

Flagship Collaborative Research Program

Guiding Principles

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1. Overview

1.1 Introduction

In April 2003 the Prime Minister, Mr John Howard, launched the CSIRO Flagship Initiative. Flagships were developed through extensive consultation with Government, with CSIRO partners in science and industry, and with opinion leaders in the community.

Flagships are targeted at six national goals which are closely aligned to the Commonwealth Government's National Research Priorities¹. Each Flagship involves collaboration between leading Australian scientists, research institutions, commercial companies and CSIRO. Their scale, longer time-frames and clear focus on delivery and adoption of research outputs are designed to maximise their impact in key areas of economic and community need.

The six Flagship Programs² and their goals are:

Preventative Health

To improve the health and well being of Australians and save \$2 billion in annual direct health costs by 2020 through the prevention and early detection of chronic diseases.

Light Metals

To lead a global revolution in light metals, doubling export income and generating significant new industries for Australia by the 2020s while reducing environmental impact.

Food Futures

To transform the international competitiveness and add \$3 billion annually to the Australian agrifood sector by the application of frontier technologies to high-potential industries.

Energy Transformed

To halve greenhouse gas emissions and double the efficiency of the nation's new energy generation, supply and end use, and to position Australia for a future hydrogen economy.

Water for a Healthy Country

To achieve a tenfold increase in the social, economic and environmental benefits from water by 2025.

Wealth from Oceans

To position Australia by 2020 as an international benchmark in the delivery of economic, social and environmental wealth based on leadership in understanding ocean systems and processes.

¹ The Commonwealth Government's National Research Priorities can be found at http://www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/national_research_priorities/default.htm

² Further information on Flagships can be found at <http://www.csiro.au/FlagshipPrograms>

1.2 New funding

In the Commonwealth Government announcement on the *Backing Australia's Ability – Building our Future through Science and Innovation* package, a further \$305 million was committed to the CSIRO Flagship Initiative over seven years to reinforce the development of collaborative research partnerships which reflect the National Research Priorities. The Government has invested in Flagships because they:

- have the necessary scale and focus;
- have clear paths for technology to be taken to market; and
- are able to harness the talents and resources of research agencies and businesses to maximise the effort in addressing national challenges and opportunities.

New funding for Flagships is expected to further strengthen collaboration with universities and other publicly funded research agencies (PFRAs) through a contestable funding pool of \$96.8 million over seven years. Elements of this funding pool are:

- a collaborative research program;
- visiting fellowships; and
- postgraduate scholarships³.

These guidelines detail the principles for the allocation of funding for the collaborative research program, to be called the Flagship Collaborative Research Program.

Any funds provided for collaboration that remain unspent at the end of any year will be carried forward to future years to ensure that the full amount provided by the Government is spent on collaboration activities over the life of the scheme.

2. Categories of Investment

2.1 Mission Directed, Strategic Research

The Australian Innovation System is diverse, with three broad categories of research activity:

- *Investigator initiated research*, which is strong in the university sector, tends to be performed by individuals or small teams, and is frequently curiosity driven with the primary aim of advancing knowledge.
- *Mission directed, strategic research*, which is strong in PFRAs, focuses on defined outcomes that address long term issues and tend to be performed by multidisciplinary teams, with a feature being the proactive management towards adoption or commercialisation.
- *Applied research and experimental development*, which is strong in business, focuses on immediate results to solve problems often by the application of existing knowledge.

The resilience and flexibility of the Australian Innovation System has its origins in the diversity of its research providers. For collaboration to flourish in this system there is a need for organisations to understand that the missions and strategic drivers of organisations are

³ Details of the Flagship Postgraduate Scholarships can be found at <http://www.csiro.au/Flagships/CollaborationFund#scholarships> For Scholarships due to commence in 2005 see: <http://www.csiro.au/PostGradScholarships>

fundamentally different, and that this needs to be recognised if collaboration is to be enhanced in any meaningful way. Generally speaking, the key driver of collaboration is the existence of a perceived benefit.

