



# LINKAGE-PROJECTS

**Funding Rules**  
for funding commencing in  
**2004**

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# Acronyms

The following acronyms are used in these Funding Rules.

<b>APAI</b>	Australian Postgraduate Award Industry
<b>APDI</b>	Australian Postdoctoral Fellowship Industry
<b>ARC</b>	Australian Research Council
<b>CI</b>	Chief Investigator
<b>EAC</b>	Expert Advisory Committee
<b>GAMS</b>	Grant Application Management System
<b>HECS</b>	Higher Education Contribution Scheme
<b>IPP</b>	Information Privacy Principle
<b>LIF</b>	Linkage Industry Fellow
<b>NHMRC</b>	National Health and Medical Research Council
<b>PI</b>	Partner Investigator
<b>SPIRT</b>	Strategic Partnerships with Industry–Research and Training

## Ethics

NOTE: All research proposals should conform to the principles outlined in the Joint NHMRC/AVCC Statement and Guidelines on Research Practice (1997) ([www.nhmrc.gov.au/issues/researchethics.htm](http://www.nhmrc.gov.au/issues/researchethics.htm)). Proposed research involving humans should conform to the principles outlined in the NHMRC's National Statement on Ethical Conduct in Research Involving Humans ([www.nhmrc.gov.au/publications/synopses/e35syn.htm](http://www.nhmrc.gov.au/publications/synopses/e35syn.htm)). Proposed research involving animals should conform to the principles outlined in the NHMRC's codes on animal research ([www.nhmrc.gov.au/issues/animalethics.htm](http://www.nhmrc.gov.au/issues/animalethics.htm)).

# Australian Research Council

## Linkage–Projects

### Funding Rules for Funding Commencing in 2004

#### 1. Introduction

This document sets out the funding rules (the Funding Rules) under the *Australian Research Council Act 2001* (the ARC Act) for Linkage–Projects which is part of the Australian Research Council’s National Competitive Grants Program (NCGP). The NCGP comprises two elements, Discovery and Linkage.

Linkage–Projects is an application-based program available for individual researchers or research teams.

These Funding Rules are written on the basis that it is the researcher who is the applicant. However, Linkage-Projects grants from the ARC are made to eligible Higher Education Institutions (Appendix 1), not to individual researchers.

#### 2. Objectives

Linkage–Projects aims to —

- encourage and develop long-term strategic research alliances between higher education institutions and industry in order to apply advanced knowledge to problems and/or to provide opportunities to obtain national economic, social or cultural benefits
- support collaborative research on issues of benefit to regional and rural communities
- enhance the scale and focus of research in Designated National Research Priorities (Section 3.2 and Appendix 6)
- foster opportunities for postdoctoral researchers to pursue internationally competitive research in collaboration with industry, targeting those who have demonstrated a clear commitment to high-quality research
- provide industry-oriented research training to prepare high-calibre postgraduate research students
- produce a national pool of world-class researchers to meet the needs of Australian industry.

#### 3. Description

Linkage–Projects supports research and development projects which are collaborative between higher education researchers and industry, which are undertaken to acquire new knowledge, and which involve risk or innovation. The following project costs are supported under Linkage–Projects —

a) Personnel, including

- Research Associates, technicians, laboratory attendants, and so on
- Australian Postgraduate Awards Industry (APAI) for postgraduate research students studying towards a Masters or PhD award (see Appendix 3 for APAI entitlements)

- Australian Postdoctoral Fellowships Industry (APDI) for researchers with less than three years' postdoctoral experience (see Appendix 4 for entitlements)
- Linkage Industry Fellowships - support for costs associated with short-term transfers for Chief Investigators or some Partner Investigators between eligible higher education institutions and Industry, where, in the opinion of the ARC, an outstanding case is made (see Section 5.3).
- Teaching relief for Chief Investigators, but only where the request is justified to the satisfaction of the ARC (see Section 5.5)

b) Equipment

c) Maintenance

d) Travel.

A proposal must contain a contribution from an eligible industry partner organization (an Industry Partner - see Appendix 2). Interaction with an Industry Partner is required for the whole period of the project. Applicants determine, in collaboration with the Industry Partner(s), which type of resources are appropriate and necessary for the project they wish to undertake. The contribution from the Industry Partner(s) must be specific to the project and must not be part of a broader contribution to the institution. Information for Industry Partner(s) and prospective applicants about the eligibility of Industry Partner(s) is set out in Appendix 2, together with information about an application, contributions and tax incentives.

### **3.1. Type of research supported**

The scope of Linkage-Projects is broad because it supports excellent research which includes—

- pure basic research which is experimental and theoretical work undertaken to acquire new knowledge without looking for long-term benefits other than the advancement of knowledge.
- strategic basic research which is experimental and theoretical work undertaken to acquire new knowledge directed into specified broad areas that are expected to lead to useful discoveries. It provides the broad base of knowledge necessary to solve recognised practical problems.
- applied research which is original work undertaken primarily to acquire new knowledge with a specific application in view. It is undertaken either to determine possible uses for the findings of basic research or to determine new ways of achieving some specific and predetermined objectives.

### **3.2. National Research Priorities**

The Minister for Education, Science and Training has designated the following areas as national research priorities for the 2004 funding rounds:

- Research Priority 1: An Environmentally Sustainable Australia
- Research Priority 2: Promoting and Maintaining Good Health
- Research Priority 3: Frontier Technologies for Building and Transforming Australian Industries
- Research Priority 4: Safeguarding Australia

These areas of research will be referred to as Designated National Research Priorities. Within each Research Priority are a number of Priority Goals which are listed below:

- Research Priority 1: An Environmentally Sustainable Australia - Priority Goals
  - PG 1. Water – a critical resource
  - PG 2. Transforming existing industries
  - PG 3. Overcoming soil loss, salinity and acidity
  - PG 4. Reducing and capturing emissions in transport and energy generation
  - PG 5. Sustainable use of Australia’s biodiversity
  - PG 6. Developing deep earth resources
- Research Priority 2: Promoting and Maintaining Good Health - Priority Goals
  - PG 1. A healthy start to life
  - PG 2. Ageing well, ageing productively
  - PG 3. Preventive healthcare
- Research Priority 3: Frontier Technologies for Building and Transforming Australian Industries - Priority Goals
  - PG 1. Breakthrough science
  - PG 2. Frontier technologies
  - PG 3. Advanced materials
  - PG 4. Smart information use
- Research Priority 4: Safeguarding Australia - Priority Goals
  - PG 1. Critical infrastructure
  - PG 2. Protecting Australia from invasive diseases and pests
  - PG 3. Protecting Australia from terrorism and crime
  - PG 4. Transformational defence technologies

Full descriptions of these Designated National Research Priorities and their associated Priority Goals can be found in Appendix 6, and on the ARC web site ([www.arc.gov.au](http://www.arc.gov.au)).

### **3.3. Changes from last year**

The major changes to these Funding Rules since last year are:

- Designated National Research Priorities and Priority Goals (Section 3.2 above and Appendix 6).
- Linkage Industry Fellowships (detailed in Section 5.3)
- Changes in Section 4.1 - Eligibility criteria for Chief Investigators, regarding conflict of interest, financial interests and positions held at Industry Partner organisations.
- Changes in Section 4.3 - Eligibility criteria for APDI, to clarify that an APDI applicant should be early in their research career.
- Removal of specific reference to APAI-only applications (Section 8), and consequent alterations to selection criteria (Section 8.1) and selection procedures (Section 8.2). Note that APAI-only applications are still welcome, but these Funding Rules no longer distinguish them as a separate category within Linkage–Projects. The ARC expects that statistics regarding APAI-only applications and funded grants will still be made available.

- Re-wording in Section 6, particularly regarding cross-scheme funding for ARC Centres (Section 6.2), and NHMRC overlap (Section 6.4).
- Deletion of former sections 8.3.2 (Ownership of assets) and 8.3.3 (Commencement of projects) as they unnecessarily duplicate material in the Funding Contract.
- Replacement of the former appendix containing Information Privacy Principles (IPPs) by Section 10.2.

A number of minor formatting and style changes have also been made. Applicants should read and understand the entire Funding Rules and draft Funding Contract before submitting an application to the ARC.

## 4. Eligibility

There are three applicant roles available under Linkage–Projects:

- Chief Investigator (CI)
- Partner Investigator (PI)
- Australian Postdoctoral Fellowship Industry (APDI)

The roles and eligibility requirements for each of these are described below. To be eligible for consideration, each application must have at least one Chief Investigator or APDI. Where a Linkage–Projects application requests support for an APAI, the application must have at least one Chief Investigator identified as supervisor for the student.

