



Australian Government
Australian Research Council

Excellence in Research for Australia

ERA

RESEARCH in the national interest - enabling the future

ERA 2010 Evaluation Guidelines

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ERA phases

Figure 1: This figure outlines the various phases of the ERA 2010 process and references the relevant section of this document that provides further information about each phase.

Phase	Activity	Section
Submission		4.1
Assignment	Assignment of material to reviewers	10
Evaluation	Stage 1 – Preliminary evaluation by REC members at the four-digit level and evaluation by additional peer reviewers of research outputs at the four- and two-digit levels	11 & 12
	Stage 2A – REC members review four-digit evaluations and preliminary evaluation at the two-digit level	13
	Stage 2B – REC members review two-digit evaluations	14
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SECTION 1. Purpose of the ERA 2010 Evaluation Guidelines

The purpose of the *ERA 2010 Evaluation Guidelines* is to provide information to Research Evaluation Committee (REC) Members and additional Peer Reviewers about their roles and responsibilities. *The ERA 2010 Evaluation Guidelines* also provide direction on the evaluation of assigned material for the Excellence in Research for Australia (ERA) initiative, commencing in 2010.

These Guidelines must be read in conjunction with the:

- ERA 2010 Submission Guidelines
- ERA-SEER 2010 Technical Specifications

These documents can be downloaded from the Australian Research Council (ARC) website at <http://www.arc.gov.au/era>.

REC Members and Peer Reviewers may be provided with other explanatory material by the ARC from time to time during the process.

These Guidelines outline the:

- key elements of ERA evaluation;
- roles and responsibilities of REC Chairs, Members and Peer Reviewers;
- evaluation processes;
- rating scale and guidance for evaluating assigned material;
- evaluation component of the ERA information management system known as SEER, which will be used to access and view material assigned for evaluation;
- moderation processes.

For information about the key data elements of ERA, in addition to the elements of evaluation, refer to the *ERA 2010 Submission Guidelines*.

A list of abbreviations used in this document is included as **Attachment A** – List of Abbreviations.

SECTION 2. Structure of the ERA 2010 Evaluation Guidelines

This document contains an overview of roles and responsibilities of all ERA Reviewers and guidelines for evaluation in the 2010 ERA process. The *ERA 2010 Evaluation Guidelines* is divided into Sections, grouped and briefly summarised as follows:

<p>Section 3: Overview of ERA Section 4: Overview of ERA Processes</p>	<p>These sections summarise the objectives and major phases of ERA, and introduce discipline clusters, Research Evaluation Committees (RECs) and discipline-specific indicators used in ERA.</p>
<p>Section 5: Key Elements of ERA</p>	<p>This section addresses the key elements of ERA evaluation, including: The definition of research; Units of Evaluation; ERA rating scale; <i>Discipline Matrices</i>; Interdisciplinary and Multidisciplinary Research in ERA; The arrangements in cases of low volume; Reference periods; The use of indicator categories to inform the evaluation process; and The role of ERA expert (REC) and peer review.</p>
<p>Section 6: Roles and Responsibilities</p>	<p>This section outlines the roles and responsibilities of the REC, the REC Chair and Members, and Peer Reviewers.</p>
<p>Section 7: Confidentiality, Conflict of Interest and Other Sensitivities</p>	<p>This section deals with confidential or sensitive research outputs; physical, technical or legal limitations; privacy complaints and advice; freedom of information; intellectual property in ERA-related material; managing copyright and conflicts of interest in research outputs identified for ERA peer review and related material; moral rights; and the consequences of institutions providing incomplete, false or misleading information.</p>
<p>Section 8: Overview of Evaluation Section 9: The Rating Scale</p>	<p>These sections provide an overview of the processes and stages of evaluation, and the rating scale.</p>
<p>Section 10: Assignment</p>	<p>This section outlines the assignment processes.</p>
<p>Section 11: Evaluation Stage 1 – Expert Review Section 12: Evaluation Stage 1 – Peer Review Section 13: Evaluation Stage 2A – Expert Review Section 14: Evaluation Stage 2B – Expert Review</p>	<p>These sections provide information and guidance for REC Members and Peer Reviewers about the detail of processes and activity for evaluation prior to the REC meeting. These sections also contain information about the range of indicators used in ERA.</p>
<p>Section 15: Evaluation Stage 3 – The REC Meeting</p>	<p>This section provides information about the conduct of the REC meeting, and about outcomes from the meeting.</p>
<p>Section 16: Evaluation Stage 4 – Cross-Cluster Chair Meeting</p>	<p>This section outlines the purpose of the Stage 4 meeting, and expected outcomes.</p>

Section 17: Reporting the ERA Outcomes	This section provides information about what will be reported from the ERA evaluations.
Section 18: Supporting ERA Documentation and ERA Contact Details	This section addresses the various points of reference relevant to evaluation, and how to obtain additional information as required.

Attachments:

- Attachment A** - List of Abbreviations
- Attachment B** - Field of Research (FoR) Codes
- Attachment C** - Format of research statement for Peer Review of creative works for the HCA cluster
- Attachment D** - Tier definitions for the ranking of journals
- Attachment E** - Tier definitions for the ranking of conferences
- Attachment F** - Eligible Institutions and ERA institution identifiers

SECTION 3. Overview of ERA

3.1 Introduction

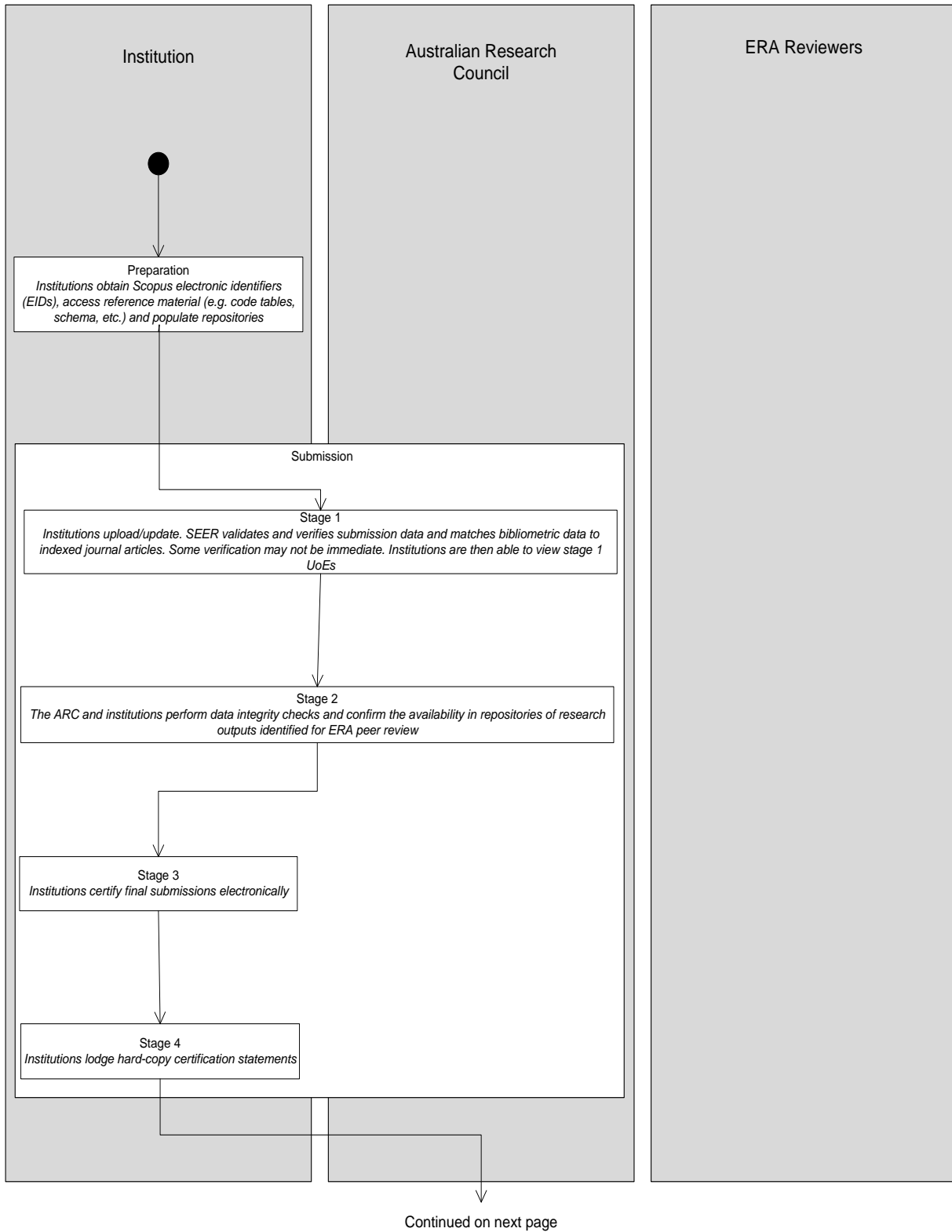
The Excellence in Research for Australia (ERA) initiative will evaluate research excellence at a discipline level in eligible higher education institutions (hereinafter, 'institutions') according to research quality. The initiative will use expert evaluation by leading national and international experts, informed by a range of discipline-specific indicators.

Evaluations in ERA will be undertaken by Research Evaluation Committees (RECs) established at the discipline cluster level. There will be eight RECs in total. RECs will comprise nationally and internationally-recognised researchers with expertise in research evaluation.

