LINKAGE–INTERNATIONAL

Funding Rules for applicants

for Fellowships funding commencing in 2004
and Awards submitted in 2003

Federal Register of Legislative Instruments F2008B00455

Australian Research Council
Linkage–International
Funding Rules for Fellowships commencing in 2004 and Awards submitted in 2003

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Acronyms

The following acronyms are used through these guidelines.

AAO	Anglo-Australian Observatory
ARC	Australian Research Council
IREX	International Researcher Exchange Scheme
MoU	Memorandum of Understanding

NOTE: All research proposals should conform to the principles outlined in the Joint NHMRC/AVCC Statement and Guidelines on Research Practice (1997) (at 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 (at: http://www.nhmrc.gov.au/publications/synopses/e35syn.htm URL: http://www.nhmrc.gov.au/publications/pdf/e35.pdf). Proposed research involving animals should conform to the principles outlined in the NHMRC's codes on animal research (at http://www.nhmrc.gov.au/issues/animalethics.htm).

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1 Introduction

This document sets out the funding rules under the *Australian Research Council Act 2001* for *Linkage—International* which is part of the Australian Research Council's National Competitive Grants Program (NCGP).

These Funding Rules are written on the basis that researchers are the applicants. However, grants from the ARC are made to institutions, not the individual researchers.

Under *Linkage—International*, the Commonwealth provides funding to support:

- **Fellowships** under international agreements for the reciprocal exchange of postdoctoral researchers; and
- **Awards** to build links between researchers, research teams and research centres of excellence in Australia and overseas by funding extended collaborations.

2 Objectives

Linkage–International will provide funds to:

- build strong ongoing collaborations between researchers, research teams or centres of excellence in Australia and overseas;
- strengthen international research experience for early career researchers and generate opportunities for postgraduate and postdoctoral researchers to link into leading edge international research networks;
- build Australian research capability by enhancing existing, and developing new collaborations among experienced and senior researchers; and
- develop innovative modes of international collaboration and links into global innovation networks.

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3 Description

Linkage–International Fellowships

Linkage–International Fellowships meet obligations under reciprocal agreements with France, Germany, the Republic of Korea (South Korea) and the United Kingdom for early career postdoctoral and senior researchers. A Fellowship is a grant for up to one year for the selected Fellow to work in Australia. It includes support for salary and salary on-costs, travel to a major conference in Australia, and return international travel and consumables. Refer to Appendixes 4, 5, 6 and 7 for details. The Australian-based Chief Investigator submits the application for a collaborative project with the applicant Fellow.

Linkage–International Awards

Linkage–International Awards provides funds for Australian-based researchers to participate in joint research projects with overseas researchers, establishing in new collaborations, strengthening on-going collaborations and providing international research experience for early career researchers. Funding is available to Australian-based researchers for the direct costs of the collaboration for a period of up to three years.

Applications may seek funding for reciprocal visits by leading researchers and exchanges for postgraduate and/or postdoctoral researchers working in their research teams. Visits by leading researchers (the Chief Investigators and Overseas Investigators on the application) may be for short periods but visits by early career researchers should be for more substantial uninterrupted periods, typically three months or more.

Applications for support under *Linkage–International* Awards may be for collaboration with any appropriate researchers in any country or countries. Preference may be given to applications involving countries with which the ARC has a Memorandum of Understanding (see Appendix 8) and countries with which the ARC has traditional research links (the United States of America, the United Kingdom, Canada, New Zealand and India). Australian researchers currently employed in overseas institutions are encouraged to use *Linkage—International* Awards to maintain and develop collaborations with Australian-based colleagues.

Applicants may seek funding for innovative modes of research collaboration, for example through e-research networking.

Designated National Research Priorities

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

- 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 is 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 9, and on the ARC web site (www.arc.gov.au).

4 Eligibility

4.1 Applicant roles

There are four applicant roles available under *Linkage—International*. These are:

- Chief Investigator (CI)
- Overseas Investigator (OI)
- Fellow
- Partner Investigator (PI)

The roles and eligibility requirements for each of these are described below.

4.2 Eligibility of applicant

The Australian-based Chief Investigator(s) (CI) and Overseas Investigator(s) (OI) must be outstanding researchers of international standing in the relevant discipline or multi-disciplinary field. A team of Australian-based researchers can consist of researchers from different organisations, provided the Chief Investigator is a researcher employed by the administering institution.

