



Australian Government

Australian Research Council

Linkage Infrastructure, Equipment and Facilities
Funding Rules for funding commencing in 2010

Australian Research Council Act 2001

I, KIM CARR, Minister for Innovation, Industry, Science and Research, having satisfied myself of the matters set out in section 59 of the *Australian Research Council Act 2001*, approve these Funding Rules under section 60 of that Act.

Dated

2009

KIM CARR

Minister for Innovation, Industry, Science and Research

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Acronyms

The following acronyms are used in ARC Funding Rules.

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| AEST | Australian Eastern Standard Time |
| AIMS | Australian Institute of Marine Science |
| ANSTO | Australian Nuclear Science and Technology Organisation |
| ARC | Australian Research Council |
| AVCC | Australian Vice-Chancellors' Committee |
| CI | Chief Investigator |
| CSIRO | Commonwealth Scientific and Industrial Research Organisation |
| DSTO | Defence Science and Technology Organisation |
| GA | Geoscience Australia |
| GST | Goods and Services Tax |
| LIEF | <i>ARC Linkage Infrastructure, Equipment and Facilities</i> |
| NCGP | National Competitive Grants Program |
| NHMRC | National Health and Medical Research Council |
| PI | Partner Investigator |
| RMS | ARC Research Management System |
| SAC | Selection Advisory Committee |
| UA | Universities Australia |

Key Dates

| | |
|---|--|
| Closing time for Eligibility Exemption and Eligibility Advice Requests | Not applicable for the <i>LIEF</i> scheme |
| Closing time for submission of Proposals | 5.00 pm (AEST) Wednesday 20 May 2009 |
| Deadline for letters requesting non-use of an assessor | 5.00 pm (AEST) Wednesday 20 May 2009 |

Contacts

The ARC deals with thousands of Proposals each year. Researchers should, therefore, direct requests for information to the Research Office within their organisation.

Enquiries and paper copies of Proposals must be addressed and sent:

by mail to:

LIEF Coordinator
Australian Research Council
GPO Box 2702
CANBERRA ACT 2601

or by courier to:

LIEF Coordinator
Australian Research Council
1st Floor, 8 Brindabella Circuit
CANBERRA AIRPORT ACT 2609

Enquiries may also be made to:

Email: arc-lief@arc.gov.au
Phone: 02 6287 6600
Fax: 02 6287 6638
Web Site: <http://www.arc.gov.au>

Inquiries concerning RMS User Ids:

Email rms@arc.gov.au

Appeals must be addressed and sent:

by mail to:

The Appeals Officer
Australian Research Council
GPO Box 2702
CANBERRA ACT 2601

or by courier to:

The Appeals Officer
Australian Research Council
1st Floor, 8 Brindabella Circuit
CANBERRA AIRPORT ACT 2609

1. Name of Funding Rules

These Funding Rules are the Australian Research Council *Linkage Infrastructure, Equipment and Facilities (LIEF) Funding Rules for funding commencing in 2010*.

2. Commencement

The Funding Rules shall take effect upon registration on the Federal Register of Legislative Instruments.

3. Definitions

In these Funding Rules, unless the contrary intention appears:

Adjunct or Emeritus Appointment or equivalent means that an Eligible Organisation has a formal agreement with a researcher which establishes an ongoing association with the Eligible Organisation, of the nature of an emeritus or honorary academic or visiting fellow. The ARC may seek documentary evidence of such an association if it is considered necessary.

Administering Organisation means an Eligible Organisation which submits a Proposal for funding under *LIEF* and which will be responsible for the administration of the funding if the proposed project is approved for funding.

Applicant means the Administering Organisation. Funding under *LIEF* is provided to Administering Organisations, not to individual researchers.

ARC means the Australian Research Council, as established under the ARC Act.

ARC Act means the *Australian Research Council Act 2001*.

ARC Fellow means the holder of an ARC Fellowship

ARC Fellowship means a position held by a researcher where the salary is funded wholly or partly by the ARC and where the researcher has been nominated in a Proposal to hold a Fellowship. An ARC Fellowship may be awarded at a number of levels and in various ARC schemes. ARC Fellowship includes Australian Postdoctoral Fellowship (APD), Australian Research Fellowship (ARF), Queen Elizabeth II Fellowship (QEII), Australian Professorial Fellowship (APF), Australian Postdoctoral Fellowship (Industry) (APDI), Linkage Industry Fellowship (LIF), ARC Centre Fellowship, ARC International Fellowship (ARCIF), Federation Fellowship, Future Fellowship, Australian Laureate Fellowship, Australian Research Fellowship - Indigenous (ARF-I) and Indigenous Researcher Fellowship (IRF).

Australian Laureate Fellow means a researcher whose salary is funded under the ARC *Australian Laureate Fellowships* scheme.

ARC Web Site is <http://www.arc.gov.au>

Chief Investigator means a researcher who satisfies the eligibility criteria for a Chief Investigator.

Collaborating Organisation means any organisation which is identified in the Proposal as a contributor to the project.

Commonwealth means the Commonwealth of Australia.

Conflict of Interest means an actual or perceived conflict between a person's public duty and their private or personal interest.

Eligible Organisation means an organisation which is eligible to apply for and receive funding under the *LIEF* Funding Rules as specified in Section 7.1.

Eligibility Advice Request means a request submitted by an Applicant to the ARC for advice on the likelihood of the Proposal satisfying certain requirements.

Eligibility Exemption Request means a request submitted by an Applicant to the ARC for a relaxation of the eligibility requirements stipulated in the Funding Rules.

Federation Fellow means a researcher whose salary is funded under the ARC *Federation Fellowship* scheme.

Full Time Equivalent means the period of service that a person, who has been employed at any time otherwise than on a full-time basis, would have attained if that person had always been employed on a full-time basis.

Funding Agreement means the agreement entered into between the ARC and the Administering Organisation if the Administering Organisation's Proposal is approved for funding. This Agreement sets out the terms and conditions under which the Commonwealth is to provide funding and the Administering Organisation is to be responsible for administration of the funding and the conduct of the project.

Funding Rules means this document.

GST has the meaning as given in section 195-1 of the *A New Tax System (Goods and Services Tax) Act 1999*.

LIEF Coordinator means the occupant, from time to time, of the position of Scheme Coordinator *LIEF* in the ARC, or any other person to whom the administration of the ARC *LIEF* scheme may be allocated.

Medical and Dental Research means research and/or training which, in the opinion of the ARC, has a significant focus on clinical medical (including dental) outcomes.

Minister means the Minister from time to time responsible for the administration of the ARC Act, or the Minister's delegate.

National Research Priority means a national research priority detailed in Appendix E.

Partner Investigator means a researcher who satisfies the eligibility criteria for a Partner Investigator.

Partner Organisation means an organisation, other than an Eligible Organisation, which is to be a contributor to the project, and which meets the requirements specified in Section 7.3.

Project Leader means the first-named researcher nominated on a Proposal who is a Chief Investigator and who will lead the proposed research program.

Proposal means a request to the ARC for the provision of financial assistance for a research project which is submitted in accordance with Funding Rules approved by the Minister.

Research Office means a business unit within an organisation that is responsible for administrative contact with the ARC regarding Proposals and research projects.

Special Condition means a special condition specified in a Funding Agreement which governs the use of the funding provided by the ARC.

4. Introduction

4.1 Overview and NCGP objectives

- 4.1.1 This document sets out the Funding Rules for *LIEF*, a scheme funded under the ARC National Competitive Grants Program (NCGP), which comply with the requirements of the ARC Act.
- 4.1.2 All parties involved in Proposals should read and understand the Funding Rules and the ARC standard Funding Agreement (which is available at the ARC Web Site) before submitting a Proposal to the ARC. Applicants are responsible for ensuring that their Proposals are complete and accurate.
- 4.1.3 Funding under *LIEF* is provided to Administering Organisations, not to researchers. That is, the ARC will accept a Proposal only from an Eligible Organisation and not from any individual researcher or researchers.
- 4.1.4 These Funding Rules are current as at February 2009 and have been prepared in accordance with the requirements of the ARC Act in force then. These Funding Rules are subject to change at any time, for reasons including any subsequent amendment to, replacement or supplementation of the ARC Act.

- 4.1.5 The ARC is an Australian Government statutory authority established under the ARC Act. The primary functions of the ARC, as specified by the ARC Act, are to make recommendations regarding the funding of research programs, to administer funding to support research programs, and to provide policy advice related to research.
- 4.1.6 The ARC has established a range of competitive funding schemes for the support of research and research training under the framework of the NCGP. A list of current NCGP funding schemes is available on the ARC Web Site.
- 4.1.7 By the operation of a range of funding schemes under the NCGP, the ARC aims to:
- a. maintain and build on existing research and research training;
 - b. build the scale and focus of research and research training;
 - c. encourage cross-disciplinary approaches to research and research training;
 - d. facilitate collaborative approaches to research and research training; and
 - e. support research and research training of national benefit, including in the following National Research Priorities:
 - i. An Environmentally Sustainable Australia;
 - ii. Promoting and Maintaining Good Health;
 - iii. Frontier Technologies for Building and Transforming Australian Industries; and
 - iv. Safeguarding Australia.
- 4.1.8 Descriptions of these National Research Priorities and their associated Priority Goals can be found in Appendix E, and on the ARC Web Site.

4.2 Linkage Infrastructure, Equipment and Facilities

- 4.2.1 *LIEF* provides funding to Eligible Organisations for research infrastructure, equipment and facilities that will be used to support high-quality research projects.
- 4.2.2 The objectives of *LIEF* are to:
- a. encourage Eligible Organisations to develop collaborative arrangements in the higher education sector and with other organisations outside the sector in order to develop research infrastructure;
 - b. support large-scale cooperative initiatives thereby allowing expensive infrastructure, equipment and facilities to be shared;
 - c. enhance support for areas of research strength; and
 - d. ensure that researchers in fields of recognised research potential have access to the support necessary to carry out high-quality research.
- 4.2.3 *LIEF* supports access to resources essential for mounting high-quality research projects particularly those funded via Australian Government competitive schemes.