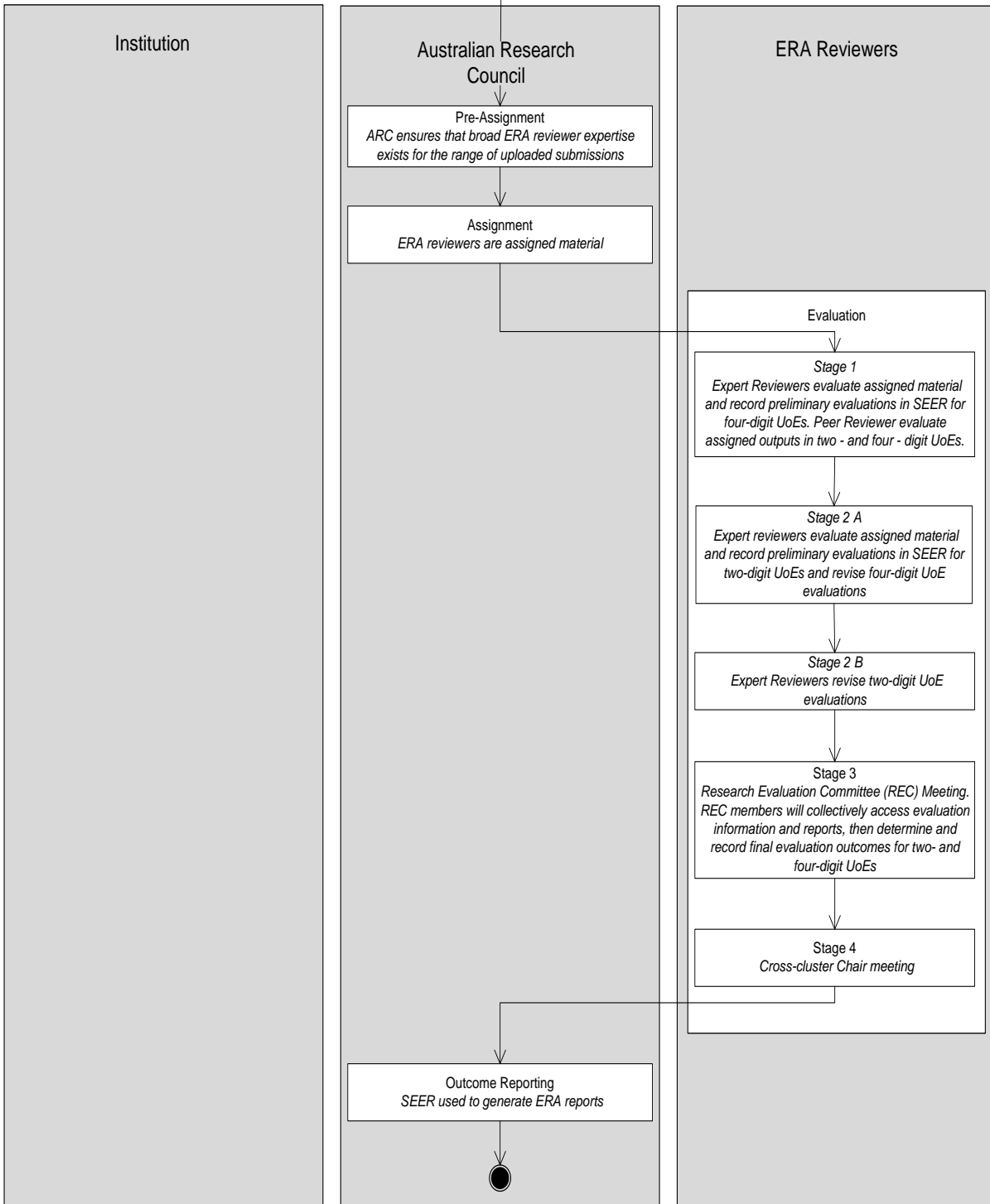
The members of a REC will be engaged in the process of evaluating submissions from institutions and other supporting information (such as the benchmarking data for citations from an external data supplier) over a period of three to four months. In the first instance, REC members will individually be assigned material for preliminary evaluation (informed at various points by the preliminary evaluations of colleagues on the REC assigned to the same material). The preliminary evaluations of REC members are submitted to a main REC evaluation meeting, where the REC will make its final judgments about the Units of Evaluation within the cluster.

The major phases of ERA are Submission, Assignment, Evaluation and Outcome Reporting. Each phase is described in the following diagram. Further information on the Submission phase is available from the *ERA 2010 Submission Guidelines*.

Figure 2: Overview of ERA process



Continued from previous page



3.2 Objectives

The objectives of ERA are to:

1. Establish an evaluation framework that gives government, industry, business and the wider community assurance of the excellence of research conducted in Australia's higher education institutions;
2. Provide a national stocktake of discipline-level areas of research strength and areas where there is opportunity for development in Australia's higher education institutions;
3. Identify excellence across the full spectrum of research performance;
4. Identify emerging research areas and opportunities for further development; and
5. Allow for comparisons of Australia's research nationally and internationally for all discipline areas.

3.3 Discipline clusters

ERA will undertake evaluations across eight clusters of disciplines. These clusters are:

- Cluster One—Physical, Chemical and Earth Sciences
- Cluster Two—Humanities and Creative Arts
- Cluster Three—Engineering and Environmental Sciences
- Cluster Four—Social, Behavioural and Economic Sciences
- Cluster Five—Mathematical, Information and Computing Sciences
- Cluster Six—Biological and Biotechnological Sciences
- Cluster Seven—Biomedical and Clinical Health Sciences
- Cluster Eight—Public and Allied Health Sciences

For the purposes of ERA, disciplines are defined as four-digit and two-digit Fields of Research (FoRs) as identified in the Australian and New Zealand Standard Research Classification (ANZSRC).¹

Data for ERA is submitted at the four-digit FoR level. Indicators are calculated based on the submitted data for each institution at the four-digit and two-digit FoR levels, and this information is aggregated to create four-digit and two-digit Units of Evaluation (discipline by institution, see *ERA 2010 Submission Guidelines*). Units of Evaluation are grouped by cluster, and are assessed and rated by Research Evaluation Committees.

The full list of disciplines and FoR codes by ERA cluster can be found in **Attachment B**.

3.4 Indicators

Research Evaluation Committees (RECs), comprising experienced, internationally-recognised experts, will evaluate the overall research performance of disciplines within institutions, using a range of discipline-specific indicators. Information about which indicators will be used for each Unit of Evaluation in each Cluster is provided in the *ERA 2010 Discipline Matrices*, available from the ARC website (see **Section 18** for details).

¹ For information on ANZSRC visit the Australian Bureau of Statistics website <http://www.abs.gov.au>

SECTION 4. Overview of the ERA process

The four major phases of ERA are Submission, Assignment, Evaluation, and Outcome Reporting.

4.1 Submission

Institutions will be given access to the ERA IT system, the System to Evaluate the Excellence of Research (SEER), to upload their cluster submission data. This data will be verified and validated by SEER to ensure that the data submitted aligns with the *ERA 2010 Submission Guidelines* and *ERA–SEER 2010 Technical Specifications*. Using the submission data from each institution, SEER will create Units of Evaluation for each four- and two-digit FoR that meets or exceeds the low volume threshold. SEER will provide those Submission Stage 1 Units of Evaluation to institutions for checking. Once the data for a particular institution has been submitted correctly, the submission needs to be certified by the institution.

The ARC will then append to the submission relevant data for evaluation, including national and international benchmarks.

Further information about the submission phase is provided in the *ERA 2010 Submission Guidelines*.

4.2 Reference periods

Submission data for ERA will be collected for the following reference periods:

Data Type	Reference Period	Years
Research Outputs	1 January 2003–31 December 2008	6
Research Income	1 January 2006–31 December 2008	3
Applied Measures	1 January 2006–31 December 2008	3
Esteem Measures	1 January 2006–31 December 2008	3

Data regarding eligible researchers is not collected for a reference period but based on a single staff census date, which is 31 March 2009.

4.3 Assignment

At the close of the Submission phase, material will be assigned to REC Members and, where appropriate, to Peer Reviewers.

4.4 Evaluation

RECs will undertake expert review out of session, using all relevant indicators for each Unit of Evaluation, and provide preliminary ratings and any supporting text. As part of this process, where it is an indicator, ERA Peer Review will be undertaken of a sample of research outputs selected by the institution. Peer Review will be undertaken by REC members, and by additional Peer Reviewers where appropriate. Peer Reviewers will provide a single rating and supporting text for the sample of outputs which have been reviewed for each Unit of Evaluation – not individual outputs within the sample.

REC members will then consider all the preliminary outcomes for their assigned Units of Evaluation including the evaluations of colleagues on the REC assigned to the same material, and Peer Reviewers where peer review is an identified indicator, in preparation for the REC meeting.

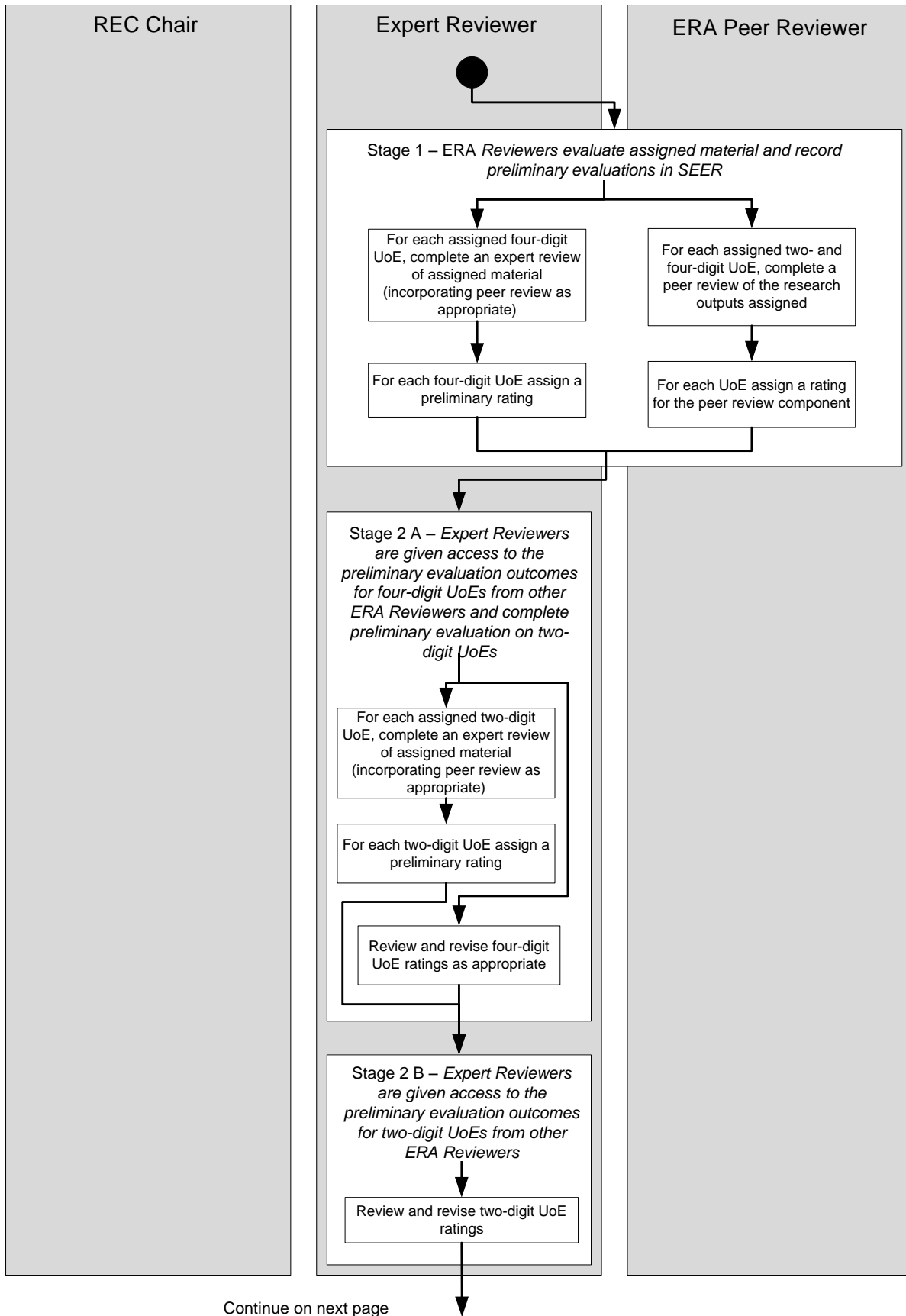
Each REC will convene to consider the preliminary outcomes and agree to final evaluation outcomes for each Unit of Evaluation at the Stage 3 meeting.

