Advisory Committee (NCRIS)
C/o Research Infrastructure Strategy Section
Department of Education, Science and Training,
Loc Code 726
GPO Box 9880
CANBERRA ACT 2601

Dear Professor Hume

The Australian Marine Sciences Association Inc. (AMSA) appreciates the opportunity to comment on the Draft Implementation Framework for the National Collaborative Research Infrastructure Strategy and the opportunity to attend an information session in December 2004.

AMSA has some 900 members across the range of marine science disciplines in research and teaching institutions, government agencies, and the private sector. As a professional association, its objectives are to promote, develop, and assist in the study of all branches of marine science in Australia and to promote the exchange of information amongst those concerned with the marine sciences in a broad sense. The Association has made significant contributions to recent national marine science initiatives, including the development of the Marine Science and Technology Plan, Australia's Oceans Policy, and more recently, development of the National Research Priorities (2002).

In April this year, the United Nations Commission on the Limits of the Continental shelf will begin its consideration of the submission lodged by Australia in November 2004 on proposed seabed boundaries for areas of extended continental shelf beyond the limits of the Australian 200 mile Exclusive Economic Zone. At Australia's request, the Commission will not at this stage be examining material relating to the areas off the Australian Antarctic Territory. If accepted, the seabed boundaries are binding, and the process will establish the outer limits of Australia's marine estate for the foreseeable future.

At a total of well over 14 million km^2 (see attached table), Australia's marine areas form possibly the most extensive in the world under a single national jurisdiction. They are a significant proportion of the global ocean area. Some areas, mainly in shallower water, are relatively well studied, but there are vast stretches of the seabed and water column about which we know little in any detail. Our assertion of jurisdiction has attendant responsibilities and obligations under international law relating to understanding the areas and their use, care and management in perpetuity. We need to be ready to meet the economic development and security issues that will arise in our offshore jurisdiction.

Australia's capacity in to meet those responsibilities, and its enjoyment of the benefits of ecologically-sustainable use of the resources in the long-term, will require a significant, strategic and sustained investment in marine research and training. It is very much in the national interest to have a well thought out and forward-looking program for the collaborative development, deployment, and maintenance of marine research infrastructure that deals both with very large infrastructure and the smaller scale.

The attached material, which has been considered by AMSA Council, addresses some of the issues raised in the Draft Implementation Strategy in four main areas -

A: Biodiversity-related -

- Understanding Australia's marine biodiversity and ecosystems: as a component of core research infrastructure in the life sciences, investment to ensure high-quality taxonomic capacity and services in the face of increasing demands on limited and diminishing expertise and facilities.
- High-quality taxonomic information is a prerequisite to any understanding of marine biodiversity and its effective use for national good. It is critical in a number of areas, including marine resource management, impact assessment, management of introduced and invasive species and access to genetic resources and biopharmaceuticals

B: National marine research facilities and platforms - and the potential to complement national capacity through participation in collaborative international programs.

- Strategic development of shore-based research facilities and supported field research stations;
- Strategic development of accessible ocean-going surface, water-column and seabed marine research capacity and ;
- Strategic engagement in the development and implementation of accessible ocean observing systems, including satellite and lower altitude platforms and other remote sensors;

C: Information management and collaboration in data storage and access and the collation, standardisation and management of key national data sets in marine science; and

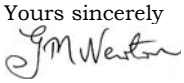
D: Strategic development of the national marine science and training capacity including opportunities through international collaborative programs and linkages with marine industries.

Lead times for design, development, and deployment of ocean-capable platforms and other marine research related technology are significant. Some initiatives will be well beyond the timeframe and the limits of the funding commitments under NCRIS for the period 2004-5 to 2010-11. It is important that the NCRIS process is capable of identifying those longer-term strategic needs, of developing mechanisms to address them and of factoring them into the shorter-term arrangements. There will be many smaller-scale research infrastructure needs dependent on the large-scale facilities available and the associated access and funding arrangements.

The key issue of the relationship between NCRIS outcomes and strategic identification and investment in what NRIT termed Landmark or very large scale research infrastructure is addressed in comments on Section 8.4 of the NCRIS Draft Implementation Framework.

AMSA Council notes that DEST is intending to establish an e-consultation mechanism and would be happy to continue to participate.

Yours sincerely



Dr Gina M Newton
President, The Australian Marine Sciences Association Inc.

Australian Marine Sciences Association Inc.