4.3 Selection criteria

All *LIEF* Proposals which meet the eligibility criteria will be assessed and merit ranked using the following selection criteria, which are weighted for the purpose of selection as shown:

- 4.3.1 Significance of research to be supported with the proposed infrastructure, equipment and facilities: (20%)
- a. nature of the research, including aims and significance;
 - b. relevance of the proposed infrastructure, equipment or facility to research needs; and
 - c. enhancement of support for areas of existing or potential research strength.
- 4.3.2 Need for excellent Australian researchers to access the proposed infrastructure, equipment and facilities: (30%)
- a. availability of and access to similar infrastructure, equipment or facility at organisational, regional or national level;
 - b. national benefit of the research infrastructure, equipment or facility; and
 - c. value for money and budget justification, including where appropriate any cash or in-kind financial contributions to be made from non-ARC sources, and the expected rate of use.
- 4.3.3 Strength and benefits of collaboration between Eligible Organisations and/or other organisations: (30%)
- a. commitment of the Administering Organisation and, where applicable, Collaborating Organisations and Partner Organisations. The Proposal must provide clear justification for the extent of financial and other support of these organisations, and must be consistent with the organisations' research management plans;
 - b. effectiveness of cooperative arrangements between both CIs and PIs and/or organisations, including access and resource sharing; and
 - c. past collaborative performance.
- (Note: If the Proposal is a Single-Organisation Proposal, justification must be provided why broader collaboration is not appropriate.) (See sub-section 7.1.2).
- 4.3.4 Investigator(s): (20%)
- a. for CIs and PIs who are to manage the purchase, upgrading, construction, transportation, installation and/or maintenance of and/or access to the proposed infrastructure, equipment and facilities, a demonstrated track record relative to opportunity in the aforementioned activities; and/or
 - b. for CIs or PIs who are to be significant and regular users of the proposed infrastructure, equipment and facilities, a demonstrated capacity to undertake high quality research using the proposed infrastructure, equipment and facilities.

4.4 Conflict of Interest

- 4.4.1 All parties involved in or associated with Proposals and ARC-funded research projects are required to disclose to the ARC, and the other parties involved in the Proposal/project (including all Collaborating Organisations and Partner Organisations), any Conflict of Interest which has the potential to influence, or appear to influence, the request for funding, or the research and activities, publications and media reports related to the Proposal/project. Such conflicts must be disclosed to the ARC at the time of the submission of a Proposal, and in reporting on ARC-funded research projects, and notified to the other parties as soon as practicable after the Conflict of Interest is identified.
- 4.4.2 If, in the opinion of the ARC, any party involved in or associated with a Proposal has failed to disclose any such Conflict of Interest, the ARC may in its absolute discretion decide to not recommend for approval any or all Proposals involving that party.
- 4.4.3 If a Conflict of Interest exists or arises, the Administering Organisation must have processes in place and documented for managing the Conflict of Interest for the duration of the project. Such processes must comply with the NHMRC/ARC/UA Australian Code for the Responsible Conduct of Research Practice (2007) and any relevant successor document. In the event of any inconsistency between the original and any successor document, the latter document is to apply.

5. Changes from last year

- 5.1 A number of clarifications and revisions have been made in these Funding Rules for funding commencing in 2010 (the 2010 *LIEF* Funding Rules). Significant changes from the 2009 *LIEF* Funding Rules include:
- a. investigators are no longer eligible to be CIs or PIs if they are only casual, intermittent and/or occasional users of the proposed infrastructure, equipment and facilities (subsection 8.1.8);
 - b. the first named Chief Investigator must have a demonstrated capacity to manage the purchase, upgrading, construction, transportation, installation and maintenance of and/or access to the research infrastructure, equipment and/or facilities which may be funded by *LIEF* (subsection 8.1.4);
 - c. changes have been made to the 'Restrictions on budget items', including permissible items in respect to international facilities. (subsection 6.4.2.c);
 - d. the information regarding the selection criteria from which all eligible Proposals will be ranked, has been moved from Section 11 to Section 4.3;
 - e. sections concerning administration of funding have been moved to Appendix B;
 - f. a subsection which makes approval by the ARC of international agreements involving payment of international subscriptions conditional on the presence of significant benefits to Australia has been moved (subsection 6.4.5);

- g. a number of minor changes have been made in various sections for the purpose of clarification; and
 - h. proposals must be submitted via RMS. (Section 11).
- 5.2 The list of changes above is not comprehensive. Applicants and other parties involved in Proposals should read and understand the entire Funding Rules and standard Funding Agreement before a Proposal is submitted to the ARC.

6. Funding

6.1 Level of funding

- 6.1.1 All amounts referred to in these Funding Rules are to be read as exclusive of GST (if any), unless expressly stated otherwise.
- 6.1.2 The minimum level of funding which will be provided by the ARC for a project under this *LIEF* funding round is a total of \$100,000 per calendar year for all items requested in each calendar year.
- 6.1.3 If a Proposal requests less than \$100,000 for any year the ARC may in its absolute discretion decide to not to recommend the Proposal for approval.
- 6.1.4 Subject to Sections 6.3, 6.4 and 6.5, the maximum level of funding which will be provided by the ARC for a project is 75% of the total direct cost of the purchase, upgrading, construction, transportation and installation of and/or management of access to the infrastructure, equipment or facility for which funding is being requested. If the amount of funding being requested from the ARC exceeds this amount, the ARC may at its absolute discretion decide to not recommend the Proposal for approval.
- 6.1.5 The ARC reserves the right to recommend funding for a project at levels which may differ from those requested in the Proposal.

6.2 Period of funding

- 6.2.1 Funding may be payable under these Funding Rules for *LIEF* projects in respect of the financial year 2009-10 and any subsequent years to which the ARC Act applies. Funding for approved projects will commence with effect 1 January 2010, unless other arrangements are approved by the Minister.
- 6.2.2 Projects may be funded for 1 year only, except in the case of subscriptions or other payments in respect of major international research facilities where up to 5 years of funding may be provided.
- 6.2.3 Projects may be funded, subject to sufficient funding being available for *LIEF*, the provisions of the ARC Act, and continued satisfactory progress of the project.
- 6.2.4 The ARC may recommend funding for a project for a duration different from that requested in the Proposal.

6.3 Types of research infrastructure, equipment and facilities supported

- 6.3.1 Subject to Sections 6.4 and 6.5, *LIEF* supports the purchase, upgrading, construction, transportation and installation of and/or management of

access to major research infrastructure, equipment and facilities, including:

- a. major computing/data facilities, animal houses, herbaria, experimental farms;
- b. salaries if these are directly associated with purchasing, upgrading, construction, transportation, installation and maintenance of and/or access to the research infrastructure, equipment and/or facility;
- c. consortium membership costs, travel to the research facility, costs associated with establishment or upgrading of the facility, reasonable operational costs, and secretariat costs in the case of Australia's participation in the use of major international research facilities; and
- d. library and research information infrastructure (non-capital aspects only) to support specific research projects.

6.3.2 **Integrated research facilities**

LIEF supports major research facilities and equipment. Minor items of equipment are the responsibility of Eligible Organisations. However, there may be special circumstances in which a case can be made for an integrated research facility consisting of a number of small items. If a Proposal requests funding for a number of small items and it does not contain justification to the satisfaction of the ARC that the items form part of an integrated research facility and are necessary to support research activities, the ARC may in its absolute discretion decide to not recommend the Proposal for approval.

6.4 **Restrictions on budget items**

6.4.1 *LIEF* funds only costs which directly support provision of infrastructure, equipment and facilities for use in research projects. The ARC may in its absolute discretion determine whether any proposed costs meet this requirement.

6.4.2 *LIEF* has restrictions on the following budget items:

- a. construction or refurbishment of general purpose buildings;
- b. rental of accommodation;
- c. operational costs, including salaries of staff engaged in teaching and research, outreach, community relations, and in research only (including the cost of 'buying time' to free such staff to do more research) except, at the ARC's discretion, where subscriptions for a major international facility may cover such costs, or where membership of a major international facility incurs an obligation that cannot be funded by other means;
- d. salaries of staff supporting research at the organisational level (for example, Deputy or Pro Vice-Chancellor Research, Research Grants Officer);
- e. stipends of postgraduate research students;
- f. travel costs directly associated with individual projects with the exception of travel costs to allow participation in a major international facility and/or consortia; and

- g. minor equipment that should be normally funded by Eligible Organisations (such as personal computers), unless otherwise approved by the ARC.
- 6.4.3 Proposals that seek non-capital works aspects of library or research information infrastructure may include salaries and minor pieces of equipment to build an integrated facility if the entire Proposal is a cohesive attempt to provide infrastructure support for research.
- 6.4.4 If a Proposal requests salary funding for a CI or PI, other than in relation to salary costs permitted under subsections 6.3.1.b, 6.3.1.c, 6.4.2.c, 6.4.2.d and/or 6.4.3, the Proposal will not be recommended or approved for funding.
- 6.4.5 Funding for subscriptions or other payments in respect of major international research facilities would normally occur under an international agreement that is approved by the ARC. The ARC will approve such agreements only if there are significant benefits to Australia by way of access to a facility not otherwise available to Australian researchers.
- 6.5 Areas of investigation/work not supported**
- 6.5.1 *LIEF* does not support:
- a. infrastructure, equipment or facilities which, in the opinion of the ARC, are to be used predominantly for Medical and Dental Research;
 - b. activities leading solely to the creation or performance of a work of art, including visual art, musical compositions, drama, dance, film, broadcasts, designs and literary works;
 - c. projects such as uncritical compilations and purely descriptive catalogues or editions that do not involve original research;
 - d. production of teaching materials, even though some research may be involved in their production;
 - e. compilation of data, unless this is an integral part of the project which is judged to be necessary, in which case the Proposal must include a statement indicating the research objectives to which the data would contribute; and/or
 - f. development of research aids and tools (including computer programs), unless they form an integral part of the Proposal, in which case the Proposal must include a statement indicating the research objectives to which these activities would contribute;
 - g. publication costs, including printing and page costs, will not be funded under *LIEF*; and
 - i. costs not directly related to a project will not be funded, for example, costs of a personal nature.
- 6.5.2 If the ARC considers that the Proposal seeks funding for any of the items not permitted under Sections 6.4 or 6.5, then to that extent part or all of the Proposal will not be recommended or approved for funding. However, subject to subsection 6.4.4, if the ARC considers that other parts of the

proposed project remain worthy of support, the ARC may recommend that a reduced amount of funding be approved for the Proposal.