An Australian-based Chief Investigator may make a maximum of one *Linkage–International* Fellowship application in a calendar year and one application for a *Linkage–International* Award in a 12 month period. Award applications are valid for consideration by the ARC for a period of one year from date of submission. An Australian Chief Investigator may hold a maximum of two *Linkage–International* and/or IREX Awards and host only one *Linkage–International* and/or IREX Fellowship at any one time. For the purposes of this eligibility criterion, a *Linkage–International* grant carried over, or deferred, into the next calendar year is classified as a *Linkage–International* grant for the calendar year in which it was first awarded.

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

4.2.1 Linkage–International Fellowships

To be eligible for consideration, each *Linkage—International* Fellowships application must have at least one Australian-based Chief Investigator and one overseas applicant Fellow.

Fellowships are available for early career postdoctoral and senior researchers from France, Germany, South Korea and the United Kingdom. Applications for Fellowships are to be made by Australian-based host researchers together with the applicant Fellow. The host researcher of a Fellowship is the Chief Investigator on the application. Chief Investigators must be employed by eligible higher education institutions as listed at Appendix 1. In the case of Fellows from Germany and South Korea, these must be employed by those listed institutions or the CSIRO.

The applicant Fellow must be able to demonstrate that he/she is covered by the relevant agreement as either a resident or a citizen of the country and that he/she has ongoing research connections with a university or research institute in that country. Refer to Appendices 4-7 for details of the relevant agreements.

The Anglo-Australian Observatory Fellowship is also supported under *Linkage–International* (refer to Appendix 3).

4.2.2 Linkage–International Awards

To be eligible for consideration, each *Linkage—International* Awards application must have at least one Australian-based Chief Investigator (CI) and one Overseas Investigator (OI).

Applications may include Partner Investigators (PI). Partner Investigators are researchers who are not eligible to be Chief Investigators but who are providing significant commitment, intellectual input, relevant expertise and significant financial contribution to the project.

The first-named Chief Investigator for *Linkage–International* Awards must be an Australian-based researcher or academic employed by an eligible higher education institution as listed at Appendix 1. The eligible higher education institution at which the CI is employed must be the administering organisation for the grant.

At the time of application, the first-named Chief Investigator must be a Chief Investigator on at least one current ARC grant under *Discovery—Projects* (or the earlier *Large Research Grants* or *Research Fellowships* programs), *Linkage—Projects* (or the earlier *SPIRT* program), or *ARC Centres of Excellence*, *Special Research Centres* or *Key Centres of Teaching and Research* programs.

4.3 Eligibility of institution

The application must be submitted by the Australian-based Chief Investigator through an eligible Australian institution. A list of eligible institutions is set out in Appendix 1. In addition, the CSIRO is eligible to submit applications for Fellows from Germany and South Korea.

To be eligible for a *Linkage–International* grant, an Australian administering institution must undertake to provide appropriate facilities and equipment for the researcher(s), to meet the associated infrastructure support costs, and to continue collaboration with the overseas researcher(s).

4.4 Eligibility of project

A *Linkage–International* application must propose a collaborative research project of international standard in a relevant discipline or multi-disciplinary field. In some Fellowships, the disciplines or fields are specified or restricted under the Under the Memoranda of Agreement between the ARC and partner research agencies (see Appendixes 3–8). The project can involve basic or applied research or a combination of both.

5 Funding

5.1 Fellowships

Linkage–International Fellowship grants are based on the ARC notional salary scale (Appendix 2).

5.2 Awards

The minimum *Linkage–International* Award grant is $A5000. Awards provide funding for collaboration in research through exchanges and visits, and innovative modes proposed by the researchers in their applications.

5.2.1 Reciprocal visits and exchanges

Applications may seek funding for reciprocal visits by leading researchers and exchanges for postgraduate and/or postdoctoral researchers working in their research teams. Usually, the ARC will fund international travel costs for Australian-based researchers and subsistence in Australia for visiting researchers from overseas.

The ARC expects that Australian Government funding normally will be augmented by matching cash and in-kind contributions from the overseas collaborating partners to meet the direct costs of their participation. Contributions from the overseas source in the form of primary project costs and salary should not be included as matching contributions and it is against the spirit of *Linkage–International* for this funding to be obtained from any Australian source. Funds from the ARC may not be used for this purpose. *Linkage–International* Fellowships may not be used to provide salary and travel support as the overseas matching component of an Award. In cases where the source of matching funds for the overseas collaborator(s) provides international travel and subsistence for them, the ARC will consider supporting Australian researchers on the same basis.

