

## **VENUS Work Launches Oceanworks to Commercial Success in the Mediterranean** <sup>[1]</sup>

Submitted by Virginia Keast Sun, 2011-07-10 02:11

A Vancouver company's work for VENUS and NEPTUNE Canada opened a new path in its technology development and led it to a massive project in Cyprus.

For years, OceanWorks has been building systems for submarine rescue, deep diving, and other complex manned systems for navies and private companies around the world. The ocean, with its pervasive salt and inescapable wetness, is great at destroying just about anything humans make. The particular conditions at various VENUS and NEPTUNE Canada sites—be it intense pressures, currents, or sediment buildup—require custom equipment, and OceanWorks' experience in adapting delicate electronics and sturdy hardware for such environments landed the company work with VENUS.

OceanWorks' first project with VENUS was to design its scientific instrument interface module, or SIIM, and the 2-tonne nodes, which are made up of a fixed base on the seafloor and a removable electronics pod. Each SIIM houses electronics that provides power and a communication path to various instruments attached to it, enabling sensors to sample and stream their measurements online. Their first SIIM design, a silver cylinder a little bigger than a diving tank, could be placed up to 70m from a node and can support 5 to 10 instruments. VENUS also needed removable node pods to fit in their 4.2 x 2.5 m fixed bases.

"To be honest, we thought it would be easy," says Derek White, a member of the sales team at OceanWorks. Applying a theory always leads to engineering issues, he explains, but in this case there was nothing drastic. "It was a great introduction to the kind of work we're doing now."

Their work snagged the attention of NEPTUNE Canada, which needed junction boxes based on the SIIMs that withstand even greater pressures and run power greater distances. Since then, OceanWorks refined the design, expanded the VENUS SIIM to fit more instruments, and toughened the power control system. They have supplied NEPTUNE Canada with 15 junction boxes, and 2 more are expected by summer 2011. The VENUS cruise in December 2010 deployed 8 new SIIMs along with the upgraded Central node in the Strait of Georgia.

OceanWorks' products put them on the radar of Harris Maritime Communications Services.

Harris makes large buoys for ocean observing systems, including one run by the Oceanography Centre of Cyprus that has been monitoring and predicting coastal weather in the Mediterranean since 2004.

Recently, the Centre decided to add a massive tsunami detection network of seismometers and bottom pressure recorders spanning hundreds of kilometres across the seafloor. To do so, they teamed with CSNet, an offshore communications company, whose partnership with Harris led to OceanWorks securing the contract to supply five nodes—all stemming from that first contract for VENUS.

“We would not have gotten that project without the support and experience from VENUS and NEPTUNE Canada,” says White. The new project integrated the nodes and electro-optic cables up to 250 km long with Harris’s buoys, running the information via satellite back to headquarters. The system was launched in autumn 2010.

The project in Cyprus marked a turning point for OceanWorks in their ocean observing products. They’ve standardized their junction boxes, which has interested similar ocean observing programs around the world, and added “cabled observatory systems” to their list of products.

People at VENUS and NEPTUNE Canada “are very collaborative and very open,” says White. “They helped a lot in developing the products that became our signature nodes and scientific instrument packages.”

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