4.5 Outcome reporting

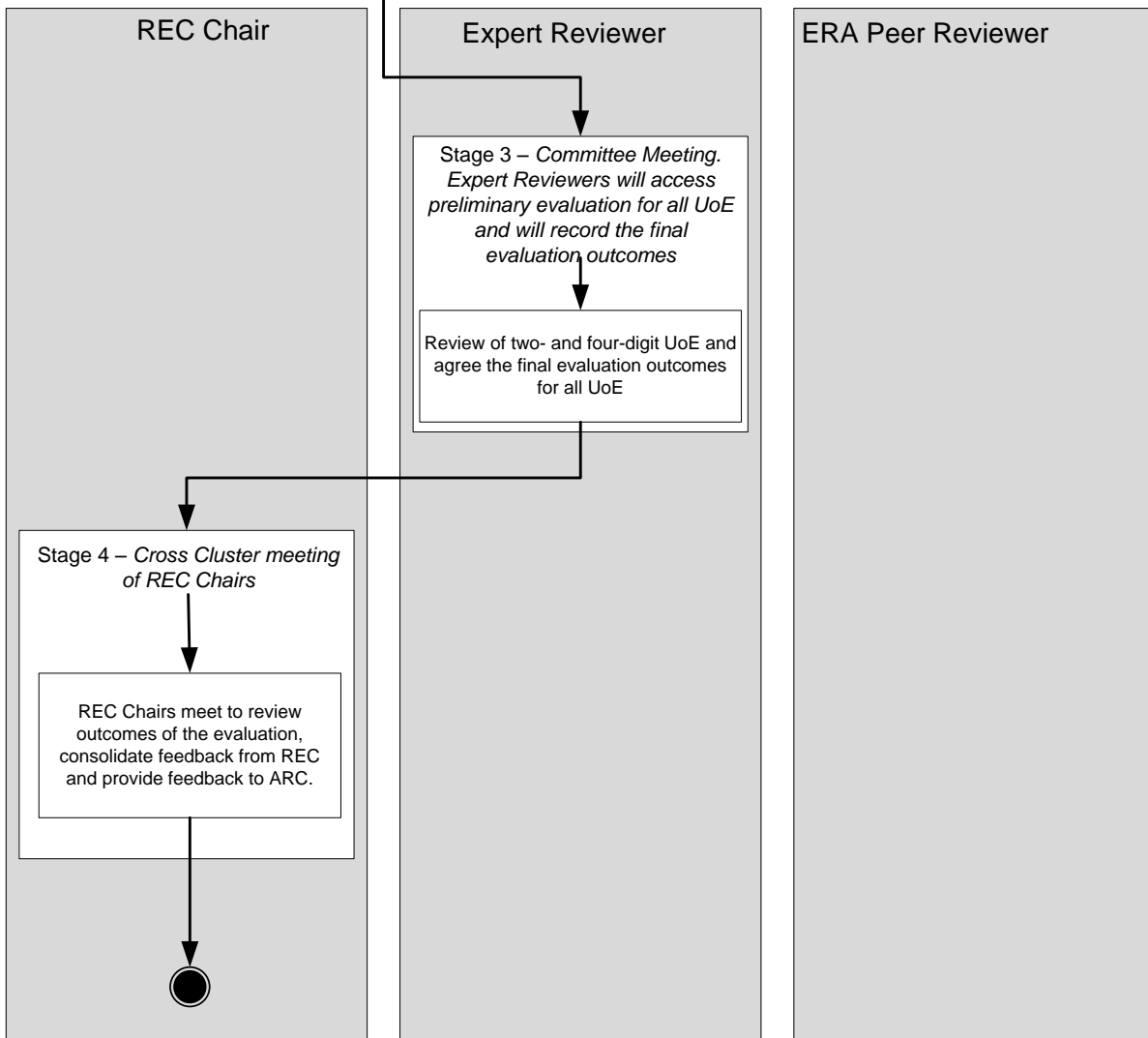
The ARC will publicly release outcomes of the evaluations for all disciplines. The ARC may publish additional information (e.g. an institution's submitted information) with the consent of the relevant institution(s).

The following diagram (**Figure 3**) outlines the overall evaluation processes in ERA:

Figure 3: Overview of ERA Evaluation Processes



Continued from previous page



SECTION 5. Key elements of ERA evaluation

5.1 Definition of research

For the purposes of ERA, research is defined as the creation of new knowledge and/or the use of existing knowledge in a new and creative way so as to generate new concepts, methodologies and understandings. This could include synthesis and analysis of previous research to the extent that it is new and creative.

This definition of research is consistent with a broad notion of research and experimental development (R&D) as comprising ‘creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of humanity, culture and society, and the use of this stock of knowledge to devise applications’.² This definition should be read as consistent with that used in the Higher Education Research Data Collection Specifications (‘HERDC Specifications’).³

Institutions have been asked to use this definition of research when assessing the eligibility of research outputs for submission in ERA.

5.2 Unit of Evaluation

The Unit of Evaluation (UoE) for ERA is the research discipline for each institution by cluster.

Evaluations in ERA will normally be conducted at both the four-digit and two-digit Field of Research (FoR) level. All ERA data collection will be at the four-digit FoR level, regardless of the volume of an institution’s research activity at that level. For some areas of research, it is recognised that there may not be sufficient research volume to undertake a valid analysis at the four-digit FoR level for a given institution. In the case of low volumes at the four-digit level, RECs will not undertake an evaluation of that four-digit discipline for that institution.

RECs will also conduct analyses at the two-digit level where two-digit volumes are sufficient for evaluation. In the case of low volumes at the two-digit level, RECs will not undertake an evaluation of that two-digit discipline for that institution (see **Section 5.4**, below).

5.3 Interdisciplinary and multidisciplinary research

As ERA is a discipline-based research evaluation exercise, interdisciplinary and multidisciplinary research will be disaggregated based on its discipline components.

In the case of research outputs, RECs will have access to a profile of the extent of multidisciplinary research associated with a Unit of Evaluation. This will be derived from the FoRs that are appended to each research output in the relevant Unit of Evaluation.

Additionally, institutions may assign up to two research themes (where applicable) to research outputs, and may also choose to assign up to two Institutional Unit codes to research outputs. Where research outputs have been coded by research theme or Institutional Unit, institutions will be able to recompile data on their interdisciplinary and multidisciplinary research outputs internally. While coding of research outputs by research themes will provide data on the extent of

² OECD (2002), Frascati Manual: Proposed Standard Practice for Surveys on Research and Experimental Development, Paris.

³ <http://www.innovation.gov.au/Section/Research/Pages/highereducationresearchdatacollection.aspx>

interdisciplinary or multidisciplinary research, it will not be presented to the RECs for the purpose of evaluation.

5.4 Low Volume—Non-assessable units of evaluation

Institutions are required to apportion FoRs for research outputs, research income, applied measures and esteem. For Journal Articles, apportionment of FoRs is only possible within the codes to which each journal is assigned.

To ensure that there is a meaningful level of data to be evaluated by RECs, a low volume threshold exists for each Unit of Evaluation in ERA.

For disciplines where citation analysis is used, no evaluation will be conducted for the relevant FoR for a given institution if the number of indexed journal articles over the six year research outputs reference period is fewer than 50 in any four- or two-digit FoR.

For disciplines where citation analysis is not used, no evaluation will be conducted for an FoR for a given institution where, over the six year research outputs reference period, there are fewer than the equivalent of 30 submitted research outputs. Books are given an effective weighting of 5:1 compared with other research outputs. Books are weighted only for the purposes of determining the low volume threshold; in every other instance they are regarded as a single research output.

In each of these instances, the Unit of Evaluation for a given institution will be automatically treated as ‘not assessed due to low volume’, and will be publicly reported as ‘not assessed’. This means that data submitted on research outputs, research income, applied measures and esteem measures for the relevant two-digit or four-digit FoR for that institution will be collected but not evaluated under ERA. The institution therefore will not be considered by ERA as research active for the relevant discipline. However the data submitted will contribute to the national benchmarks.

5.5 Indicator categories

ERA will use four broad categories of indicators:

1. ***Indicators of research quality*** – Research quality is considered on the basis of ranked outlets, citation analysis, ERA peer review, and peer-reviewed Australian and international research income.
2. ***Indicators of research volume and activity*** – Research volume and activity is considered on the basis of total research output, contribution to total of research outputs in Australia, research income and other research items within the context of the profile of eligible researchers.
3. ***Indicators of research application*** – Research application is considered on the basis of research commercialisation income and other applied measures.
4. ***Indicators of recognition*** – Research recognition is considered on the basis of a range of esteem measures.

5.6 Expert review

For the purposes of ERA, the ARC will appoint RECs for each Cluster. RECs will comprise internationally-recognised members with expertise in research evaluation and with broad disciplinary expertise. REC members will undertake expert review at each Stage of Evaluation. Their expert review will be informed by the range of indicators identified in the *ERA 2010 Discipline Matrices*, the outcome of the expert review by colleagues on the REC, and peer review (where peer review is identified in the *ERA 2010 Discipline Matrices*).

5.7 Peer review

The ARC may appoint Peer Reviewers external to the REC, where peer review is identified in the *ERA 2010 Discipline Matrices*, to assist RECs. For disciplines where peer review is used, institutions are asked to identify a pre-determined proportion of their outputs for peer review. Peer reviewers will only have access to the sample of outputs for an assigned Unit of Evaluation, and not to any other indicators.