Normally, the ARC will consider providing the following support—

- for researchers travelling **from** Australia, international return economy class airfare(s) and, in some cases, a contribution to living expenses at reasonable local rates;
- for researchers coming **to** Australia, a contribution to living expenses (up to $600 per week), internal travel and, in exceptional circumstances (that is, where the overseas collaborator is from an economically disadvantaged country), a contribution to the international economy class airfare;
- in both cases, a limited contribution to consumables directly related to the collaborative work, up to a maximum of $A5000 a year.

The ARC will consider applications which do not include matching reciprocal funding in relation to the objectives of the program, noting that strength of commitment from overseas collaborators' institutions is a selection criterion.

5.2.2 Innovative modes of collaboration

Applicants may seek funding for innovative modes of research collaboration, for example through e-research networking, residencies or modes other than reciprocal visits and exchanges (see 5.2.1). Applicants should explain the nature of the innovation in the proposed collaboration, and identify and justify budget items in relation to the proposed collaboration.

5.1 Areas of investigation not supported

Research in the fields of clinical medicine and dentistry is not supported by the ARC as the National Health and Medical Research Council has responsibility for funding research in those fields.

5.2 Budget items not supported

The following items are **not** eligible for support under the *Linkage–International—*

- salaries of academic staff engaged in teaching and research, and in research only, (including the cost of 'buying time' to free such staff to do more research) except for the *Linkage–International* Fellowships where the salary of the fellow is funded; consideration will given to requests for contributions to Overseas Investigator salaries, on a case by case basis and in relation to the objectives of the program;
- salaries of staff supporting research at the institutional level (for example, Deputy Vice-Chancellor Research, Research Grants Manager);
- costs of the primary research activity, including field trips, equipment and support staff salaries. These should be met from another funding source (for example, an ARC *Discovery–Projects*);
- infrastructure support costs, which are the responsibility of an administering institution;
- costs of ongoing collaboration with overseas researchers and/or their home institutions incurred after completion of the *Linkage–International* project. These are the responsibility of an administering institution; and
- conferences or seminars, or exchanges that are primarily organisational.

6 Application

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 selection committee. All details in the application, particularly concerning any successful grants, must be current.

6.1 Application format

Applications consist of two parts:

- application form
- additional text, including supporting documentation and curricula vitae.

All documents must be written in English. All pages should be in black type, use a single column and 12 point type-face 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, only legible typefaces should be used such as Arial, Courier, Palatino, Times New Roman, or Helvetica. Variants such as mathematical typesetting languages may also be used.

Colour graphs or colour photographs may be included but they will be reproduced in black and white.

A table of contents is not required.

The additional text, the curriculum vitae and supporting documentation must have the pages numbered consecutively, starting from page 1 of the additional text.

Pages in excess of the stipulated limits may be removed before assessment.

6.2 Application content: *Linkage–International* Fellowships

6.2.1 Application form

Application forms are available from research offices in institutions or may be downloaded from the Internet at http://www.arc.gov.au.

6.2.2 Additional text

Applicants should note that applications are considered by a selection advisory group whose membership includes people who are not specialists in the field of the application. Consequently, the collaboration and its expected outcomes should be described in a way that can be understood by all committee members, both specialist and non-specialist. *Linkage–International* Awards and Fellowships have different text requirements. Please read these instructions carefully.

In no more than **six** pages, applicants for Fellowships are required to consider the selection criteria and provide the following information—

1. a brief outline of the aims, research plan and methodology;
2. a brief description of the nature of the applicant Fellow's ongoing research connections with a university or research institute in his/her country;
3. information on the research environment of the host institution including physical, and intellectual resources available to the Fellow;
4. justification of all budget items;
5. the track record of the proposed Fellow.

In the case of a proposal for a Fellow from Germany or Korea, applicants should explain the benefit expected to flow to programs of research administered by higher education institutions as listed at Appendix 1.

6.2.3 Curriculum vitae and supporting documentation

A **curriculum vitae** for each Chief Investigator, applicant Fellow and Partner Investigator must be provided. Each curriculum vitae should not exceed **one** page in length and must include the following details:

- name
- qualifications and current appointment
- relevant employment history
- a list of the ten most significant relevant publications for the last five years and the total number of peer-reviewed research publications over the last five years
- brief details of all competitive grant funding for the last five years.

