Future Research Vessel Project

Consultation and Engagement Strategy

Terms of Reference, Structure and Operation

May 2010

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1 Introduction

The MNF research vessel, *Southern Surveyor,* was built in 1971 and is approaching the end of its useful life. *Southern Surveyor* was built as a North Sea trawler. Prior to its conversion for use as a research vessel it also saw service as an oilfield Dive Support Vessel. It is a tribute to the vessel operators that its useful life has been extended well beyond the 20 year lifespan for which it was designed and built in 1971.

In May 2009 the Australian Government announced funding of $149.6 million to:

- replace the Marine National Facility (MNF) Research Vessel, *Southern Surveyor* with a new vessel ($120M);
- manage the acquisition project ($2.4M);
- commence full year operation with the new vessel in 2012-13 ($9.8M); and
- carry out an enhanced maintenance program over the next three years and continue operating Southern Surveyor for 180 days until the new vessel is delivered ($17.3M).

An element of the governance framework is formation of a Technical Advisory Group (TAG). The TAG will be responsible for provision of advice to the Marine National Facility Future Research Vessel Project to ensure delivery of a broadly capable, multi-role research vessel to support provision of the scientific advice that informs and underpins the sustainable development of Australia's oceans.

1.1 Objectives of the Technical Advisory Group

- The development of robust specifications for a broadly capable, multi-role, blue water research vessel and its scientific outfit.
- Independent, objective assessment of the design and equipment proposed for a future research vessel for conformance with approved specifications and for their combined ability to deliver agreed capabilities.
- The provision of a forum to facilitate a dialog between the marine science community and the FRV Project team on:
    - the capabilities required to support future marine science needs
    - the capabilities delivered by the project
    - the suitability of the proposed vessel and its equipment to deliver the scientific outcomes required

1.2 Membership

- Captain Frederick R. Stein, Director MNF; Chair
- Mr. Brian Griffiths CSIRO
- Mr. Ron Plaschke, Ship Manager, MNF
- Mr. Simon Allen, Technical Director IMOS
- Professor Neville Exon ANU
- Professor Iain Suthers UNSW
- Professor Roger Bradbury MNF Scientific Advisory Committee
- Dr Bernadette Sloyan CMAR
- Dr Peter May BoM
- Dr Chris Battershill AIMS
- Dr Andrew Heap GA
- Mr Andrew McCrindell RAN

2 Background

The Marine National Facility Steering Committee (appointed by the Minister for Innovation, Industry, Science and Research) has been planning for the replacement of the *RV Southern Surveyor* since mid-2005.

In early 2006, the Steering Committee convened an Expert Working Group "to canvass opinion from the Australian marine science community, and provide advice on future needs for blue-water research vessel capability". The Expert Working Group reported back to the Steering Committee in December 2006.

Having established broad agreement on future needs, the Steering Committee then asked the Expert Working Group to develop a detailed Statement of Requirements that could be used to underpin a vessel replacement process. The Expert Working Group reported back in November 2007, having undertaken a second round of consultation within the Australian marine science community.

These documents are publicly available, and can be found at
http://www.marine.csiro.au/nationalfacility/future/index.htm

In early 2006 the NCRIS Strategic roadmap identified;