6.6 Number of Proposals and funded projects

6.6.1 A researcher may not be nominated as a CI on more than two LIEF Proposals in the same funding round. For the purposes of applying this limit, the number of Proposals on which the researcher is nominated is evaluated as at the closing time for the submission of Proposals. Submitting Proposals that exceed this limit may result in all Proposals involving the relevant researcher(s) not being recommended or approved for funding.

6.7 Duplicate Proposals

Only one Proposal may be submitted to *LIEF* in respect of a particular project in the same funding round, regardless of any variation in the listed CIs, PIs and/or Administering Organisation. If the ARC decides that a project described in a Proposal is the same as or similar (in whole or in part) to a project described in another Proposal that is submitted in the same funding round, the ARC may in its absolute discretion decide to recommend any or all of those Proposals, not be approved or recommend that a reduced amount of funding be provided for that or any similar Proposal. The ARC reserves the right to determine whether Proposals are duplicates or sufficiently similar to warrant one or more Proposals being recommended not to be approved.

6.8 Ownership and location of infrastructure, equipment and facilities

6.8.1 All the organisations involved in a Proposal must reach agreement on time-sharing and access to the infrastructure, equipment and facilities before the Proposal is submitted. Details of time-sharing and access arrangements must be included in the Proposal. If the Proposal is approved for funding, the Administering Organisation must, prior to expending ARC funding for the project, execute a written agreement with the Collaborating and Partner Organisations which accords with the arrangements outlined in the Proposal and which specifies:

- a. the location of the infrastructure, equipment or facilities;
- b. the terms and conditions of access for the parties listed on the Proposal; and
- c. details of the arrangements and costs of managing the infrastructure, equipment or facilities (including any recurrent expenditure) and how any costs will be distributed across the users of the infrastructure, equipment or facilities.

6.8.2 Unless otherwise approved by the ARC (for example in the case of major international research facilities), ownership of shared infrastructure, facilities and equipment funded under *LIEF* is to be vested in the Administering Organisation and listed in its assets register. If ownership is to be vested in any other entity the Proposal must provide justification to the satisfaction of the ARC of the proposed ownership arrangements.

6.8.3 Unless otherwise approved by the ARC (for example in the case of major international research facilities located overseas or cases where the

research specifically needs to be conducted elsewhere) the infrastructure, equipment and facilities must be located on the Administering Organisation's premises. If infrastructure, equipment and facilities are not going to be located on the Administering Organisation's premises, the Proposal must provide justification to the satisfaction of the ARC of the proposed location arrangements.

- 6.8.4 If a Proposal is required to address any of the matters specified in subsections 6.8.2 or 6.8.3, and it fails to do so, the ARC may in its absolute discretion decide to not recommend the Proposal for approval.

7. Organisational types, roles and eligibility

7.1 Eligible Organisations

- 7.1.1 A Proposal may be submitted only by an Eligible Organisation. Appendix C specifies Eligible Organisations for *LIEF*.

- 7.1.2 Each Proposal must identify an Administering Organisation. A Proposal must involve two or more Eligible Organisations unless it demonstrates that:
- a. collaborative use of the proposed infrastructure, equipment and facility by other Eligible Organisations is not practicable; and
 - b. the project does not duplicate similar infrastructure, equipment or facilities at an Eligible Organisation where collaborative arrangements would be practicable. If similar infrastructure, equipment or facilities are available at an Eligible Organisation, the Proposal must provide justification to the satisfaction of the ARC why the collaborative use is not practicable.

- 7.1.3 If a Proposal identifies two or more Eligible Organisations (an Administering Organisation and one or more Collaborating Organisations) to be involved in the proposed project, the Proposal must indicate agreed contributions from the Administering Organisation and all Collaborating Organisations which meet the requirements specified in Appendix D.

- 7.1.4 A Proposal may be submitted by a Peak Body if the Proposal is for international subscriptions or other payments in respect of participation in and use of international research facilities (including international facilities located within Australia). A Proposal submitted by a Peak Body must include one of the Eligible Organisations listed in Appendix C subsection C1 or C2 as a Collaborating Organisation and meet the requirements specified in Appendix D.

- 7.1.5 Proposals in which two or more organisations are involved must identify the mechanism for accountability and achievement of the research program outcomes between the organisations involved.

- 7.1.6 If a Proposal is required to address any of the matters specified in subsections 7.1.2 through to 7.1.5, and it fails to do so, the ARC may in its absolute discretion decide to not recommend the Proposal for approval.

7.2 Collaborating Organisations

- 7.2.1 Administering Organisations determine, in collaboration with the Collaborating Organisation(s), which type of resources are appropriate and necessary for the project they wish to undertake. Contributions from the Collaborating Organisation(s) must be specific to the project and must not be part of a broader contribution to an Eligible Organisation. Projects must relate to high-quality research activity and must be broadly in line with the research directions of the organisation(s) involved.
- 7.2.2 Contributions from each Collaborating Organisation must meet the requirements specified in Appendix D.
- 7.2.3 Collaboration will typically involve the shared use of infrastructure, equipment and facilities on different projects and/or collaborative projects. Where the infrastructure, equipment and facilities requested will be located in more than one Eligible Organisation, the Proposal must demonstrate clearly that:
- a. the facility is genuinely integrated and collaborative;
 - b. the items of infrastructure, equipment and facilities are complementary; and
 - c. overall research outcomes will be enhanced.

If such a Proposal fails to address any of the matters specified in this subsection, the ARC may in its absolute discretion decide to not recommend the Proposal for approval.

7.3 Partner Organisations

Proposals involving one or more Partner Organisation(s), such as government research organisations and businesses, must demonstrate a significant contribution of cash and/or in-kind resources from the Partner Organisation(s) (having regard to the total cost of the project and the relative contribution of each Partner Investigator).

8. Roles and eligibility for researchers

8.1 Researcher roles and general eligibility

- 8.1.1 Roles that may be undertaken by researchers under *LIEF* are:
- a. Chief Investigator (CI); or
 - b. Partner Investigator (PI).
- 8.1.2 A Proposal must nominate at least one CI.
- 8.1.3 If a person has been nominated for a role for which she/he does not satisfy the eligibility criteria, the Proposal may be funded only if, upon request by the ARC, the Administering Organisation provides the ARC with relevant certifications from the person, and satisfactory evidence that she/he satisfies the eligibility criteria, for the role she/he is to perform.
- 8.1.4 The first-named researcher nominated on a Proposal who is a CI on a Proposal will be considered the 'Project Leader' and must have a demonstrated capacity to manage the purchase, upgrading, construction, transportation, installation and maintenance of and/or access to research infrastructure, equipment and/or facilities which may be funded by LIEF.

Other than in the case of major international research facilities, this person must lead the management of the infrastructure, equipment and facilities.

- 8.1.5 A researcher nominated as a CI or PI must:
- a. take significant intellectual responsibility for the proposed project;
 - b. make any strategic decisions called for in the pursuit of the project and the communication of results;
 - c. have the capacity to make a serious commitment to the project and a demonstrable need for access to the proposed infrastructure, equipment and facilities to undertake high quality research; and
 - d. satisfy the eligibility criteria for the role they are to perform, as specified in Section 8 of these Funding Rules.

The ARC reserves the right to determine whether a person has the requisite capacity to perform the role.

8.1.6 At the time of the submission of a Proposal all obligations regarding previously funded projects involving the nominated CIs on the Proposal must have been fulfilled to the satisfaction of the ARC. Such obligations include the provision of satisfactory progress and final reports.

8.1.7 Subject to subsection 8.1.3 if the ARC considers that a researcher nominated in a Proposal as a CI or PI does not meet the eligibility criteria in this Section 8 for the role which that researcher is to perform, the Proposal will not be recommended or approved for funding.

8.1.8 To be eligible to be CIs or PIs, investigators must be significant and regular users of the proposed infrastructure, equipment and facilities. Regardless of whether they satisfy subsection 8.1.5, investigators are not eligible to be CIs or PIs if they are only to be casual, intermittent and/or occasional users of the proposed infrastructure, equipment and facilities.

8.2 Eligibility criteria for Chief Investigators

- 8.2.1 A researcher nominated on a Proposal as a CI must satisfy the requirements of subsections 8.1.5, 8.1.6 and 8.1.8 and meet at least one of the following criteria at 1 January 2010, and for the full term of her/his participation in the project:
- a. be an employee of an Eligible Organisation listed in Appendix C subsections C1 or C2 for at least a Full Time Equivalent of 50 per cent of full time service;
 - b. be a holder of an Emeritus, Adjunct or equivalent appointment at an Eligible Organisation listed in Appendix C subsections C1 or C2 who does not have a substantive position or paid appointment elsewhere;
 - c. be a Federation Fellow;
 - d. be an Australian Laureate Fellow at an Eligible Organisation listed in Appendix C subsections C1 or C2; or
 - e. if a Peak Body is the Administering Organisation, meet one of the above criteria in subsection 8.2.1 or be a member or officeholder of the Peak Body.

8.2.2 She/he must reside predominantly in Australia for the full term of her/his participation in the project. If the person does not have permanent resident status she/he must obtain temporary or permanent resident status from the Department of Immigration and Citizenship before she/he may commence on the project.

8.2.3 Notwithstanding a researcher's eligibility under the criteria in this Section, a researcher undertaking undergraduate or postgraduate studies is not eligible to be a CI.

8.3 Eligibility criteria for Partner Investigators

To be eligible to be nominated as a PI on a Proposal, a researcher must:

- a. not meet the eligibility criteria specified in Section 8.2 for a CI;
- b. secure a significant contribution of cash, or in-kind or other resources from the researcher's organisation for the proposed project (having regard to the total cost of the project and the relative contribution of other investigators); and
- c. satisfy the requirements outlined in subsection 8.1.5.