A **report** on the outcome of any earlier ARC funded international collaborative grant (such as IREX) for each Chief Investigator, including a list of joint publications, grants or similar evidence of successful ongoing collaboration. This report should consist of one page per grant.

These documents are **not** included in the quota of pages for the additional text.

6.3 Application content: *Linkage–International* Awards

6.3.1 Application form

Application forms are available from research offices in institutions or may be downloaded from ARC website (www.arc.gov.au).

6.3.2 Additional text

Applicants should note that applications are considered by a selection committee whose membership may include people who are not specialists in the field of the application. Consequently, the collaboration and its expected outcomes should be described in a way that can be understood by all committee members, both specialist and non-specialist. *Linkage–International* Awards and Fellowships have different text requirements. Please read these instructions carefully.

In no more than **three** pages, applicants for Awards are required to consider the selection criteria and provide the following information—

1. a brief outline of the aims, significance, research plan and methodology for the proposed program;
2. a brief description of the nature of the collaboration including the role of, and benefit to, the Australian and overseas partners;
3. justification of all budget items;
4. a management plan for the collaboration, including a proposed schedule of research activities. If the collaboration includes visits, a schedule of visits is to be presented as a table with the following information for each visit—
   - dates
   - name and status of researcher(s) travelling
   - destination
   - activity to be performed
   - funding source

Below is an example of a schedule of visits.

Dates		Researchers	Destination	Activity	Funding
2003	Mar/April	Prof John Smith, CI	Bonn Univ	Establish parameters…	Linkage–International /DFG
	Mar/Aug	Dr Susan Jones, res asst	Bonn Univ	Conduct X…. research	Linkage–International /DFG
2004	Jan/May	Dr Hans Schmidt, res asst	Uni Melb	Conduct Z…. research	DFG/ Linkage–International
	April	Prof Helena Jakobs	Uni Melb	Establish …..conduct…	DFG/ Linkage–International

6.3.3 Curriculum vitae and supporting documentation

The documents listed below are **not** included in the quota of pages for the additional text. The first two items must be provided.

1 A curriculum vitae for Chief Investigator(s), Overseas Investigator(s), and, where appropriate, Partner Investigator(s). Each CV is to be no more than **one** page in length for each Investigator and must include the following details—

- name
- qualifications and current appointment
- relevant employment history
- a list of the ten most significant relevant publications for the last five years and the total number of peer-reviewed research publications over the last five years
- brief details of all competitive grant funding for the last five years.

2 A report on the outcome of any earlier ARC funded international collaborative grant (such as LX or IREX) for each Australian Chief Investigator and, where appropriate, each Australian Partner Investigator, including a list of joint publications, grants or similar evidence of successful ongoing collaboration. This report should consist of one page per grant.

3 Applicants for *Linkage–International* Awards may attach a letter of support from the overseas collaborating institution if that letter indicates financial commitment to the proposed collaboration.

7 Submission of application (Fellowships and Awards)

Fellowships Applications must be submitted by close of business (AEST) **21 March 2003.**

Awards Applications may be submitted to the ARC at any time. They will be batched for assessment several times during the year.

Two copies are required, an original and one identical copy. It is the copy that is reproduced and dispatched for assessment.

The application must be clipped, with NAL clips, not stapled**,** and submitted in the following order—

- application form
- additional text, curriculum vitae
- report on previous grant, if relevant
- letter of support, as appropriate

All applications must—

- be signed by the appropriate persons on the certifications page of the application form
- be submitted through the research office of the administering institution

Applicants should submit their applications through the Research Office of the administering institution by the institution's closing date. Applications should be completed and submitted electronically, by the Research Office, via the Grants Application Management System (GAMS), to the ARC. (Applicants who require an alternative means to submitting the form on-line should contact their university's Research Office.)

Research offices should send applications–

by **mail**, to

LX Program Coordinator
Disciplines and Programs Branch
Australian Research Council
GPO Box 2702
CANBERRA ACT 2601

by **courier**, to

LX Program Coordinator
Disciplines and Programs Branch
Australian Research Council
Geoscience Australia Building
cnr Jerrabomberra Ave and Hindmarsh Drive
SYMONSTON ACT 2609

Applicants should note that a separate document *Linkage-International Instructions to applicants for funding Fellowships commencing in 2004 and Awards submitted in 2003* will be available on www.arc.gov.au to assist in preparing applications.