Members of a REC will also undertake an evaluation of a sample of outputs, consistent with their expert review role. REC members will have access to the full range of indicators for the assigned Unit of Evaluation, including the sample of outputs.

SECTION 6. Roles and responsibilities

6.1 Role of the REC

The role of the REC is to assign an agreed rating for all Units of Evaluation within the Cluster where there is sufficient volume for evaluation, and report the results (see Section 17 - Reporting the ERA Outcomes) to the ARC CEO.

6.2 Responsibilities of a REC Chair

The responsibilities of the REC Chair are to:

- participate fully in the evaluation process within their REC;
- ensure that the REC operates within the policies, guidelines and procedures established by the ARC;
- ensure that confidentiality is maintained for the deliberations and decisions of the REC;
- contribute fully, constructively and dispassionately to all REC processes and take ownership of the collective decisions of the REC;
- identify instances where they may have a conflict of interest (COI) or other sensitivity and raise these with the ARC prior to conflict occurring;
- assign material to REC members, and to Peer Reviewers where appropriate, for evaluation;
- evaluate assigned material and give preliminary ratings;
- ensure that evaluations are completed within agreed time frames;
- chair the REC Meeting to review preliminary ratings, and guide the REC to provide final quality ratings for each Unit of Evaluation;
- ensure that REC Members have an opportunity to contribute fully to the process and REC activities;
- ensure that REC decisions are documented (*see Section 17 - Reporting the ERA Outcomes*);
- report on REC results at the conclusion of the REC Meeting; and
- participate in a cross-cluster review at the conclusion of the REC Meeting and report to the ARC on the evaluation processes undertaken by the REC.

In the event that a REC Chair is unable to perform some or all of these responsibilities the ARC will appoint an Acting Chair from within the REC to take on some or all of the responsibilities of the REC Chair, as determined by the ARC. This will most commonly occur, for example, where the Chair has identified a COI and the ARC appoints an Acting Chair for the purposes of assigning particular material for evaluation.

6.3 Responsibilities of REC Members

The responsibilities of REC Members are to:

- participate fully in the evaluation process within their REC;
- be diligent in completing tasks allocated to them by the REC Chair;
- provide advice on suitable Peer Reviewers (where the REC member has been appointed a Principal Reviewer),

- evaluate assigned material and allocate preliminary ratings to each Unit of Evaluation;
- contribute fully, constructively and dispassionately to all REC processes and, within the capacity of their expertise, take ownership of the collective decisions of the REC;
- maintain confidentiality of both the deliberations and decisions of the REC;
- exercise due skill and care in the performance of their responsibilities; and
- identify all instances where they may have a COI or other sensitivity and raise these with the ARC prior to conflict occurring.

6.4 Roles and responsibilities of peer reviewers

Where identified as an indicator in the *ERA 2010 Discipline Matrices*, assigned REC members will undertake Peer Review and may utilise external Peer Reviewers for the evaluation of the research output component of Units of Evaluation during Stage 1 of evaluation. See **Section 12** - Evaluation Stage 1 – Peer Review for information about the processes for identifying and appointing external Peer Reviewers. Peer Reviewers are external specialists who may be used particularly where gaps in expertise are identified or where significant workload issues are expected.

The responsibilities of Peer Reviewers are to:

- evaluate assigned material, give preliminary ratings to each assigned UoE, and provide supporting text;
- be diligent in completing tasks allocated to them;
- exercise due skill and care in the performance of their responsibilities;
- identify instances where they may have a COI or other sensitivities and raise these with the ARC prior to conflict occurring; and
- abide by confidentiality requirements.

6.5 Summary of ERA roles

Title	Roles	Activity	Stage of Evaluation
REC Chair	<ul style="list-style-type: none"> • All Expert Reviewer tasks, plus: <ul style="list-style-type: none"> ➤ Assign REC members to units of evaluation ➤ Manage the workload of the REC ➤ Chair the Stage 3 meeting ➤ Take part in the Stage 4 Chairs' meeting 	Assignment	Pre-evaluation
		Evaluation	Stages 1, 2a, 2b and 3
		Cross-cluster Review	Stage 4
Expert Reviewer (i.e. REC Member)	<ul style="list-style-type: none"> • Evaluate all relevant indicators for assigned 2- and 4-digit units of evaluation • Where peer review is an indicator, assign peer reviewers to units of evaluation (if Principal Reviewer) • Take part in evaluation Stages 1, 2a, 2b and 3 	Evaluation	Stages 1, 2a, 2b and 3
		Peer Review (as required)	Stage 1, 2a and 2b
Peer Reviewer	<ul style="list-style-type: none"> • Evaluate the peer review indicator only • Evaluate assigned 2- and 4-digit units of evaluation in disciplines using peer review component only • Only take part in Stage 1 of evaluation 	Peer Review (as required)	Stage 1

SECTION 7. Confidentiality, conflict of interest and other sensitivities

7.1 Confidentiality

REC Members and Peer Reviewers are required to sign a confidentiality agreement with the ARC prior to their participation in ERA. The agreement covers all aspects of their work with ERA, and the agreement will survive the conclusion of their engagement for the purposes of ERA.

REC Members and Peer Reviewers must not contact researchers and/or institutions to seek clarification or to discuss material that has been submitted for evaluation in ERA, or seek additional information from the web or other sources. REC Members and Peer Reviewers must not reveal details about any evaluation, REC deliberations or conclusions, before or after the final outcomes have been released by the ARC.

7.2 Conflict of interest (COI)

A COI is any situation where a REC Member or Peer Reviewer has an interest which conflicts, might conflict, or may be perceived to conflict with the interests of the implementation of ERA. Examples of COI include:

- being employed by, or holding an adjunct or honorary appointment at, the institution which has made the submission which is being assigned;
- having a close personal relationship with someone whose work is significantly incorporated in the Unit of Evaluation or peer review task being assigned for evaluation. This could include a partner, spouse, family member or close friend. Included in this category is enmity;
- being a close collaborator with someone whose work is significantly incorporated in the Unit of Evaluation or peer review task which is being assigned for evaluation;
- other conflicts that a REC Member or Peer Reviewer may wish to raise and have clarified, including financial interests (for example holding a company directorship, stock ownership or options, patents, royalties, consultancy or grant) which could lead to financial gain to a REC Member or Peer Reviewer in circumstances where they have access to information or are able to influence decision-making.

A REC Member or Peer Reviewer is required to declare a COI as soon as practicable after it has been identified. In such circumstances, the ARC will address each instance on a case by case basis. In most cases, these situations will be handled either by the REC noting the conflict, or the individual REC Member or Peer Reviewer not evaluating the particular material. REC Members and Peer Reviewers should not evaluate any material for which they have a potential COI.

REC Members and Peer Reviewers must contact the ARC if they are unsure about whether they have a COI. This is any COI that would prevent them submitting a completely objective evaluation. All concerns will be addressed in confidence.

7.3 Other sensitivities

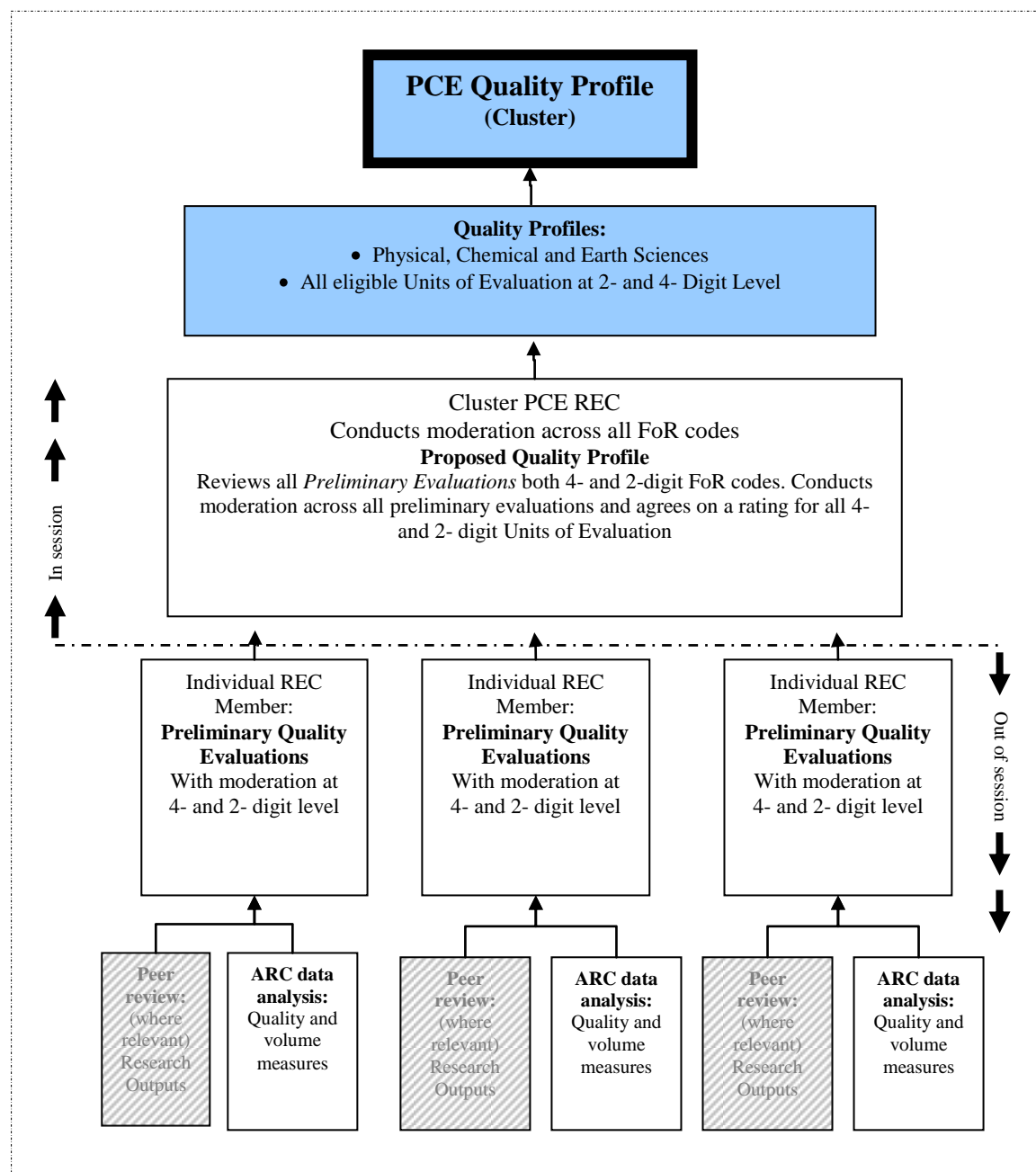
If REC Members or Peer Reviewers are asked to evaluate research outputs within a Unit of Evaluation, and the research material causes offence or serious sensitivity, they should raise their concern with the ARC as soon as practicable. One example may be where the research offends their

personal beliefs, or there may be another sensitivity that may significantly affect their expert judgment of a Unit of Evaluation. In this case the task will be reassigned to another REC Member or Peer Reviewer.

