PORTFOLIO OF
OCEAN BOTTOM SENSING SOLUTIONS

Atlantis

nanometrics

TAILORED OCEAN BOTTOM SENSING SOLUTIONS

Nanometrics' Atlantis portfolio offers innovative seismic sensing solutions that help address the challenges of ocean bottom deployments, while offering the reliability and data quality that our seismic instrumentation is known for. Engineered with the benefit of decades of experience and industry collaboration, Atlantis seismic sensing solutions offer a breadth of solutions ideal for multidisciplinary research as well as offshore earthquake and tsunami early warning. Work with Nanometrics to discover tailored seismic solutions for any OBS deployment type with unparalleled data quality, flexibility, and reliability, to enable groundbreaking research and responsive critical networks.

Data Quality, Without Compromise

Expect the same high-performance, low-noise data acquisition with Nanometrics for your ocean bottom deployments as terrestrial deployments.

Innovative Technology for OBS

Innovations that address the complexities of deploying on the ocean bottom, such as purpose-built pressure vessels and sleds, reliable self-leveling mechanism, true north determination, and compact, ultra-low power instrumentation with industry-leading performance.

Customizable Solutions

Each OBS deployment is unique. Our team works closely with researchers and industry to tailor seismic sensing solutions to meet the goals and operational constraints of each project.

Featured Customers

ALCATEL SUBMARINE NETWORKS

ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA

OBSIC

OCEAN NETWORKS CANADA

OCEAN OBSERVATORIES INITIATIVE

OSEAN UNDERWATER TECHNOLOGY

SCRIPPS INSTITUTION OF OCEANOGRAPHY

UNIVERSITY of WASHINGTON

WOODS HOLE OCEANOGRAPHIC INSTITUTION

Abalones

Ocean Bottom Systems for Autonomous Deployments up to 20 Months

The Abalones is the lowest-noise autonomous deployment system available for the challenges of free-fall deployments up to 6,000 m. The Abalones releases the seismometer directly onto the seafloor to achieve optimal seismic coupling to the earth and mechanical decoupling from the frame, but still surrounds the seismometer, shielding it from ocean currents to minimize unwanted environmental noise. The trawl resistant system combines Nanometrics' industry leading Pegasus OBS digital recorder and Trillium OBS seismometer technologies with Scripps Institution of Oceanography's versatile OBS deployment technology to provide a turnkey solution. The syntactic foam-based flotation frame and four-channel Pegasus digital recorder are compatible with a range of three-channel seismic sensor options.

Key benefits

- Supports a range of Nanometrics broadband/very-broadband seismometers for best-fit sensing capability
- Seismometer interfaced with noise-free auto-leveling kinematic gimbal (tilt-correction ≤ 360°), always retaining the system's full dynamic range
- Integration of hydrophone, differential pressure gauge, digital sensors (such as temperature, pressure, turbidity, or ADCP) enables further customization

Cabled OBS Observatory

Integrated System for Permanent, Observatory Class Seismic and Multidisciplinary Deployments

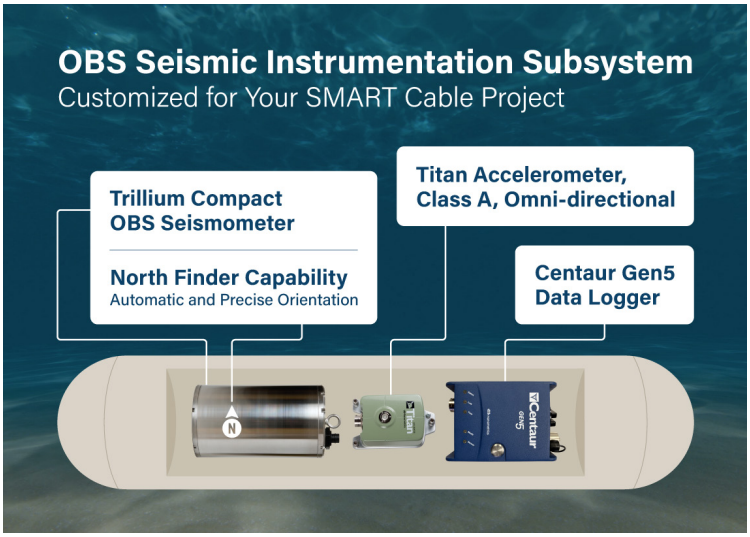
The Atlantis Cabled Ocean Bottom Seismic Observatory (COBSO) provides the reliability, flexibility, and high-fidelity real-time data required for groundbreaking multidisciplinary research projects and low-latency early warning systems. The highest-quality data acquisition and management is provided by combining the best-in-class Trillum 120 or 360 broadband seismometer and Titan 'Class A' strong motion acceleromoter with the Centaur data logger.