### 4.1. Eligibility criteria for Chief Investigators

To be eligible to apply as a Chief Investigator, the applicant must meet the following criteria-

- he/she must be an active researcher who takes intellectual responsibility for the project, its conception, any strategic decisions called for in its pursuit and for the communication of results. The applicant must have the capacity to make a serious commitment to the project and cannot assume the role of a supplier of resources for work that will largely be placed in other hands.
- he/she must reside predominantly in Australia for the full term of the grant. If the applicant does not have permanent resident status he/she must obtain temporary resident status from the Department of Immigration and Multicultural Affairs before taking up the grant.
- he/she must meet one of the following two criteria—
  - be an employee of, and derive at least 50% of his/her salary from, an eligible higher education institution (as listed in Appendix 1), or
  - be the holder of an adjunct appointment at an eligible higher education institution (as listed in Appendix 1) who does not have a substantive position or paid appointment elsewhere.
- his/her involvement in the project must not generate or represent a significant conflict of interest. At a minimum, this means that an applicant
  - must not have any direct or indirect financial interest in any of the proposed Industry Partner(s) for the project, and

- must not hold a position of Director, Board member, or other paid or unpaid senior management or advisory position in any of the proposed Industry Partner(s) for the project.

Exemptions may be obtained where the ARC considers that any financial interests or positions held by the Chief Investigator are such as would not be likely to affect, or be reasonably perceived to affect, the decisions and/or actions of the Chief Investigator in carrying out his/her responsibilities towards the Project. (Section 4.4.3).

- he/she must not receive any salary from the ARC for the project (subject to Section 5.3 concerning Linkage Industry Fellows).

Notwithstanding his/her eligibility under the criteria above, researchers in the following categories are not eligible to apply as a Chief Investigator–

- an undergraduate student or
- a postgraduate student (unless eligible to be a CI because of employment but only for research which lies outside the scope of the postgraduate studies).

Chief Investigators must have fulfilled to the satisfaction of the ARC all obligations from previous ARC grants (including final and progress reports).

## **4.2. Eligibility criteria for Partner Investigators**

Researchers who are not eligible to be Chief Investigators or APDIs but who are providing significant commitment, intellectual input and relevant expertise to the project can apply as Partner Investigators. To be eligible to apply as a Partner Investigator, a researcher must meet the following criteria –

- be ineligible to apply as a Chief Investigator.
- be employed by an organisation, other than those eligible higher education institutions listed at Appendix 1, such as Industry Partner organisations and organisations being funded for research from State or Commonwealth sources (such as CRCs and the CSIRO), other companies, industry peak bodies and overseas organisations.
- derive more than 50 percent of his/her salary from employment in the organisation.
- secure an appropriate contribution of time and operating costs from his/her organisation for the proposed project.
- not receive funding from the ARC for the project, unless approved to undertake a Linkage Industry Fellowship (see Section 5.3).

A Partner Investigator may act as a supervisor for an APAI in conjunction with a Chief Investigator in the application.

Partner Investigator and Chief Investigator roles are mutually exclusive. An individual cannot apply to have both roles on applications in the same round.

## **4.3. Eligibility criteria for APDI**

Applicants for an APDI Fellowship must satisfy all the criteria for a Chief Investigator (above) except for the requirement to be an employee of, and derive at least 50% of his/her salary from, an eligible higher education institution. They must also—

- be an early career researcher (with no more than three years postdoctoral equivalent research experience) who has been awarded a PhD not more than three years before the

close of applications for the relevant round, or has not yet submitted his/her PhD but will do so within six months after the close of applications in the relevant round (in which case the Fellowship cannot commence until the PhD has been awarded).

- If the PhD is not submitted within six months of the close of applications for the relevant round any offer of grant for a project involving the APDI award will be withdrawn.
- not have previously held an ARC Research Fellowship, and
- make a **full-time** commitment to the project.

The ARC regards an APDI as a prestigious award for early-career Chief Investigators. If the ARC considers the APDI applicant to be critical to the success of the project then, if the APDI applicant cannot take up the award, the entire project will be terminated.

Further information on entitlements for APDIs is set out in Appendix 4.

#### **4.4. Request for eligibility exemption**

If the candidate requires one or more of the following eligibility exemptions, a request must be lodged in writing, through the institution's Research Office, with the ARC Linkage-Projects Program Coordinator, at least six weeks before the close of applications for the relevant round. The ARC may, in its absolute discretion, extend the deadline for lodging eligibility exemptions. The eligibility exemption request must include a statement justifying the applicant's special circumstances for an eligibility exemption. The applicant will be advised of the decision as soon as possible to allow time for a detailed application to be completed.

If, after reading these Funding Rules, a researcher is unsure whether he/she is eligible to apply for an APDI, he/she must lodge a request for eligibility exemption through the institution's Research Office in accordance with the deadline above.

If an applicant requires an eligibility exemption and fails to meet the above deadline, his/her subsequent application will be deemed ineligible.

##### **4.4.1. APDI—Career interruption**

In some circumstances, an applicant who is seeking an APDI may not satisfy all the required eligibility criteria due to research career interruption. Research career interruptions could include, for example, non-research employment, misadventure, or carer responsibilities. If this is the case, an applicant may apply for an exemption from the eligibility criteria, through the Research Office, in accordance with the deadlines above. The ARC will make a final determination of the eligibility status of applicants.

##### **4.4.2. APDI—PhD**

Normally, a prerequisite for an APDI is that the applicant is an early career researcher with a recent PhD (as described in Section 4.3 above). Applicants who do not have a PhD or equivalent research doctorate must submit a request for eligibility exemption which provides evidence that their research has been recognised as equivalent to a PhD, and that they have no more than three years postdoctoral equivalent research experience.

##### **4.4.3. Interests of Chief Investigators**

Chief Investigator or APDI applicants may apply for an eligibility exemption from the requirement not to have any direct or indirect financial interest in, or position with, any of the proposed Industry Partner(s) for the project. Such exemptions may be given to Chief Investigator or APDI applicants where the ARC determines that their financial interest, or position held, is

not such as to affect, or be reasonably perceived to affect, the decisions and/or actions of the applicant in carrying out his/her responsibilities towards the Project.

In these cases, a request for exemption may be lodged, together with a statement detailing an applicant's financial interests or positions held, and justifying their special circumstances for an eligibility exemption. A request for eligibility exemption must be lodged in writing, through the institution's Research Office in accordance with the deadlines outlined above.

#### **4.5. Number of grants and applications**

The following limits apply to applications and grants awarded under the Linkage-Projects program:

- Chief Investigators and APDIs may participate in up to four concurrent Linkage-Projects which have funding for project costs (other than APAIs) and/or APDIs. This total includes any grants awarded under the former SPIRT Scheme. Chief Investigators may also participate on up to four concurrent Linkage-Projects which have funding for APAIs only.
- There is no limit on the number of concurrent Linkage-Projects grants which may be held by Partner Investigators.
- Except in the final year of their Fellowship, researchers who hold an APDI Fellowship may only apply for further support under Linkage-Projects providing the application is, in the opinion of the ARC, closely associated with their existing Fellowship project.

Applicants may apply for Linkage-Projects grants only to the extent that, if all were successful, they would not hold more than the maximum number of grants permitted in 2004. Submitting initial applications that contravene the above limits may result in the exclusion of all applications involving that researcher as a Chief Investigator/Partner Investigator/APDI.

Various components underpinning a project are to be framed in a single Linkage-Projects application. For example, separate applications cannot be submitted seeking project funding for APDIs and APAIs for essentially the same project. Only one Linkage-Projects application concerning a single project may be submitted in a round, regardless of any variation in the applicants or proposed administering institution.

Subject to the provisions of Section 8.2.6 concerning reconsideration of applications, a Linkage-Projects application for essentially the same project may not be submitted twice in consecutive rounds. However, if a Linkage-Projects application is found ineligible in a particular round, a similar application which meets eligibility requirements may be submitted in the following round.

Apart from the exceptions above, submitting similar or duplicate applications may result in the exclusion of all applications involving those applicants.

In all cases, the ARC reserves the right to determine whether applications are duplicates or sufficiently similar to warrant exclusion.

### **5. Funding**

Applicants will be able to apply in the first round in May 2003 for funding to commence in January 2004, or in the second round in November 2003 for funding to commence in July 2004. The ARC will allocate funds for commencing projects between the two rounds to take account of funds available, the demand to fund projects and the quality of applications.

## **5.1. Level of funding**

The minimum grant size is \$20,000 per annum and the maximum is \$500,000 per annum. Applicants must make a request of at least \$20,000 per year. The ARC reserves the right to determine the level and length of funding allocated to the project. The ARC will award few grants at the higher end of the funding spectrum and these will normally be awarded only for an application that involves a collaborating team of outstanding investigators.