SECTION 8. Overview of evaluation

The following diagram presents an overview of the processes of evaluation. The example given is for the PCE (Physical, Chemical and Earth Sciences) Cluster, and so the ‘peer review’ boxes have been ‘greyed out’ to reflect that peer review will not be used in the evaluation of PCE disciplines.

Figure 4: Overview of evaluation



The processes, in summary, are as follows:

Stage 1 (out of session)—REC Members will conduct individual preliminary evaluations of assigned four-digit Units of Evaluation out of session. This will be informed by all of the material that has been assigned for evaluation—including the relevant indicators and benchmarks. Peer

review, where it is indicated in the *ERA 2010 Discipline Matrices*, also takes place in Stage 1 and is carried out by both REC Members and Peer Reviewers.

Stage 2A (out of session)—REC Members will have access to the combined preliminary evaluations for those Units of Evaluation they have been assigned to, from other REC Members and Peer Reviewers, for the purpose of moderation at the four-digit level. REC members will also conduct individual preliminary evaluations of assigned two-digit Units of Evaluation out of session. This will be informed by all of the material that has been assigned for evaluation – including the relevant indicators and benchmarks.

Stage 2B (out of session)—REC Members will have access to the combined preliminary evaluations at the two-digit level for the Units of Evaluation they have been assigned to from other REC members and Peer Reviewers for the purpose of moderation at the two-digit level.

Stage 3 (in session)—the preliminary evaluations will be reviewed and moderated across all four-digit codes and all two-digit codes. The REC will agree on a rating and any supporting text for all Units of Evaluation which meet or exceed their low volume threshold, and provide a report to the ARC's Chief Executive Officer.

Stage 4 (in session)—REC Chairs will meet to review the overall evaluation outcomes from RECs, and the evaluation processes.

SECTION 9. The Rating Scale

The Rating Scale for ERA is broadly consistent with the approach taken in research evaluation processes in other countries to allow for international comparison where appropriate.

Figure 5: ERA Rating Scale

Rating	Descriptor
5	The Unit of Evaluation profile is characterised by evidence of outstanding performance well above world standard presented by the suite of indicators used for evaluation.
4	The Unit of Evaluation profile is characterised by evidence of performance above world standard presented by the suite of indicators used for evaluation.
3	The Unit of Evaluation profile is characterised by evidence of average performance at world standard presented by the suite of indicators used for evaluation.
2	The Unit of Evaluation profile is characterised by evidence of performance below world standard presented by the suite of indicators used for evaluation.
1	The Unit of Evaluation profile is characterised by evidence of performance well below world standard presented by the suite of indicators used for evaluation.
NA	Not assessed due to low volume. The number of research outputs does not meet the volume threshold standard for evaluation in ERA.

Note:

1. In order to achieve a rating at a particular point on the scale, the majority of the output from the Unit of Evaluation will normally be expected to meet the standard for that rating point.
2. ‘World Standard’ refers to a quality standard. It does not refer to the nature or geographical scope of particular subjects, or to the locus of research nor its place of dissemination.

SECTION 10. Assignment

10.1 Pre-assignment processes

At the conclusion of the submission period, the ARC will examine the material that has been submitted. For the purposes of assignment, the ARC will:

- identify potentially sensitive material and resolve assignment and access issues;
- identify non-repository peer review items for Peer Review and resolve access issues; and
- identify COI and other pre-determined inability to evaluate and initiate preventative processes.

In consultation with the REC Chair, the ARC will develop a work program for each REC Member, including potential workload based on submissions.

10.2 The assignment process

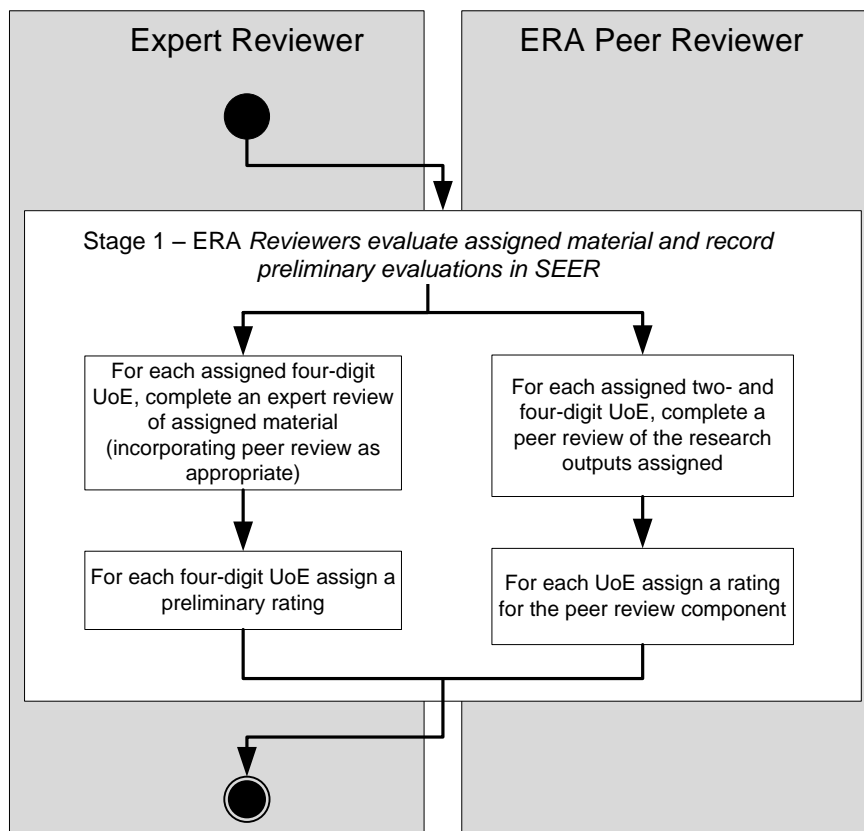
The ARC will assign all Units of Evaluation for the Cluster to the Chair of the REC (excluding those prohibited by the Chair's COI or other sensitivity—see **Section 6.2** for information about arrangements for the appointment of an Acting Chair). The Chair is responsible for the assignment of the Units of Evaluation to REC Members, having regard to:

- the expertise of the REC Members, so as to match their research profile;
- any declared COI or other declared inability to evaluate, including pre-identified sensitivities;
- sensitive materials; and
- achieving a balance of workload across REC Members.

Chairs will arrange for the assignment of each Unit of Evaluation to **at least three REC Members** and appoint one of those three as the Principal Reviewer, for each Unit of Evaluation. Where Peer Review is identified as an indicator in the *ERA 2010 Discipline Matrices*, the Chair will work with the Principal Reviewer to assign Peer Reviewers (see **Section 12**).

SECTION 11. Evaluation Stage 1—Expert Review

Figure 6: Overview of Stage 1



Note: Peer Review in Stage 1 will be undertaken by REC members and by additional Peer Reviewers who are appointed for this purpose.

11.1 Overview

During Evaluation Stage 1, REC Members will:

- view assigned material to confirm that they have no Conflict of Interest or other reason for declaring an inability to evaluate which would prevent them from appropriately reviewing and rating each of the Units of Evaluation which are assigned to them;
- identify any anomalies in the material assigned and report them to the ARC; and
- review (including peer review) material and give a rating (and any supporting text) for all the material within a Unit of Evaluation which is assigned to them, and submit ratings. The role of Peer Review is explained in more detail in **Section 12**.

REC Members must not seek additional information either by contacting others, or by undertaking their own research/inquiries about the material which is assigned for evaluation. For example, web searches and independent citation analyses are strictly not permitted.

In Evaluation Stage 1, the information contained in the material assigned to a REC Member should not be disclosed to any other person either involved in the ERA 2010 evaluation process or outside of ERA. This is particularly so when evaluating information contained in an institutional

submission that is identified as confidential or includes culturally sensitive material (and for which its treatment or use would be a matter of profound concern to others). Care must be taken by REC Members to ensure that the material is not disclosed (even inadvertently) to any other person, except in the course of the proper activities of the REC.

Prior to the REC Meeting (Evaluation Stage 3), REC Members must not discuss their evaluation with any others, including those involved in the 2010 ERA Evaluation Process. Each REC Member must form an independent view of the quality of Units of Evaluation (including any evaluation of peer review outputs during this Stage) which have been assigned to them.

It should be noted that the ARC is available to provide advice to all REC Members and Peer Reviewers on any issues that arise at any time, including during Evaluation Stage 1. Contact details are provided in **Section 18**.

11.2 Indicator dashboard

Evaluation in ERA is informed by a range of indicators will be presented to the RECs as a ‘dashboard’. Where available, REC members will be able to ‘drill down’ into some indicator sets.

- 1. Indicator Summary:** outlines the entire dashboard available to the RECs at a glance. This includes all indicators in a summative format.
- 2. Volume and Activity**
 - a.** Distribution of research outputs by outlet types and contribution to Australian HEP total by outlet types.
 - b.** Distribution of FTE and headcounts by HESDC Levels.
- 3. Ranked Outlets: Journals**
 - a.** Number and proportion of outputs by year of publication,
 - b.** Profiled by tier and compared against Australian and World benchmarks and, ranked journals citation supplier coverage.
 - c.** Contribution to Australian HEP total by tier.
- 4. Ranked Outlets: Conferences**
 - a.** Number and proportion of outputs by year of publication, and
 - b.** Profiled by tier and compared against Australian benchmarks.
 - c.** Contribution of Australian HEP total by tier
- 5. Peer Review**
 - a.** Number of outputs by outlet type available for peer review (full output accessed through the drill-down function).
- 6. Citation Analysis**
 - a.** Relative citation impact (RCI) against world and Australian HEP benchmarks.
 - b.** Distribution of papers by RCI Classes.
 - c.** Low and high RCI Class ratio.