Key benefits

- Exceptional data quality for research and monitoring outcome certainty with lowest OBS seismometer self-noise and widest dynamic range
- Successful, simplified deployments with retention of full system-wide dynamic range up to ± 50° tilt angle with noise-free, kinematic gimbal
- Flexible, efficient data management
- Tailor the system to your specific application, with expansion capabilities for additional serial and analog sensors

SEISMIC MONITORING SUB SYSTEMS CUSTOMIZED FOR SMART CABLE APPLICATIONS

With premier seismology engineering know-how, we offer customized ocean bottom sensing systems in ultra-compact form factors that can be integrated into subsea telecommunication cables, whether that be a SMART (Science Monitoring and Reliable Telecommunications) cable repeater, or another type of subsea cabled installation. The vessel could include the following OBS instrumentation and can be combined with other science instrumentation packages for multidisciplinary research purposes.

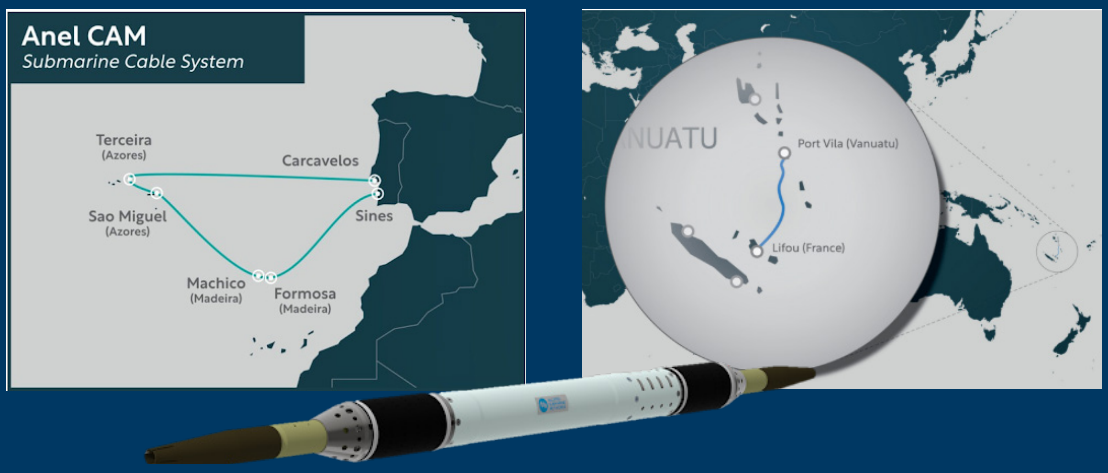


- **Strong Motion Data:**
  Titan Strong Motion Accelerometer
- **Weak Motion Data:**
  Trillium Compact OBS Seismometer

  Optional: North finding feature for highly accurate station orientation to ensure data quality and deployment integrity
- **Data Capture and Station Management:**
  Pegasus OBS Digital Recorder or Centaur Gen5 Data Logger (data logger choice depends on the deployment type) with third-party sensor integration capabilities

CUSTOMER FEATURE: THE FIRST COMMERCIALLY AVAILABLE SMART CABLE

Scientific Monitoring And Reliable Telecomunications (SMART) cables represent an emerging area of development that addresses the data connectivity needs of the world in the largely uninstrumented swath of water bodies on the planet. Nanometrics collaborated with Alcatel Submarine Networks (ASN) to engineer an integrated seismic instrumentation system to fit within the confines of their SMART Cable Climate Change Node (CC-node). The integrated technology includes Nanometrics Trillium Compact OBS Module, Titan Accelerometer, and Pegasus Digitizer that have been customized for ASN requirements. ASN will deploy the first commercial SMART cable solutions in 2026. This technology will play a critical role in monitoring seismic activity and other environmental conditions, contributing to disaster preparedness and scientific research.