8 Selection and approval process

8.1 Selection criteria

8.1.1 Linkage–International Fellowships

Selection will be based upon the following criteria and weightings:

- quality of the applicant Fellow including track record and potential 30%
- research proposed, in particular, aims, significance, research plan and methodology 30%
- quality of the host group, including intellectual and physical resources for support of the applicant Fellow 20%
- prospects for ongoing international collaboration between the host group and other Australian groups and groups in the relevant country. 20%

8.1.2 Linkage–International Awards

Selection will be based upon the following criteria and weightings:

- strength and benefits of the collaboration (as evidenced, for example, by on-going research collaboration, reciprocal and matching funding contributions, and/or the participation of early career researchers) 40%
- Chief Investigator, including, track record, research management skills 20%
- Overseas Investigator, including track record, research management skills 20%
- research proposed, in particular, aims, significance, research plan and methodology 20%

8.1.3 All applications

All assessments under *Linkage–International* will include the following additional considerations where appropriate:

- In the case of applicants who have previously received grants under *Linkage—International* or the former IREX program, the demonstrated outcomes of those collaborations, including joint publications, joint grants, contracts or similar awards, or other relevant evidence;
- Any other requirements mentioned in specific agreements or indicated in the attached appendices.

8.2 Selection procedure

Assessment of applications is undertaken by a selection committee drawn from members of the Expert Advisory Committees. The selection committee:

- ranks each application relative to the others on the basis of the application;
- assesses and recommends budgets; and
- prepares funding recommendations that are submitted to the ARC Board for endorsement and then to the Minister for approval.

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

8.3 Offer of grant

Following the Minister's approval, the ARC will inform the successful administering institution in a letter of offer, that will indicate the funding to be provided and will include the Funding Contract. The Minister's decision is final.

8.4 Funding Contract

Applicants should familiarise themselves with the Funding Contract, which will be available on the ARC website (www.arc.gov.au). The administering institution must accept the Funding Contract, in writing, on behalf of the cooperating institutions, before grant payments can be made. If the institution is administering more than one grant under *Linkage–International*, only one Funding Contract document needs to be completed.

8.5 Variation to the Funding Approval

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

(a) the organisation's involvement with the research program ends;

(b) the research program changes so that it is no longer consistent with the description in the Funding Approval;

(c) the person named in the Funding Approval as the person leading the research program ceases to lead the program; and

(d) any other such circumstances as the ARC may, in its discretion, determine.

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). The form must be lodged through the institutions research office and be received **within 28 days** of the date on the letter notifying the outcome of applications. Appeals should be addressed to:

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

10 Grant administration

10.1 Reporting requirements

Institutions are required to submit the following documents to the ARC —

- *Exceptions Report* on grants that have financial exceptions by 1 November in the calendar year for which they were granted;
- *End of Year Report* on the expenditure of grant funds and the project by 31 March in the year following the calendar year for which funds were granted;
- *Progress Report* on the project 31 March (Awards only) in the year following the calendar year for which funds were granted
- *Final Report* on the project, within six months of the completion of the project and expenditure of all ARC funds
- *Audited Financial Statement*: by 30 June of the year following the year of the grant, in accordance with the appropriate Act.

The ARC reserves the right to suspend payment of further instalments of any current grant until the appropriate reports have been received and assessed as satisfactory.

Reporting should be made in sufficient detail to show that funds have been applied in the fields for which they were awarded. The Final Report should also highlight significant aspects of the research and the collaboration, and should provide an outline of how *Linkage–International* funding has contributed to developments in collaborations in the research field supported and the outlook for the future.

10.1.1 Failure to provide reports

Where an institution fails to submit satisfactory reports, as required, the Minister may determine that funds have not been used in accordance with conditions applicable to the grant, and that all or part of the grant must be repaid. In this case, the ARC may withhold the remainder of the institution's payments under the scheme for the current year or initiate recovery of grant moneys.

10.2 Payment of funds

Linkage–International operates on a calendar-year basis. Subject to appropriations, payment of funds will be made to institutions in regular instalments, in accordance with approved payment arrangements made under the *Australian Research Council Act 2001*. Funds must be used only for the purposes approved under *Linkage–International*, otherwise they must be returned.

10.3 Privacy of individuals

Documents containing personal information are 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 program must abide by the IPPs and the *Privacy Act 1988* 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 only disclosed in accordance with IPP 11.