SECTION 12. Evaluation Stage 1—Peer Review

12.1 Overview

The ARC may appoint Peer Reviewers to assist RECs, where peer review is identified in the *ERA 2010 Discipline Matrices*. Each Unit of Evaluation will be assigned a ‘principal’ REC member, who will assign Peer Reviewers, where required.

A Peer Reviewer may be used in the following circumstances:

- where the relevant subject area expertise for evaluating a particular body of work is not sufficiently available within the REC;
- where the significance of a particular body of work is disputed or uncertain; or
- where there are significant workload issues that prevent a REC Member with the relevant expertise from participating in the evaluation of a sample of outputs.

The final responsibility for determining whether an external Peer Reviewer is necessary lies with the Chair of the REC (or the Acting Chair where the Chair is conflicted), in consultation with the relevant Principal Reviewer for the Unit of Evaluation. The selection of Peer Reviewers will be from an ERA expert database developed by the ARC from a range of relevant sources.

REC Members must not communicate directly with Peer Reviewers at any time. Peer Reviewers will submit ratings and supporting text, as for REC Members, through SEER (System to Evaluate the Excellence of Research).

12.2 Information for peer review

For disciplines where peer review is used, institutions are asked to identify a pre-determined proportion of their outputs for peer review. The proportion of outputs required to be made available for peer review is indicated in the *ERA 2010 Discipline Matrices*. Peer Reviewers will only have access to outputs in the pool of nominated peer review items. Peer Reviewers will not have access to the indicator profiles or other submission data for the relevant Unit of Evaluation.

12.3 Research in the Creative Arts

Research in the Creative Arts ranges from the experimental, involving the production of creative works, through to the analytical, involving the study of particular subjects.

When a creative work is submitted to ERA for evaluation, it may not be immediately clear to ERA Reviewers what the research component of the research output is. To assist ERA Reviewers with this, institutions are asked to write a Research Statement describing the research component of the research output to help with the task of reviewing the output. The Statement will include the following:

- research background—field, context and research question;
- research contribution—innovation/new knowledge; and
- research significance—evidence of excellence.

An example of a Research Statement is provided in **Attachment C** of this document. Further details on the requirements for Research Statements are included in the *ERA 2010 Submission Guidelines*.

12.4 Determining a rating for peer review

Peer Reviewers will consider a pool of outputs for peer review, to enable them to make an informed judgment about the quality of the assigned material. Peer Reviewers will be instructed to select a range of outputs sufficient for a robust evaluation.

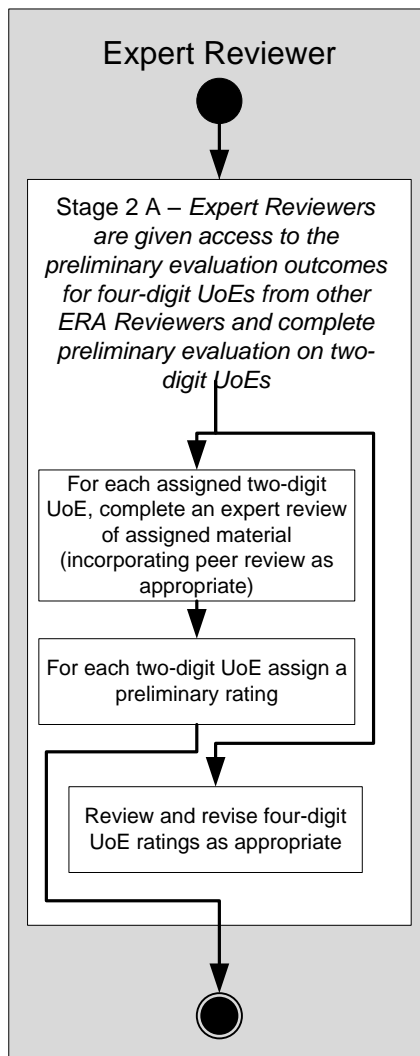
Peer Reviewers will read all of the selected material and use their expert judgment in forming a single rating for all of the peer reviewed material based on the quality rating scale for ERA. Weightings will not apply to different output types or to different types of evidence. Peer Reviewers will not rate individual outputs.

12.5 Peer Review Report

Peer Reviewers will assign a single rating for each Unit of Evaluation, together with supporting text for the rating. The Peer Review Report will be made available to relevant REC members for Evaluation Stage 2. Peer Reviewers are not involved in the evaluation process after the completion of Stage 1, other than to the extent their reviews are used by the RECs.

SECTION 13. Evaluation Stage 2A—Expert Review

Figure 7: Overview of Stage 2A



13.1 Preliminary four-digit evaluations

In Evaluation Stage 2A, REC Members will be given access to the preliminary evaluation outcomes (ratings and any supporting text) from other REC Members and Peer Reviewers (where peer review has taken place), limited to those (four-digit FoR code) Units of Evaluation that they have been assigned to.

13.2 Review of four-digit evaluations

After all four-digit preliminary evaluations from REC Members and Peer Reviewers are received, the ARC will present the combined preliminary evaluations for each Unit of Evaluation to REC Members. REC Members will still only have access to the combined preliminary evaluations for those Units of Evaluation they have been assigned, and not those where a COI has been identified.

A REC Member is able to view all the preliminary evaluations of other REC Members assigned to the same Units of Evaluation, and will also have access to the rating(s) and supporting text from Peer Reviewers. At this point such information is useful for REC Members because it will show

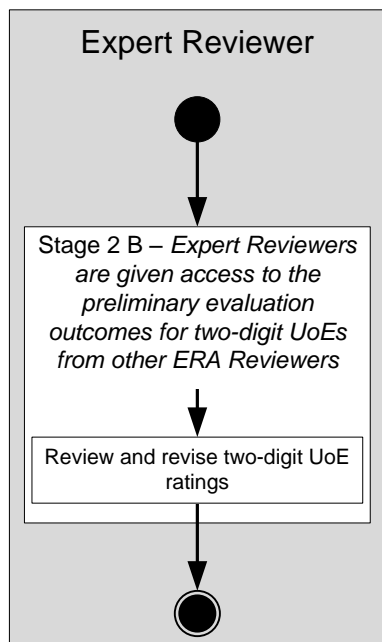
areas of complementary views and ratings, the extent of differing ratings and comments, and the potential level of moderation required.

13.3 Preliminary two-digit evaluations

REC Members will conduct individual preliminary evaluations of assigned two-digit Units of Evaluation. Access to these profiles is on the basis that no conflicts of interest are present when viewing the two-digit level information.

SECTION 14. Evaluation Stage 2B—Expert Review

Figure 8: Overview of Stage 2B



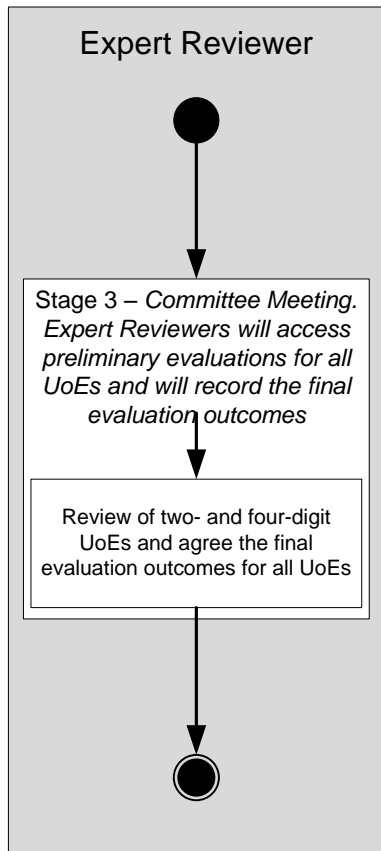
14.1 Review of two-digit evaluations

In Evaluation Stage 2B, REC Members will be given access to the preliminary evaluation outcomes (ratings and any supporting text) from other REC Members and Peer Reviewers (where peer review has taken place), to assist them in confirming or revising their preliminary scores for the (two-digit FoR code) Units of Evaluation to which they have been assigned.

During Evaluation Stage 2B, REC Members will also be able to review indicator and supporting information profiles at the two-digit level for Units of Evaluation to which they have been assigned.

SECTION 15. Evaluation Stage 3—The REC Meeting

Figure 9: Overview of Stage 3



15.1 Overview

All RECs will meet at the same time and in the same place to finalise evaluation outcomes. This arrangement will allow for the exchange of cross-cluster expertise as appropriate in finalising the outcomes.

Subject to COI or other identified sensitivity, all preliminary ratings will be available to all REC Members at the Stage 3 meeting and final ratings for all Units of Evaluation (for those which meet the volume threshold for evaluation) will be determined by the RECs during this time. Moderation will take place during the meeting to ensure consistency of approach and interpretation of the rating scale.

REC Members are expected to attend the REC Meeting to discuss, as a committee, the final ratings and any feedback text for each Unit of Evaluation.

15.2 What information will be available at the Meeting

At the Meeting, REC Members will have access to:

- preliminary ratings and any supporting text from REC Members and (where it is identified in the *ERA 2010 Discipline Matrices*) Peer Reviewers, for each Unit of Evaluation;
- indicator profiles at the four-digit and two-digit FoRs within institutions.

15.3 Working methods

The ARC will provide documentation and training to REC members. The training is expected to inform the development by the RECs of any additional working methods for the purposes of evaluation. RECs will be expected to document any additional working methods developed for the purposes of evaluation. Other explanatory material may be provided by the ARC from time to time during the process.

At the REC Meeting REC members will be expected to:

- undertake a systematic review of all Units of Evaluation from institutions, and the preliminary ratings;
- reach a collective conclusion about the rating for a Unit of Evaluation, on the basis of collective discussion, and agree on any supporting text for the rating;
- participate fully in the evaluation process within their REC.

REC Members will not be permitted to remain in the room during discussions of Units of Evaluation for which they have an identified COI.

An Acting REC Chair will be appointed by the ARC from the REC membership where the REC Chair is not present at the meeting (because of an identified COI, or other circumstances where the Chair is unavailable).

Where consensus within the REC about a rating is not possible, the ARC may appoint a moderator from another REC to review the Unit of Evaluation and the proposed rating(s). The moderator will make a recommendation to the REC Chair, who will determine the final rating.