Collaboration is important where it produces clear national benefits. The Government has reinforced this by committing new funding to support collaborative partnerships under the Flagship Collaborative Research Program. The Flagship Collaborative Research Program funds are specifically to be used by university or partner organisations to enhance the overall effort in the Flagship Program by either increasing scale and focus or bringing together complementary expertise. An important underlying principle is that the funds must support the directions of the Flagships and must align with their strategic goals and outcomes.

The two elements of the Flagship Collaborative Research Program are detailed below.

2.2 Flagship Projects

Flagship Projects will be funded under the Flagship Collaborative Research Program to support a specific research project which has outcomes and deliverables relevant to a Flagship objective. This approach is based on the US Defence Advanced Research Projects Agency (DARPA) funding model⁴ of focussing on project outcomes and their delivery.

Projects can stem from ideas generated from within the CSIRO Flagship Programs that have a specific need to engage outside expertise to help achieve a particular Flagship objective – called *Solicited Projects*. This expertise may come in the form of intellectual capital, comprising people and intellectual property, or physical capital and infrastructure, including facilities and equipment.

[Solicited](#) Projects will be advertised on Flagship websites by Flagship Directors when required. Universities will be notified when project specifications have been published. Researchers are encouraged to apply for funding for these projects if they believe they have the necessary complementary expertise to achieve the Flagship objective.

Not all good ideas will be generated from within the CSIRO Flagship Programs. Often new and innovative ideas will originate from outside organisations which have the potential to further the objectives of a Flagship – those that are accepted into Flagships are called *Unsolicited Projects*. Researchers seeking support under the Flagship Collaborative Research Program for Unsolicited Projects should explore fully the Flagships' interests in research by reviewing the material on the Flagships website at <http://www.csiro.au/FlagshipPrograms>. Projects that do not have direct relevance to the strategic goals and outcomes of a Flagship Program will not be supported.

Flagship projects are restricted to universities. Project proposals may be submitted by a single university or a number of universities. Project Leaders will normally be employed by the university leading the development of the application.

2.3 Flagship Clusters

Flagship Clusters will be funded under the Flagship Collaborative Research Program to support a larger scale of activity with an emphasis on people and partnerships working on a Stream⁵ of research relevant to a Flagship Program. Each cluster must have at least one university member. The Flagship Cluster could involve the co-location of staff of CSIRO and partner institutions/organisations to enhance the exchange of ideas and complementary

⁴ Further information available at <http://www.darpa.mil/>

⁵ Dimensions of CSIRO's research are focussed and classified within a hierarchy of Major Programs supporting Themes, Streams and Projects.

expertise between the two groups. This is similar to the Intel open collaborative model⁶ of industry-university research. Joint projects will be proposed and initiated by CSIRO and/or external partner staff located in the Flagship Cluster during its life, and these will be expected to deliver outcomes relevant to the Flagship Stream objective, with co-investment by both organisations being a key factor.

Cluster Leaders will normally be employed by the organisation leading the development of the Cluster application.

3. Funding Rules

3.1 Eligibility

Applications for projects will be accepted from universities only. Applications for clusters will be accepted from eligible Australian Higher Education Institutions⁷, Cooperative Research Centres (CRCs) and other Australian PFRAs (excluding CSIRO)⁸. Industry partners are welcome to participate in cluster arrangements. However, they are not eligible to share in funding from the Collaboration Fund.

The Collaboration Fund will not fund research already funded from other sources. CSIRO reserves the right to determine if a proposed research project duplicates research already being funded.

3.2 Level and Duration of Funding

Flagship Projects will be of limited duration (eg they would not often be funded for more than one year). The level of funding must be sufficient to ensure impact on the Flagship Program. In normal circumstances, it is envisaged that projects would attract funding of at least \$100,000 per annum from the Fund.

Flagship Clusters will be funded for up to three years at a minimum of \$1 million of Flagship Collaborative Research Program funding over the life of the Cluster, with an expected co-investment of matching cash and/or in-kind support by the partner institutions/organisations over the life of the Cluster.

