Collaborative Underwater Communication Projects

EvoLogics, Germany, is demonstrating the results of its recent collaboration projects - an underwater networking toolkit developed together with WSENSE from Italy and a joint new product with SubNero maritime experts from Singapore. These demos are being held during OCEANS'13 MTS/IEEE Conference in Bergen, Norway, from 10 to 13 June 2013.

At the exhibition, the EvoLogics team is presenting the WSENSE SUNSET underwater networking toolkit created by EvoLogics' long-term partner WSENSE. This company is a spin-off of the University of Rome "La Sapienza". The new toolkit allows to create underwater networks to deliver data to surface, moored or mobile underwater nodes and control them over single-hop and multi-hop acoustic transmissions.

The toolkit is integrated with EvoLogics WiSE (While Line Science Edition) modems: SUNSET framework runs on the modem board with no additional hardware required. The WiSE line of underwater acoustic modems with an embedded network protocol development platform provided a flexible framework for WSENSE's designs. SUNSET and EvoLogics system has been used for remotely controlling and retrieving data from various sensors (CO_2, methane, ADCP), as well as operating mobile vehicles (AUVs and ASVs).

Another partner of EvoLogics, SubNero, is a Singapore-based company that focuses on underwater communications. SubNero is introducing its new product to the market, the SubNero-EvoLogics underwater acoustic modem. The new product is based on the UnetStack, an embedded implementation of the UnetStack underwater network stack specifications. UnetStack provides a basic set of software agents allowing an underwater network to be deployed. It was developed at the ARL (Acoustic Research Laboratory) of the National University of Singapore to address the need for highly optimised protocols that are specially designed for use in underwater acoustic networks. The SubNero chose to use EvoLogics' know-how expertise to develop the analogue parts of the modem to provide its customers with a flexible platform for a variety of underwater applications. The new SubNero-EvoLogics modems are customisable, allowing to implement and test network protocols as well as physical layer algorithms.