15.4 Moderation processes

ERA will employ a number of moderation processes, coordinated through the supporting secretariat for each REC. These include:

- support to REC training sessions to ensure consistent messages are imparted;
- support to RECs with the development and review of any additional working methods;
- support for RECs at the REC Meeting in addressing any irregularities identified in the evaluation processes;
- review by REC Members of the preliminary ratings prior to the REC Meeting and moderation across all four- and two- digit codes within a cluster;
- continuous review of REC processes during the REC Meeting for consistency with the established policies, supporting documentation and procedures for ERA; and
- advice from REC members throughout the evaluation and final stages to the ARC regarding future moderation processes for ERA.

15.5 Reporting REC results

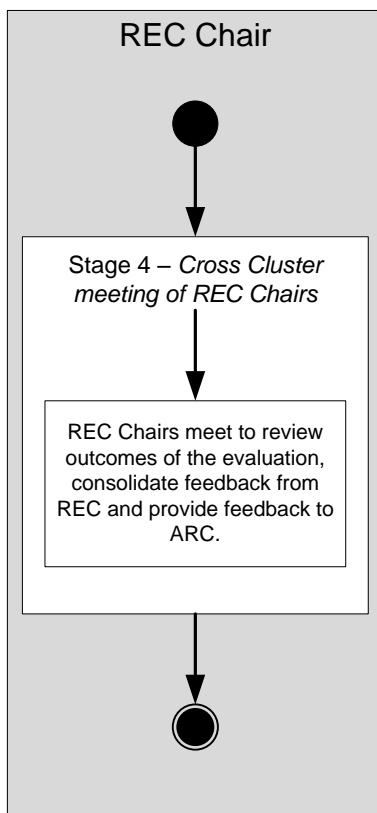
At the completion of the REC Meeting, the expected outcomes are:

- an agreed rating for every Unit of Evaluation (except where there is insufficient volume for evaluation), and supporting text;
- appropriate recording of working methods, including COI declarations and how they were dealt with by the REC;
- appropriate recording of any policy issues which had arisen during the course of the REC's deliberations, including the resolution of issues, and recommendations for further consideration by the ARC about future improvements for ERA processes;
- an outcomes report that details the outcomes of the evaluation for the Cluster by the REC to the ARC Chief Executive Officer (CEO).

The reports from all RECs will be available to the REC Chairs in the Stage 4 cross-cluster review meeting, and will be provided to the ARC CEO at the conclusion of the Stage 4 meeting for consideration together with the Stage 4 meeting report.

SECTION 16. Evaluation Stage 4—Cross Cluster Chair Meeting

Figure 10: Overview of Stage 4



Following the REC meeting and finalisation of the evaluation outcomes, the REC Chairs will meet for a cross-cluster review of processes and evaluations. At this cross-cluster review meeting, the Chairs will have access to evaluation outcomes subject to COI. At the cross cluster meeting, REC Chairs will be expected to:

- review overall outcomes from all RECs;
- ensure that there has been a consistent interpretation and application of the ERA rating scale and other ERA evaluation measures;
- address recommendations made by the RECs (for further consideration by the ARC about future improvements to ERA processes);
- review evaluation processes and provide feedback to the ARC.

This is an overarching review. It is not intended to be a detailed examination of the evaluation outcomes. The REC Chairs will report on the review of the evaluation processes.

SECTION 17. Reporting the ERA Outcomes

The ARC will publicly release outcomes of the evaluations for all disciplines. The ARC may publish additional information (for example, an institution's submitted information) with the consent of the relevant institution(s).

SECTION 18. Supporting ERA documentation and ERA contact details

18.1 Supporting ERA documentation

The *ERA 2010 Submission Guidelines* provide an overview of, and specify the content and data requirements for ERA 2010 submissions. They also provide guidance to eligible higher education providers on policy and practical matters in preparing submissions.

The *ERA-SEER 2010 Technology Pack* includes technical documentation, Code Tables and XML schema related to the submission process. It also includes the *ERA-SEER 2010 Technical Specifications* which outline requirements for ensuring that information is available to reviewers during the evaluation process.

The *ERA 2010 Discipline Matrices* provide information about which indicators will be used for each Unit of Evaluation in each Cluster. This is available on the ARC website as a Microsoft Excel document as part of the *ERA-SEER 2010 Technology Pack*.

The *ERA Ranked Journal List* and *ERA Ranked Conference List*. Discipline-specific tiered outlet rankings will be one of the indicators used to support the evaluation of research excellence. For most disciplines this will be via the ERA Ranked Journal List, but for some disciplines the ERA Ranked Conferences List will be used as an indicator.

All of the supporting documentation and further information about ERA is available on the ERA website at www.arc.gov.au/era

18.2 ERA contact details

All general inquires regarding all aspects of ERA should be directed to the ERA Helpdesk on (02) 6287 6755 or email era@arc.gov.au.

ATTACHMENT A

List of abbreviations used in this document

ANZSRC	Australian and New Zealand Standard Research Classification
ARC	Australian Research Council
BB	Biological and Biotechnological Sciences
BCH	Biomedical and Clinical Health Sciences
CEO	Chief Executive Officer
COI	Conflict of Interest
EE	Engineering and Environmental Sciences
ERA	Excellence in Research for Australia
FoR	Field of Research (ANZSRC)
FTE	Full-Time Equivalent
HEP	Higher Education Provider: in this document this refers to eligible higher education institutions
HCA	Humanities and Creative Arts
HERDC	Higher Education Research Data Collection
HESDC	Higher Education Student Data Collection
MIC	Mathematical, Information and Computing Sciences
NHMRC	National Health and Medical Research Council
PAH	Public and Allied Health Sciences
PCE	Physical, Chemical and Earth Sciences
R&D	Research and Development
RCI	Relative Citation Impact
REC	Research Evaluation Committee
SBE	Social, Behavioural and Economic Sciences
SEER	System to Evaluate the Excellence of Research
UoE	Unit of Evaluation

ATTACHMENT B

Field of Research (FoR) Codes by cluster

Cluster One: Physical, Chemical and Earth Sciences (PCE) – FoR Codes

Discipline	FoR
PHYSICAL SCIENCES	02
ASTRONOMICAL AND SPACE SCIENCES	0201
ATOMIC, MOLECULAR, NUCLEAR, PARTICLE AND PLASMA PHYSICS	0202
CLASSICAL PHYSICS	0203
CONDENSED MATTER PHYSICS	0204
OPTICAL PHYSICS	0205
QUANTUM PHYSICS	0206
OTHER PHYSICAL SCIENCES	0299
CHEMICAL SCIENCES	03
ANALYTICAL CHEMISTRY	0301
INORGANIC CHEMISTRY	0302
MACROMOLECULAR AND MATERIALS CHEMISTRY	0303
MEDICINAL AND BIOMOLECULAR CHEMISTRY	0304
ORGANIC CHEMISTRY	0305
PHYSICAL CHEMISTRY (INCL. STRUCTURAL)	0306
THEORETICAL AND COMPUTATIONAL CHEMISTRY	0307
OTHER CHEMICAL SCIENCES	0399
EARTH SCIENCES	04
ATMOSPHERIC SCIENCES	0401
GEOCHEMISTRY	0402
GEOLOGY	0403
GEOPHYSICS	0404
OCEANOGRAPHY	0405
PHYSICAL GEOGRAPHY AND ENVIRONMENTAL GEOSCIENCE	0406
OTHER EARTH SCIENCES	0499

Cluster Two: Humanities and Creative Arts (HCA) – FoR Codes

Discipline	FoR
BUILT ENVIRONMENT AND DESIGN	12
ARCHITECTURE	1201
DESIGN PRACTICE AND MANAGEMENT	1203
URBAN AND REGIONAL PLANNING	1205
OTHER BUILT ENVIRONMENT AND DESIGN	1299
LAW AND LEGAL STUDIES	18
LAW	1801
MAORI LAW	1802
OTHER LAW AND LEGAL STUDIES	1899
STUDIES IN CREATIVE ARTS AND WRITING	19
ART THEORY AND CRITICISM	1901
FILM, TELEVISION AND DIGITAL MEDIA	1902
JOURNALISM AND PROFESSIONAL WRITING	1903
PERFORMING ARTS AND CREATIVE WRITING	1904
VISUAL ARTS AND CRAFTS	1905
OTHER STUDIES IN CREATIVE ARTS AND WRITING	1999
LANGUAGE, COMMUNICATION AND CULTURE	20
COMMUNICATION AND MEDIA STUDIES	2001
CULTURAL STUDIES	2002
LANGUAGE STUDIES	2003
LINGUISTICS	2004
LITERARY STUDIES	2005
OTHER LANGUAGE, COMMUNICATION AND CULTURE	2099
HISTORY AND ARCHAEOLOGY	21
ARCHAEOLOGY	2101
CURATORIAL AND RELATED STUDIES	2102
HISTORICAL STUDIES	2103
OTHER HISTORY AND ARCHAEOLOGY	2199
PHILOSOPHY AND RELIGIOUS STUDIES	22
APPLIED ETHICS	2201
HISTORY AND PHILOSOPHY OF SPECIFIC FIELDS	2202
PHILOSOPHY	2203
RELIGION AND RELIGIOUS STUDIES	2204
OTHER PHILOSOPHY AND RELIGIOUS STUDIES	2299

Cluster Three: Engineering and Environmental Sciences (EE) – FoR Codes

Discipline	FoR
ENVIRONMENTAL SCIENCES	05
ECOLOGICAL APPLICATIONS	0501
ENVIRONMENTAL SCIENCE AND MANAGEMENT	0502
SOIL SCIENCES	0503
OTHER ENVIRONMENTAL SCIENCES	0599
ENGINEERING	09
AEROSPACE ENGINEERING	0901
AUTOMOTIVE ENGINEERING	0902
BIOMEDICAL ENGINEERING	0903
CHEMICAL ENGINEERING	0904
CIVIL ENGINEERING	0905
ELECTRICAL AND ELECTRONIC ENGINEERING	0906
ENVIRONMENTAL ENGINEERING	0907
FOOD SCIENCES	0908
GEOMATIC ENGINEERING	0909
MANUFACTURING ENGINEERING	0910
MARITIME ENGINEERING	0911
MATERIALS ENGINEERING	0912
MECHANICAL ENGINEERING	0913
RESOURCES ENGINEERING AND EXTRACTIVE METALLURGY	0914
INTERDISCIPLINARY ENGINEERING	0915
OTHER ENGINEERING	0999
BUILT ENVIRONMENT AND DESIGN	12
BUILDING	1202
ENGINEERING DESIGN	1204

