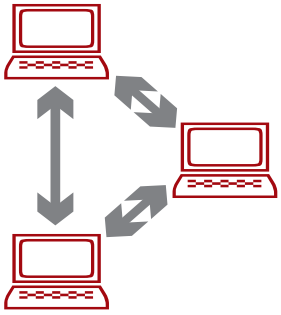
The scale of the effort required to observe and understand the oceans means that no one agency can deliver the observations needed to understand the system and the local and remote impacts of changes in ocean currents, air sea interaction and ecosystem changes. IMOS is delivering a true paradigm shift in Australia's marine research effort by utilising the capability of 10 agencies and universities to create an enhanced, nationally integrated capacity to collect marine data, draw it together, and make it available to researchers and other users in a timely fashion. eMII is charged with the collation and delivery of the IMOS data streams and data products.



Data

IMOS collects data in a wide range of parameters from a number of different platforms (facilities) and sensors. All data is quality controlled and stored in a nationally distributed database according to international standards, allowing easy access to high quality data streams and offering compatability with data from the wider marine science community. Each platform delivers data at different time and space scales, and with sensors having differing accuracies. As seen from Table 1, in many cases a parameter is measured by several platforms resulting in an unprecedented multi-dimensional view of the parameter. Many of the data streams are contemporary, allowing a time-evolving view of the marine environment.

Applications and products

An overarching aim of IMOS is to deliver marine datastreams. Basic products such as time series and spatial patterns will be delivered. When a parameter is measured by different techniques (see Table 1), products derived by integrating these data sources will be produced. Regional and temporal aggregations will provide 'climatologies' against which trends and anomalies of multiple parameters can be investigated. Where possible, IMOS data will be used to update and improve existing international datasets, e.g. the Argo program. Products to be delivered will depend on the requirements of researchers and the wider marine community.

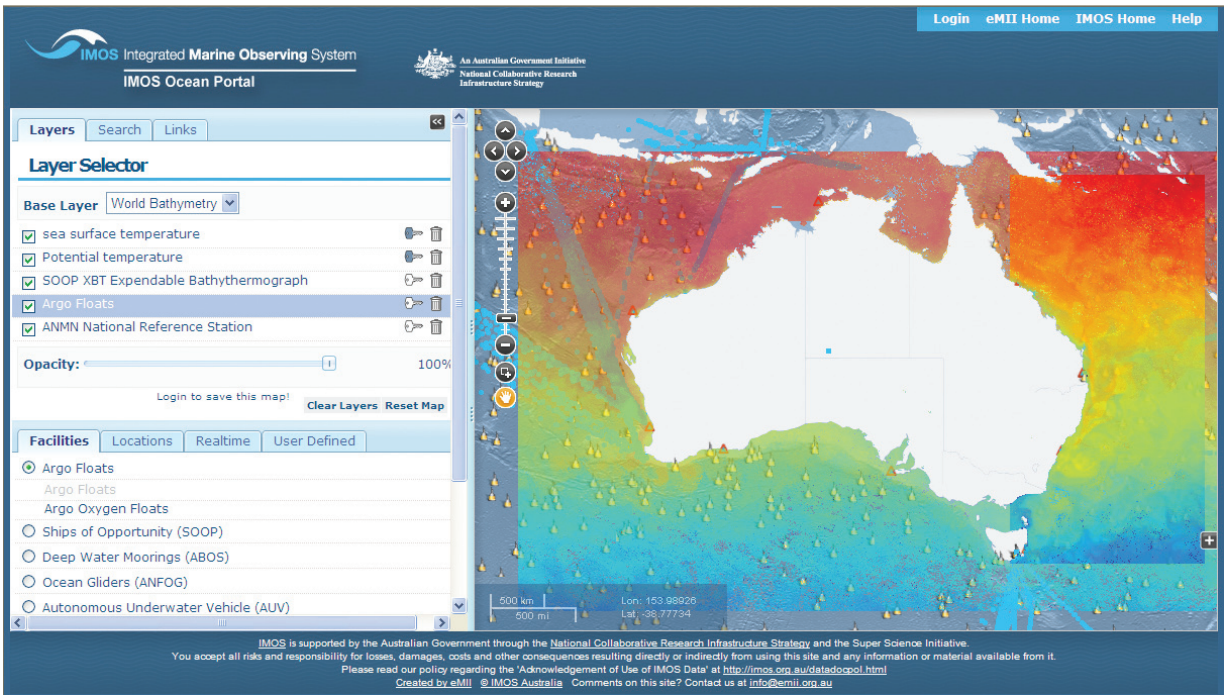


Figure 1. The IMOS Ocean Portal. IMOS data from all around Australia is delivered direct to your computer through this interactive map based interface. See http://imos.aodn.org.au/webportal/.

