

## **Autonomous Underwater Vehicle (AUV) Facility : Call for Proposals for Access 2010-2011**

Australian marine researchers are invited to submit proposals to use the Autonomous Underwater Vehicle (AUV) Facility as part of the Integrated Marine Observing System (IMOS) for the period from 1 January 2010 to 30 June 2011. Free, open and timely access to all IMOS data is available without a proposal. This call is seeking collaborators to include the deployment of an AUV as part of on-going scientific research programs. Proposals are **due to the IMOS Office on Friday, October 30<sup>th</sup> 2009**. This document should be read in conjunction with the draft IMOS Five Year Strategy 2009-13 that outlines the IMOS goals and objectives in more detail. These documents are available on the IMOS website [www.imos.org.au](http://www.imos.org.au).

Via the Sydney Institute of Marine Science (SIMS), the University of Sydney's Australian Centre for Field Robotics (ACFR) is leading the IMOS AUV Facility and has an ocean going Autonomous Underwater Vehicle (AUV) called *Sirius* capable of undertaking high-resolution survey work. This platform is a modified version of a mid-size robotic vehicle called Seabed built at the Woods Hole Oceanographic Institution. The submersible is equipped with a full suite of oceanographic instruments, including a high-resolution stereo camera pair and strobes, a multibeam sonar, depth and conductivity/temperature sensors, Doppler Velocity Log (DVL) including a compass with integrated roll and pitch sensors, Ultra Short Baseline Acoustic Positioning System (USBL) and forward looking obstacle avoidance sonar. As part of IMOS, the vehicle has been enhanced with a Wetlabs Eco Puck, measuring chlorophyll-a, CDOM and scattering (red). Requests for additional sensor payloads may be considered as part of this application process if funding is available to support the integration process.

The IMOS AUV Facility will support deployment of the *Sirius* AUV which will be made available to scientists on a competitive basis in order to assist marine projects in Australia. IMOS will cover the costs of AUV calibration, preparation, insurance, transport within Australia, and access to and storage of the data. Ship-time for the deployment, tracking and recovery of the AUV are the responsibility of the organisation requesting the deployment. The use of the AUV must comply with IMOS' objective to "*offer open access to data arising from research infrastructure provided through the IMOS to the national and international marine research communities*".

This call is to assist in identifying deployment opportunities after 1 January 2010 and up to 30 June 2011. The AUV Facility is different from other IMOS Facilities in that it will provide access to a platform that can readily be transported around the country and will support relatively short, intense deployments as part of longer term studies. Priority will be given to proposals that included an aspect of sustained observation and potential for repeated survey.

Australian marine researchers, and their international collaborators, are encouraged to make proposals for the deployment of the AUV available through the IMOS AUV Facility. Proposals will be assessed on a competitive basis and allocated to particular deployments based on the following assessment criteria:

- Consistency with IMOS Principles and Goals (refer to <http://www.imos.org.au/> )
- Alignment with a Node Science and Implementation plan (see [www.imos.org.au/nodes/html](http://www.imos.org.au/nodes/html))
- The excellence of the science proposed and relevance to the IMOS goals;
- The track records of the proposers relative to previous opportunity;
- The wider value of the data archive which will be produced from the deployments (e.g. size of research community using the data; potential of national benefit arising from the research; potential to produce a long time series relevant to climate research)
- The degree of integration with other activities within the IMOS system;
- Level of additional co-investment towards deployment.

The evaluation process will consist of the review of the proposals by the AUV Facility leaders and their Steering Committee and an assessment against the IMOS goals. Final Proposals will be sent to the IMOS Steering Group for evaluation and recommendation to the IMOS Director. We will work closely with selected proposers to fully develop deployment schedules and cruise plans. Interested parties are encouraged to contact the AUV Facility Coordinator to discuss their proposal and address any questions they may have about the use of the AUV. Final proposals should be submitted via email using the attached Pro Forma to Katy Hill, IMOS Scientific Officer ([katy.hill@imos.org.au](mailto:katy.hill@imos.org.au)); and copied to the AUV Facility Coordinator.

For further information or queries regarding the application and assessment process, please contact:

**Dr. Stefan B. Williams**  
AUV Facility Coordinator  
[stefanw@acfr.usyd.edu.au](mailto:stefanw@acfr.usyd.edu.au)

## **AUV Facility Proposal Pro Forma**

Proposals should include the following information:

- Names, affiliations and contact details for all scientific participants;
- Brief CVs (1 page) of leading scientific participants, plus publications over the last 5-years;
- Specification of the required IMOS infrastructure and a budget for the proposed deployment including co-investments.
- Statements addressing the following selection criteria

### **Brief Description of Research Objectives**

Provide a brief description of your research objectives and the role of the AUV in supporting this research. Outline the immediate research applications and scientific rationale for the proposed AUV deployments. Applications that integrate with other IMOS activities and present opportunities for sustained observations will be given preference.

### **Significance of Research to IMOS**

Describe the significance of your proposed project with respect to Australia's National Research Priorities and the following IMOS goals:

- To provide sustained ocean and associated observational data and infrastructure capability that meets the broad needs of the Australian marine and climate research communities,
- To provide the marine and climate research community with free and timely access to quality assured observational data, and
- To involve the marine and climate research community in defining future needs and to strengthen the technical and operational capability of the marine and climate community and hence sustain the ocean observing paradigm into the longer term.

Research objectives should be discussed with the relevant IMOS Node leader and priority may be given to proposals that include a letter of support from the Node describing how the work is aligned with the Node's scientific plan. Otherwise, please provide a statement on how the proposal aligns to the draft IMOS Five Year Strategy 2009-13.

### **Funding**

Outline the funding secured to support the project. Priority will be assigned to applications that have secured funding from competitive grants. Have AUV deployments been included as part of the initial project proposal? If your project is not selected to receive IMOS support, are there sufficient funds available to proceed regardless? This would require funds to support the transport and logistical costs to deliver the vehicle and crew to your chosen port.

## Ship Support Confirmed

Has ship support been confirmed? If so, provide details of the ship and its facilities. If not, describe how you intend to support the deployment and operation of the vehicle.

## Timeline for Deployment

Are firm dates required for this deployment? What constraints exist in terms of the research agenda, weather windows and availability of ships and any other required infrastructure?

## Sensor Payload Requests

Select the suite of sensors you would require to support your operations. In addition to the standard navigation sensors (DVL, CTD, USBL, GPS), are there additional sensors that would enhance the data collected during the proposed AUV deployments?

Required	Sensor	Description
<input type="checkbox"/>	Stereo imaging system	Dual high resolution (1360x1028) cameras, one BW, one colour synchronized with a pair of high speed strobes
<input type="checkbox"/>	Multibeam	Multibeam sonar, 120°x3° capable of synthesizing up to 480 beams, 260kHz, max range 100m
<input type="checkbox"/>	EcoPuck fluorometer	Measures chlorophyll-a, CDOM, scattering (red)
<b>Requested</b>		
<input type="checkbox"/>	Other:	