

Seafloor observatory opens portal to the Pacific

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The Victoria Experimental Network Under the Sea (VENUS) facility, led by the University of Victoria, today opened the data portal to the seafloor through its information management and archive system.

The portal -- hosted on the new VENUS Web site at www.venus.uvic.ca -- gives scientists and the general public access to a constantly expanding "warehouse" of images, sounds and live data from the ocean floor.

"This is a very important and exciting development providing a unique window for researchers and the public on the world under the sea, about which we have so much still to learn," says Dr. Martin Taylor, UVic's vice-president research.

The \$10.3 million VENUS facility offers the world's first interactive, real time portal to the ocean. Its underwater network of fibre optic cables and instruments, which is connected to the Internet, lets us all "enter" the ocean whenever we wish, and allows scientists to operate their instruments and download data online, day or night, in real time.

The 3-km network of fibre optic cables and instruments that makes up the first leg of VENUS was installed in Saanich Inlet in February. Information has been streaming in since then. A second, 40 km leg will be installed in the Strait of Georgia near Vancouver later this year.

At the heart of VENUS is a centralized data management and archive system that offers unrestricted access to long-term ocean observations.

"It is a very advanced software 'structure' that was developed at UVic and sets new standards in data capture, access and delivery," says VENUS project director and marine biologist Dr. Verena Tunnicliffe.

The four key features of the data management and archive system are: data acquisition and storage; easy user access to data; observatory monitoring; and the control of instruments by VENUS scientists. "This is a remarkable resource and represents a year of hard work by a 13-member team," says Tunnicliffe.

"The information we see today on the VENUS website is just the tip of the iceberg," says Benoît Pirene, director of the database team. "Behind the scenes, there is an extensive software and hardware infrastructure designed to collect data from the various instruments and store them for 20 or more years."

VENUS instruments collect several gigabytes of information every 24 hours. In its four-and-a-half months of operation, VENUS has already archived more than 35 million measurements and dozens of gigabytes of acoustic and visual data. That information -- and new real time data -- is now available to the world.

The data management system is constantly evolving. In the near future, "software agents" will work on behalf of VENUS scientists, monitoring incoming data and alerting them by e-mail or cell phone if an unusual event or trend occurs that warrants immediate attention.

Over its 20-year lifespan, VENUS will support studies on topics such as: long-term ocean change; tides, currents and mixing; fish and marine mammal movements; seafloor community ecology; underwater noise pollution; sediment and slope dynamics; and plankton behaviour.

Source: University of Victoria

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