



OceanDepth Buoy

Seabed monitoring for coastal erosion prevention

Coastal erosion poses increasing risks to communities, infrastructure, and natural ecosystems. OceanDepth Buoy provides an innovative, autonomous solution for continuous seabed monitoring, specifically designed to track sediment movement and shoreline changes in real time.

Equipped with integrated echosounder technology and advanced algorithms, OceanDepth delivers precise data on bathymetry and sediment shifts, helping coastal managers and public authorities better understand dynamic coastal processes. Its autonomous operation, solar power, and seamless data transmission make it an essential tool for informed, proactive shoreline management and protection strategies.

COASTAL MANAGEMENT AND PROTECTION

OceanDepth Buoy offers critical insights for coastal protection and planning. Designed to support public authorities, environmental agencies, and research institutions, it enables better understanding and management of seabed dynamics to address erosion and safeguard coastal environments.



Coastal erosion monitoring



Public Safety & Coastal Planning



Environmental and resource management

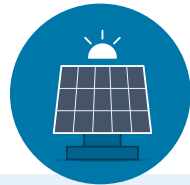


Scientific research & data collection



Precise and continuous seabed monitoring

Integrated echosounder and algorithms accurately measure sediment layers and seabed shifts.



Autonomous and solar-powered

Operates independently, transmitting real-time data without manual intervention.



Seamless Data Access and Analysis

Integrated software visualizes both real-time and historical seabed profiles, supporting informed decision-making.



24/7 support and expert involvement

Satlink provides 24x7 technical support with expert involvement. Proven technology in coastal protection initiatives

RELIABLE MOORING SYSTEM

To ensure optimal performance, OceanDepth buoys are securely anchored to the sea floor using a dedicated marker buoy. This marker buoy complies with all local regulations and is designed to remain robust even under the harshest sea conditions.



As a tried-and-tested solution, we use a rope-only connection, which anchors the smart buoys independently via a spacer with floats. This setup keeps the device clear of the anchor chain, ensuring accurate readings and smooth data collection without interference.

We choose ropes over chains to minimize breakage from friction, and all metal-to-rope connections are secured with stainless steel shackles and bolts for maximum reliability. Additionally, the buoy is fixed at three separate connection points, distributing the load evenly and providing redundancy for extra safety.

Notwithstanding these best practices, we recommend regular inspection and maintenance of the mooring system to keep it in top condition.

TECHNICAL SPECIFICATIONS

Weight	6.5 Kg
Dimensions	37.4 cm diameter x 22.7 cm height
Echosounder	SIMRAD ES16
Energy	PV panels and Lithium-ion battery
Accelerometer	Built-in 3D accelerometer: <ul style="list-style-type: none"> · Resolution 2 g · Selectable tracking (+/- 2 - 16 g) · Sensitivity 2 g

SIMRAD ES16 TECHNICAL SPECIFICATIONS

Composite transducer	200 KHz
Scientific transducer	38 KHz
Beam width	32°
Power	200 watts
Range	Up to 115 meters
Modulation	Broadband chirp
Sea bed reading accuracy	1.5 cm

MEASUREMENTS

Measurement frequency	Configurable (1 min - 60 min)
GPS positioning	Horizontal position (CEP): 2.5/2.0m Velocity: 0.05 m/s Heading: 0.3 degrees
Hydrodynamic parameters	Water depth (up to 115 meters, 1.5 cm accuracy) Wave conditions (measurement interval 3–20 min): <ul style="list-style-type: none"> · Wave period (accuracy <1 sec) · Significant wave height (accuracy <0.1 m)

DATA CONNECTION & PROCESSING

Data transmission mode	Via satellite
Data transmission frequency	Configurable (typically 1x per 10- to 1440 min)
Data outputs	Morphological trend analysis (different time scales) Water level statistics (different time scales) Wave characterisation (different time scales)
Data storage & availability	Cloud solution Historic data storage & backup
Horizontal positioning	Geofencing & alert function

SOFTWARE

Accessibility	Unlimited data access Secure Identity & access management
Visualisation & analytics dashboard	Mapping functionality (Historic) time series graphs Wave- & water level analytics Cross shore profile views



EUTECH

Satlink's technology has been awarded for its contribution to ocean conservation by international organizations such as the United Nations Global Compact or the European Union Technology Chamber.