The amount of Commonwealth funding being sought in a Linkage–Projects application will depend on the applicant’s capacity to obtain the required Industry Partner(s) contribution (refer to Appendix 2).

Applicants seeking an APDI under Linkage–Projects must include a request for a salary component in the budget. APDIs are awarded at levels outlined in Appendix 4.

The ARC will commit at least 20 percent of funding available under the Linkage–Projects in order to support collaborative research on issues of benefit to regional or rural communities. Linkage–Projects applications will be considered with regard to the nature of the research and to evidence of collaboration between the researcher(s) and the community.

## **5.2. Duration of funding**

Linkage–Projects grants may be awarded for one to five years, subject to parliamentary appropriation. APDIs have a standard duration of three years. The ARC may award APDIs with a duration of less than three years where the application provides reasons, to the satisfaction of the ARC, why an award of the APDI for a period of less than three years is justified. (Further details about the tenure of APDIs are provided in Appendix 4.)

Only a small number of five-year project grants will be made available and these are intended for researchers with sustained track records of successful research outcomes. ARC Expert Advisory Committees may recommend project grants for a duration different to that requested.

APAI stipends are awarded for a maximum period of three years with provision under certain conditions for an additional six months’ support from the Commonwealth for PhD students. Where an applicant seeks funding for less than the three-year maximum, including a Master’s degree, a successful applicant will be awarded a stipend only for the period sought without the opportunity to extend.

## **5.3. Linkage Industry Fellowships**

Linkage–Projects now offers some researchers the opportunity to request a Linkage Industry Fellowship, which provides support for costs involved in a temporary transfer from one of the eligible higher education institutions listed on an application to one of the Industry Partners on that application, or vice versa.

A Linkage Industry Fellowship may only be funded for a single period of between 3 and 12 months during the life of the proposed project, for an amount up to a maximum of \$100,000. An application may not request more than one Linkage Industry Fellowship. Only a limited number of Linkage Industry Fellowships will be made available, where, in the opinion of the ARC, an outstanding case is made for the fellowship. Only funds specifically approved for a Linkage Industry Fellowship may be used for that purpose.

To request a Linkage Industry Fellowship, an application must

- identify the proposed Linkage Industry Fellow, who must be
  - an eligible Chief Investigator on the application, or

- an eligible Partner Investigator on the application who is an employee of, and derives more than 50% of his/her salary from, one of the Industry Partners on the application.
- identify the amount of support requested for the Fellowship (not more than \$100,000) and the proposed duration and timing of the Fellowship (between 3 and 12 months), and detail how the support requested will be used.
- describe and justify the nature of the temporary transfer, which, except in exceptional circumstances, must include a single, continuous physical transfer of the Fellow for the duration of the Fellowship from one of the eligible higher education institutions listed on the application to one of the Industry Partners on the application, or vice versa. The ARC is prepared to be flexible in considering a range of transfer arrangements, as best benefits the proposed project and circumstances of the parties involved.
- make a case for the Fellowship in terms of the benefits to the project, and the contribution towards the objectives of Linkage–Projects.

Recommendations on the level of support for, and duration of, Linkage Industry Fellowships rest with the ARC’s Expert Advisory Committees, and they may recommend levels and durations which differ from those requested.

The Linkage-Projects ‘Instructions to Applicants’ provides more detailed information on how to request a Linkage Industry Fellowship within a Linkage-Projects application.

#### **5.4. Areas of investigation/work not supported**

Linkage–Projects does not support the following work —

- clinical medical and dental research and training, and public health research and training that are covered by the NHMRC
- activities leading solely to the creation or performance of a work of art, including visual art, musical compositions, drama, dance, designs and literary works, for which Commonwealth Government support is provided through the Australia Council for the Arts
- scholarly investigations that, while important in themselves, do not lead to conceptual advances or discoveries, or to novel practical outcomes or applications. Projects such as uncritical bibliographical compilations and purely descriptive catalogues or editions that do not involve original research are not funded
- projects where the Industry Partner(s) is seeking expert external assistance, not available within their own organisation(s), in order to develop specific applications involving little innovation or low risk, which the ARC deems to be contracted research or consultancies
- projects that, in the judgement of the ARC, do not significantly enhance links with industry
- additional funding of existing projects previously funded by the Commonwealth under an ARC scheme
- production of teaching materials, even though some research may be involved in their production
- compilation of data, unless it is an integral part of a project, in which case applicants must provide a statement indicating the research objectives to which the data would contribute

- development of research aids and tools (including databases and computer programs), unless they form an integral part of a project, in which case applicants must provide a statement indicating the research objectives to which these activities would contribute.

## **5.5. Budget items not supported**

Linkage–Projects does not support the following budget items—

### ***Costs of capital works and general infrastructure***

Capital works and general infrastructure costs are not considered as project costs to be funded from a project grant. They must not be included as the industry contribution.

### ***Salaries of Chief Investigators and Partner Investigators***

Apart from the possibility of support for costs associated with teaching relief (as described below), or a Linkage Industry Fellowship (Section 5.3 above), the Commonwealth will not provide support, in whole or in part, to meet the salaries of Chief Investigators or Partner Investigators under Linkage–Projects. Salary support may be requested for certain early career researchers who are eligible to apply for an APDI as a component of a Linkage–Projects grant.

Linkage–Projects funding is not usually provided for teaching relief for Chief Investigators. However, the ARC may consider a request for such funding, for a period of not more than six months per year, if the request is justified, to the satisfaction of the ARC, in terms of the achievement of a successful outcome for the project. If approved, the funding contribution is limited to a maximum rate of \$29,666 per six months, regardless of the level of appointment of the staff member. Only funds specifically approved for teaching relief may be used for that purpose.

### ***Special Studies Programs***

Funds are not provided for travel or other expenses for researchers when on a Special Studies Program. Travel to special facilities away from the base where a researcher is conducting his/her study is seen as part of the normal costs of a Special Studies Program. Only in cases considered by the ARC to be exceptional may such costs be supported within Linkage–Projects. Subsistence funds will be provided only if an investigator can show that living expenses are not covered by a Special Studies Program grant and that the research to be undertaken directly relates to the project.

### ***Research support for investigators not resident in Australia***

Funding will not be provided for research assistance to an overseas Partner Investigator.

### ***International students' fees and HECS liability***

Funds are not provided to pay the fees of international students or HECS liabilities for Australian students.

### ***Computer facilities for molecular analysis***

Applicants for projects involving molecular biology should be aware that the ARC supports the Australian National Genomic Information Service, which provides access to a range of databases and a large suite of analysis programs. As this service is available at modest cost, proposals seeking funding for computer facilities to undertake molecular analysis will have to justify such needs very thoroughly.

### ***Basic facilities***

Linkage–Projects will not fund basic facilities, resources and infrastructure such as

- accommodation (e.g. laboratory and office, suitably equipped and furnished in standard ways)

- access to workshop services (such as machine tools and qualified technicians available to each member of staff to enable them to carry out their research)
- access to a basic library collection
- adequate computing time (excluding access to high-performance computers)
- standard reference materials or funds for abstracting services
- basic computing, word processing and microfilm-reading facilities
- use of photocopiers, telephones, mail, fax, email and internet services

### ***Publication Costs***

Publication costs, including page costs, are not funded under Linkage–Projects.

## **6. Cross-program funding**

The ARC will not fund research already funded by the Commonwealth. The ARC reserves the right to determine if a proposed research project duplicates research already being funded.

### **6.1. Cross-scheme eligibility**

Applicants must list all existing research funding, and research funding being sought, from all sources.

If a funding request for all or any part of a project for which the applicant is seeking Linkage–Projects funding has been or is being submitted to any other funding source (including other ARC programs and other funding bodies) applicants must indicate the level of funding obtained, or being sought, from the other funding source.

Applicants applying for both an APDI and any other ARC Fellowship must cross-reference the applications. Only one grant can be accepted in the event that both applications are successful.

If the processes above are not observed, the Linkage–Projects application will be excluded. The ARC also reserves its rights to exclude any other application by the applicant to other ARC programs and to terminate any ARC funding arrangement currently in place with the applicant.

The ARC may liaise with other funding bodies to determine if there is any overlap between applications in order to avoid duplication of funding.