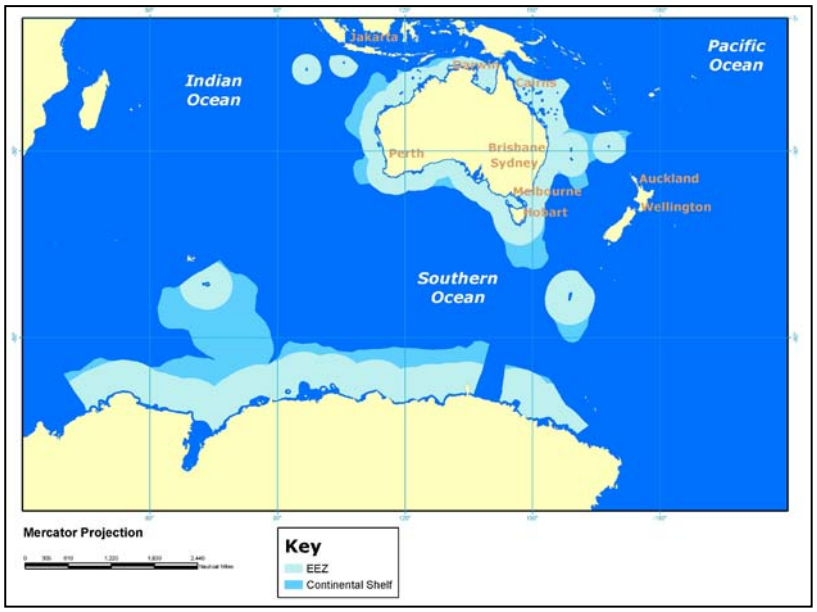
"...a blue water research vessel capability, ..." as landmark infrastructure consistent with the NCRIS principle of identifying;

"… those capabilities that will provide the most strategic impact in terms of delivering national benefit, producing world-class excellence in both discovery and application driven research, and/or enhancing the overall capacity of the research and innovation system by providing enabling research platforms and promoting accessibility and collaboration. "

2.1 Operational Scope

- From the ice edge to the equator
- Australia's surrounding reefs, seas and oceans.

- Australia's continental shelf and the adjoining abyssal plains and deep ocean trenches.



2.2 Science Mission Requirements

- Support for a broad range of sophisticated scientific activities by multi-disciplinary research teams.
- 24 hour operation.
- Sea-keeping characteristics that maximise operational effectiveness.
- The ability to efficiently interface customized research systems with a core suite of sampling equipment and sensors.
- The ability to combine data from on-board observations with data from shore based models, space-based and autonomous sensors in real time.
- The ability to manage, visualise and communicate data and results in real time.

2.3 Safe Working Environment

The provision of a safe working environment aboard a vessel that will routinely encounter the challenges of the Southern Ocean and the cyclones of Australia's Tropical North is a primary design criteria.

2.4 Guiding Principles

In addition to the Statement of Requirements (SOR) the Expert Working Group (EWG) also articulated five underlying principles that it recommended provide an underlying philosophy to guide the articulation of the future vessel's physical design from its conceptual basis.

- COTS (Commercial-Off-the-Shelf) Technology
- Modularity
- Engineered for Change
- Encouraging Innovation
- Ergonomic Working Environment

3 Operation of the Technical Advisory Group

CSIRO has initiated the Marine National Facility Future Research Vessel (MNF FRV) project to deliver a research vessel to replace the RV Southern Surveyor, which will then be decommissioned and disposed. The project will be delivered over a four-year period, commencing 2009/10.

3.1 Scope

- Design of the proposed research vessel
- Outfit of the proposed research vessel
- Design of the ancillary research equipment acquired as modular outfit for the proposed research vessel

3.2 Terms of Reference

The Future Research Vessel Project Technical Advisory Group is established to provide advice, through the FRV Project Manager, to the FRV Project Steering Committee on:

1. The development of a Functional Specification for all aspects of a future Australian blue-water research vessel including but not limited to:
    - Design of the hull, main and auxiliary machinery
    - Design and arrangement of navigating, accommodation, science, engineering and storage spaces
    - Design and arrangement of permanently fitted sensors and sampling systems
    - Design and arrangement of modular sensors and sampling systems
    - Design and arrangement of equipment and sample handling arrangements
    - Design and arrangements of internal and external communication systems.

2. Agreement between the Functional Specification developed at term of reference 1 and proposals submitted in response to the procurement process for a future research vessel.