3.3 Co-investment

Collaboration often requires co-investment of physical and intellectual capital. Co-investment can occur at the level of a Flagship Project, but it is essential for a Flagship Cluster because it ensures organisational alignment with the cluster's objectives. It also helps achieve the scale and impact of the activities to make significant advances in a Flagship Stream. It is anticipated that co-investment by universities will generally be in-kind.

The level of co-investment by the collaborating organisations will often be determined by the expected returns from the investment. Intellectual Property considerations play a significant part and these are detailed in Section 8.2 of these guidelines. Because PFRAs are

⁶ Research -Technology Management, July-August 2004, pp 19-26.

⁷ Eligible Australian Higher Education Institutions are listed in Section 4 of the Higher Education Funding Act 1988 at <http://scaleplus.law.gov.au/html/pasteact/0/108/0/PA000090.htm>

⁸ Australian PFRAs include, but are not limited to, the Australian Institute of Marine Science (AIMS), the Australian Nuclear Science and Technology Organisation (ANSTO), the Defence Science and Technology Organisation (DSTO), Geoscience Australia (GA), Medical Research Institutes and other State R&D organisations.

generally funded to conduct research, it is expected that their level of coinvestment would normally at least match the contribution from the Collaboration Fund.

As a general rule, all co-investment by CSIRO and the partner organisations needs to be fully costed. While recognising that all organisations have different costing models, it is recommended that partner organisations use the AVCC published⁹ multipliers of 1.25 and 0.92 against direct payroll costs (salary and salary on-costs (usually about 30% of base salary) of professional staff involved in the project) to estimate indirect costs of laboratory based research projects and non-laboratory based research projects, respectively. Other direct costs such as the use of specialised equipment and facilities should also be included. Partner organisations can use alternative costing models but these will need to be fully justified.

Co-investment could extend to Australian Research Council (ARC) Federation Fellowships¹⁰. Provided the focus of activity of the proposed Federation Fellow is relevant to the outcomes of a Flagship Stream which satisfies the national benefit, then a Flagship Cluster might be used as the required matching commitment of the partners to the Fellowship.

4. Application Process and Timelines

4.1 Application Form

Applicants must submit their proposal using the required Application Form. The Application Form should be completed on-line at <http://www.csiro.au/Flagships/ApplicationForms> and requires a Project Leader to be identified (or Cluster Leader in the case of Flagship Clusters). This person will be responsible for coordinating the application and the reporting of project outcomes as detailed in Section 7.4.

The application must contain all the information necessary to make an assessment of the project, and all details in the application must be current at the time of submission.

4.2 Certification and Submission

Applications must be certified by the Project Leader/Cluster Leader and the Responsible Officer of each participating institution/organisation prior to submission. Applications must be submitted on behalf of institutions, not individual researchers. The application form requires the institution to certify that it supports the application.

A hard copy print-out of the completed on-line application form with the required signatures should be forwarded to Ms Sue Kingsland, Executive Officer Flagship Implementation, CSIRO, PO Box 225 Dickson ACT 2602 at the same time as the application is submitted on-line.

4.3 Closing Date

Applications for Solicited Flagship Projects will be required by the closing dates nominated on the Flagship websites. Applications for Unsolicited Flagship Projects will be accepted at any time, but an Expression of Interest is required ahead of the full proposal to ensure it meets a Flagship Program objective (see Section 6.1).

⁹ Report can be found at <http://www.avcc.edu.au/documents/publications/policy/statements/urissues.pdf>

¹⁰ Details of ARC Federation Fellowships can be found at http://www.arc.gov.au/apply_grants/discovery_federation.htm

It is unlikely that any clusters will begin operation during 2004/5. Applications for Flagship Clusters advertised on Flagship websites will be required by 30 June 2005 for funding in 2005/6. Please note that universities and other organisations may require applications to be submitted for internal review at least 10 days ahead of the external closing date. Late applications will not be accepted.

Please note: Lists of proposed clusters are available on Flagship websites.