### **6.2. Researchers from ARC funded Centres**

The ARC will not further fund research already funded by the Commonwealth in an ARC Centre. However, any researcher associated with an ARC-funded centre, including the Director, is eligible to be a Chief Investigator so long as the following criteria are satisfied—

- The proposed research does not duplicate existing Commonwealth-funded research within the centre, as outlined in the Centre proposal and Centre annual reports. This must be certified by the Centre Director in a statement no longer than one page in length, which must accompany the application.
- As ARC Centre Directors are required by the Conditions of Grant for those Centres to undertake the function on a full-time basis they may apply for a Linkage–Projects grant only if the proposed research is related and complementary to the centre, but not funded by the Centre.
- The applicant meets all other Chief Investigator eligibility criteria.

### **6.3. Cooperative Research Centres (CRCs)**

The ARC will not fund projects already funded by a CRC, or which should reasonably be expected to be funded by a CRC given its core business. Researchers from CRCs may apply as Chief Investigators only if they meet all the eligibility criteria for Chief Investigators (including those concerning the holding of a position at an eligible higher education institution). All other researchers associated with a CRC, including the Centre Director, who do not satisfy the eligibility criteria for Chief Investigators, may apply as Partner Investigators providing they meet all the Partner Investigator eligibility criteria.

Applicants who have an association with a CRC must explain why the project falls outside the core business of the CRC and therefore should not be funded by the CRC. This must be certified by the Centre Director in a statement no longer than one page in length which must accompany the application.

The ARC reserves the right to make the final decision on whether a proposal is outside the core business of a CRC.

### **6.4. Funding under the ARC or the NHMRC**

As stated in Section 5.4, clinical medical and dental research and training, and public health research and training that are covered by the NHMRC will not be funded by the ARC. In some instances, it may not be clear whether an application is more appropriately considered by the ARC or the NHMRC. In these cases, the potential applicant should forward a two-page summary outlining the proposal, through the institution's research office, to the ARC Program Coordinator, at least six weeks before the close of applications for the relevant round. The ARC will use the summary to decide whether it will accept an application. Each potential applicant will be advised of the decision approximately two weeks after the due date for such requests.

If an application is received that has potential overlap with NHMRC and the above process has not been observed, the ARC will determine if it is the more appropriate granting agency. Applications that the ARC determines are more appropriate for the NHMRC will be ruled ineligible.

### **6.5. Funding under Linkage–Infrastructure (Equipment and Facilities)**

Linkage–Projects will not normally support a request for an item of equipment costing more than \$133,000. Linkage-Infrastructure (Equipment and Facilities) encourages institutions to develop collaborative arrangements across the higher education sector as a whole and with organisations outside the sector. These grants are intended primarily to support large-scale cooperative initiatives involving two or more institutions. Further information about Linkage-Infrastructure (Equipment and Facilities) can be found on the ARC web site ([www.arc.gov.au](http://www.arc.gov.au)).

## **7. Application process**

### **7.1. Applications**

As the application is the prime source of information available to the selection committee, applicants must submit their projects as mature research plans ready for implementation. The application must contain all the information necessary for assessment of the project without the need for further written or oral explanation, or reference to additional documentation, including the World Wide Web, unless requested by the ARC or its Expert Advisory Committees. All details in the application, particularly concerning any successful grants, must be current.

Applications must not be marked commercial-in-confidence as they cannot be assessed under the ARC procedures for peer assessment.

## **7.2. Certification**

It is the responsibility of the administering institution to obtain signatures of all participants named at Part B and Part F of the application form. These signatures are to be retained by the administering institution which must provide these certifications if requested. A pro forma is available for this purpose on the ARC web site ([www.arc.gov.au](http://www.arc.gov.au)).

## **7.3. Submission of applications**

Applications under Linkage–Projects consist of two parts—

- Application form to be completed in the ARC Grant Application Management System (GAMS)
- Additional text

### **7.3.1. Application format**

All documents must be written in English and must comply strictly with the format and submission requirements.

All pages should be in black type, use a single column and 12-point font size on white A4 paper, printed on one side only and unbound, with at least 2 cm margins on each side. As applications are scanned electronically, applicants must use a highly legible font type, such as Arial, Courier, Palatino, Times New Roman and Helvetica. Variants such as mathematical typesetting languages may also be used. References may be reproduced in 10-point font size. Colour graphs or colour photographs may be included but they will be reproduced in black and white.

The pages of the application should be numbered consecutively starting from page one.

### **7.3.2. Application form**

Applicants must use the application form produced by GAMS at the ARC web site ([www.arc.gov.au](http://www.arc.gov.au)).

Applicants should note that a separate document, Linkage–Projects Instructions to Applicants for Funding Commencing in 2004, is available from [www.arc.gov.au](http://www.arc.gov.au) to assist in preparing the GAMS application form.

Applicants must submit their applications through the Research Office by the university's internal closing date. University Research Offices have access to GAMS and will allocate GAMS UserIDs and passwords to enable applicants at their university to access the system and create application forms. If an applicant has previously been allocated access to GAMS, his/her UserID and password should still be current.

After preparation by the applicant, the University Research Offices must submit the application form in GAMS and forward the full paper application, to be received at the ARC before the closing date for the relevant round.

### **7.3.3. Number of copies**

An original and one identical paper copy only are required. The application must be clipped with NAL clips, not stapled. The application form should be submitted with the additional text, including supporting documentation, interleaved appropriately (see Linkage–Projects Instructions to Applicants for Funding Commencing in 2004).

### 7.3.4. Closing date for applications

The paper original and copy of applications for the first round of Linkage–Projects must be received by the ARC, and application forms completed in GAMS must be submitted to the ARC, by close of business 17:00 hrs (AEST) Friday 9 May 2003.

The paper original and copy of applications for the second round of Linkage–Projects must be received by the ARC, and application forms completed in GAMS must be submitted to the ARC, by close of business 17:00 hrs (AEDT) Friday 28 November 2003.

The ARC may, in its absolute discretion, extend closing dates for applications.

Applications may be withdrawn but may not be changed after submission. Additions, deletions and modifications will not be accepted after submission. The ARC will not accept applications that have not been submitted in GAMS or received by the ARC by the relevant closing date above.

Research Offices should send applications–

By mail to:	By courier to:
Program Coordinator (Linkage–Projects) Australian Research Council GPO Box 2702 CANBERRA ACT 2601	Program Coordinator (Linkage–Projects) Australian Research Council Geoscience Australia Building Cnr Jerrabomberra Avenue and Hindmarsh Drive SYMONSTON ACT 2609

### 7.3.5. Linkage–Projects calendar 2003

Month	Year	Event
28 March	2003	Due date for submission of eligibility exemption requests and summaries related to ARC/NHMRC overlap, round 1
<b>9 May</b>	<b>2003</b>	<b>Closing date for applications, Round 1</b>
August	2003	Expert Advisory Committee review applications, assessments and rejoinders, Round 1
17 October	2003	Due date for submission of eligibility exemption requests and summaries related to ARC/NHMRC overlap, round 2
<b>28 November</b>	<b>2003</b>	<b>Closing date for applications, Round 2</b>
April	2004	Expert Advisory Committee review applications, assessments and rejoinders, Round 2

## 8. Selection and approval process

### 8.1. Selection criteria

When the ARC is assessing applications for funding, it applies weightings to each selection criterion. Selection criteria and weightings under Linkage–Projects are detailed below.

#### *Investigator(s)*

- **Track record (20%)**
  - Track record relative to opportunities and/or suitability to supervise postgraduate students (as appropriate)

## ***Project Content***

- ***Significance and innovation (25%)***
  - does the research address an important problem?
  - how will the anticipated outcomes advance the knowledge base of the discipline?
  - is the research principally focussed upon a topic or outcome that falls within one of the Designated National Research Priorities and associated Priority Goals, and if so how does it address the Designated National Research Priorities and Priority Goals?
  - are the project aims and concepts novel and innovative?
  - will new methodologies or technologies be developed?
- ***Approach and Training (20%)***
  - are the conceptual framework, design, methods and analyses adequately developed, well integrated and appropriate to the aims of the project?
  - if the project involves an APAI, is the project suitable for research training?
  - is the intellectual content and scale of the work proposed appropriate to a research higher degree?
- ***National benefit (10%)***
  - what is the potential of the research project to result in economic and/or social benefits for Australia from the expected results and outcomes of the project?
  - what is the potential for the research to contribute to Designated National Research Priorities?
- ***Commitment from Industry Partner (25%)***
  - is there evidence that the Industry Partner is genuinely committed to, and prepared to collaborate in, the research project?

### **8.1.1. APDI(s)**

Assessment of fellowship applications is based on the excellence of the applicant's track record relative to opportunity and the excellence of the project. APDI applicants must also provide details, in the text of their application (at Section B10), of

- their contribution to the project, and
- the research environment of their host institution.