9. Cross-scheme issues

9.1 Cross-scheme eligibility

9.1.1 If a researcher nominated as a CI or a PI on a *LIEF* Proposal submitted under these Funding Rules is named in a different funding request for proposed research projects that have been submitted or approved under this or any other ARC scheme or to any other Commonwealth funding body, then the *LIEF* Proposal submitted must contain details of these requests and summary details of other funding where the research programs proposed in those other requests or being undertaken with that other funding:

- a. could reasonably be expected to be undertaken on the infrastructure, equipment and facilities being sought in the *LIEF* Proposal; and/or
- b. are in fields of research closely related to the research proposed to be conducted on the infrastructure, equipment and facilities sought in the *LIEF* Proposal.

9.1.2 If these processes described in subsection 9.1.1 are not observed, or the ARC determines that incomplete, misleading or inaccurate details were included in the Proposal, the ARC may in its absolute discretion decide to not recommend the *LIEF* Proposal for approval.

9.1.3 The ARC may liaise with other funding agencies to discuss any overlap between proposed or existing research projects (including fellowships) in order to avoid duplication of funding. The ARC may for this purpose disclose to that agency any information in a Proposal.

9.1.4 The Administering Organisation must promptly advise the ARC if a funding request submitted to another Commonwealth funding source, for any similar proposed infrastructure, equipment or facility, is successful subsequent to the submission of the *LIEF* Proposal to the ARC.

9.2 Cross-scheme funding

9.2.1 The ARC will not duplicate financial assistance for research infrastructure, equipment and facilities or research already funded by the Commonwealth or which is likely to be funded from other Commonwealth funding sources (including under other ARC funding schemes). The ARC reserves the right to determine if a Proposal duplicates or is likely to duplicate research infrastructure, equipment and facilities being funded by another Commonwealth source. In such circumstances the ARC may in its absolute discretion decide to not recommend the Proposal for approval. However, if the ARC considers that parts of the proposed project remain worthy of support, the ARC may assess the Proposal in the usual way and the ARC may instead recommend that a reduced amount of funding be approved for the Proposal.

9.3 Funding of Medical and Dental Research

9.3.1 Pursuant to Section 6.5.1.a and 6.5.2 the ARC does not fund Medical and Dental Research under *LIEF*. The ARC reserves the right to determine conclusively whether the proposed research involves Medical and Dental Research.

9.3.2 Applicants should note that the ARC does not provide for submission of Eligibility Advice Requests under *LIEF* concerning whether or not a Proposal would fall within this area of research.

9.3.3 If the Administering Organisation submits, or is intending to submit, Proposals to the ARC and the NHMRC for similar research it must cross-reference the Proposals and must declare the dual submission on the ARC application form.

10. Application process

10.1 Eligibility exemption and eligibility advice

This item is not relevant to *LIEF* as formal eligibility exemption and eligibility advice request processes do not operate in this scheme.

10.2 Proposals

10.2.1 A Proposal should be submitted as a mature research plan ready for implementation. The Proposal must contain all the information necessary for its assessment without the need for further written or oral explanation, or reference to additional documentation, unless requested by the ARC, including its College of Experts.

10.2.2 All details in the Proposal must be current at the time of submission.

10.2.3 In submitting a Proposal, the Administering Organisation and the CIs and PIs nominated in the Proposal are consenting to the Proposal being assessed under the ARC peer assessment procedures and agree to the release of the Proposal to third parties for assessment purposes.

11 Submission of Proposals

11.1 Submission of Proposals in RMS

Administering Organisations must submit Proposals through the ARC on-line Research Management System (RMS) unless otherwise advised.

11.2 Proposal Content

Proposals consist of:

- a. an on-line form which must be completed and submitted in RMS accessible via the ARC Web Site;
- b. may include the following additional information in the Proposal:
 - i. “Certification by Administering Organisation and, if applicable, Collaborating and/or Partner Organisations”;
 - ii. “a Statement Addressing Selection Criteria”;
 - iii. “a Budget Justification”;
 - iv. “the Infrastructure, Equipment or Facilities Arrangements”;
 - v. “the Roles of Personnel”;
 - vi. “References”;
 - vii. “Curriculum Vitae(s)”;
 - viii. “a Summary of Quotes”; and
 - ix. If applicable, “Statements on Progress of ARC-funded *LIEF* Projects”.

11.3 Format in RMS

11.3.1 All documents must be written in English and must comply strictly with the format, content and submission requirements as specified in these Funding Rules and the “*Linkage Infrastructure, Equipment and Facilities Instructions to Applicants for funding Commencing in 2010*” document which will be made available on the ARC Web Site. If a Proposal fails to meet any format, content or submission requirements, the ARC may in its absolute discretion decide to not recommend the Proposal for approval.

11.3.2 All pages of additional text must be uploaded in PDF format into the RMS form. Text must be in black type, use a single column and 12-point font size and with all margins being at least 2 cm. As Proposals may be scanned electronically, a highly legible font type must be used, such as 12 point Times New Roman, Arial, Courier, Palatino, and Helvetica subject to their being equivalent to Times New Roman 12 point font. Variants such as mathematical typesetting languages may also be used. References may be reproduced in 10-point font size. Colour graphs or colour photographs should not be included as they will be reproduced in black and white and the reproduction quality may not be optimal. Finely detailed graphics and grey scale may also not be precisely reproduced. Additional text attachments may appear slightly reduced in size due to the RMS system formatting the attachments to include page numbers. Attached PDFs should be directly generated rather than scanned to maximise the quality of reproduction.

11.4 How to complete and submit a Proposal in RMS

- 11.4.1 Administering Organisations must use the ARC's on-line form in RMS which is accessible via the ARC Web Site.
- 11.4.2 A "*Linkage Infrastructure, Equipment and Facilities Instructions to Applicants for Funding Commencing in 2010*" document will be available from the ARC Web Site. This document specifies a range of requirements for Proposals and also assists parties in preparing Proposals.
- 11.4.3 Research Offices have access on-line to RMS and will approve User account requests, along with the ARC, to enable researchers at their organisations to access the system and prepare Proposals. If a researcher has previously been allocated access to GAMS, her/his User ID (which will be converted to uppercase) should be current within RMS. However, the user will be required by the RMS to reset their password.
- 11.4.4 If a researcher does not have a Research Office or equivalent unit, she/he should email rms@arc.gov.au at the ARC for assistance.

11.5 Closing time for Proposals in RMS

- 11.5.1 The on-line form in the RMS must be submitted, by **5.00 pm (AEST) Wednesday 20 May 2009**.
- 11.5.2 Proposals may be withdrawn but additions, deletions and modifications will not be accepted after submission, unless invited by the ARC.
- 11.5.3 Applicants should note that Administering Organisations may have internal closing times which precede the ARC closing time.

11.6 Certification of Proposals in RMS

- 11.6.1 The Administering Organisation must certify Proposals on-line in RMS. Research Offices should ensure that the Research Office delegate role is authorised in RMS to certify and submit proposals for their organisation.
- 11.6.2 Proposals submitted on-line through RMS must include signed "Certification forms for Organisations" from each organisation on the Proposal which is contributing cash or in-kind or CIs or PIs. These "Certification forms for Organisations" are available for this purpose on the ARC Web Site. To be acceptable the "Certification forms for Organisations" must contain hand-written signatures of authorised officers of the organisations. These signed certification forms must be merged into the Proposal as PDFs in accordance with the "*Linkage Infrastructure, Equipment and Facilities Instructions to Applicants for funding Commencing in 2010*".
- 11.6.3 The Administering Organisation must also obtain hand-written signatures of all CIs and PIs nominated in the Proposal on the "Certification form for Investigators" available for this purpose on the ARC Web Site. The signed "Certification forms for Investigators" do not need to be submitted via RMS with Proposals but must be provided to the ARC if requested. If the Administering Organisation fails to provide this material upon request, the ARC may in its absolute discretion decide to recommend that the Proposal not be approved for funding. Signed certifications are not required by the

ARC at any time for users of the proposed infrastructure, equipment and facilities who are not named as CIs or PIs on the Proposal.

- 11.6.4 A Proposal must be submitted through the appropriate Research Office. If a Proposal has not been submitted through the appropriate Research Office/Chief Executive Officer for certification, the Proposal will be recommended not to be approved for funding.

12. Selection and approval process

12.1 Assessment and selection process

- 12.1.1 Assessment of Proposals is undertaken by the ARC, which has the right to make recommendations solely on the basis of its expertise, and which may:
- a. consider if a Proposal satisfies the eligibility criteria set out in these Funding Rules;
 - b. identify and consider any other matters that these Funding Rules state may result in the ARC recommending that a Proposal not be approved for funding;
 - c. assign assessors to review Proposals;
 - d. seek comments on assessors' reports from the parties involved in the Proposal;
 - e. rank each Proposal relative to the others on the basis of the Proposal, any assessors' reports, and any response to those assessment reports;
 - f. assess and recommend the amount of funding to be made available for a Proposal; and/or
 - g. prepare funding recommendations.
- 12.1.2 In addition to assessment by the ARC, a Proposal may at the ARC's absolute discretion be assessed by external assessors. Assessors may be drawn from a range of organisations to reduce the potential for conflicts of interest. Proposals will be assessed against the criteria set out in these Funding Rules and the reports by the assessors may include written comment.
- 12.1.3 The ARC reserves the right to make recommendations for funding to the Minister based on any number of assessments or solely on the assessment of the ARC.
- 12.1.4 Administering Organisations may provide written notification to the ARC naming any person or persons whom they do not wish to assess a Proposal on a "Request not to Assess" form available from the ARC Web Site. Such notifications must contain detailed justification and be submitted using the "Request not to Assess" form through the Administering Organisation's Research Office. This notification must not accompany the Proposal. The notification must be sent to the address advised under 'Contacts' at the beginning of these Funding Rules and received by the ARC by the closing time for Proposals, **5:00 pm (AEST) Wednesday 20 May 2009**.