	Sea Temperature									Optical Observations													
	Skin Temp	Surface temp	Sub surface temp	Vertical temp profile	Salinity	Dissolved Oxygen	Radiation flux	Meteorology	Dissolved CO_2	Fluorescence	Turbidity	Organic Matter	Coloured Dissolved	Chlorophyll a	Clarity	Current	Biogeochemical	Biological	Bathymetry	Stereo imagery	Sediment-flux	Surface waves	Bottom pressure
Argo Floats				●	●	●										●							
Ships of Opportunity	●	●	●	●	●	●	●	●	●	●	●			●			●	●					
Deep Water Moorings		●	●	●	●		●	●	●	●	●						●	●			●		
Ocean Gliders	●	●	●	●	●	●				●	●	●	●	●	●	●							
Auto. Underwater Vehicle			●		●	●				●	●	●				●			●	●			
National Moorings Network		●	●	●	●	●	●	●		●	●				●	●	●	●					●
Ocean Radar								●								●						●	
Animal Tagging & Monitoring				●	●													●					
Wireless Sensor Networks		●	●	●				●															●
Satellite Remote Sensing	●										●			●									

Table 1. A summary of the datastreams available through IMOS and the Facilities which deliver them.

Every effort will be made to identify the needs of different communities (e.g. research scientists, marine managers, environmental regulators, recreational users, the offshore industry) to deliver practical and accessible information.

Focus and priorities

- Constructing robust data management infrastructure within which data is stored at secure, reliable facilities with backup and redundancy.
- Ensuring that all IMOS data is accessible, is quality controlled to recognised standards, and has metadata to ISO standards.
- Providing flexible search and visualisation tools to allow easy discovery and data download.
- Enabling the marine science community, through the provision of supporting tools, to maximise the integration and analysis of IMOS data.

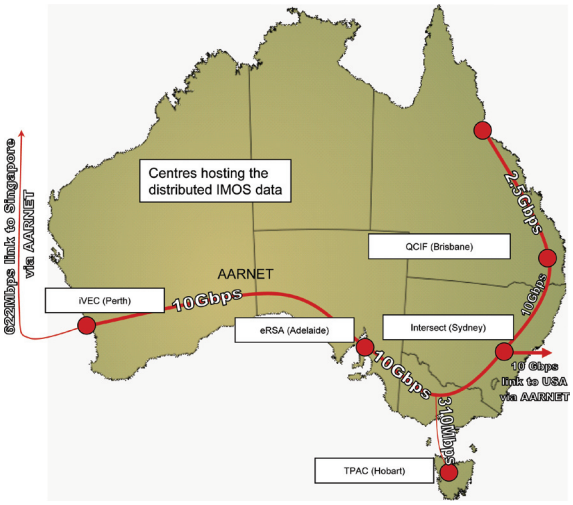


Figure 2: A summary of data centres and bandwidth around Australia.

Partners

- iVEC (WA) - the Hub of Advanced Computing in Western Australia
- eRSA (SA) - eResearch South Australia
- Intersect (NSW) - Institute for Transdisciplinary eResearch Services and Technology
- QCIF (QLD) - Queensland Cyber Infrastructure Foundation
- TPAC (Tas) - Tasmanian Partnership for Advanced Computing
- ARCS - Australian Research Collaboration Service
- ANDS - Australian National Data Service
- NeAT - National eResearch Architecture Taskforce
- MACDDAP - Marine and Climate Data Discovery and Access Project

www.imos.org.au

IMOS
Integrated Marine Observing System

An Australian Government Initiative
National Collaborative Research Infrastructure Strategy

More information

IMOS eMarine Information Infrastructure
http://imos.org.au/emii.html

IMOS is supported by the Australian Government through the National Collaborative Research Infrastructure Strategy and the Super Science Initiative.