### **8.1.2. Projects that are of benefit to a rural or regional community**

The ARC will identify approximately 20 percent of available Linkage–Projects funding to support collaborative research on issues of benefit to rural or regional communities. Linkage–Projects applications will be considered with regard to the nature of the research and to evidence of collaboration between the researcher(s) and the community. This could, for example, take any of the following forms:

- the Industry Partner(s) is an organisation located, and/or operating, in a rural or regional community;
- the rural or regional community is involved in identifying the problem or issue to be addressed;
- the rural or regional community is involved in conducting the research;

- there is evidence of an existing relationship between the researchers and the community; and/or
- researchers with a strong track record are involved in conducting research of benefit to rural or regional community.

Applications with a demonstrated benefit to a rural or regional community not supported under the identified allocation will be assessed under the remaining Linkage–Projects allocation.

### **8.1.3. APAI in the fields of information technology and communications**

In 2004, the ARC will allocate at least 50 APAI places in the field of information technology and communications in addition to other APAI funding.

Where a Linkage–Projects application contains a request for an APAI that is clearly demonstrated as being primarily within the area of information technology and communications, the ARC will initially assess the APAI request against these 50 APAI places. Requests for APAIs not supported under these 50 places will also be assessed against all other Linkage–Projects applications.

## **8.2. Selection procedure**

Assessment of applications is undertaken by the ARC with the assistance of one or more of its Expert Advisory Committees (EACs), which have the right to make decisions and recommendations solely on the basis of their expertise, and which may:

- exclude ineligible applications
- assign assessors to review applications
- seek applicants’ comments on assessors’ reports
- rank each application relative to the others on the basis of the application and any assessors’ reports and applicant response to those assessments
- assess and recommend budgets
- prepare funding recommendations that are submitted to the ARC Board for endorsement and then to the Minister for Education, Science and Training for approval.

The ARC has procedures for declaring conflicts of interest and for members and assessors to withdraw from consideration of particular applications.

### **8.2.1. Exclusion**

Exclusion of ineligible applications by the ARC may take place at any time during the selection process. Every effort will be made to exclude ineligible applications and inform applicants early in the assessment process. Applications that contravene the Funding Rules in any way may be excluded. Grounds for exclusion include:

- failing to submit the application through the appropriate Research Office/Chief Executive Officer for certification
- not meeting the funding threshold when inappropriate budget items are removed
- Investigator not meeting the eligibility criteria for a Chief Investigator, Partner Investigator or APDI
- exceeding the limits on the number of applications permissible
- not following procedures for ARC/NHMRC overlap
- providing incomplete or misleading information

- designating all or any part of the application as ‘commercial-in-confidence’.

### **8.2.2. Assessment**

The ARC and its EACs may assess applications in different ways depending on the level and nature of support sought in the application. The ARC and EACs may assign a number of assessors who will be asked to read and rank assigned applications. Such assessors for each discipline grouping will be drawn from a range of institutions to avoid potential conflicts of interest. The ARC reserves the right to make decisions and recommendations based on any number of assessments or solely on the assessment of the EACs.

Applicants may name any person whom they do not wish to assess the application. Detailed written justification, which will be considered by the ARC, must be submitted through the institution’s research office, in a separate letter, which must not accompany the application. The letter must be received before the closing date for applications for the relevant round, and be sent to

Program Coordinator (Linkage–Projects)  
Australian Research Council  
GPO Box 2702  
CANBERRA ACT 2601

The ARC will consider the justification put forward by an applicant to exclude any person as an assessor. However, the ARC reserves to itself the discretion not to give effect to an applicant’s request.

### **8.2.3. Applicant rejoinder**

Where obtained, assessors’ comments will be provided to the applicant allowing the opportunity for a one-page rejoinder to the comments. Names of assessors are not provided to the applicant. At the same time, the EACs may add questions to the material sent to the applicants for rejoinder. A period of at least 7 working days will be notified to institutions research offices in which applicants will be able to submit a response to the ARC.

### **8.2.4. Recommendations**

The EACs rank each application relative to the others on the basis of the application, and assessors’ reports and the applicant’s rejoinders (where obtained). The EACs assess and recommend budgets. The EACs’ funding recommendations are submitted to the ARC Board.

### **8.2.5. Ministerial approval**

A recommendation from the ARC Board is sent to the Minister for consideration. The Minister determines which applications will be offered funding. The Minister’s decision is final (subject to an appeals process).

### **8.2.6. Reconsideration of Applications**

The ARC reserves the right to identify some eligible applications which are not offered funding as applications for reconsideration in the next Linkage–Projects round. Applicants will be informed of the status of any such application, and may withdraw the application from further consideration if they wish. An application reconsidered in the next round will be assessed against other reconsidered and new applications in that round. When assessing a reconsidered application, the ARC reserves the right to use existing assessor reports and applicant rejoinder (where obtained), and may also seek further assessments (and rejoinder).

### 8.3. Offer of grant

The successful administering institution will be notified in a letter of offer, that will indicate the funding to be provided and will include the Funding Contract.

A project may not begin, nor grant funds be expended before the Funding Contract is signed.

In addition, a project may not begin, nor grant funds be expended, until the administering institution and each collaborating institution have entered into a written agreement. The agreement must cover the role of the institutions in the project including—

- contributions by the institutions
- payment of stipends and supervision arrangements of APAIs
- payment of salaries for ARC Fellows
- intellectual property arrangements
- an undertaking by the institutions to abide by the Funding contract.

## 9. Appeals process

Appeals will be considered only against process issues and not against panel decisions or assessor ratings and comments. Appeals must be made on the appeals form available on the ARC website ([www.arc.gov.au](http://www.arc.gov.au)).

The form must be lodged through the institution's Research Office to, and be received **within 28 days** of the date on the letter notifying the outcome of applications by:

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

## 10. Grant administration

### 10.1. Funding Contract

Applicants should familiarise themselves with the Funding Contract. The successful applicants must accept the terms of the Funding Contract and the administering institution must sign the Funding contract before grant payments can be made.

Projects must commence as required by the Funding Contract. Failure to do so will result in termination of funding.

Administering organisations should note that the Funding Contract covers the post-award management including reporting requirements and financial management. The draft Funding Contract can be viewed on the ARC website ([www.arc.gov.au](http://www.arc.gov.au)).

#### 10.1.1. Varying the Funding Contract

Requests to vary the Funding Approval or the Funding Contract must be forwarded in writing by the institution's Research Office, or equivalent, to the ARC. The Funding Approval may be varied where any of the circumstances described in subsection 55(3) of the *Australian Research Council Act 2001* occurs namely:

- the organisation's involvement with the research program ends;

- the research program changes so that it is no longer consistent with the description in the Funding Approval;
- the person named in the funding approval as the person leading the research program ceases to lead the program.
- any other such circumstances as the ARC may, in its discretion, determine

### **10.1.2. Reports**

Administering organisations are required to submit both technical and financial reports concerning funded projects to the ARC on a regular basis, as detailed in the Funding Contract.

## **10.2. Privacy of individuals**

Whenever you provide personal information to the ARC it is handled and protected in accordance with the provisions of the *Privacy Act 1988* (the Privacy Act). The Privacy Act sets the minimum standards for the collection, storage, access, use and disclosure of personal information by the ARC.

Persons, bodies and organisations involved in the ARC Linkage–Projects Program must abide by the IPPs and the Privacy Act when handling personal information collected for the purposes of that program. In brief, persons, bodies and organisations must ensure that:

- personal information is collected in accordance with IPPs 1-3;
- suitable storage arrangements, including appropriate filing procedures are in place;
- suitable security arrangements exist for all records containing personal information;
- access to a person’s own personal information held by the organisation is made available to the person at no charge;
- records are accurate, up-to-date, complete and not misleading;
- where a record is found to be inaccurate, the correction is made;
- where a person requests that a record be amended because it is inaccurate but the record is found to be accurate, the details of the request for amendment are noted on the record;
- the personal information is only to be used for the purposes for which it was collected, or for other purposes where expressly allowed by IPP 10; and
- personal information is disclosed only in accordance with IPP 11.

While Privacy complaints can be made directly to the Privacy Commissioner, the Privacy Commissioner prefers that the ARC be given an opportunity to deal with the complaint in the first instance. You can contact the Privacy Commissioner on 1300 363 992.

## **10.3. Confidentiality**

Information contained in applications is regarded as confidential unless otherwise stated and, subject to the need to provide applications to assessors, and statutory requirements for the ARC to provide information to Parliament and other organisations, applications will be received and treated as confidential.