SUBMISSION TO THE ADVISORY COMMITTEE ON THE NATIONAL COLLABORATIVE RESEARCH INFRASTRUCTURE STRATEGY
DRAFT IMPLEMENTATION FRAMEWORK

CONSULTATION ISSUES: NCRIS STRATEGY DRAFT IMPLEMENTATION FRAMEWORK (DIF)

DIF Section 6

- *Stakeholders are invited to provide their initial responses to the outline of the Strategic Roadmap, including conceptual and structural issues, and for suggestions for developing and improving [the strategic roadmap*]

AMSA welcomes the development of a framework for long-term strategic planning to support Australia's marine research infrastructure and capability in the region. Structuring the framework to align with the National Research Priorities is a logical step, but it will be important that the framework and roadmap provide both the necessary overall direction, and the flexibility to accommodate new developments and emerging priorities over the next five to ten years. AMSA has made some initial proposals in this submission for higher-level additions that we consider are essential to provide a focus within the Roadmap for marine-related infrastructure development.

AMSA notes, however, the comments under the Draft Implementation Framework sections 6 and 7 on the process proposed for further development of the Roadmap. The detail provided by NCRIS in the current Roadmap under *Capabilitie*s and *Specific Suggestions* is clearly not comprehensive and the components included can only be considered indicative at this stage of its development, although the consultation on the Draft Implementation Framework will itself provide additional proposal. It is however, not clear from the document how the Roadmap is to be refined by the RIAC through a 'portfolio' approach, to provide both the finer scale components and balance in identification of the broader areas for investments that will have a substantial contribution in delivering national benefits.

AMSA notes that DEST is intending to establish an electronic consultation mechanism and would be keen to contribute further to the process. More specific comments are provided below.

Initial outline of Strategic Roadmap

Under NRP - environmentally sustainable Australia suggested additions:

:Capabilities to enhance ...1	**Specific suggestions.....**
• National marine and terrestrial taxonomic capacity and biodiversity databases	• Support for maintenance, upgrading and access to information in major national biodiversity collections in Museums and other agencies as major asset and core component of national biodiversity research infrastructure
• Replacement and additional research vessels and other marine research platforms and facilities	• review of current vessels and capacity and development of national development strategy, including replacement and additional vessels, manned submersibles, ROVs and mapping capacity as Strategic Very Large Infrastructure

Safeguarding Australia

• Improved capacity to identify, detect and predict and manage introduced and invasive marine species • Improved capacity to identify and mitigate the impacts of climate change on terrestrial and marine environments	• Upgrade and maintain national taxonomic collections and identification facilities for introduced marine and terrestrial biota, dispersal vectors and pathways • Observing systems, modelling capabilities and IT infrastructure.

Advancement of knowledge of strategic importance -

Additional broader goal	**Capabilities to enhance ...**	**Specific suggestions.....**
Knowledge of Australia's deep-sea frontiers - information for understanding and sustainable use of Australia's marine estate	Next-generation instrumentation for national marine biodiversity, marine GeoScience and oceanographic capacity	Strategic review and planned development of surface and space-based platforms and other telemetry instrumentation

DIF Section 7

- *Stakeholders are invited to comment on the preliminary implementation decisions set out in Section 7.*

7.1 Governance arrangements

It will be important to ensure that RIAC membership provides a mix of marine and terrestrial expertise from the public and private sectors.

AMSA hopes that very early in its operation RIAC would consider the development of a collaborative working group (or groups) capable of developing rapidly the longer-term strategic and cross-disciplinary overview for large-scale marine research infrastructure required, and to identify mechanisms to ensure that essential planning and development can occur within the current NCRIT planning and funding cycle. This has a direct bearing not only on the development of the suggested additional major goal on Australia's marine estate, but also on the capacity to incorporate those strategic requirements into the development of Investment Priorities.

AMSA notes that the Government's response to the final Report of the NRI Taskforce includes a statement that in developing the NCRIS, the Government will take into account recommendations relating to existing infrastructure, including museums and libraries and other major national collections. We note that the Taskforce recommendations include:

"*[NRIC] consider how libraries and museums should be integrated into the National Research Infrastructure Strategic Framework and into any national approach into upgrading basic infrastructure."*

The existing collections represent a long term investment of several hundred million dollars, and there are significant annual maintenance costs. Inclusion of national biological reference and taxonomic collections as a component of core research infrastructure would require that the costs of identification, curation and maintenance of the material are taken into account in determining funding to be made available through NCRIS. The continuing costs of access and of making high-quality information available from the collections would similarly need to be considered,

As with other marine facilities, the maintenance of marine research vessels and shore-based research stations and their equipment is costly. Such facilities underpin the marine field research effort and it is vital that the maintenance costs are factored into the budgeting and planning process. It is also essential that RIAC consider the provision of funding to ensure that costs of access (travel, accommodation, and user fees, for example) to facilities do not impede their use by researchers.