Important: Potential applicants for Projects and Clusters must discuss proposals with the relevant Flagship before proposals are drafted. This will minimise the opportunity and other costs associated with preparing unsuccessful full applications. Contact details of all Flagships are available at <http://www.csiro.au/Flagship/CollaborationFund#contacts>

5. Selection Criteria

5.1 Quality and relevance

The quality and relevance of the activity being proposed are critical for both Flagship Clusters and Flagship Projects. The research must be complementary to, and clearly aligned with, the portfolio of a relevant Flagship Program and not simply to the broad scientific fields covered by the Flagship. It will be assessed on its relevance to the work of the Flagship and the achievement of the Flagship's goals. The research activity must be of an excellent quality, with the conceptual framework well developed and appropriate to the desired outcomes. Consideration of quality will include distinctiveness of the science capability and novelty of the approach or work program proposed.

5.2 People

The quality and track record of the proposed investigators are important for a Flagship Project, but are critical to the assessment of a Flagship Cluster, as is the capacity of the individuals and groups to undertake the work.

5.3 Partners

The quality of the partners and the benefit of the proposed collaboration to the Flagship Program outcomes will be assessed. The partnership is expected to bring new complementary physical and/or intellectual capital which is not already available in CSIRO. Flagships are not just about science but about science making a difference, and so researchers from the humanities and social science disciplines are encouraged to apply.

The level of co-investment by the partners is also important and is expected to at least match the Flagship Collaborative Research Program funding for a Flagship Cluster, but there is no requirement for the partners to contribute cash. What will be assessed is the relevance of the co-investment in achieving the Flagship Program outcomes, in particular whether it has helped achieve the necessary scale and focus for the activities.

5.4 Prospects

The potential of the proposed collaboration to support the directions of the Flagships and to deliver outcomes that are relevant to a particular Flagship is essential. Also important are the broader prospects of the nature and value of the benefits of the outcomes of the collaboration, and in particular whether they have helped the Flagships achieve their audacious national goals.

6. Assessment

6.1 Flagship Projects

The task of assessing Flagship Projects is the responsibility of the relevant Flagship Director, who will take advice on the proposals. This advice may come from the relevant Flagship Advisory Committee (FAC) or other external party as required. The FAC is made up of senior representatives of CSIRO and external parties with scientific, industry and contract experience.

Important: Prospective applicants must contact the relevant Flagship to discuss their intention to submit an application for a Flagship Project under the Flagship Collaborative Research Program. Contact details of all Flagships are available at <http://www.csiro.au/Flagship/CollaborationFund#contacts>

Before submitting a full proposal for an Unsolicited Project, applicants are required to submit a hard copy Expression of Interest to the relevant Flagship to allow prompt feedback on the likelihood of the proposal being selected. The Expression of Interest should be no more than two pages and should include:

- a brief statement on the scope of the project and its significance to a Flagship objective;
- details of the researchers and institutions/organisations involved with the project; and
- the expected outcomes and impact of the project.

6.2 Flagship Clusters

Flagship Cluster applications will be evaluated (including by external assessment) and approved by CSIRO. CSIRO will consider the overall range of Flagship Cluster applications in each round before making a final decision on which Clusters will be funded. CSIRO reserves the right to negotiate changes to Cluster proposals, eg the merger of two proposals that are clearly complementary. In the case of a Flagship Cluster which is tied to a concurrent ARC Federation Fellowship application, the ARC's assessment process will serve as the external validation.

Important: Prospective applicants must contact the relevant Flagship to discuss their intention to submit an application for a Flagship Cluster under the Flagship Collaborative Research Program. Contact details of all Flagships are available at <http://www.csiro.au/Flagship/CollaborationFund#contacts>

7. Reporting and Accountability

7.1 Program Performance Framework

One of the key elements of Flagships is a strong performance framework which aims to ensure the achievement of Flagship objectives and the appropriate use of resources.

Performance monitoring is an important feature and requires reporting on whether the project is on brief, on budget and on time, with the level of reporting and accountability commensurate with the scope of the project and associated risks.

For Flagship Projects, the completed application form will serve as the basis of a Project Plan for assessing performance against agreed milestones and deliverables. The milestones are expected to mark significant events in a project that denote the completion of a phase of work and are typically a time for review.