3. Agreement between the Functional Specification developed at term of reference 1, proposals accepted in response to a procurement process and detail design and specifications developed by a design and build process with respect to:
    - Design of the hull, main and auxiliary machinery
    - Design and arrangement of navigating, accommodation, science, engineering and storage spaces
    - Design and arrangement of permanently fitted sensors and sampling systems
    - Design and arrangement of modular sensors and sampling systems
    - Design and arrangement of equipment and sample handling arrangements
    - Design and arrangements of internal and external communication systems.

4. The extent to which harbour and sea acceptance trials and the commissioning process confirm the fitness for purpose of the delivered:

- Hull, main and auxiliary machinery
- Navigating, accommodation, science, engineering and storage spaces
- Permanently fitted sensors and sampling systems
- Modular sensors and sampling systems
- Equipment and sample handling systems
- Internal and external communication systems.

When preparing and providing advice to the FRV Project Steering Committee the Technical Advisory Group shall consider the proposed vessel's:

- Operational Scope
- Science Mission Requirements
- Safe Working Environment
- Guiding Principles
- The reports of the Replacement Capability Assessment Project EWG

3.3 Structure

The advisory group will establish the following consultative clusters:

- Science Capability Consultation
  - Oceanography
  - Marine Geology and Geophysics
  - Marine Biology
  - Meteorology and Climatology
  - Tropical Marine Science
  - Defence

- Engineering and Technical Consultation
  - Naval Architecture and Marine Design
  - Marine Electronics
  - Information and Communications Technology
  - Hydrochemistry

Each consultative cluster will be convened by a advisory group member who will report, in summary, the views of their consultative cluster to the Technical Advisory Group.

As the specification, design and build proceeds issues that impact on the scientific interests of the research community will arise. The Technical Advisory Group will, through consultative cluster convenors, advise the marine science community of and seek their feedback on these matters.

In their role of cluster raporteur convenors are asked to record not only the consensus views of their clusters but also to note dissenting opinions presented.

Cluster convenors should use the Statement of Requirements attached to the Phase II report of the Expert Working Group as the basis for their discussions.

3.3.1 Science Capability Consultation

Each consultative cluster convenor is asked to engage with the community of researchers with interests in the scientific issues of concern to the disciplines represented.

Science cluster convenors are asked, through an iterative Request for Comments process, to lead their discipline in a discussion of:

1. What is the priority science that Australia should do in the blue-water space in the next two decades?
2. What capabilities of a blue-water research vessel will contribute most to supporting priority research
3. For their science, what capabilities are 'must-have' for a blue-water research vessel.

In the first round of discussion each group convened should specifically address the question;|

"Is there an important capability to support science that has either not been provided for, or that is excluded by the design features of the FRV proposed to date?"

3.3.1.1 Cluster convenors:

- Oceanography — B. Sloyan CMAR
- Marine Geology and Geophysics — N. Exon ANU / A. Heap GA
- Marine Biology — I. Suthers UNSW
- Meteorology and Climatology — P. May BoM
- Tropical Marine Science — C. Battershill AIMS
- Defence — A. McCrindell RAN

3.3.2 Engineering and Technical Consultation

Each Engineering and Technical consultative cluster is asked to consider the required capabilities identified by the science community.

Each consultative cluster is tasked with:

- Reporting the extent to which the capabilities identified by the science community are delivered by the capabilities identified in the EWG Phase II report and, where appropriate, making recommendations for change to the Statement of Requirements to the Technical Advisory Group.
- Analysing and assessing submissions to the FRV Project from potential project contractors for their degree of conformance with Statements of Requirements, equipment specifications and performance standards.
- Analysing and assessing proposals to the FRV Project from project contractors equipment and service providers for their degree of conformance with design briefs, specifications and Key Performance Indicators.
- Analysing and assessing data collected during harbour and sea acceptance trials and the commissioning process and reporting to the FRV Project team on the degree of conformance between capabilities and performance sought and capabilities and performance delivered by the ship, its equipment, services, auxiliary equipment, research systems and systems of management.