EXPLORE ATLANTIS COMPONENTS

OCEAN BOTTOM SEISMOMETERS

Nanometrics' extensive portfolio of reliable, high-performing seismometers have earned a reputation for high quality data and dependability. Choose from three OBS seismometers to fit the needs of your ocean bottom deployment - in its own instrumentation pressure vessel, in a system pressure vessel from Nanometrics, or your own pressure vessel.

Trillium Compact OBS

The Trillium Compact OBS is an ultra-low power 120-second true broadband seismometer for ocean bottom deployments. The OBS vessel and gimbal design preserves the full performance of the land-based Trillium Compact seismometer, including its exceptional dynamic range and low noise floor.

Key benefits

- Ultra-low 195 mW power requirements for longer autonomous deployment longevity or smaller battery requirements
- Available in full titanium pressure vessel for deployments up to 6000m or an aluminum-anodized enamel painted vessel for up 1800m deployments
- The integrated self-orienting north finder technology automatically determines and records azimuth in the metadata, which provides precise data analysis and more deployment flexibility.
- Noise-free auto-leveling kinematic gimbal (tilt-correction ≤ 360°) ensuring the compact OBS will auto-level from all orientations
- State-of-Health logging includes case orientation providing a powerful data set for optimizing deployments.

Trillium 120/360 OBS

Combining exceptionally high-performance with ultra-low power, the Trillium 120 and 360 OBS are optimized for ocean bottom experiments.

Key benefits

- Self-levels up to a ± 50° tilt range to ensure a successful deployment on the ocean bottom
- The titanium pressure vessel is rated for 6000 m deployments and features proven glass epoxy connectors.
- State-of-Health logging includes case orientation providing a powerful data set for optimizing deployments

OCEAN BOTTOM DATA LOGGERS

Pegasus OBS

For Both Autonomous Deployments and Networks with Unique Communication Protocols

Every aspect of the Pegasus OBS ecosystem has been optimized to provide the greatest efficiency for autonomous ocean bottom experiments. The seamless, end-to-end workflow optimizes onshore and shipboard processes, and delivers automatically constructed, ready-to-analyze data and metadata. The high-precision, low-drift timing system of the Pegasus OBS produces accurately time stamped data. With its small form factor and remarkably low power consumption, the Pegasus OBS digital recorder minimizes the cost of batteries, extends maximum experiment duration, reduces overall station size requirements, and simplifies integration into existing systems or new vessel designs.

Centaur Gen5 Series Powered by *StrataOS*

For Cabled Deployments

The Centaur Gen5 is an all-in-one digitizer, recorder, and real-time streaming data logger with advanced on-board data processing. The new Centaur Gen5 series of data loggers includes 3-channel, 6-channel and 8-channel models to meet your sensing needs. The Centaur Gen5 operating system, *StrataOS*, builds on the Nanometrics legacy of quality and ease-of-use that you rely upon. Centaur Gen5 combines exceptional performance, adaptability and reliability, supporting seamless integration of various sensor types into one power-efficient station.

OCEAN BOTTOM ACCELEROMETERS

Titan Accelerometer

For Cabled or Autonomous Deployments

Nanometrics Titan Accelerometers have been pre-integrated into our Atlantis Cabled Observatory and SMART Cable solutions, and can be adapted for deployments in customer or Nanometrics supplied pressure vessels. The Titan omni-directional model can work at any angle and features industry leading dynamic range that, when combined with ultra-low self-noise performance, mitigates environmental noise resulting in accurate measurements and high quality data.

EXPLORE TODAY'S ATLANTIS APPLICATIONS

From free-fall autonomous solutions ideal for OBS experiments to low-latency cabled observatories essential for critical networks and early warning systems, the applications for the Atlantis OBS portfolio are varied:

- Seismic research campaigns
- Multidisciplinary ocean science research
- Climate change research
- Early warning systems including for earthquakes and tsunamis
- Natural hazards monitoring

Atlantis

Contact a Product Expert

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