#### **10.4. Intellectual property**

Applicants must agree to comply with the National Principles of Intellectual Property Management for Publicly Funded Research (available at [www.arc.gov.au](http://www.arc.gov.au)) and act in accordance with any intellectual property policies of the applicant's institution.

#### **10.5. Incomplete or misleading information**

It is a serious offence to provide false or misleading information to the Commonwealth. If an application is incomplete or contains information that is considered misleading, it may be excluded from any further consideration for funding (see section 8.2.1).

If the ARC believes that omissions or inclusion of misleading information are intentional, or if there is evidence of malpractice, the ARC will refer the matter for investigation with a view to prosecution under Commonwealth criminal law. The Commonwealth Government 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.

Examples of malpractice include, but are not restricted to:

- providing fictitious track records; or
- falsifying claims in publications records (such as describing a paper as accepted for publication when it has only been submitted).

#### **10.6. Contact points**

For further information, the institution's Research Office should be contacted in the first instance.

Enquiries about Linkage–Projects may be addressed to

Program Coordinator (Linkage–Projects)  
Australian Research Council  
GPO Box 2702  
CANBERRA ACT 2601

Email	<a href="mailto:ncgp@arc.gov.au">ncgp@arc.gov.au</a>
Phone	02 6284 6600
Fax	02 6284 6638
Web address	<a href="http://www.arc.gov.au">www.arc.gov.au</a>

# **APPENDIX 1: Eligible higher education institutions**

## **Higher education institutions receiving Commonwealth funding on a triennial basis**

### **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  
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**

The Flinders University of South Australia  
The University of Adelaide  
University of South Australia

**Tasmania**

Australian Maritime College  
University of Tasmania

**Northern Territory**

Northern Territory University  
Batchelor College

**Australian Capital Territory**

The Australian National University  
University of Canberra

**Multi-State**

Australian Catholic University

## **APPENDIX 2: Information for industry partner organizations applying under Linkage–Projects**

### **Eligibility**

To be an eligible industry partner organization (an Industry Partner), an organisation must be:

- a private sector industry organisation,
- a private non-profit organisation, or
- a Government agency
  - State, Territory or Commonwealth Government organisations are eligible to apply as Industry Partners where funds they are committing to the project have not previously been appropriated either for internal research-related activities or for any other purpose of research, evaluation and/or consultancy.

The following organisations and types of organisation are not eligible as Industry Partners under Linkage–Projects:

- higher education institutions and their controlled entities, including their commercial arms
- Rural Research and Development Boards
- State and Territory Government Research and Development organisations
- Co-operative Research Centres (CRCs)
- the Defence Science and Technology Organisation (DSTO)
- the Australian Nuclear Science and Technology Organisation (ANSTO)
- the Commonwealth Scientific and Industrial Research Organization (CSIRO)
- Geoscience Australia
- the Australian Institute of Marine Sciences (AIMS)
- the Institute of Advanced Studies(IAS) at the Australian National University
- the Environmental Research Institute of the Supervising Scientist (ERISS)
- the Australian Antarctic Division (AAD)
- and any other organisation that the ARC considers as primarily funded for research from State, Territory or Commonwealth Government sources or from Governments of other countries.

If, after reading these Funding Rules, any doubt exists over the eligibility of an organisation to be an Industry Partner, applicants can seek advice from ARC about the status of the organisation before developing the application. Any requests seeking ruling about the eligibility of an organisation must be lodged in writing with the ARC Linkage–Projects Program Coordinator through the institution’s Research Office at least six weeks before the close of applications in the relevant round. The applicant will be advised of the decision as soon as possible to allow time for a detailed application to be completed.

### **Overseas Industry Partner**

The ARC is prepared to accept an overseas organisation as an Industry Partner where the organization meets the eligibility criteria above. Where an application includes an overseas

Industry Partner, the application must address the following additional criteria to the satisfaction of the ARC:

- the economic or social benefit of the research to Australia, and
- the intended use of the research outcomes in Australia.

Where similar projects involving Australian and overseas Industry Partner(s) are competing at the margin for funding, the Committee will give priority to the Australian Industry Partner. An Australian Industry Partner is an eligible organisation, or part of such an organisation, that is incorporated under Australian law and is operating in Australia.

### **Application process**

The application must be submitted by an eligible higher education institution and should include:

- a detailed description of the collaborative arrangements proposed, and
- a clear indication of how the Industry Partner will be involved in the project.

Details of the nature of the collaboration should be presented in both descriptive terms and in figures. Applications should make clear:

- how the collaborating Industry Partner is involved in the project
- how the project fits into the Industry Partners' overall strategic plan
- how the project is of value to the Industry Partner.

The application must also include a letter of support (of no more than two pages) from each Industry Partner(s) on their letterhead, including the following information:

- a brief profile of the Industry Partner
- details of the cash and in-kind support that will be provided

Failure to do so provides grounds for exclusion.

Every organisation applying to Linkage-Projects as an Industry Partner must certify at Section F3 of the application form—

- that no part of its cash contribution is drawn from funds previously appropriated from government sources for the purposes of research, evaluation and/or consultancy activity.
- that the Industry Partner has read and understood the requirements in the Funding Contract about Industry Partner agreements, including the requirement to enter into arrangements for intellectual property.

Failure to do so provides grounds for exclusion.

Grant funds from the Commonwealth can be used to support and offset project expenses including personnel (such as research associates, APDI, and laboratory staff), research training through an APAI, travel, maintenance and equipment. Detailed information about the type of research supported and the areas of investigation/work not supported are shown in Sections 3 and 5 of these Funding Rules.

### **Contribution of Industry Partner(s)**

For projects not involving an APAI, the combined Industry Partner contributions, in cash (i.e. funds transferred to the administering institution) or in kind (i.e. other eligible contributions of resources), must at least match the total amount sought from the Commonwealth on a dollar-for-dollar basis. Only total direct costs are taken into account as eligible Industry Partner contributions.

Where a project is seeking on average \$50,000 or more per year from the Commonwealth, the combined minimum contribution in cash should be 20 percent of the total amount sought from the Commonwealth. Only in exceptional circumstances will the ARC waive this prerequisite.

Organisations such as community groups, small business enterprises, charities, and start-up commercial organisations that can demonstrate that they do not have ready access to cash reserves, may seek exemption for the minimum cash requirement. In such cases, the applicant must submit a request for exemption from the 20 percent cash contribution requirement in writing, through the institution's Research Office, with the ARC Program Coordinator at least six weeks before the close of applications in the relevant round. The request must quantify in detail the in-kind contribution and the Industry Partner's commitment to providing it. However, applicants should note that the cash contribution is an important indicator for assessors when judging the degree of commitment and level of collaboration from the Industry Partner.

The total contribution from the Industry Partner must be specific to the project and not part of a broader contribution to the institution. The contribution may be used to assist the project with personnel costs (excluding the salaries of CIs), provision of equipment or the use of a laboratory. Costs of capital works and general infrastructure are not normally considered for inclusion in the Industry Partner contribution.

The ARC and its Expert Advisory Committees examine the proposed level of the Industry Partner's cash and in-kind financial support carefully and makes any adjustments it considers necessary to reflect the true value of the contribution. The Industry Partner's contribution (both in cash and in-kind) must be reported by the institution in its end-of-year report.

### **Linkage–Projects projects involving an APAI**

Where a project seeks support for an APAI student, the Industry Partner must contribute a minimum of \$5000 in cash and \$5000 in cash or in kind (that is, \$10,000 in total) for each year the student is to receive a stipend. In-kind payments alone will not suffice as the sole contribution to the project.

Support requested for project costs over and above those sought to support an APAI stipend must (in addition) be matched by the Industry Partner on a dollar-for-dollar basis at least. Where a project is seeking on average \$50,000 or more per year from the Commonwealth, the combined minimum contribution in cash (including for APAIs) should be 20 percent of the total amount sought from the Commonwealth.

### **Evaluating the adequacy of Industry Partner in-kind contributions for Linkage–Projects projects**

Guidelines to assist applicants and Industry Partners in determining the value of in-kind Industry Partner contributions can be found at Appendix 5.

### **Offer of grant**

A project may not begin, nor grant funds be expended, until the Funding Contract between the administering institution and the ARC has been signed, and Industry Partner(s) and the administering institution have entered into a written agreement (the Industry Partner Agreement) as required in the Funding Contract.

### **Eligibility for concessional treatment**

Industry contributions to a Linkage–Projects project may be eligible for the R&D Tax Concession to the extent that the expenditure is incurred by an eligible company in respect of eligible R&D activities and provided that all other eligibility requirements are met.

Detailed information on the eligibility requirements for the R&D Tax Concession can be obtained from AusIndustry State Offices in each capital city. Details of the programs administered by AusIndustry can be obtained from its homepage ([www.ausindustry.gov.au](http://www.ausindustry.gov.au)).