3.3.2.1 Cluster convenors:

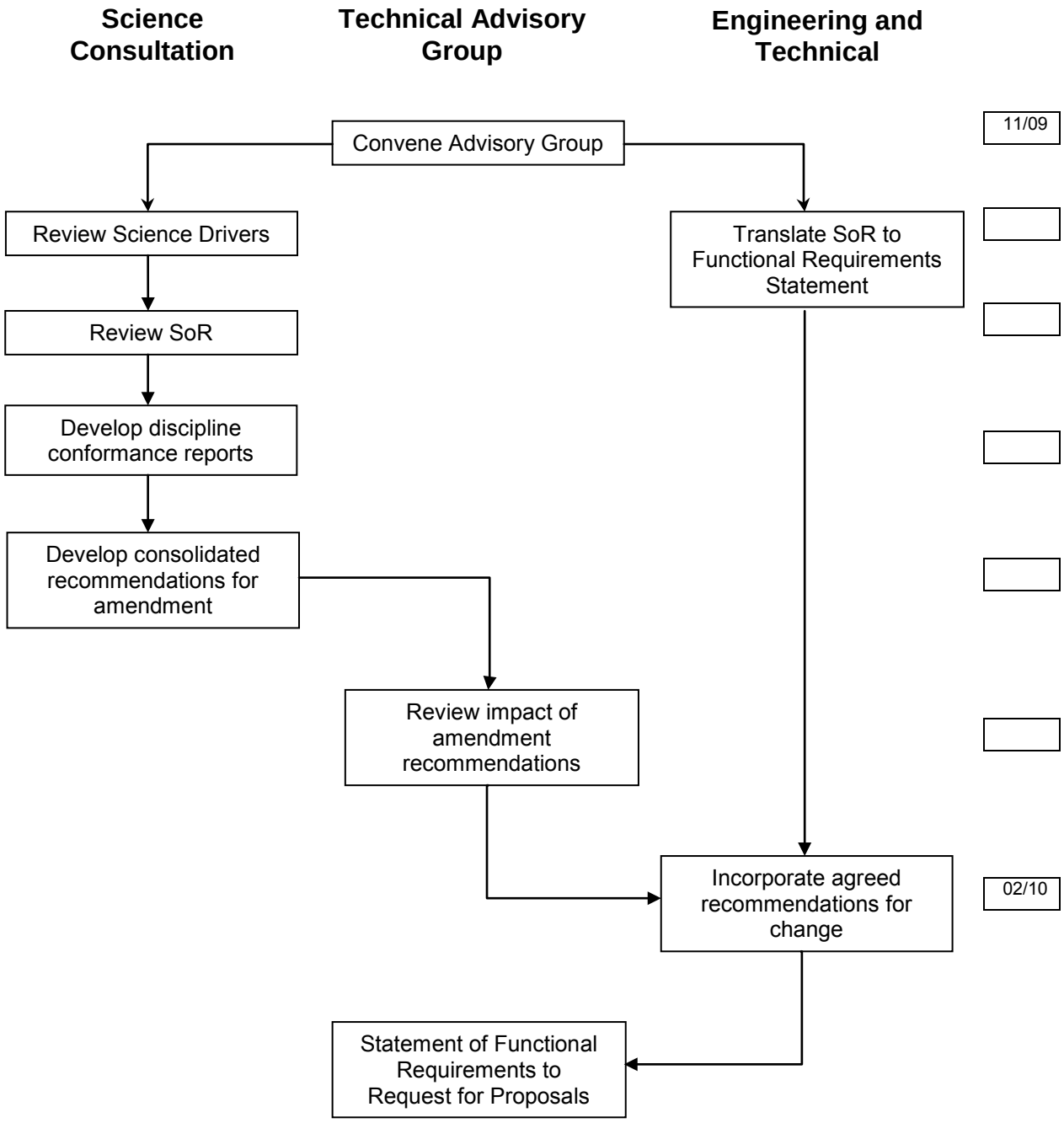
- Naval Architecture and Marine Design — F. Stein MNF
- Marine Instrumentation — S. Thomas CMAR
- Information and Communications Technology — I. Hawkes CMAR
- Data Processing — L. Pender CMAR
- Hydrochemistry — D. Terhell CMAR