Complaints about breaches of privacy should be referred to the Chief Executive Officer of the ARC. Privacy complaints can be made directly to the Federal Privacy Commissioner, but the Federal 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.

10.4 Confidentiality

Information contained in applications is regarded as confidential unless otherwise stated and will be received and treated as confidential by the ARC, institutions and assessors.

10.5 Intellectual property

Applicants must agree to comply with the intellectual property statute of the administering organisation and the National Principles of Intellectual Property Management for Publicly Funded Research (available at www.arc.gov.au).

10.6 Incomplete or misleading information

It is a serious offence to provide false or misleading information. If an application is incomplete or contains information that is considered misleading, it will be excluded from any further consideration for funding. If the ARC believes that the omission of information or the inclusion of misleading information is intentional, or if there is evidence of malpractice, the ARC will refer the matter for appropriate legal advice. The Commonwealth Government is committed to protecting its revenue, expenditure and property from any attempt, either 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
- falsifying claims in publications records (for example, describing a paper as accepted for publication when it has only been submitted).

10.7 Contact points

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

Enquiries about *Linkage—International* may be addressed to:

LX Program Coordinator
Disciplines and Programs Branch
Australian Research Council
GPO Box 2702
CANBERRA ACT 2601
Email: ncgp@arc.gov.au
Phone: + 61 2 6284 6600
Fax: +61 2 6284 6638
Web site: www.arc.gov.au

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
Monash University
RMIT University
Swinburne University of Technology
University of Ballarat
The University of Melbourne
Victoria University

Queensland
Bond University
Central Queensland University
Griffith University
James Cook University
Queensland University of Technology
The University of the Sunshine Coast
The University of Queensland
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
University of Tasmania
Australian Maritime College

Northern Territory
Batchelor College
Northern Territory University

Australian Capital Territory
The Australian National University
University of Canberra

Multi-State
Australian Catholic University

APPENDIX 2: ARC notional salaries for 2003 in 2002 dollars

	Salary	26% Oncosts	Total
Postdoctoral Fellowship	$51,067	$13,278	$64,345
Research Fellowship			
(step 1)	$63,747	$16,574	$80,321
(step 2)	$75,758	$19,697	$95,455
Professorial Associate	$87,508	$22,752	$110,260
Professorial Fellowship	$102,766	$26,719	$129,485

* salary scales and stipends will be indexed to 2003 dollars for successful applications

2003 ARC Fellows Relocation (maximum) Allowances

USA	$15,000
UK/Europe/Asia (Nth Hem)	$12,000
Asia (Sth Hem)/NZ	$ 9,000
Australia	$ 6,000

APPENDIX 3: Anglo-Australian Observatory Fellowships

An International Research Fellowship Agreement between the United Kingdom Particle Physics and Astronomy Research Council and the ARC. This Fellowship is managed by the Anglo-Australian Telescope Board.

Number and eligibility

- One Fellowship will be awarded alternately to early-career British and Australian researchers to undertake postdoctoral work at the Anglo-Australian Observatory.
- The Fellowship is funded on a 50/50 share basis between the parties to the Agreement.

Duration

- Two years with an extension of up to twelve months in exceptional circumstances.

Application

- Any Australian or British postdoctoral researcher is eligible to apply for the Fellowship when applications are called for by advertisement.
- Selection is managed by the Anglo-Australian Observatory.

Possible entitlements

- Salaries will be recommended by the administering institution from the appropriate point (dependent upon experience) on the ARC notional salary scale in 2003 set out in Appendix 2. Salaries are subject to approval by the Minister and will be paid through the administering institution.
- Reimbursement of travel costs at the cheapest direct airfare rate for an overseas resident and his/her dependants is provided, with similar return airfare provisions, provided that the Fellow has not obtained subsequent employment in Australia for a period exceeding twelve months.
- Transfer expenses for an Australian resident Fellow and his/her dependants are reimbursed on a basis comparable to those provided for overseas Fellows, including a private vehicle allowance up to the maximum equivalent of the cheapest direct airfare.
- Removal expenses of up to $A12 000 are payable for a Fellow relocating from the United Kingdom and comparable expenses are payable for an Australian resident Fellow, subject to full refund of the amount if the Fellowship is relinquished within twelve months.
- Leave (recreation, sick and maternity) may be granted during the period of the Fellowship.
- An additional Research Support Grant of $6000 a year is available.