If an eligible company is unsure whether it can claim the contribution as research and development expenditure, it can apply for a private binding ruling from the Australian Taxation Office (ATO). Details on how to apply and what information needs to be provided can be obtained from the nearest ATO Branch.

## APPENDIX 3: APAI information

### Eligibility

Students are likely to be recent graduates interested in industry research or graduates with some years of relevant work experience who wish to undertake research work in order to complete a higher degree. Grants are made on the basis of full-time study and are to begin in the first year of the grant.

To be eligible for an APAI, a student must:

- be an Australian citizen (unless a suitable Australian citizen cannot be obtained – see the Funding Contract for further details)
- be enrolled in a full-time postgraduate research degree at the eligible host institution
- have an appropriate Honours 1 or high 2A (or equivalent) undergraduate degree
- not be receiving similar funding or stipend from a Commonwealth Government program
- not already have completed a degree at the same level as the proposed candidature or at a higher level, and
- not have previously held an Australian Postgraduate Award (APA) or APAI unless it was terminated less than three months after the stipend was first paid.

The institution may credit periods of study already undertaken towards the degree. If this occurs, the periods of study before the beginning of the APAI will be deducted from its maximum period of tenure.

The institution must inform the ARC in the Exceptions Report of any changes to an award that affect the amount or duration of funding.

APAI students may receive additional funding and/or payments from other sources provided that such funding and/or payments do not contravene their higher education institution rules applying to Linkage-Projects APAI holders and that the Industry Partner(s) has no objection to the funding and/or payments.

### Entitlements from the Commonwealth for APAIs

The Commonwealth will provide an annual stipend and other entitlements in the form of an APAI for a postgraduate research student studying for either a Masters or a PhD, or equivalent research doctorate. The APAI will be provided at the highest rate of the Australian Postgraduate Award range. Scholarship rates are indexed annually.

Details of the rates for the current year are set out on the ARC website ([www.arc.gov.au](http://www.arc.gov.au)).

APAIs can be sought for up to three years. Where the award is based on a Masters, the Committee will allocate a maximum of up to two years stipend only. PhD APAIs will be allocated a maximum of three years, with a possible six month extension. For a successful applicant, the Commonwealth will pay to the institution-

- the APAI stipend each year
- a further contribution towards relocation and thesis expenses, as outlined below.

Any funding requirements in excess of the allocation provided for these expenses should be claimed by the institution in the end-of-year report, and any unspent amounts should be reported.

### Relocation allowance

The institution will make payments to APAI students relocating residence in order to take up their position, or for an approved transfer, provided that the student provides evidence of

expenditure to the institution within six months of the expenditure being incurred. The ARC will reimburse the institution only as part of the Exceptions Report provided that the claim is submitted within a year of the expenditure having been incurred. The ARC will reimburse to a maximum of \$6000 for all allowances combined in accordance with the Funding Contract.

### **Thesis allowance**

The Commonwealth will provide up to \$840 toward the production of a PhD thesis or \$420 toward the production of a Master's thesis. This amount must be provided by the institution to the student if-

- the student's thesis is submitted within six months of the completion of the project, and
- the claim is made within twelve months of the end of the project, and
- the student provides to the institution evidence of expenditure relating to producing the thesis.

### **Taxation**

Full-time APAI stipends are tax-exempt under section 51-10 of the *Income Tax Assessment Act 1997*.

### **HECS exemption**

APAI students are exempted from liability under the Higher Education Contribution Scheme (HECS) under section 35 of the Higher Education Funding Act 1988.

## **APPENDIX 4: APDI information**

A one-page justification for an APDI award must be submitted in the application (Section B10) by the applicant who is seeking the Fellowship for himself/herself. It cannot be submitted by another Chief Investigator with a view to advertising for a suitable APDI. Awards begin in the first year of the grant.

Applicants must include in the application the name of an experienced researcher who will act as a mentor for the APDI. He/she could be another Chief Investigator involved in the project.

A successful applicant would be appointed by the institution for three years as an APDI to be employed full-time on the approved project. Tenured researchers who meet the eligibility criteria and successfully apply for an APDI will have to resign from their substantive position before the project begins.

### **Entitlements from the Commonwealth for an APDI**

For a successful APDI applicant, the Commonwealth will pay to the institution each year, as part of funding for the Linkage–Projects project, a sum of approximately \$52,240 a year (plus on-costs) as a contribution towards the salary of the Fellow (approximately equivalent to the former Level A (Tutor), Academic Salary Scale). Remuneration levels are reviewed each year.

The Fellowship funding represents the maximum contribution that may be paid as salary to the Fellow from Commonwealth funds in any one calendar year. The host institution must use internal funds or other resources to match local salary levels reached under enterprise bargaining agreements. Other project funds from the Commonwealth must not be used for this purpose.

### **Eligibility exemption**

Please refer to the information at Section 4.4 of these Funding Rules.

### **Relocation allowance**

The institution will make payments to an APDI for travel and removal expenses associated with their relocating residence in order to take up their position on condition that the Fellow provides full particulars of mode and time of travel and the receipts for all other payments (for example, removal expenses) to the institution within six months of the expenditure being incurred. The ARC will reimburse the institution only as part of the end-of-year report, provided that the claim is submitted within a year of the expenditure having been incurred.

The ARC will reimburse in accordance with the Funding Contract the following relocation expenses:

- travel expenses, not exceeding the cost of the cheapest direct airfare, for the Fellow and his/her dependants. Where a Fellow elects to travel by car, the Commonwealth will provide a mileage allowance up to the maximum equivalent of the cheapest direct airfare. On completion of the Fellowship, the Fellow will be entitled to the same return fare provisions and removal expenses, provided that he/she has not obtained subsequent employment in Australia for a period exceeding twelve months.
- relocation costs for the Fellow and his/her dependants. For the purposes of relocation entitlements, a dependant is defined as a person who moves residence with the Fellow. A spouse/partner who transfers employment to the city of the institution may be regarded as a dependant; a child continuing to study at the former city and not intending to live with the Fellow, may not be regarded as a dependant.

## **APPENDIX 5: Guidelines for the evaluation of the adequacy of Industry Partner in-kind contributions for Linkage–Projects**

These guidelines are to be used in determining the value of in-kind Industry Partner contributions that are required to be provided by Industry Partners to the Institution to at least match the financial assistance to be provided by the Commonwealth for Linkage–Projects grants.

### **Underlying principles and practical considerations**

1. The primary objectives in examining the Industry Partner contribution are to ensure that:
  - the available support is adequate for the successful completion of the Project;
  - the Industry Partner Contribution matches at least dollar-for-dollar the financial assistance provided by the Commonwealth over the life of the Project (except for some projects involving APAIs);
  - the Industry Partner Contribution is in accordance with the budget, aims and research plan contained in the Project Application submitted by the Institution; and
  - that APAI students are supported by a \$5000 cash and a \$5000 in-kind contribution by the Industry Partner for each year they are to receive a stipend.
2. Unless otherwise specified in the project application, where a project requests greater than \$50,000 per annum (on average over the life of the grant), a minimum cash contribution by the Industry Partner of 20 percent of the Commonwealth's financial assistance is required. Appendix 2 describes contribution requirements in more detail.
3. In-kind contributions that are shown to be essential and central to the conduct of the Project are given full recognition in evaluating the dollar-for-dollar contribution; however, claims of contributions that are not fully documented in the End-of-Year Report will be closely examined by the ARC. The onus is on the Institution to establish the merit of the case for recognition of the level and extent of the in-kind contribution.
4. For each APAI stipend awarded, Industry Partners must provide the institution with a minimum annual cash contribution of \$5000 or the amount specified in the project application, whichever is the larger, for each year the student is to receive a stipend on the basis that the Project has been approved by the Minister at the level of Industry Partner Contribution specified in the Project Application. Industry Partners must also provide a further minimum annual cash or in-kind contribution of \$5000 or more in line with the amount specified in the project application. Where an APAI is extended by up to six months for a PhD student, the Industry Partner is not required to provide further cash or in-kind contributions.
5. With the exception of the above APAI-related Industry Partner contribution, if the amount of Commonwealth funding approved for a Linkage–Projects grant varies from the amount applied for, the Chief Investigator must discuss the matter with the Industry Partner. Where the Industry Partner agrees the research project is viable within the parameters of the varied amount of Commonwealth funding pro rata, adjustments may be made to the project application budget. The Chief Investigator is responsible for providing the research office of the higher education institution with evidence of any such Industry Partner agreement for grant acquittal and reporting purposes.
6. In-kind contributions to a Project may include scientific liaison and management, direct technical support, or unique access to reagents or equipment.