Cluster Four: Social, Behavioural and Economic Sciences (SBE) – FoR Codes

Discipline	FoR
EDUCATION	13
EDUCATION SYSTEMS	1301
CURRICULUM AND PEDAGOGY	1302
SPECIALIST STUDIES IN EDUCATION	1303
OTHER EDUCATION	1399
ECONOMICS	14
ECONOMIC THEORY	1401
APPLIED ECONOMICS	1402
ECONOMETRICS	1403
OTHER ECONOMICS	1499
COMMERCE, MANAGEMENT, TOURISM AND SERVICES	15
ACCOUNTING, AUDITING AND ACCOUNTABILITY	1501
BANKING, FINANCE AND INVESTMENT	1502
BUSINESS AND MANAGEMENT	1503
COMMERCIAL SERVICES	1504
MARKETING	1505
TOURISM	1506
TRANSPORTATION AND FREIGHT SERVICES	1507
OTHER COMMERCE, MANAGEMENT, TOURISM AND SERVICES	1599
STUDIES IN HUMAN SOCIETY	16
ANTHROPOLOGY	1601
CRIMINOLOGY	1602
DEMOGRAPHY	1603
HUMAN GEOGRAPHY	1604
POLICY AND ADMINISTRATION	1605
POLITICAL SCIENCE	1606
SOCIAL WORK	1607
SOCIOLOGY	1608
OTHER STUDIES IN HUMAN SOCIETY	1699
PSYCHOLOGY AND COGNITIVE SCIENCES	17
PSYCHOLOGY	1701
COGNITIVE SCIENCE	1702
OTHER PSYCHOLOGY AND COGNITIVE SCIENCES	1799

Cluster Five: Mathematical, Information and Computing Sciences (MIC)

Discipline	FoR
MATHEMATICAL SCIENCES	01
PURE MATHEMATICS	0101
APPLIED MATHEMATICS	0102
NUMERICAL AND COMPUTATIONAL MATHEMATICS	0103
STATISTICS	0104
MATHEMATICAL PHYSICS	0105
OTHER MATHEMATICAL SCIENCES	0199
INFORMATION AND COMPUTING SCIENCES	08
ARTIFICIAL INTELLIGENCE AND IMAGE PROCESSING	0801
COMPUTATION THEORY AND MATHEMATICS	0802
COMPUTER SOFTWARE	0803
DATA FORMAT	0804
DISTRIBUTED COMPUTING	0805
INFORMATION SYSTEMS	0806
LIBRARY AND INFORMATION STUDIES	0807
OTHER INFORMATION AND COMPUTING SCIENCES	0899
TECHNOLOGY	10
COMMUNICATIONS TECHNOLOGIES	1005
COMPUTER HARDWARE	1006
NANOTECHNOLOGY	1007
OTHER TECHNOLOGY	1099

Cluster Six: Biological and Biotechnological Sciences (BB) – FoR Codes

Discipline	FoR
BIOLOGICAL SCIENCES	06
BIOCHEMISTRY AND CELL BIOLOGY	0601
ECOLOGY	0602
EVOLUTIONARY BIOLOGY	0603
GENETICS	0604
MICROBIOLOGY	0605
PHYSIOLOGY	0606
PLANT BIOLOGY	0607
ZOOLOGY	0608
OTHER BIOLOGICAL SCIENCES	0699
AGRICULTURAL AND VETERINARY SCIENCES	07
AGRICULTURE, LAND AND FARM MANAGEMENT	0701
ANIMAL PRODUCTION	0702
CROP AND PASTURE PRODUCTION	0703
FISHERIES SCIENCES	0704
FORESTRY SCIENCES	0705
HORTICULTURAL PRODUCTION	0706
VETERINARY SCIENCES	0707
OTHER AGRICULTURAL AND VETERINARY SCIENCES	0799
TECHNOLOGY	10
AGRICULTURAL BIOTECHNOLOGY	1001
ENVIRONMENTAL BIOTECHNOLOGY	1002
INDUSTRIAL BIOTECHNOLOGY	1003
MEDICAL BIOTECHNOLOGY	1004

Cluster Seven: Biomedical and Clinical Health Sciences (BCH) – FoR Codes

Discipline	FoR
MEDICAL AND HEALTH SCIENCES	11
MEDICAL BIOCHEMISTRY AND METABOLOMICS	1101
CARDIOVASCULAR MEDICINE AND HAEMATOLOGY	1102
CLINICAL SCIENCES	1103
DENTISTRY	1105
IMMUNOLOGY	1107
MEDICAL MICROBIOLOGY	1108
NEUROSCIENCES	1109
ONCOLOGY AND CARCINOGENESIS	1112
OPHTHALMOLOGY AND OPTOMETRY	1113
PAEDIATRICS AND REPRODUCTIVE MEDICINE	1114
PHARMACOLOGY AND PHARMACEUTICAL SCIENCES	1115
MEDICAL PHYSIOLOGY	1116

Cluster Eight: Public and Allied Health Sciences (PAH) – FoR Codes

Discipline	FoR
MEDICAL AND HEALTH SCIENCES	11
COMPLEMENTARY AND ALTERNATIVE MEDICINE	1104
HUMAN MOVEMENT AND SPORTS SCIENCE	1106
NURSING	1110
NUTRITION AND DIETETICS	1111
PUBLIC HEALTH AND HEALTH SERVICES	1117
OTHER MEDICAL AND HEALTH SCIENCES	1199

ATTACHMENT C

Format of Research statement for peer review of creative works for the HCA Cluster

For the HCA cluster, the following research output types can also be submitted:

- original (creative) works in the public domain;
- live performances;
- recorded (performance) works; and
- curated or produced substantial exhibitions, events or renderings.

For those research outputs which are selected for the peer review pool, a statement identifying the research component of the output must be available in an institutionally-supported repository. The statement must be a maximum of 250 words and address the following categories:

1. Research Background—Field, Context, Research Question.
2. Research Contribution—Innovation and New Knowledge.
3. Research Significance—Evidence of Excellence.

The following is an example of an acceptable visual arts research statement:

Research background:

Current international developments in painting have identified the need to establish complex forms for representing identity in terms of facial expression. While this research recognises the significance of facial expression, it has overlooked the unstable nature of identity itself.

Research contribution:

The paintings *Multiple Perspectives* by Y address the question of the unstable nature of identity as expressed in painterly terms through a study in unstable facial phenomenon using the philosophical concept of ‘becoming’. In doing so it arrives at a new benchmark for the discipline in understanding visual identity, namely that identity is not bound to stable facial phenomena but, like other forms of meaning, is constantly undergoing change.

Research significance:

The significance of this research is that it overcomes barriers for visually understanding the complex nature of identity and its expressive painterly possibilities. Its value is attested to by the following indicators: selection of the painting for inclusion in the Tier A international exhibition Documenta, Kassel, Germany; its inclusion as a case study in the renowned Courtauld Institute, University of London, *Issues in Contemporary Art* graduate seminar series; its being the subject of a chapter in the book *Identity Reframed* published by Thames and Hudson and authored by the renowned art historian Z; its forming part of a competitively funded ARC project.

When selecting outputs for ERA peer review, institutions should focus on those outputs with a substantial research component. Peer reviewers will only examine these outputs on the basis of the research component as specified in the research statement available in an institutionally-supported repository.

ATTACHMENT D

Tier definitions for the ranking of journals

A*

Typically an A* journal would be one of the best in its field or subfield in which to publish and would typically cover the entire field/subfield. Virtually all papers they publish will be of a very high quality. These are journals where most of the work is important (it will really shape the field) and where researchers boast about getting accepted. Acceptance rates would typically be low and the editorial board would be dominated by field leaders, including many from top institutions.

A

The majority of papers in a Tier A journal will be of very high quality. Publishing in an A journal would enhance the author's standing, showing they have real engagement with the global research community and that they have something to say about problems of some significance. Typical signs of an A journal are lowish acceptance rates and an editorial board which includes a reasonable fraction of well known researchers from top institutions.

B

Tier B covers journals with a solid, though not outstanding, reputation. Generally, in a Tier B journal, one would expect only a few papers of very high quality. They are often important outlets for the work of PhD students and early career researchers. Typical examples would be regional journals with high acceptance rates, and editorial boards that have few leading researchers from top international institutions.

C

Tier C includes quality, peer reviewed, journals that do not meet the criteria of the higher tiers.

ATTACHMENT E

Tier definitions for the ranking of conferences

A

All papers in a Tier A conference will be of high or very high quality. Publishing in a Tier A conference would show the author has real engagement with the global research community and that they have something to say about problems of some significance. Typical signs of a Tier A conference are low acceptance rates and a program committee and speaker list which includes a reasonable fraction of well known researchers from top institutions, and a high level of scrutiny by the program committee to look at the significance of the work.

B

Tier B covers conferences with a solid, though not outstanding, reputation. Generally, in a Tier B conference, one would expect only a few papers of very high quality. They are often important outlets for the work of PhD students and early career researchers. Typical examples would be regional conferences and international conferences with high acceptance rates. The editorial boards would have few leading researchers from top international institutions.

C

Tier C conferences are those where quality, peer reviewed papers are presented, but the conference as a whole does not meet the quality standard of the higher tiers

ATTACHMENT F

Eligible Institutions and ERA institution identifiers

Australian Catholic University	ACU
Batchelor Institute of Indigenous Tertiary Education	BAT
Bond University	BON
Central Queensland University	CQU
Charles Darwin University	CDU
Charles Sturt University	CSU
Curtin University of Technology	CUT
Deakin University	DKN
Edith Cowan University	ECU
Flinders University	FLN
Griffith University	GRF
James Cook University	JCU
La Trobe University	LTU
Macquarie University	MQU
Melbourne College of Divinity	MCD
Monash University	MON
Murdoch University	MUR
Queensland University of Technology	QUT
RMIT University	RMT
Southern Cross University	SCU
Swinburne University of Technology	SWN
The Australian National University	ANU
The University of Adelaide	ADE
The University of Melbourne	MEL
The University of New England	UNE
The University of New South Wales	NSW
The University of Newcastle	NEW
The University of Notre Dame Australia	NDA
The University of Queensland	QLD
The University of Sydney	SYD
The University of the Sunshine Coast	USC
The University of Western Australia	UWA
University of Ballarat	BAL
University of Canberra	CAN
University of South Australia	USA
University of Southern Queensland	USQ
University of Tasmania (incorporating Australian Maritime College)	TAS
University of Technology, Sydney	UTS
University of Western Sydney	UWS
University of Wollongong	WOL
Victoria University	VIC