3.4 Operation

The advisory group will consider the views of each consultative group and develop consensus reports to the FRV Project Manager on matters arising from:

- The development of a Functional Specification
- Agreement between the Functional Specification and proposals submitted in response to the procurement process.
- Agreement between the Functional Specification, proposals accepted in response to the procurement process and detail design and specifications developed by a design and build process
- The extent to which harbour and sea acceptance trials and the commissioning process confirm the fitness for purpose of the delivered build

Consultative Process



3.5 Consultative Milestones

Refer Consultation and Engagement Schedule - Fig 2

1. Statement of Requirements Review
2. Request for Proposals response review
3. Final Proposal Review
4. Detail Design Data Pack Review
5. Modular System Design Review
6. System Acceptance Trial Data Review
7. Commissioning data reviews

3.6 Remuneration

Consultative committee participants who are not officers of CSIRO or employees of the Commonwealth Government or its agencies will be remunerated in accordance with the rulings of the Commonwealth Remuneration Tribunal for Unspecified Meetings, Category 2 as described in MNF Procedure 2004-2.1-v.1(Sitting fees).

http://www.marine.csiro.au/nationalfacility/policies/Procedure04_21V1_SittingFees.pdf

The current daily fees set by the Tribunal with effect from 1 July 2008 are:

Chairperson: $495

Member: $366

Travel, meal and accommodation expenses appropriately incurred by committee participants will be met by the project.

3.7 Consultation and Engagement Schedule

		2009		2010				2011				2012				2013			
Review SOR Finalise Functional Requirements	Aug 2009 Oct 2009																		
Procure																			
Review Initial Proposals	Q4 2009																		
Review Final Proposals	Q2 2010																		
Acquire																			
Review Hull and Machinery Data Pack	Q4 2010																		
Review Science Outfit Data Pack	Q2 2011																		
Review Modular System Data Pack																			
Commission																			
Review Acceptance Trials Results																			
Review Commissioning Data																			

Fig 2

Consultation and Engagement Schedule

Appendix

Future Research Vessel Project Steering Committee

Dr Andrew Johnson (Chair)	CSIRO, Environment Group Executive
Mr Mike Whelan	CSIRO, Deputy Chief Executive Officer
Mr David Toll	CSIRO, Acting Chief Financial Officer
Dr Bruce Mapstone	CSIRO, A/Chief CMAR
Professor Craig Johnson	Chair, Marine National Facility Steering Committee
Ms Anne-Marie Lansdown	Head of Division, Science and Infrastructure Division, Department of Innovation, Industry, Science and Research
Mr Graham Stacey	Project Director

Abbreviations

AAD	Australian Antarctic Division
AAS	Australian Academy of Science
AIMS	Australian Institute of Marine Science
ANU	Australian National University
BoM	Bureau of Meteorology
CMAR	CSIRO Marine and Atmospheric Research
COTS	Commercial-off-the-shelf
CSIRO	Commonwealth Scientific and Industrial Research Organisation
EEZ	Exclusive Economic Zone
EWG	Expert Working Group
FRV	Future Research Vessel
FRVPSC	Future Research Vessel Project Steering Committee
MNF	Marine National Facility
MNFSC	Marine National Facility Steering Committee
MNFSAC	Marine National Facility Scientific Advisory Committee
NCESS	National Committee for Earth Systems Science
NCRIS	National Collaborative Research Infrastructure Strategy
SAC	Scientific Advisory Committee
SOR	Statement of Requirements
TAG	Technical Advisory Group
UNSW	University of New South Wales
UTas	University of Tasmania

CSIRO Marine and Atmospheric Research

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