- 12.1.5 The ARC will consider the justification put forward to exclude any person as an assessor, but may choose not to give effect to such a request.
- 12.2 Rejoinder**
- LIEF* does not provide for assessors' written comments, if obtained, to be provided to applicants to allow the opportunity for a rejoinder by applicants to those comments.
- 12.3 Recommendations and offer of funding**
- 12.3.1 The ARC's recommendations will be submitted in accordance with the ARC Act to the Minister for consideration. The Minister will determine which Proposals will be approved and the amount and timing of financial assistance to be paid to Administering Organisations for approved Proposals.
- 12.3.2 Under the ARC Act, the Minister must not approve for funding any Proposal that fails to meet the eligibility criteria set out in these Funding Rules.
- 12.3.3. Administering Organisations whose Proposals are approved will be notified in a letter of offer that will indicate the financial assistance to be offered and will be provided with a copy of a Funding Agreement for signing.
- 12.4 Exclusion of Proposals**
- 12.4.1 The ARC will not recommend for approval, and the Minister will not approve for funding, any Proposal that fails to satisfy the "eligibility criteria" set out in these Funding Rules, including:
- a. if the Proposal seeks funding for any of the items not permitted under Sections 6.4 or 6.5 and the ARC considers no other part of the proposed project remains worthy of support (subsection 6.5.2);
 - b. if the Proposal seeks salary funding for a CI or PI, other than in relation to salary costs permitted under subsections 6.3.1.b, 6.3.1.c, 6.4.2.c or 6.4.3 (see subsection 6.4.4);
 - c. if the Proposal is not submitted by an Eligible Organisation (Section 7.1);
 - d. if the Proposal does not nominate at least one CI candidate (subsection 8.1.2);
 - e. if the ARC considers that a researcher nominated in the Proposal as CI or PI does not satisfy the eligibility criteria as specified in Section 8 for the role which that researcher is to perform;
 - f. if, in the opinion of the ARC, the equipment, infrastructure or facilities is to be used predominantly for Medical and/or Dental Research (subsection 6.5.1.a and Section 9.3);
 - g. if a Proposal has not been submitted through the appropriate Research Office/Chief Executive Officer for certification (subsection 11.6.);

- h. if the Proposal is not for a program of research, or a program that supports the conduct of a program of research; and
- i. if the Proposal does not meet the requirement for contributions from the Administering Organisation, Collaborating Organisation(s) and/or Partner Organisation(s) (Sections 7.1, 7.2, 7.3 and Appendix D).

12.4.2 The ARC may in its absolute discretion decide to recommend that a Proposal not be approved if:

- a. in the opinion of the ARC, any researcher nominated in the Proposal as a CI or PI has caused or has significantly contributed to the failure of an organisation to meet its obligations under any current or previous Funding Agreement with the ARC or all obligations regarding previously funded projects involving the candidate have not been fulfilled to the satisfaction of the ARC;
- b. in the opinion of the ARC, any party involved in or associated with the Proposal or ARC-funded research project has failed to disclose to the ARC, or any other parties involved in the Proposal, any Conflict of Interest which has the potential to influence, or appear to influence, the research and activities, publications and media reports, or requests for funding related to the Proposal (subsection 4.4.2);
- c. the Proposal seeks funding which is less than the minimum amount or more than the maximum amount of funding allowed (subsection 6.1.2 and 6.1.4);
- d. the ARC considers that the project described in the Proposal is the same as or similar (in whole or in part) to a project described in another Proposal that is submitted in the same funding round (subsection 6.7.1);
- e. in the opinion of the ARC, the Proposal duplicates or is likely to duplicate research already being funded, or which is likely to be funded, by the Commonwealth (subsections 9.2 and 9.3);
- f. where required the Proposal does not include details of other funding or funding requests (subsection 9.1.1);
- g. the ARC considers incomplete, inaccurate, or misleading material has been provided in relation to the Proposal or if the Administering Organisation and/or researchers nominated in the Proposal have provided the ARC with incomplete, inaccurate or misleading information in relation to the provision of advice relating to, or in the reporting of progress of, a funded project (subsections 9.1.1, 9.3.3 and Appendix A subsections A8.2 and A8.3);
- h. if submission of Proposals through the RMS is required and the Administering Organisation fails to provide an online certification by an authorised officer (subsection 11.6.1);
- i. when requested, the Administering Organisation fails to provide the signed certifications and agreements of all parties necessary to allow the proposed project to proceed (subsections 11.6.2 and 11.6.3);

- j. the Proposal fails to meet any format and other submission requirements (subsections 11.3 and 11.6.2);
- k. the on-line part of a Proposal is not submitted, or the paper part of the Proposal (if required by the ARC) is not received by the ARC, by the closing time (subsections 11.5.1);
- l. if the amount of funding requested from the ARC is greater than 75% of the total direct cost of the purchase, upgrading, construction, transportation and installation of and/or management of access to the infrastructure, equipment or facility for which funding is being requested (subsection 6.1.4);
- m. the Proposal requests funding for a number of small items and, taking into account any justification provided in the Proposal, the ARC is not satisfied that the items form part of an integrated facility and are necessary to support research activities (subsection 6.3.2);
- n. the Proposal is required to address any of the matters specified in subsections 6.8.2 or 6.8.3 and it has failed to do so (subsection 6.8.4);
- o. the Proposal is required to address any of the matters specified in subsections 7.1.2 - 7.1.5 and Appendix D and it has failed to do so (subsection 7.1.6);
- p. the Proposal is required to demonstrate the matters specified and it has failed to do so (subsection 7.2.3); and
- q. the limit on the number of Proposals permissible is exceeded (subsection 6.6.1).

13. Appeals process

- 13.1 Appeals will be considered only against administrative process issues and not, for example, against committee recommendations or assessor ratings and comments.
- 13.2 Appeals must be made on the appeals form available from the ARC Web Site. The form must be lodged by the Administering Organisation and must be authorised by a Deputy Vice Chancellor (Research), Chief Executive Officer or equivalent. Appeals must be received within 28 days of the date on the letter notifying the outcome of Proposals.
- 13.3 Appeals must be addressed and sent to the address advised under 'Contacts' at the beginning of these Funding Rules.

Appendix A – Other Matters

Fundamental principles and requirements

A1 Ethics and research practices

- A1.1 The NHMRC web site, <http://www.nhmrc.gov.au>, provides a series of publications which outline principles of ethical conduct in research. All Proposals and ARC-funded research projects must, unless otherwise approved by the ARC, conform to the principles outlined in the following and their successor documents:
- a. NHMRC/ARC/UA Australian Code for the Responsible Conduct of Research (2007);
 - b. as applicable, the NHMRC/ARC/AVCC National Statement on Ethical Conduct in Human Research (2007); and
 - c. as applicable, codes on animal research promulgated by the NHMRC.
- A1.2 If there is any conflict between a successor document and its predecessor, then the successor document prevails to the extent of any inconsistency.

A2 Acknowledging ARC support

- A2.1 The Funding Agreement requires that any ARC contribution to research and other activities funded by the ARC be appropriately acknowledged. When, at any time during or after completion of a project, the researcher or any other party publishes or produces material such as books, articles, newsletters or other literary or artistic works which relate to the research project, the Administering Organisation must ensure (wherever possible) that the ARC's contribution and support of the project is acknowledged in a prominent place and in an appropriate form. This acknowledgement should include the mention of the ARC as a funding body. Similar efforts should be made to acknowledge ARC support when participating in television and radio programs, when interviewed by the print media and when otherwise speaking publicly about the project.
- A2.2 Advice on acceptable forms of acknowledgement and use of the ARC logo is provided on the ARC Web Site.

A3 Dissemination of research outputs

- A3.1 The Australian Government makes a major investment in research to support its essential role in improving the wellbeing of our society. To maximise the benefits from research, findings need to be disseminated as broadly as possible to allow access by other researchers and the wider community.
- A3.2 The ARC acknowledges that researchers take into account a wide range of factors in deciding on the best outlets for publications arising from their research. Such considerations include the status and reputation of a journal or publisher, the peer review process of evaluating their research outputs, access by other stakeholders to their work, the likely impact of their work on users of research and the further dissemination and production of knowledge. Taking heed of these considerations, the ARC endeavours to

ensure the widest possible dissemination of the research supported under its funding, in the most effective manner and at the earliest opportunity.

- A3.3 The ARC therefore encourages researchers to consider the benefits of depositing their data and any publications arising from a research project in an appropriate subject and/or institutional repository. If a researcher is not intending to deposit the data from a project in a repository within six months of the completion of the research, she/he should include the reasons in the project's Final Report. Any research outputs that have been or will be deposited in appropriate repositories should be identified in the Final Report.

A4 Applicable law

The ARC is required to comply with the requirements of the *Privacy Act 1988* and the *Freedom of Information Act 1982*.

A5 Confidentiality

- A5.1 The ARC will treat information contained in a Proposal as confidential. However, the ARC may disclose information contained in a Proposal, or otherwise provided to the ARC, to the extent that the information:

- a. is disclosed by the ARC to the Minister;
- b. is authorised or required by law to be disclosed;
- c. is disclosed in accordance with any other provision of these Funding Rules or the Funding Agreement;
- d. is disclosed by the ARC to its advisers (including external assessors), officers, employees or other third parties in order to assess, evaluate or verify the accuracy or completeness of a Proposal;
- e. is shared by the ARC within the ARC's organisation, or with another Commonwealth Department or agency, where this serves the Commonwealth's legitimate interests;
- f. is disclosed to the ARC's personnel to enable effective management or auditing of the *LIEF* scheme or any Funding Agreement; or
- g. is in the public domain otherwise than due to a breach by the ARC of any obligation of confidence.

- A5.2 Where information contained in a Proposal is made available to third parties for evaluation or assessment purposes the ARC will require the third parties to maintain the confidentiality of the material.

- A5.3 Notwithstanding the above, and in addition to the exemptions listed at Appendix A subsection A5.1, the ARC may publicise and report offers or awards of funding, including information about the proposed research; the name of the investigators nominated in funded *LIEF* Proposals and their organisations; the name of the Administering Organisation and any other parties involved in or associated with the project; the title and summary descriptions of the project and its intended outcomes (including the national/community benefits that are expected to arise from the research); and the level and nature of financial assistance from the ARC. Administering Organisations should ensure that information contained in

the project title and summaries would not, if released, compromise their own requirements for confidentiality (such as future protection of intellectual property).

A6 Project description

In making public information about a Proposal which has been approved for funding, the ARC may use a project description, including title and summary, which may differ from that provided in the Proposal.