APPENDIX 4: French Fellowships

An International Research Fellowship Agreement between the French Ministry of National Education, Research and Technology and the ARC.

Number and eligibility

- Up to five research Fellowships may be awarded by the ARC in 2004 to postdoctoral or senior researchers from France to work in Australia in the fields of humanities, social sciences, the natural sciences and engineering. Australian researchers may seek Fellowships through their French host researcher.
- Applicant Fellows must be of at least postdoctoral status at the time of application. This means that the applicant Fellow's PhD must have been conferred before submitting the application to the ARC. Early career researchers from France are strongly encouraged.
- Applicant Fellows must be French citizens and must demonstrate ongoing research connections with a university or research institute in France.
- Fellowships cannot be extended or granted a second time.

Duration

- Six to twelve months.
- Successful applicants must commence Fellowships before 30 June 2004.

Application

- Any Australian academic institution may nominate French candidates to the ARC.
- Any French academic institution may nominate Australian candidates to the Ministry.
- Nominating institutions must guarantee to provide appropriate facilities and equipment and to meet associated research costs.

Possible entitlements

- Salaries will be recommended by the administering institution from the appropriate point on the ARC notional salary scale in 2004 at Appendix 2. Salaries are subject to agreement by the ARC and approval by the Minister, and will be paid through the administering institution.
- An amount of 26 per cent of salary is payable to administering institutions for on-costs together with a contribution to consumable items for the research project.
- One return economy class airfare and associated travel expenses for the Fellow is provided.
- The cost of attendance at a major conference in Australia, during the Fellowship, including registration and travel, is covered.
- Medical and accident insurance is provided by the administering institution.

No responsibility will be taken for any costs associated with visits by family members.

APPENDIX 5: German Fellowships

An International Research Fellowship Agreement between the Alexander von Humboldt-Stiftung (AvH) and the ARC.

Number and eligibility

- Up to five Fellowships annually to German citizens or residents, three to outstanding researchers of international standing, and two to young (or early career) researchers, in humanities, social sciences, natural sciences or engineering.
- Applicant Fellows must be of at least postdoctoral status at the time of application. This means that the applicant Fellow's PhD must have been conferred before submitting the application to the ARC.
- Applicant Fellows must be able to demonstrate ongoing research connections with a university or research institute in Germany.
- Fellowships cannot be extended or granted a second time.

Duration

- Four to twelve months.
- Successful applicants must commence Fellowships before 30 June 2004.

Application

- Any Australian higher education institution and the CSIRO can nominate German candidates to the ARC.
- Any German researcher, university or research institution can nominate Australian candidates to the AvH.
- Nominating institutions must guarantee to provide appropriate facilities and equipment and to meet associated research costs.

Possible entitlements

- Salaries will be recommended by the administering institution from the appropriate point on the ARC notional salary scale in 2004 at Appendix 2. Salaries are subject to agreement by the ARC and approval by the Minister, and will be paid through the administering institution.
- An amount of 26 per cent of salary is payable to administering institutions for on-costs together with a contribution to consumable items for the research project.
- One return business class airfare and associated travel expenses for the Fellow is provided. Air fares and associated travel expenses, at the economy rate, for a partner and dependent children can be provided if they accompany the Fellow and stay in the host country for at least six months. If the Fellow is accompanied by his/her family, he/she will be entitled to economy class travel.
- The cost of attendance at a major conference in Australia, during the Fellowship, including registration and travel can be claimed.
- The administering institution will provide health and accident insurance cover during the stay in the host country for the researcher (and partner and dependent children provided they are in continuous residence in the host country for the stay of the researcher).

APPENDIX 6: The Republic of Korea (South Korea) Fellowships

An International Research Fellowship Agreement among the Korea Science and Engineering Foundation (KOSEF), the ARC, the Australian Academy of Science (AAS), and the Australian Academy of Technological Sciences and Engineering (ATS).

Number and eligibility

- At least three Fellowships to researchers from South Korea. Up to ten each year may be available, depending on funds.
- Applicant Fellows must be of at least postdoctoral status at the time of application. This means that the applicant Fellow's PhD must have been conferred before submitting the application to the ARC.
- No restriction is placed on nationality or age.
- Applicant Fellows must demonstrate ongoing research connections with a university or research institute in South Korea.
- Fellowships cannot be extended or granted a second time.