7. Corporate membership or subscription fees in industrial consortia do not qualify as Industry Partner contributions but the allocation of designated research funds, together with the identification of the linkages between the member and the Project, do qualify.

### **Guidelines for recognising in-kind budget items in Industry Partner Contributions**

This list is not all-inclusive. If in doubt as to the acceptability of a particular item, consult:

Program Coordinator  
 Australian Research Council  
 GPO Box 2702  
 CANBERRA ACT 2601

<b>Category</b>	<b>Accepted</b>	<b>Not Accepted</b>
<b>Access to unique databases</b>	Incremental costs of access	Cost of collecting the database
<b>Analytical and other services</b>	Internal rates	Commercial rates
	Incremental cost of providing service	
<b>Equipment</b>	<b>Contributed – Used</b> - fair market value - company book value - price for internal transfers	List price or discounted list price  Rental equivalents exceeding accepted values had the equipment been donated or sold
	<b>Contributed - New</b> - selling price to most favoured customer (if stock item) - cost of manufacture (if one of a kind) - cost of purchase	Development costs
	<b>Lent</b> - rental equivalent based on depreciation - rental rate equivalent to highest-volume user	
	<b>Sold</b> - difference between discounted price and selling price to most favoured customer	

<b>Category</b>	<b>Accepted</b>	<b>Not Accepted</b>
<b>Materials</b>	Unit cost of production for commercial products Selling price to most favoured customer Price for internal transfers Cost of production of prototype and samples	Development costs (unless it is an integral part of the Project proposal)
<b>Patents and licences</b>	Licences acquired from third parties for use by the university	Patents Licensing fees paid to the university
<b>Payments concerning the Chief Investigator</b>	Payment to the university for release time from teaching duties	Payment to the Chief Investigator as consulting fees or honoraria (additional to normal salary)
<b>Salaries</b>	Typical salary cost (including overheads) at internal rates	External charge-out or consultant rates Costs relating to administrative support where overhead has been included in salary costs
<b>Contributed software</b> (need to distinguish between existing software used as a tool for analytical purposes and the collaborating Industry Partner's contribution to developing new software tools where this is one of the main objectives of the proposal)	Copying costs Licensing cost Documentation cost Cost of training and support of software Cost of equivalent commercial product (where donated software is not commercially available)	Development costs
<b>Travel</b>	Travel costs associated with field work Travel costs to meet with university personnel & Industry Partner staff Conference travel for university staff	

<b>Category</b>	<b>Accepted</b>	<b>Not Accepted</b>
<b>Use of facilities</b>	<p>Internal rates for logistical support and travel allowance for university personnel working on collaborating Industry Partner premises or on field work</p> <p>Internal rates for use of specialised equipment by university personnel or use of process or production lines</p> <p>Internal rates for value of lost production resulting from down time</p>	<p>Use of equipment by collaborating Industry Partner personnel.</p> <p>Space for collaborating Industry Partner activities outside the scope of the specific proposal</p> <p>Equivalent commercial rates</p>

# APPENDIX 6: Descriptions of Designated National Research Priorities and associated Priority Goals

## Research Priority 1: An Environmentally Sustainable Australia

*Transforming the way we use our land, water, mineral and energy resources through a better understanding of environmental systems and using 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, and for our agricultural and marine production systems; 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.

The Government is committed to meeting the greenhouse gas emissions target set for Australia at Kyoto.

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 such as agriculture, natural resource management, climate change, horticulture, forestry, mining, energy, and marine sciences.

We must build on these strengths to improve our competitive advantages while enhancing our understanding of natural systems and the interplay of human activities.

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 six areas of water utilisation, transforming resource-based industries, overcoming land degradation, developing cleaner, more efficient fuels and energy sources, managing biodiversity and deep earth resources.

## **Priority Goals**

### **1 Water – a critical resource**

Ways of 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 and unique ecosystems, flora and fauna. Enhancing our understanding of the links between water availability and these factors will result in a better understanding of sustainable water management practices.

### **2 Transforming existing industries**

New technologies for resource-based industries to deliver substantial increases in national wealth by reducing 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 will depend on research and new technologies.

### **3 Overcoming soil loss, salinity and acidity**

Identifying causes and solutions to land degradation using a multidisciplinary approach (examples include incorporating hydrology, geology, biology and climatology) 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 in the Australian environment and illustrates Australia's leading edge in national mapping of critical resource data.

### **4 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 and the Government is committed to meeting the emissions target set for Australia at Kyoto. We are also well placed to develop alternative energy technologies and ecologically sustainable transport and power generation systems.

### **5 Sustainable use of Australia's biodiversity**

Managing and protecting Australia's terrestrial and marine biodiversity to develop long term use of ecosystem goods and services ranging from fisheries to ecotourism.

Australia has a unique and rich flora and fauna. Our complex ecosystems are resilient and have adapted to events such as drought and fire, and underpin the health of our agricultural, fisheries and tourism industries. There is a need for a more comprehensive understanding of these natural systems and the interplay with human activities.

### **6 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).

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.

## **Research Priority 2: Promoting and Maintaining Good Health**

### ***Promoting good health and preventing disease, particularly among young and older 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.

Enhancing the health outcomes of Australians 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 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.

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 multi-disciplinary 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 three areas of a healthy start to life, ageing well, ageing productively, and health promotion and disease prevention healthcare.

## **Priority Goals**

### **1 A healthy start to life**

Reducing the impact of genetic, social and environmental factors predisposing infants and children to ill health and reducing their life potential.

Human health in the developing foetus and in early childhood is absolutely 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. This goal fits well with the Government's National Agenda for Early Childhood initiative.

## **2 Ageing well, ageing productively**

Developing new and better social and medical strategies to reduce mental and physical degeneration based on greater knowledge and understanding of the causes of disease and degeneration of mind and body.

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 other OECD nations, major shifts in cultural expectations and attitude are necessary to respond constructively to ageing, at both an individual and population level. This goal fits well with the Government's National Strategy for an Ageing Australia. A healthy aged population will actively contribute to the life of the nation through participation in the labour market or through voluntary work.

## **3 Preventive healthcare**

New evidence-based strategies to promote healthy attitudes, habits and lifestyles and to develop new health-promoting foods and nutraceuticals.

Preventive healthcare research will improve the prediction and prevention of disease and injury 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 in prevention will emphasise interdisciplinary research, drawing on contributions from the social sciences and humanities, as well as from the health and medical 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*

Wealth often derives 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 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.

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 four areas of breakthrough science, frontier technologies, advanced materials and smart information use.

## **Priority Goals**

### **1 Breakthrough science**

Better understanding of the fundamental processes that will advance knowledge and develop technological innovations (examples include bio-informatics, nano-assembly, quantum computing and geo-informatics).

Breakthrough science underpins technological innovation across a range of industries critical to maintaining Australia's position as a developed country. Some examples include bio- 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.

### **2 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 (examples include nanotechnology, biotechnology, ICT, photonics, genomics/phenomics, and complex systems).

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.

### **3 Advanced materials**

Advanced materials for applications in construction, communications, transport, agriculture and medicine (examples include ceramics, organics, biomaterials, smart material and fabrics, composites, polymers and light metals).

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.

## 4 Smart information use

Improved data management for existing and new business applications and creative applications for digital technologies (examples include e-finance, multimedia, content generation and imaging).

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, multimedia, 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, health and 'infotainment'. The ability of organisations to operate virtually and collaborate across huge distances in Australia and internationally hinges on our capabilities in this area. Research is also needed to exploit the huge potential in the digital media industry.

### **Research Priority 4: Safeguarding Australia**

#### ***Safeguarding Australia from terrorism, crime, invasive diseases and pests, and securing our infrastructure, particularly with respect to our digital systems***

The importance of security and safety to Australia has been underscored by recent events.

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.

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 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 four areas of critical infrastructure, protecting Australia from invasive diseases and pests, protecting Australia from terrorism and crime, and transformational defence technologies.

## **Priority goals**

### **1 Critical infrastructure**

Protecting Australia's critical infrastructure including our financial, energy, computing 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.

### **2 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.

### **3 Protecting Australia from terrorism and crime**

By promoting a healthy and diverse Research and Development system that supports core competencies in modern and rapid identification techniques.

Protecting Australia from terrorism is now more important than ever before in light of recent events and our involvement in the 'war on terror'. Crime takes a significant toll on Australian society and economy. The June 2000 report from the Prime Minister's Science, Engineering and Innovation Council estimated that crime costs Australia at least \$18 billion per annum. 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.

### **4 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.