A7 Intellectual property

A7.1 The ARC does not claim ownership of any intellectual property in a Proposal or which is created or developed from the conduct of a project funded under *LIEF* scheme.

A7.2 However, all Proposals become the property of the ARC on submission. Administering Organisations submit their Proposals on the basis that the ARC may copy, modify and otherwise deal with information contained in a Proposal (and allow any external assessor or other third party to do the same) for any purpose related to:

- a. the evaluation and assessment of Proposals;
- b. verifying the accuracy, consistency and adequacy of information contained in a Proposal, or otherwise provided to the ARC;
- c. the preparation and management of any Funding Agreement; or
- d. the administration or management of the NCGP.

A7.3 If a Proposal contains information belonging to a third party, the Administering Organisation must ensure that it has in place all necessary consents to allow the ARC to deal with that information in accordance with these Funding Rules, prior to the Administering Organisation submitting its Proposal.

A7.4 Except with written approval from the ARC, all Proposals and ARC-funded research projects must comply with the *National Principles of Intellectual Property Management for Publicly Funded Research* (available on the ARC Web Site) and accord with any intellectual property policies of the researcher's organisations.

A8 Incomplete or misleading information

A8.1 It is a serious offence to provide false or misleading information to the Commonwealth.

A8.2 If the ARC considers that a Proposal is incomplete, inaccurate or contains false or misleading information, the ARC may in its absolute discretion decide to recommend that the Proposal not be approved for funding.

A8.3 If an Administering Organisation and/or the researcher nominated in a Proposal has provided the ARC with incomplete, inaccurate or misleading information in relation to any Proposal for, or in the provision of advice relating to, or reporting of progress of, a project funded by the Commonwealth, the ARC may in its absolute discretion decide to recommend that the Proposal not be approved for funding and/or terminate projects involving that organisation/person if funded and require the Administering Organisation to repay some or all of the funding.

- A8.4 If the ARC considers that omissions, or inclusion of misleading information, are intentional, or if there is evidence of misconduct, the ARC may refer the matter for investigation with a view to prosecution under Commonwealth criminal law. The Commonwealth is committed to protecting its revenue, expenditure and property from any attempt, by members of the public, contractors, sub-contractors, agents, intermediaries or its own employees, to gain financial or other benefits by deceit.
- A8.5 Examples of misleading information and misconduct are, but are not restricted to:
- a. providing fictitious track records;
 - b. making false claims in publications records (such as describing a paper as accepted for publication when it has only been submitted);
or
 - c. failing to disclose to the ARC the existence, and nature, of actual or potential Conflicts of Interest of any of the parties involved in the Proposal/project (such as any affiliations or financial interest in any organisation that has a direct interest in the matter or outputs of the project).

A9 Insurance and liabilities

Administering Organisations are subject to the liability, indemnity and insurance provisions of the Funding Agreement.

Appendix B – Administration of funding

B1 Funding Agreement

- B1.1 All parties involved in a Proposal should familiarise themselves with the standard Funding Agreement, but only the Administering Organisation and the ARC will be parties to the Funding Agreement. Parties involved in a funded project must accept the terms of the Funding Agreement and the Administering Organisation must sign the Funding Agreement before the ARC will commence payments.
- B1.2 Projects must commence as required by the Funding Agreement. Failure to do so may result in termination of the Funding Agreement.
- B1.3 Administering Organisations should note that the Funding Agreement covers the post-award management, including reporting requirements and financial management. The standard Funding Agreement can be viewed on the ARC Web Site.

B2 Varying the Funding Agreement

- B2.1 Requests to vary the Funding Agreement must be forwarded in writing by the Administering Organisation's Research Office to the *LIEF* Coordinator. Forms are available on the ARC Web Site. Amendment of any clauses of the Funding Agreement will be at the ARC's absolute discretion.
- B2.2 If a Proposal has been approved for funding by the Minister and any or all of the CIs are at any time during the project no longer able to work as proposed on the project, the project may be continued with a replacement CI(s) provided that:
- a. approval is obtained from the Minister for the change in CI;
 - b. the researcher nominated as a replacement CI:
 - i. takes significant intellectual responsibility for the proposed project;
 - ii. makes any strategic decisions called for in the pursuit of the project and the communication of results;
 - iii. has the capacity to make a serious commitment to the project and has a demonstrable need for access to the proposed infrastructure, equipment and facilities to undertake high quality research; and
 - iv. (where the replacement CI is to be the Project Leader), the replacement CI has a demonstrated capacity and intends to manage the purchase, upgrading, construction, transportation, installation and maintenance of and/or access to the research infrastructure, equipment and/or facilities.

Note: The ARC reserves the right to determine whether a person has the requisite capacity to perform the role.
 - c. she/he resides predominantly in Australia for the full term of her/his participation in the project. If the person does not have permanent resident status she/he must obtain temporary or permanent resident status from the Department of Immigration and Citizenship before she/he may commence on the project;

- d. she/he has fulfilled all obligations regarding previously funded projects involving the nominated replacement CI to the satisfaction of the ARC;
- e. she/he is:
 - i.. an employee of an Eligible Organisation listed in Appendix C subsections C1 or C2 for at least for at least a Full Time Equivalent of 50 per cent of Full Time;
 - ii. be a holder of an Emeritus, Adjunct or equivalent appointment at an Eligible Organisation listed in Appendix C subsections C1 or C2 who does not have a substantive position or paid appointment elsewhere;
 - iii. a Federation Fellow;
 - iv. an Australian Laureate Fellow at an Eligible Organisation listed in Appendix C subsections C1 or C2; or
 - v. in conformity with one of the above criteria in Appendix B1.2.2.e or is a member or officeholder of the Peak Body if the Administering Organisation is a Peak Body.
- f. nominated replacement CIs are intended to be significant and regular users of the proposed infrastructure, equipment and facilities. Regardless of whether they satisfy subsections B2.2 a. to e. above, nominated replacement CIs are not eligible to be CIs if they are only to be casual, intermittent and/or occasional users of the proposed infrastructure, equipment and facilities.

B2.3 If a Proposal has been approved for funding and any or all PIs are at any time during the project no longer able to work as proposed on the project, the project may be continued with a replacement PI(s) provided that:

- a. approval is obtained from the Minister for the change in PI; and
- b. the replacement PI:
 - i. meets the eligibility criteria specified in subsections 8.3.b and 8.3.c at the time of her/his nomination and for the full term of her/his participation in the project;
 - ii is not to be only a user of the infrastructure, equipment and facilities; and
 - iii. does not meet the eligibility criteria specified in Appendix B1.2.2.e for a replacement CI.

B3 Varying the funding approval

B3.1 Requests to vary the funding approval must be forwarded in writing by the Administering Organisation's Research Office to the *LIEF* Coordinator.

B3.2 The funding approval may be varied in regard to the name and title of person leading the research program, the description of the research program, the amount of financial assistance, the period of financial assistance, and/or the name of the organisation receiving financial assistance.

B1.3.3 The Minister may vary the funding approval if:

- a. the person leading the project changes;

- b. any of the organisations involved in the project end, or substantially change, their involvement with the project;
- c. the research project changes so that it is no longer consistent with the description in the funding approval as previously approved or as otherwise varied;
- d. the desirable period of funding for a project is not consistent with the period in the funding approval as previously approved or as otherwise varied; or
- e. the ARC considers and recommends that the particular circumstances of the project warrant variation of the funding approval, providing such variation is reasonably justified upon the facts of the case and any variation or change to the project accords with the *LIEF* scheme objectives.

B4 Reports

Administering Organisations are required to submit reports to the ARC concerning funded projects, in the format and by the due dates detailed in the Funding Agreement.

Appendix C – Eligible Organisations

C1 Higher education organisations eligible to submit Proposals

New South Wales

Charles Sturt University
Macquarie University
Southern Cross University
The University of New England
The University of New South Wales
The University of Newcastle
The University of Sydney
University of Technology, Sydney
University of Western Sydney
University of Wollongong

Victoria

Deakin University
La Trobe University
Melbourne College of Divinity
Monash University
Royal Melbourne Institute of Technology (RMIT University)
Swinburne University of Technology
The University of Melbourne
University of Ballarat
Victoria University

Queensland

Bond University
Central Queensland University
Griffith University
James Cook University
Queensland University of Technology
The University of Queensland
The University of the Sunshine Coast
University of Southern Queensland

Western Australia

Curtin University of Technology
Edith Cowan University
Murdoch University
The University of Notre Dame Australia
The University of Western Australia

South Australia

Flinders University
The University of Adelaide
University of South Australia

Tasmania

University of Tasmania

Northern Territory
Charles Darwin University
Batchelor Institute of Indigenous Tertiary Education

Australian Capital Territory
The Australian National University
University of Canberra

Multi-State
Australian Catholic University

C2 Other organisations eligible to submit Proposals

- a. Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS)
- b. Museums and herbaria which are Australian publicly funded organisations not directly funded to carry out research, but with research-related purposes and objectives

C3 Peak Bodies

Proposals submitted by Peak Bodies must contain a request for funding which is only for subscriptions or other payments in respect of participation in and use of international research facilities (including international facilities located within Australia). If a Peak Body submits such a Proposal, the Proposal must identify at least one Collaborating Organisation from the list of Eligible Organisations in Appendix C1 or C2.

