

Department of Ocean and Resources Engineering *Seminar*

Underwater Acoustic Communications, Networks, and Modem-Based Navigation Aids

By

Mr. Dale Green

Chief Scientist at Teledyne Benthos

Thursday, July 10, 2008, Holmes Hall 243

3:00-3:30 pm Coffee Hour

3:30-4:30 pm Seminar

Please join us for the coffee hour near the seminar venue a half hour before the seminar, 3:00 – 3:30 pm

Abstract

Teledyne Benthos is a major developer of underwater acoustic communications technologies for both military and commercial applications. Over the past 12 years, beginning with Datasonics, through Benthos, and now through Teledyne Benthos, we have developed a wide variety of modem-based capabilities providing navigation aids, autonomous sensing, and, communications. The new 4th generation modem, a development funded in large measure by SPAWAR, NUWC, and ONR, is physically smaller, more capable, more flexible, and less power-hungry than our older models. Hundreds of these devices are either sold or are on order at this time. Benthos has fully integrated the modems into all classes of acoustic releases, so that now a purchaser obtains a release with a modem or a modem with a release - depending on its application. Modem technology, largely through ONR and NUWC funding, now provides two varieties of navigation aids, submarine and UUV tracking, in-situ data recording, and in-situ passive sonar. All of these technologies are based around extremely low power, compact electronics. ONR is funding us to develop a footprint- and functionally-compatible alternative to the WHOI Micromodem, and we are opening our signaling technology for US Navy applications. We have begun the development of 3rd party, user-programmable networking capabilities based in large measure on our decade-long support of the Seaweb program. Finally, several of our developments for ONR are moving us into undersea monitoring of biological organisms. This seminar will emphasize current research directions.