For Flagship Clusters, joint CSIRO-partner projects will be managed under the performance framework, with the point of difference being that given the scale of resources committed to the Cluster there is greater flexibility to rapidly redeploy resources from projects that are not meeting expected milestones into more promising areas.

7.2 Changes to Project Plan

Requests for changes to a Project Plan as a result of a performance analysis require the management of changes to the scope of a project, including related objectives, deliverables, milestones and resourcing. Scope changes must be approved by the relevant Flagship Director who will make an assessment of the change on the cost, time and quality of the project outcomes or deliverables. Depending on the magnitude of the changes, the Flagship Director may need to seek advance approval from the Flagship Oversight Committee.

7.3 Project Closure

An important part of project management is for each project to have a pre-defined end point. This not only ensures that research agendas are renewed automatically when projects cease to exist as they are completed, but as projects are closed the outcomes can be captured and recorded. It is important that the Project Plan allows adequate resources and time to close the project and complete tasks such as reporting.

The Flagship Director may choose to extend a project past the project end date if he or she feels that significant additional progress can be made towards the Flagship outcomes with a further investment of resources.

7.4 Responsibilities

The Project Leader is ultimately accountable for the delivery of project outcomes. In most cases the Project Leader will have developed the Project Plan and must therefore be responsible for the conduct of the project, including the management of resourcing and milestone reporting.

The Cluster Leader is responsible for the management of a Flagship Cluster and its projects. The Cluster Leader will first approve projects before seeking final approval from the relevant Flagship Director. The Flagship Director is the authorised approving officer of CSIRO for all projects under the Flagship Collaborative Research Program, including any significant changes to the scope of a project.

The Project Leader and the Cluster Leader will be required to report to the Flagship Director on project outcomes at intervals necessary to facilitate reporting to the Flagship Oversight Committee, which monitors the overall performance of the Flagship Collaborative Research Program in the context of the CSIRO Flagships' Annual Performance Goals.

8. Funding Contracts

8.1 Simplified Approach - *FastTrack*

A simplification of the contractual arrangements and business processes is a necessary part of an effective collaboration. CSIRO has developed an easy and simplified approach to developing consistent and plain English contracts called *FastTrack*. However, given the complexities of multi-party collaborations, CSIRO is still in the process of developing a *FastTrack* proforma contract for use with the Collaborative Research Program. We expect that the process of standardisation will require input and consultation with all relevant parties so that an appropriate *FastTrack* contract can be developed over time. In the interim, CSIRO will provide a precedent contract as a starting point for negotiation with parties whose proposals for Flagship projects and Flagship clusters are accepted.

8.2 Intellectual Property

Arrangements for the ownership and management of Project Intellectual Property¹¹ will be negotiated on a case by case basis, but consistent with the following principles:

- proportional ownership of Project IP based upon a party's contribution*
- a non-exclusive, royalty-free research licence for parties contributing/co-investing (including in-kind contributions)
- share of the returns from future IP earnings proportional to the co-invested resources
- responsibility for managing technology transfer is conferred on one party. To ensure delivery on Flagship objectives, CSIRO will normally be the party with responsibility for technology transfer.

* Where CSIRO seeks to retain exclusive ownership of all Project IP then the full costs will be paid. In the case of Flagship Collaborative Research Program projects this may include funding the indirect costs estimated using the salary multipliers of 1.25 and 0.92 against direct payroll costs of laboratory based research projects and non-laboratory based research projects, respectively (see Section 3.3).

8.3 Financial and Reporting Obligations

Each Flagship Project will be managed as a separate project with its own budget, financial and project milestones, and end date. In the case of a Flagship Cluster, all joint projects will be grouped for reporting the performance of the Cluster.

It is the responsibility of the Project Leader or the Cluster Leader to ensure that financial reports and project reports are completed on time. Complete details of the reporting obligations and timelines will be given in the individual Funding Agreements.

¹¹ Intellectual Property (IP) developed during the project which is incorporated or identified in the deliverables.

9. Contacts

For further information on the Flagship Collaborative Research Program contact:

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