Appendix D – Contributions by organisations

1. Subject to Sections 6.4, 6.5 and 6.7, *LIEF* may fund up to 75% of the total direct cost of the purchase, upgrading, construction, transportation and installation of and/or accessing the infrastructure, equipment or facility for which funding is being requested. The cost of creating, purchasing and/or accessing infrastructure, equipment or facilities must be justified in the Proposal.
2. The Proposal must specify cash and/or in-kind contributions by the Administering Organisation and, where such other organisations are nominated in a Proposal, by each of the Collaborating Organisations and Partner Organisations.
3. Cash contributions from Collaborating Organisations and Partner Organisations must be paid to the Administering Organisation by 30 October 2010, unless otherwise approved by the ARC.
4. Only costs directly relevant to the proposed project are taken into account as eligible contributions. The contributions from each of the Administering, Collaborating and/or Partner Organisations must be specific to the project and, in the case of Collaborating and Partner Organisations, not part of a broader contribution to an Eligible Organisation.
5. The ARC may examine the proposed level of an organisation's cash and in-kind financial support carefully and may, in its absolute discretion, make any adjustments it considers appropriate to reflect what it considers to be the true value of the contribution. The ARC reserves the right to determine the levels of Administering, Collaborating and Partner Organisation contributions which are taken into account as eligible contributions and may determine contributions to be at levels which may differ from those submitted in a Proposal.
6. Salaries of support or academic staff and the cost of buildings or other infrastructure may not be counted as cash contributions. Such items may be included only as in-kind contributions.
7. If applicable, supplier discounts on infrastructure, equipment or facilities must be detailed in the Proposal. Supplier discounts may not be identified as cash or in-kind contributions.
8. If a vendor or supplier of an item of equipment, infrastructure or facility which is the subject of the Proposal is nominated as a Partner Organisation in the Proposal, the cash contribution of that Partner Organisation will be considered as a discount towards the infrastructure, equipment or facility, unless otherwise approved by the ARC upon the provision of sufficient justification.
9. The Minister may approve a lesser amount of funding than that sought by an Administering Organisation. In such cases, unless otherwise approved by the ARC upon the provision of sufficient justification, the Administering Organisation and each Collaborating Organisation are nonetheless required to contribute at least pro rata to the project at the rate identified in the Proposal, irrespective of where those items are to be located. If the Administering

Organisation or any Collaborating Organisation fails to make its required contribution, the ARC may recover all or part of the funding provided to the Administering Organisation.

10. The ARC will not duplicate financial assistance for research infrastructure, equipment and facilities or research already funded by the Commonwealth or which is likely to be funded from other Commonwealth funding sources including under other ARC funding schemes (Section 9.2.1). Accordingly no part of the cash contributions by organisations for infrastructure, equipment and facilities requested under *LIEF* can be from Commonwealth financial assistance funded or likely to be funded for the same infrastructure, equipment and facilities.

Appendix E – National Research Priorities and associated Priority Goals

Research Priority 1: An Environmentally Sustainable Australia

Transforming the way we utilise our land, water, mineral and energy resources through a better understanding of human and environmental systems and the use of new technologies.

Natural resources have traditionally fuelled our national and regional economies. They have the potential to generate further wealth and employment opportunities in the future. But our natural resources and biodiversity must be used on a sustainable basis so that the benefits continue to be enjoyed by future generations.

Australia faces significant environmental challenges:

- Efficient and sustainable water use is a critically important issue for our economic and social development;
- Significant land degradation issues, such as salinity, need to be arrested to underpin our agricultural production systems;
- Climate change can be expected to have complex, long-term consequences for the environment, for our agricultural and marine production systems and for communities; and
- The cleanliness and efficiency of our energy production systems should be enhanced.

There is substantial effort underway to develop more efficient water utilisation practices, to protect our rivers and groundwater resources, and to protect and remediate our fragile soils.

Our agricultural and mining industries are being transformed through the adoption of new technologies, and the development of new types of foods.

This will help to revitalise our regional communities and generate substantial export earnings for the nation over the coming decades.

Australia is well placed to take an international lead in developing new and improved energy technologies and in capturing and ‘sequestering’ carbon dioxide.

Other opportunities lie in managing and using our unique, rich land- and marine-based biodiversity, and in developing our deep earth resources.

Australia has a strong record of achievement in research in fields in the natural sciences, such as agriculture, natural resource management, climate change, horticulture, forestry, mining, energy, and marine sciences, as well as in the social sciences and humanities.

We must build on these strengths to improve our competitive advantages while enhancing our understanding of natural systems and the interplay of human activities. In particular, there needs to be an increased understanding of the contributions of human behaviour to environmental and climate change, and on appropriate adaptive responses and strategies.

To understand and manage these complex interactions better will require significant collaboration within the research community and with other stakeholders.

Priority goals for research fall in the seven areas of water utilisation, transforming resource-based industries, overcoming land degradation, developing cleaner, more efficient fuels and energy sources, managing biodiversity, deep earth resources and responding to climate change and variability.

Priority Goals

- **Water – a critical resource**

Sustainable ways of improving water productivity, using less water in agriculture and other industries, providing increased protection of rivers and groundwater and the re-use of urban and industrial waste waters.

Australia is one of the driest continents and is dependent upon access to freshwater supplies for economic and social development. It has a complex geological structure, a highly variable climate, unique ecosystems, flora and fauna and a distinctive indigenous and settler history. Enhancing our understanding of the links between these factors and water availability will result in a better understanding of sustainable water management practices.

- **Transforming existing industries**

New technologies for resource-based industries to deliver substantial increases in national wealth while minimising environmental impacts on land and sea.

Resource-based industries underpin much of Australia's prosperity and have the potential to do so in the future. For example, Australia remains highly prospective for minerals discoveries and highly attractive for the development of new era foods from agricultural and marine sources. Our competitive advantage and national well being will depend on research and on the development and adoption of new technologies.

- **Overcoming soil loss, salinity and acidity**

Identifying causes and solutions to land degradation using a multidisciplinary approach to restore land surfaces.

The Australian landscape is fragile: soil salinity, acidity, and nutrient levels pose significant, long term challenges for agriculture and the environment. Research is helping to find solutions to these problems. For example, the National Land and Water Resources Audit shows the extent of salinity, soil erosion and soil acidification in the Australian environment and illustrates Australia's leading edge in national mapping of critical resource data. Further multidisciplinary effort is required to develop sustainable land management practices that are appropriate for Australian conditions and mitigate major land degradation processes and increase biodiversity.

- **Reducing and capturing emissions in transport and energy generation**

Alternative transport technologies and clean combustion and efficient new power generation systems and capture and sequestration of carbon dioxide.

Australia is well positioned to produce world class solutions to reduce and capture greenhouse gas emissions. We are also well placed to develop alternative energy technologies and ecologically sustainable transport and power generation systems.

- **Sustainable use of Australia’s biodiversity**

Managing and protecting Australia’s terrestrial and marine biodiversity both for its own value and to develop long term use of ecosystem goods and services ranging from fisheries to ecotourism.

Australia has a unique and rich flora and fauna. Many of our complex ecosystems – on which our agricultural, fisheries and tourism industries depend - have adapted to events such as drought and fire, and have been shaped by indigenous and settler management practices. There is a need for a more comprehensive understanding of these natural systems and the interplay with human activities, and the effects of management and protection measures.

- **Developing deep earth resources**

Smart high-technology exploration methodologies, including imaging and mapping the deep earth and ocean floors, and novel efficient ways of commodity extraction and processing (examples include minerals, oil and gas) while minimising negative ecological and social impacts.

Many of Australia’s known mineral assets may be nearly exhausted within the next decade. New land-based deposits are believed to be buried deeper in the crust and the deep marine areas surrounding Australia are also largely unexplored. New technologies, such as remote sensing, indicate scientists are on the brink of being able to ‘see’ inside the earth and identify deeply buried deposits.

- **Responding to climate change and variability**

Increasing our understanding of the impact of climate change and variability at the regional level across Australia, and addressing the consequences of these factors on the environment and on communities.

Australia already has a highly variable climate, and climate change can be expected to have further significant impacts. It is important to enhance our understanding of the consequences of climate change and variability at the regional level across Australia, and the implications for the environment and for communities. It is also important to explore beneficial adaptation strategies to climate change and variability to ensure ongoing social, economic and environmental well being.

Research Priority 2: Promoting and Maintaining Good Health

Promoting good health and well being for all Australians

Average life expectancies have increased markedly in recent decades. Australians also expect to lead longer and healthier lives in the future, and to remain productive and independent over an extended period.

Enabling individuals and families to make choices that lead to healthy, productive and fulfilling lives will yield economic and social benefits and add materially to national well being.

Australians expect that their children and grandchildren should have a healthy start to life.

Developing strategies to promote the healthy development of young Australians, and addressing the causes and reducing the impact of the genetic, social and environmental factors which diminish their life potential will be critical.

A revolution is also underway at the other end of the life cycle. Australia, like many other developed nations, is undergoing a major demographic shift involving significant growth in the aged population.

To meet this challenge, it will be important to promote healthy ageing by developing better social and medical strategies to ensure that older Australians enjoy healthy and productive lives.

Informed insights into the causes of disease and of mental and physical degeneration will contribute to the achievement of this goal.

All Australians stand to benefit from preventive healthcare through the adoption of healthier attitudes, habits and lifestyles.

Evidence-based preventive interventions may help reduce the incidence and severity of many diseases, including major health problems such as cardiovascular and neurodegenerative diseases, mental ill-health, obesity, diabetes, asthma and chronic inflammatory conditions. These could include interventions that reduce exposure to contamination of the physical environment (eg air pollution).

Improvements in the health and well being of the young, of older Australians and in preventive healthcare will be underpinned by research.

However, while Australia has an enviable record in health and medical research, the research effort is spread across the many universities, hospitals and health and medical research institutes, resulting in critical mass only in limited areas of research.

There is also a need to draw on multidisciplinary approaches that include research contributions from the social sciences and humanities.

This priority is designed to promote health and prevent disease through a more focused and collaborative effort.

Priority goals for research fall in the four areas of a healthy start to life, ageing well, ageing productively, preventive healthcare and strengthening Australia's social and economic fabric.

Priority Goals

- **A healthy start to life**

Counteracting the impact of genetic, social and environmental factors which predispose infants and children to ill health and reduce their well being and life potential.

Human health in the developing foetus and in early childhood is critical to the future well being of the adult. Research shows that health and well being in early childhood is predictive of later positive outcomes, and that health in middle and late childhood is also crucial.

- **Ageing well, ageing productively**

Developing better social, medical and population health strategies to improve the mental and physical capacities of ageing people.

Australia's population is ageing, with a significant projected increase in the number of people aged over 65 and over 85. While Australia is relatively well-placed compared with many OECD nations, major shifts in cultural expectations and attitudes about ageing are necessary to respond constructively, at both an individual and population level. A healthy aged population will contribute actively to the life of the nation through participation in the labour market or through voluntary work.