7.4 Eligibility for funding:

DIF Section 8

DIF 8.1 National process for identifying research infrastructure investments

- *Views are sought on the proposals for a national process.*

See comment above on the development of an overview of longer-term large scale cross-disciplinary requirements for marine science and the proposed additional strategic goal, which cuts across several of the NRP groups. The new goal proposed would provide a necessary larger context and would complement the more specific work require under each of the proposed NRP goals. The process would not be starting from scratch, but would clearly build on the work done for the unfunded Marine Science and Technology Plan and the components of Oceans Policy relating to research infrastructure and information.

DIF 8.2 Investment priority recommendations

- *Views are sought on the proposed scope of investment priority recommendations.*
- *What role should RIAC play in encouraging collaboration between key players in the development of investment proposals?*

The proposed two stage approach is appropriate, and again will be important in enabling RIAC and the research community to direct efforts to projects with a high chance of success. It will also be important, however, that the winnowing process is transparent and that proposals, decisions, and reasons for decisions are documented and available to the research community at large. It may be also useful to consider the potential for proposals to add to capacity within Australia's broader geographic region of interest, in addition to the national context, in determining priorities for funding.

RIAC and its supporting committees and advisory groups and the process of developing the Investment Priority recommendations will provide a valuable avenue for identifying potential participants in cooperative arrangements and in identifying appropriate funding allocation mechanisms under the second stage proposals. Such a 'brokering' role would be a positive outcome of the process and has the potential to result in leveraging and efficiencies which might otherwise be less likely to occur.

DIF 8.3 Funding allocation processes

- *Stakeholders are invited to comment on the circumstances under which the Commonwealth could enter into direct negotiations with key organisations to develop an investment proposal.*
- *Stakeholders are invited to comment on the proposed requirements for business planning*

While competitive allocation for funds for a given priority may be appropriate in some circumstances, the first stage process should be providing a mechanism that gives a strong indication of the most appropriate pathway

to providing high-priority infrastructure support. It should also identify through consultation with those most directly involved, the potential participants, and the funding likely to be required.

There may be circumstances in which a strategic need is identified for a Landmark Facility with a lead time that does not fit within the NCRIS 5 year framework, but there is a limited field of potential partners and major users of proposed infrastructure. In such circumstances, direct negotiation with major institutions to develop an investment proposal and to provide initial support for planning and design would be sensible. That is, however, a different process to the normal competitive tendering required for development and commissioning of such facilities.

It seems sensible that the business plan should go beyond the initial purchase arrangements and cover the expected life of the infrastructure, covering maintenance/upgrade requirements and accessibility issues.

DIF 8.4 Eligibility for funding

- *Stakeholders are invited to comment on whether indicative limits should be set, the proposed criteria for them and what the appropriate limits should be.*
- *Stakeholders are invited to comment on the principle that very large facilities should not be within the scope of NCRIS, including views on the threshold for very large facilities.*
- *Stakeholders are invited to comment on whether NCRIS funds should be available for demonstration projects*

Research and research infrastructure needed to address major national goals form a continuum in terms of scale and the level of investment required. Strategically important programs are unlikely to fall neatly into independent packages within or outside the proposed funding limits and categories. It will be important that NCRIS and the NIAC processes are such that they are capable of taking into account, and deal with, the requirements of long-term strategic development of Very Large Facilities, above the $100m boundary, and outside the 2011 timeline, as well as those that fall within that envelope. Such projects - including for example, additional ocean-going research vessels, would have a timetable for commissioning and deployment that will extend beyond 2011. They will require early commitment of funds for planning and development, as well as commitment in principle to longer-term funding.

As addressed elsewhere in this submission, it will be critical that the RIAC process and advisory groups are able to consider the broader strategic framework of requirements for Very Large Facilities, to provide the longer-term context for development of other research infrastructure and to identify additional avenues for funding outside the NCRIS five-year project funding ceiling of $525million. It would be counter-productive to have a totally separate process for the assessment of the strategic need and development of Very Large Facilities, even if separate arrangements may be required for funding.

Where smaller or institutional research infrastructure may be covered by other policies and programmes, NCRIS/NIAC should be able to ensure that strategically-important proposals do not slip into the chinks between potential funding sources.

In high-seas and seabed and atmospheric research, international collaboration provides an essential means of supplementing the national capacity and facilities thorough access to international resources. Such programs may augment the national capacity, may allow work to continue while a national capacity is developed, or may provide the sole avenue for some activities.

NCRIS funding could be made available for demonstration projects - proof of concept, in a sense that may be able to provide information on potential uses and benefits with which to make a more informed decision on further investment or development or to refine cooperative arrangements needed for full scale development of infrastructure. As an example - access to a submersible research platform such as a bathyscape, where there is currently no national capacity, could be possible through international collaboration. A pilot project might allow the development of a demonstration research program in areas of particular interest such as deep slope fisheries or seamount habitat conservation. Such a project would allow assessment of the requirements, costs, and support structure and demonstration of the potential benefits of developing a national facility.

