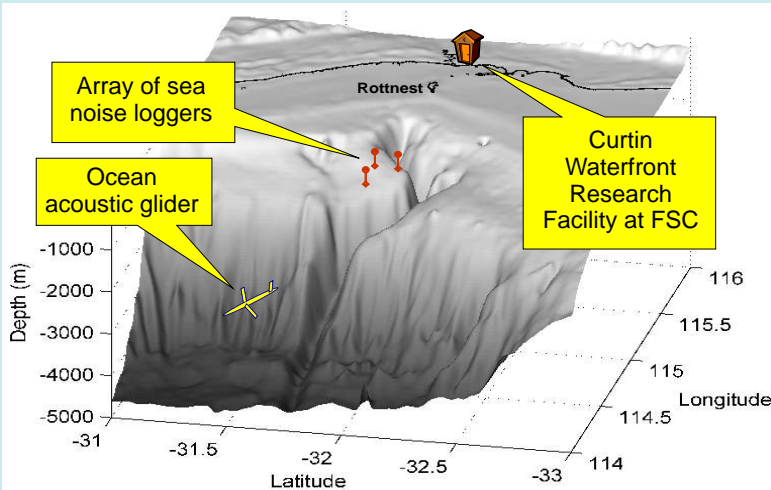


CMST News

The Newsletter of the Centre for Marine Science & Technology

#8

New National Underwater Acoustics Facility



One of the three underwater acoustic observatories scheduled to start construction at the CMST Waterfront Research Facility later this year.

The Federal government recently announced the establishment of an Integrated Marine Observing System (IMOS) as part of the National Cooperative Research Infrastructure Scheme (NCRIS), which includes enhancing existing acoustical oceanography capability. CMST is the lead organisation for the acoustics component. As part of the IMOS, CMST will build and deploy three acoustic observation stations in Australian coastal waters valued at over \$1M.

CMST is also planning to supply an acoustics package for one of the suite of ocean gliders to be acquired under IMOS. The availability of the Curtin Waterfront Research Facility was a critical success factor in this proposal. Building and managing the acoustic observation stations is only the first step in this development. Once installed, they will become a source of data that will attract major regional, national and international research programs.

National Research ROV

CMST and CSIRO are preparing a joint proposal for the establishment of a versatile \$10M ROV system that can be used to provide ocean access for the widest possible range of scientific and engineering research and development projects. Potential areas of application include underwater acoustics, oceanography, oil and gas engineering, marine geotechnics, marine geophysics, and many other fields of scientific and technical endeavour.

Because some 80% of the AEEZ (Australian Exclusive Economic Zone) is deeper than 200m, a deep-water capable system is recommended, and alternative deployment options are outlined to ensure that the system can also be used for operations in shallower waters, and from smaller operating vessels. A stakeholder survey and discussion document are available at: <http://www.cmst.curtin.edu.au/research/nationalrov>



An example ROV being considered for the National Research ROV.

Scholarship Successes

Two new PhD students have been successful in gaining highly competitive scholarships. Daniel Veen has won an Australian Postgraduate Award to study "Smoothed Particle Hydrodynamics of Ocean Waves Impacting on Ship

Hulls" and Grant Pusey gained a Curtin University Postgraduate Scholarship to study "Underwater Data Transmission Using Acoustic Modems". Both Daniel and Grant hold first class honours degrees in Applied Physics from Curtin.

International Visitors

Dr. Jinrong Wu from the Institute of Acoustics in Beijing, China visited CMST from November 2006 to January 2007, to work with Dr Gavrilov on seabed acoustics. The visit was supported by the Chinese Government.

Systems Lab at the Southampton Oceanography Centre, UK.

* Dr Katsuya Maeda, Research naval architect at the National Maritime Research Institute, Japan.

* Dr Rob Pinkel from Scripps Institute of Oceanography, USA.

* Mr Mike Tarver from Scott Polar Research Institute, UK.

CMST also hosted brief visits from:

* Prof Gwyn Griffiths, Head of the Underwater

Waterfront Research Facility Launched

The CMST Waterfront Research Facility at Fremantle Sailing Club is now operational. The buildings were installed at the end of 2006, with site works

completed in February 2007. The Facility was officially launched by the Hon. Fran Logan, Minister for Energy, Resources, Industry and Enterprise at a ceremony at

the Facility on Thursday 29 March 2007.

A joint research project with the Club has already started, investigating concentrations of Tri-Butyl-Tin (from boat

paint) in the harbour. This work is being conducted under the direction of CMST ecotoxicologist Dr Monique Gagnon in the School of Environmental Biology.



PHOTO: ANDREW WOODS

The Hon. Fran Logan launching the Curtin Waterfront Research Facility.

Photos of the facility and the launch are available here: www.cmst.curtin.edu.au/special/WRF-launch

Student Internships

Two externally supported undergraduate student internships were recently conducted at CMST.

iVEC sponsored the project titled "The Stereoscopic 3D Compatibility of Consumer Plasma Displays" conducted by Physics / Engineering student Kai Karvinen. The project was supervised by Andrew Woods. The project involved testing 15 different consumer plasma displays for compatibility with two common stereoscopic display methods. Regrettably most plasma displays are not suitable for time-sequential stereoscopic display. A full technical report is available.

DSTO sponsored Physics student Chris Sorgiovanni for

a summer studentship in underwater acoustics under the supervision of Dr Alec Duncan. Acoustic signals detected on submarine hull mounted sonar arrays are being investigated using a simplified model submarine small enough to fit inside the anechoic chamber at Curtin. 16 acoustic sensors, modelling wide aperture hull sonars, were attached to the model. Both theoretical predictions and experimental measurements of the sound amplitude and phase around the model hull surface were made. Long term goals for future work will consider the effect on sonar signals of the elastic response of hulls to low frequency sound.

Naval Architecture

CMST has been asked to continue its naval architecture lecturing support at UWA and to develop a blended learning package in ocean engineering as part of their Master's program in oil and gas

engineering.

CMST will again teach naval architecture at UWA during semester 2 of 2007. Dr Kim Klaka and Dr Tim Gourlay are the contributors from CMST.

Underwater Technology

Funding has been secured at CMST from the Western Australian Energy Research Alliance (WA:ERA) for a 3 year postdoctoral position in the field of underwater technology for improved subsea reliability. WA:ERA is a Western Australian Major Research Facility Program. The partnership involves UWA, CSIRO Petroleum and Curtin, and it holds alliances with Woodside and Chevron Texaco. It is intended to benefit the operations of the

oil and gas industry with leading edge practical research. Direct funding from the WA government of \$20M is expected to gain leverage of more than \$200M over the next decade. Prospective appointees are invited to visit the CMST website for the information on the position. One of the first tasks of the appointee will be to conduct an underwater technology review as recommended by the 2005 industry subsea workshop.

The Centre for Marine Science & Technology (CMST) conducts consulting, research, development and education for the marine industry and for government agencies.

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CMST Lunchbox Seminars

CMST holds weekly seminars, with speakers from interstate and overseas, as well as CMST staff.

The schedule of seminars is listed on our website: www.cmst.curtin.edu.au/seminars

If you would like to receive email updates regarding CMST seminars, simply send an email to the following address: seminars@cmst.curtin.edu.au