OceanObserver™

On the Slocum Autonomous Underwater Glider

Intelligent acoustic monitoring on one of the world's most utilized underwater gliders

Marine mammal monitoring without the cost of vessel or aerial surveys

- 24/7 monitoring in any sea state
- Long-term monitoring over wide areas
- Deploy from any size vessel
- Customized onboard processing algorithms
- Detections sent by satellite in near real-time
- Data recorded on 6 TB of SD memory

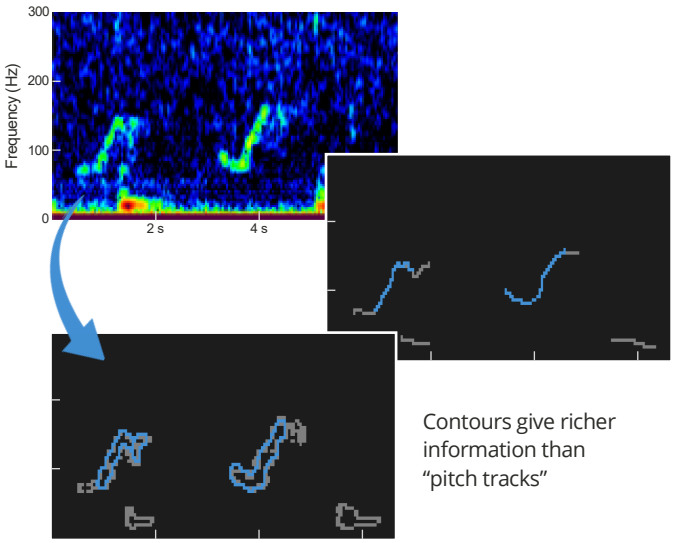
JASCO Applied Sciences has teamed with Teledyne Webb Research to integrate JASCO's OceanObserver™ intelligent acoustic monitoring system into the Slocum underwater glider.

The buoyancy driven Slocum glider gathers data as it rises and dives in the water to propel itself forward. The Ocean-Observer system onboard records the underwater sounds while running automated cetacean detectors that flag possible marine mammal calls or other events of interest.

The glider surfaces at specified intervals to send the flagged events to shore, where analysts can review and confirm the detections. All data are recorded on 6 TB of removable SD memory cards for full analysis upon retrieval.

Customized Detections and Processing

JASCO's experienced bioacousticians tailor the detection algorithms to the species and call types of your choice. Concurrent detections are associated to provide contextual information for onshore analysts. During times of high glider self noise, the processing algorithms can be disabled to minimize false alarms, reducing personnel workload and maximizing satellite bandwidth use.



Contours give richer information than "pitch tracks"

Intelligent Communications

The processed events are prioritized so that important events, like detections of species at risk, are sent first, making best use of the communication window. The event information is then distributed by email. The durations of the event time windows vary, and events are aggregated as ensembles, to maximize the contextual information available to analysts.

Detailed Detection Contours

The acoustic data, and even spectrogram images, are too large to be sent by satellite. So the Observer converts the detection spectrograms into frequency contours that are small enough to be relayed via satellite. Superior to pitch tracks, the contours give a richer representation of the data for easier, more accurate species detection and identification.

Technical Specifications

Acoustics

Sample rate:	8–512 ksps
Resolution:	24 bits
Hydrophone:	Customizable options from various manufacturers. Sensitivities and frequencies tailored to your needs.

Physical

Mass:	55–70 kg	122–155 lbs
Length:	1.5 m	59.1 in
Hull diameter:	220 mm	8.7 in
Maximum depth:	1000 m	
Horizontal speed:	0.35 m/s (0.68 knots) average Up to 0.5 m/s (1 knots) with full drive	

Memory

Removable flash memory:	Up to 6 TB on 512 GB SD cards
File format:	WAV

Customized Onboard Processing

Marine mammal call detectors for baleen whales, toothed whales, and pinnipeds
Various call types, including moans, whistles, and clicks
Seismic pulse detection and quantification
Ambient sound level calculations

Communication

Telemetry via Iridium (RUDICS) satellite
Detection information distributed via email to end users

JASCO APPLIED SCIENCES

ISO 9001 Certified

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