Duration

- Four to twelve months.
- Successful applicants must commence Fellowships before 30 June 2004.

Application

- Any Australian higher education institution, including the CSIRO, can nominate candidates from South Korea to the ARC.
- Any researcher, university or research institution in South Korea can nominate Australian candidates to KOSEF.
- Nominating institutions must guarantee to provide appropriate facilities and equipment and to meet associated research costs.

Possible entitlements

- Salaries will be recommended by the administering institution from the appropriate point on the ARC notional salary scale in 2004 at Appendix 2. Salaries are subject to agreement by the ARC and approval by the Minister, and will be paid through the administering institution.
- An amount of 26 per cent of salary is payable to administering institutions for on-costs together with a contribution to consumable items for the research project.
- One return economy class airfare and associated travel expenses for the Fellow is provided. Air fares and associated travel expenses, at the economy rate, for a partner and dependent children can be provided if they accompany the Fellow and stay in the host country for at least six months.
- The cost of attendance at a major conference in Australia, during the Fellowship including registration and travel can be claimed.

- The administering institution will provide health and accident insurance cover during the stay in the host country for the researcher (and partner and dependent children provided they are in continuous residence in the host country for the stay of the researcher).

APPENDIX 7: United Kingdom Fellowships

An International Research Fellowship Agreement between the United Kingdom Office of Science and Technology, administered by the Royal Academy of Engineering, and the ARC.

Number and eligibility

- Up to five research Fellowships may be awarded annually by the ARC in 2004 to postdoctoral researchers from the UK to work in Australia in the fields of social sciences, mathematics, the natural sciences and engineering.
- Australian researchers may seek Fellowships, through their UK host researcher, for research in any branch of science or engineering that comes within the ambit of the Royal Academy of Engineering and the Royal Society, and in the social sciences.
- Eligible researchers are those who have completed their doctorate within three years. Eligibility for Fellowships in 2004 is limited to researchers who have had doctorates conferred at any time during 2000, 2001, 2002 or by 30 March 2003. Applicants may seek an exemption from this requirement if the nominating institution includes a statement justifying special consideration, for example, candidates who interrupted their careers to care for children. Non-research careers do not normally qualify for exemption.
- No restriction is placed on nationality or age, subject to the normal immigration and visa requirements of the UK and Australia.
- Fellowships cannot be extended or granted a second time.
- Applicant Fellows demonstrate ongoing research connections with a university or research institute in the UK.

Duration

- Four to twelve months.
- Successful applicants must commence Fellowships before 30 June 2004.

Application

- Any Australian higher education institution may nominate UK candidates to the ARC.
- Any UK academic institution may nominate Australian candidates to the Royal Academy of Engineering.
- Nominating institutions must guarantee to provide appropriate facilities and equipment and to meet associated research costs.

Possible entitlements

- Salaries will be recommended by the administering institution from the appropriate point on the ARC notional salary scale in Appendix 2. Salaries are subject to agreement by the ARC and approval by the Minister, and will be paid through the administering institution.
- An amount of 26 per cent of salary is payable to administering institutions for on-costs together with a contribution to consumable items for the research project.
- One return economy class airfare and associated travel expenses for the Fellow is provided.
- Cost of attendance at a major conference in Australia, during the Fellowship, including registration and travel.
- A contribution is made towards subsistence.

Fellows are responsible for their own medical and dental treatment.

No responsibility will be taken for any costs associated with visits by family members.

APPENDIX 8: Linkage–International Awards

Countries with which the ARC has a Memorandum of Understanding (MoU)

Austria	Austrian Science Foundation (FWF)
China	National Natural Science Foundation of China (NSFC)
Czech Republic	Grant Agency of the Czech Republic
France	Centre National de la Recherche Scientifique (CNRS)
Germany	Deutsche Forschungsgemeinschaft (DFG)
Indonesia	Indonesian University Research Council (IURC)
Italy	National Research Council of Italy (CNR)
Japan	Japan Society for the Promotion of Science (JSPS)
The Republic of Korea	Korea Science and Engineering Foundation (KOSEF) and Korea Research Foundation (KRF)
Switzerland	Swiss National Science Foundation (SNSF)
The Netherlands	Netherlands Organisation for Scientific Research (NWO)

Traditional research partners are—

- Canada
- India
- New Zealand
- The United Kingdom
- The United States of America

Grants may also be awarded for projects supported under the European Union's Sixth Framework.

APPENDIX 9: 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.