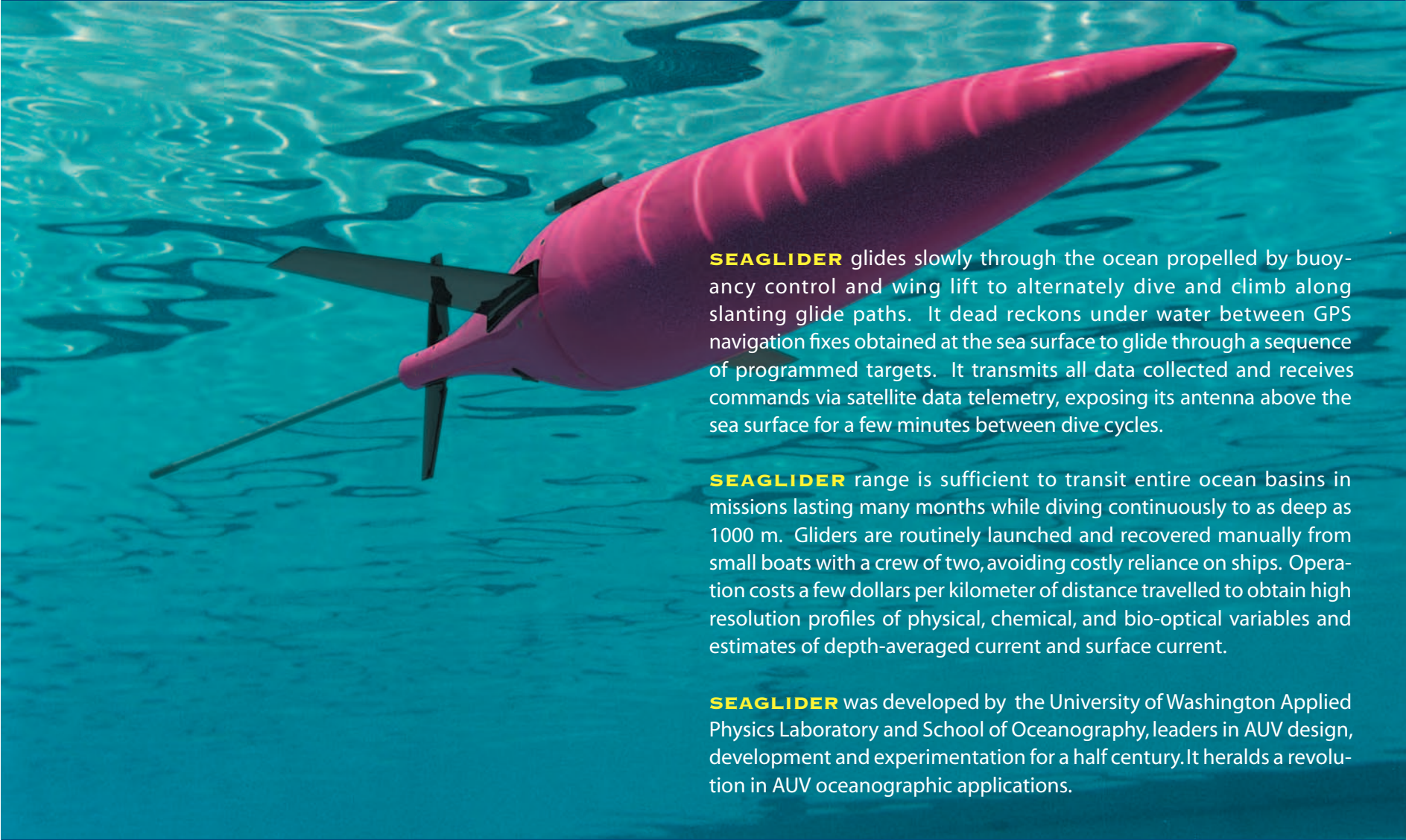


SEAGLIDER™

THE LONG RANGE, HIGH ENDURANCE AUV FOR
OCEANOGRAPHIC RESEARCH AND NAVAL MISSIONS



SEAGLIDER glides slowly through the ocean propelled by buoyancy control and wing lift to alternately dive and climb along slanting glide paths. It dead reckons under water between GPS navigation fixes obtained at the sea surface to glide through a sequence of programmed targets. It transmits all data collected and receives commands via satellite data telemetry, exposing its antenna above the sea surface for a few minutes between dive cycles.

SEAGLIDER range is sufficient to transit entire ocean basins in missions lasting many months while diving continuously to as deep as 1000 m. Gliders are routinely launched and recovered manually from small boats with a crew of two, avoiding costly reliance on ships. Operation costs a few dollars per kilometer of distance travelled to obtain high resolution profiles of physical, chemical, and bio-optical variables and estimates of depth-averaged current and surface current.

SEAGLIDER was developed by the University of Washington Applied Physics Laboratory and School of Oceanography, leaders in AUV design, development and experimentation for a half century. It heralds a revolution in AUV oceanographic applications.

SEAGLIDER™

SPECIFICATIONS

Size	Body: 1.8 m long, 30 cm max. diameter Wing span: 1 m Antenna mast length: 1 m
Weight	52 kg (dry)
Maximum Depth	1000 m
Maximum Range/Duration	4600 km (650 dives to 1 km depth)
Batteries	Lithium primaries, 24V and 10V packs, 10 MJ
Typical Speed	25 cm/s (1/2 kt)
Glide Angle	16-45° (1:3.5 to 1:1 slope)
Sensors	Sea-Bird temperature-conductivity-dissolved oxygen WET Labs fluorometer-optical backscatter Variable sample rate by sensor and depth range
Mechanical Features	Isopycnal hull No external moving parts Low drag, flooded fiberglass fairing
Electrical Features	256 MB Compact-FLASH memory 8 serial data channels (4 available) 4 frequency channels (1 available) 12 channels 12-bit A/D (3 available) 5 digital input and 3 digital outputs available
RF Data Telemetry	Iridium satellite data telemetry
Software Features	Complete data transmitted after every dive Web-based information interface Control and system commands transmitted on any dive
Guidance and Control	Dead reckoning between GPS fixes using pitch, roll, heading Kalman filter prediction for mean and oscillatory currents Bathymetry map for surface to near-bottom dives

APPLICATIONS

- Physical, chemical, and biological oceanography
- Tactical oceanography
- Maritime reconnaissance
- Communication gateway
- Navigation aid

OPERATIONAL MODES

- Survey
transits a sequence of waypoint targets
- Virtual mooring
profiles at target location
- Loiter and drift
maintains neutral buoyancy at any depth
- Loiter on bottom
maintains negative buoyancy
- Surface
positions antenna mast for GPS/RF data telemetry

MILESTONES

- First to complete >3800 km mission
- First to complete > 6 month mission
- First to conduct multi-glider mission

For more information please see:
<http://seaglider.washington.edu/>

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