- **Preventive healthcare**

New ethical, evidence-based strategies to promote health and prevent disease through the adoption of healthier lifestyles and diet, and the development of health-promoting products.

Preventive healthcare research will improve the prediction and prevention of disease and injury for all Australians through the adoption of healthier behaviours, lifestyles and environments. Research will generate an improvement in the design, delivery and uptake of programmes such as exercise-based rehabilitation. There are several major disease targets amenable to immediate study, such as cardiovascular health, neurodegenerative diseases, mental ill-health, obesity, diabetes, asthma and chronic inflammatory conditions. Research on prevention will emphasise interdisciplinary approaches, including research on ethics, drawing on contributions from the social sciences and humanities, as well as from the health and medical sciences. It will also focus on developing new health promoting foods and nutraceuticals.

- **Strengthening Australia's social and economic fabric**

Understanding and strengthening key elements of Australia's social and economic fabric to help families and individuals live healthy, productive, and fulfilling lives.

Living in today's society involves a complex web of choices, yet many of the traditional support structures are weaker than they have been in the past. Enabling people to make choices that lead to positive pathways to self reliance and supportive family structures is more important than ever. The interactions between the social

safety net, social and economic participation, financial incentives and community and private sources of support are critical in helping people maximise their potential and achieve good, healthy, lifetime outcomes. In the decade ahead, it will be vital to understand and support the drivers for workforce participation and the broader social and economic trends influencing Australian families and communities. Research in this area will emphasise interdisciplinary approaches, drawing on contributions from the economic, behavioural and social sciences.

Research Priority 3: Frontier Technologies for Building and Transforming Australian Industries

Stimulating the growth of world-class Australian industries using innovative technologies developed from cutting-edge research.

Progress and wealth often derive from the unforeseen application of new discoveries. Australia must be at the leading edge if it is to stay abreast of international developments and take advantage of opportunities.

Our national capabilities in emerging sciences and their underpinning disciplines determine our capacity to develop and implement new technologies. Australia has a strong base of expertise, skills and technological capacities in the fundamental sciences and key technologies.

Our strengths are in a wide range of areas such as biotechnology, material sciences, information and communications technology (ICT), photonics, nanotechnology and sensor technology.

ICT is currently the critical enabling technology and is a major contributor to national productivity and growth.

But breakthrough science underpins technological advancements in many areas and Australia needs to foster an environment that stimulates creativity and innovation.

Applications for frontier technologies are potentially very large. Australia has the capacity to exploit niche markets for new products and services.

Australia also has an enviable track record as an innovator and developer of advanced materials and must grasp the opportunity to stay ahead.

Smart information use involving improved data management, intelligent transport systems and digital media to develop creative applications for digital technologies provides huge opportunities to improve the performance of key Australian industries.

Australia needs to invest in this research area as it is fundamental to our future competitiveness and well being.

This priority will help to strengthen the capacity of Australian researchers to participate in new areas of research, enhance Australia's international scientific reputation, stimulate local expertise, and help create vibrant new industries.

A better understanding of the conditions that are conducive to innovation will ensure that Australia's investment in research will maximise the benefits for Australia.

Enhanced research effort will also be achieved through initiatives that develop a critical mass of researchers in key areas.

Priority goals for research fall in the five areas of breakthrough science, frontier technologies, advanced materials, smart information use, and promoting an innovation culture and economy.

Priority Goals

- **Breakthrough science**

Better understanding of the fundamental processes that will advance knowledge and facilitate the development of technological innovations.

Breakthrough science underpins technological innovation across a range of industries critical to maintaining Australia's position as a developed country. Some examples include bio-, cultural- and geo-informatics, nano-assembly and quantum computing. Technological advances are often unexpected and a strong foundation in mathematics and the fundamental sciences will provide an environment that fosters creativity and innovation. Early participation in leading edge areas of research will enable Australian researchers to benefit more fully from international developments.

- **Frontier technologies**

Enhanced capacity in frontier technologies to power world-class industries of the future and build on Australia's strengths in research and innovation.

The potential applications of frontier technologies across a range of industries in Australia are vast. Australia has significant capacity to exploit niche markets for new products and services emerging from frontier technologies. Australia has world-class research expertise in many such areas. Some examples include nanotechnology, biotechnology, ICT, photonics, genomics and phenomics. Also important are advanced frameworks such as complex systems in which these technologies are applied. Future directions in this priority area need to target the cutting-edge science critical for each emerging technology.

- **Advanced materials**

Advanced materials for applications in construction, communications, transport, agriculture and medicine.

The development of advanced materials will underpin growth in many areas of industrial and economic activity in Australia. Australia has substantial infrastructure in this area and an enviable track record as an innovator and developer of advanced materials. The era of advanced materials is just beginning, in spite of the tremendous progress in recent years. Substantial scientific and technological challenges remain ahead, including the development of more sophisticated and specialised materials. Some examples include ceramics, organics, biomaterials, smart materials and fabrics, composites, polymers, and light metals.

- **Smart information use**

Improved data management for existing and new business applications and creative applications for digital technologies.

ICT applications are providing huge opportunities to deliver new systems, products, business solutions, and to make more efficient use of infrastructure. Examples include e-finance, multi-media, content generation and imaging. Improved data management is central to the future competitiveness of key industries such as agriculture, biotechnology, finance, banking, education, transport, government, and health and 'info-tainment'. The ability of organisations to operate virtually and collaborate across huge distances in Australia and internationally hinges on our capabilities in this area.

The media and creative industries are among the fastest growing sectors of the new economy. Research is needed to exploit the huge potential in the digital media industry.

- **Promoting an innovation culture and economy**

Maximising Australia's creative and technological capability by understanding the factors conducive to innovation and its acceptance.

Understanding the factors that lead to highly creative and innovative ideas and concepts, and the conditions that lead to their introduction, transfer and uptake is critical for any nation that aspires to lead the world in breakthrough science, frontier technologies, and in other forms of innovation. Promoting an innovation culture and economy requires research with a focus on developing and fostering human talent, societal and cultural values favourable to creativity and innovation, and structures and processes for encouraging and managing innovation.

Research Priority 4: Safeguarding Australia

Safeguarding Australia from terrorism, crime, invasive diseases and pests, strengthening our understanding of Australia's place in the region and the world, and securing our infrastructure, particularly with respect to our digital systems.

Australia has to be capable of anticipating and tackling critical threats to society, strategic areas of the national economy and the environment.

The threats can potentially come from within and outside Australia.

The world is now characterised by the widespread and rapid movements of people, digitally coded data, goods and services, and exotic biological agents.

Critical infrastructure in Australia is increasingly dependent on digital technology for its management and integration.

Information protection and the integrity of security systems are now more important than ever before.

It is also necessary to protect the status of Australia as a nation free of many of the diseases affecting primary production around the world.

Terrorism has emerged as a very real global threat and crime is taking a significant toll on Australian society and economy.

Maintaining the operational advantage of Australia's defence forces through superior capabilities is also fundamental to our national security.

Enhancing our nation's understanding of social, political and cultural issues will help Australia to engage with our neighbours and the wider global community and to respond to emerging issues.

Leading edge research in Australia is already yielding high dividends and as a national research priority will improve the effectiveness of that contribution.

Stronger research capabilities will ensure that solutions are tailored to Australia's unique circumstances, reflecting its geographic features and small population.

Greater collaboration within the research community and with other stakeholders will allow us to better understand and manage potential threats to Australia.

Harnessing the knowledge and capabilities across Australia offers us the best chance of developing innovative and rapid solutions to serious threats.

Australia's international relations and its regional influence will be strengthened through new collaborative approaches and new science and technologies that enhance security and safety.

The heightened interest in personal and electronic security across the world also provides opportunities for Australian solutions.

Priority goals for research fall in the five areas of critical infrastructure, understanding our region and the world, protecting Australia from invasive diseases and pests, protecting Australia from terrorism and crime, and transformational defence Technologies

Priority goals

- **Critical infrastructure**

Protecting Australia's critical infrastructure including our financial, energy, communications, and transport systems.

Protecting our critical infrastructure is important to national security and to the social and economic well being of Australia. An important aspect of this priority goal is e-security which is an enabler of e-commerce. Maintaining a critical mass of research in e-security will be essential in providing Australia with the tools to protect our way of life.

- **Understanding our region and the world**

Enhancing Australia's capacity to interpret and engage with its regional and global environment through a greater understanding of languages, societies, politics and cultures.

Social, cultural and religious issues are of growing significance due to the insecurities of globalisation and the increasing role of non-state players in the security environment. Australia's capacity to interpret and engage with its regional and global environment will be substantially improved by enhancing its research base in apposite languages, societies and cultures. An approach that enhances Australia's capacity to interpret itself to the rest of the world is also needed.

- **Protecting Australia from invasive diseases and pests**

Counteract the impact of invasive species through the application of new technologies and by integrating approaches across agencies and jurisdictions.

Australia is free of many of the pests and diseases affecting primary production around the world. This status needs to be protected as the introduction of exotic species has the potential to adversely affect our exports and the environment. Australia already has strong skills and expertise in this area of research and further work will offer immediate benefits to the community. A greater level of coordination of our research effort will mean that Australia can more effectively develop innovative and rapid solutions to serious threats.

- **Protecting Australia from terrorism and crime**

By promoting a healthy and diverse research and development system that anticipates threats and supports core competencies in modern and rapid identification techniques.

This threat requires a more sophisticated response which should harness Australia's research capabilities, and which will focus on all phases of counter-terrorism; prevention, preparedness, detection, response and recovery. Crime takes a significant toll on Australian society and economy. Personal identification, information protection and the integrity of security systems are fundamental towards ensuring the

national security of Australia. An effective solution will include building on Australia's existing strengths in rapid detection using new analytical technologies and managing significant data collections.

- **Transformational defence technologies**

Transform military operations for the defence of Australia by providing superior technologies, better information and improved ways of operation.

Australia has a small defence force to protect a large continent and a substantial maritime region of responsibility. Its operational advantage has been maintained through a superior capability which is dependent on leveraging innovative technologies. Although some benefits can be gained from overseas research, Australia has to conduct its own research to address uniquely Australian demands. A systems approach which harnesses the research capabilities of all stakeholders is essential to the successful development and introduction of innovative technologies.