DIF 8.5 Funding conditions

- *Stakeholders are invited to comment on the proposals regarding costs covered by NCRIS grants.*

The additional options being considered for costs to be covered by NCRIS grants seem reasonable – a component of heavily subsidised access to some facilities may also be appropriate, where it would provide additional research capacity in areas of particular national and regional significance.

Where use of a facility is likely to generate samples of organisms or other biological material which require identification and long-term storage in a national collection, consideration should also be given to the inclusion of costs of such support as a component of core technical support and maintenance for the facility.

- *How should NCRIS treat funding for existing facilities?*

The option proposed in the DIF that consideration of recurrent costs should be subject to a periodic review process to assess performance, competitiveness and continuing relevance priorities is appropriate. The business case for an infrastructure proposal would need to factor in the potential recurrent costs to NCRIS.

NCRIS may wish to obtain more information on the likely level of such recurrent costs once the Roadmap and indicative priorities are better developed, before considering earmarking a specific proportion of the funding, particularly if allocation is subject to assessment against criteria of cost-effectiveness, competitiveness and continued relevance.

- *Stakeholders are invited to comment on the proposals regarding access and charging policy.*

An additional consideration is the availability of and access to information that is derived from projects carried out using NCRIS funded facilities or arising from NCRIS funded projects. As examples, access to information on biological material, bathymetry or other data derived from publicly funded research should be available within a relatively short time at minimal cost, unless there are demonstrable and over-riding considerations that dictate otherwise.

DIF 8.6 Timing of priority setting and project funding processes

- *Stakeholders are invited to comment on the proposed timetable for priority setting and project funding processes.*

The proposed additional broader goal under the Advancement of Knowledge and strategic importance category for knowledge relating to Australia's oceans, triggered by the extension of national marine jurisdiction, will require some additional development. The process proposed fewer than 7.1 for the rapid collaborative development of a cross-disciplinary review to provide a strategic re-assessment and directions for major marine research infrastructure will require allocation of funds

DIF 8.7 National stocktake and directory project

- *Stakeholders are invited to comment on the proposal for a national stocktake and directory project*

A National Stocktake and Directory would form an essential source of information which can be drawn on in policy development and potentially in the priority setting process. It could also provide information at a national level on requirements relating to maintenance, upgrading, and replacement. Consideration should also be given to ensuring that the National Stocktake is able to accommodate infrastructure that is potentially available from institutions that do not necessarily fall within the NCRIS envelope for funding, including the private sector and Defence. The Stocktake database may also be of use to those developing proposals in identifying alternative sources of equipment or facilities and avenues for collaboration...

It will be important to define clearly what the major purposes of the proposed database are to be, that it is capable of delivering, and that it can maintain its currency. If it is to function effectively, some systematic process, with a recurrent cost, will have to be developed to ensure that the information is accurate and is kept current. If information is also provided on the expected life of the infrastructure item and its condition and levels of use, the database may also be of assistance in examining gaps and strategic replacement needs.

It is understood that there is a proposal that the proposed Oceans Portal (being developed with funding through the National Oceans Office) may include a component that is intended to provide access to information on marine research equipment available nationally.

OTHER ISSUES

As indicated in the covering letter, AMSA is of the view that the extension of Australia's marine estate that will occur in the near future should provide a trigger for a rapid strategic re-assessment of the national marine research infrastructure and research and training capacity. That has clear implications for the implementation of the first NCRIS round.

ATTACHMENT

Current estimates of the extent of Australian terrestrial and marine jurisdictional areas and the extent of areas of Extended Continental Shelf identified in the November 2004 Australian Submission to the United Nations Commission on the Limits of the Continental Shelf.

[Sources Geoscience Australia, DEH ERIN and AusLIG]

	Continental Australia	**Island External Territories**	**Australian Antarctic Territory**	**Totals (km^2)**
mainland area	7,659,861		5,896,500	13,556,361
island area	32,163	536		32,699
coastline length	59,700	120	6,966	66,786
Internal waters	272,800[1]			272,800
12nm Territorial Sea	611,026	68,147	170,000	849,173
200n mile EEZ	6,048,681	2,099,569	2,040,000	10,188,250
within outer limits of 200nm EEZ	6,932,507	2,167,716	2,210,000	11,310,223
Extended continental shelf	1,369,992	1,315,177	686,821	3,371,990
total terrestrial	7,692,024	536	5,896,500	13,589,060
total marine	8,302,499	3,482,893	2,896,821	14,682,213
Total	15,994,523	3,483,429	8,793,321	28,271,273

[1] The area of internal waters- those areas landward of the baselines, is not included in all estimates of marine areas under Australian jurisdiction.