



Performance-Based Research Fund

2006 Quality Evaluation

Evidence Portfolio (EP) Manager

Business Requirements

12 October 2005

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1. Introduction

Purpose

1. This paper combines both the consultation paper TEC made available in early September 2006 to the Tertiary Education Sector on the provision of EP Manager software to support the 2006 Quality Evaluation of the Performance-Based Research Fund (PBRF) and the Sectors feedback on the intended functionality of the 2006 EP Manager software.
2. The purpose of this paper is to:
 - Summarise the broad approach the TEC intends to take with the provision of EP Manager software to the sector to support the 2006 Quality Evaluation of the Performance-Based Research Fund (PBRF)
 - Provide detailed information on the functionality for the 2006 EP Manager software
 - Specify at high level the business requirements in order that Systems personnel can progress the next level of documentation for the development of EP Manager Software¹
 - Provide enough information that development costs can be produced by Systems Project Manager and subsequent prioritisation by the business of the development if required
 - User representatives to confirm that the specification and the detailed information on the functionality meets their needs
 - Outline the arrangements for use of the software beyond the 2006 Quality Evaluation.

Background

3. Research quality is one of the three measures of performance that determine the allocation of funding under the PBRF. The assessment of quality is based on a collection of information contained in EPs, which are completed by PBRF-eligible staff and submitted by TEOs to the Tertiary Education Commission (TEC) for assessment by peer review panels.
4. To ensure that EPs for the 2003 Quality Evaluation were prepared in a consistent form and contained the relevant information, the TEC agreed content and format with the sector and developed a software package (EP Manager) to enable staff to create EPs in the required format.

¹ Subsequent documentation – either business orientated or system oriented will reference the appropriate number/feature from this document.

5. The EP Manager software was released to the sector in late May 2003. Due to the timing of the release and various issues with EP Manager (eg, the software would only work on MS Windows environments), many TEOs developed their own IT systems to use for the creation of EPs. The time available to TEOs between delivery of the software and the submission date for EP data was approximately 16 weeks.
6. The TEC released the technical specifications for EPs for the 2006 Quality Evaluation on 29 July 2005 for those TEOs or commercial vendors that wish to develop their own solutions. A document describing the content and format of the EP for the 2006 Quality Evaluation can be found at http://www.tec.govt.nz/downloads/a2z_publications/pbrf2006-ep-schemadescriptions.html

2. Issues

7. The issues identified in relation to the planned development of the EP Manager for the 2006 Quality Evaluation are set out below.

Table 1: Issues

Topic	Issues
Purpose of software	<ul style="list-style-type: none">• The main aim of the software is to enable TEOs to submit EP data in an XML format to the TEC by 21 July 2006
Nature of platform	<ul style="list-style-type: none">• TEC software (EP Manager) is intended to be web-based requiring a compatible browser.• The software will be linked to the TEC's Decision Support System (DSS) that will be used to manage EP data for the PBRF Peer Review Panels
Timing of delivery	<ul style="list-style-type: none">• The TEC plans to release the software on 28 February 2006• The delivery date allows an additional month of processing time for TEOs vis-à-vis 2003
Security	<ul style="list-style-type: none">• The software will enable TEOs to self-manage access by using existing authentication interfaces.• The software will provide for differentiated access, ie TEO administrator access to all of that TEO's EPs, and single EP access for individual staff
Reporting	<ul style="list-style-type: none">• The software will enable TEOs to print copies of the EPs for internal assessment and validation purposes.• The software will enable the return of XML data to TEOs post-submission
Beyond 2006	<ul style="list-style-type: none">• The TEC does not intend to support this software beyond April 2007

3. Purpose of software

8. The primary motivation for the TEC to produce the 2006 EP Manager has been to maximise participation by PBRF-eligible TEOs. The TEC aims to achieve this by providing an EP Manager at no financial cost to PBRF-eligible TEOs.
9. The TEC notes that a number of TEOs have purchased EP management software from commercial vendors or developed their own solutions. These purchases have in part been motivated by a desire to more effectively manage research information. The TEC anticipates that over time more TEOs will pursue similar options.
10. In addition, changes to the Quality Evaluation measure of the PBRF have implications for the level of software support required. These changes relate to the 'partial' round provisions and the reduced requirements for TEO internal assessment, ie that TEOs are not required to nominate a Quality Category for all PBRF-eligible staff in 2006.
11. The TEC must balance a number of competing priorities including other scheduled IT-related development work and the costs associated with this initiative. As a consequence, the TEC has determined that it should pursue a simple and relatively low-cost solution that builds as far as possible on existing IT infrastructure.
12. The primary purpose of the software therefore is to facilitate the submission of EP data in an appropriate XML format by 21 July 2006. The TEC solution does not intend to develop software to manage research data or to support comprehensive internal assessment processes.
13. It is not intended to support a paper based submission.
14. The appropriateness of the proposed software for this purpose is of critical importance. The high level requirements for the EP Manager is set out in Appendix A. Note that these requirements include TEO feedback where appropriate.

4. Nature of platform

15. In line with the desire to minimise costs and building on experience gained in 2003, the TEC intends to develop a web-based solution. This is expected to be a considerable improvement on the windows-dependent software produced in 2003.
16. The TEC plans to integrate EP Manager with the TEC's DSS to support the assessments by the PBRF Peer Review Panels. Such a system may create some issues for TEOs around 'control' and 'ownership' of EP data. This issue is discussed below.
17. It is assumed that TEIs and researches have or can have access to personal computers equipped with commonly used software (e.g. MS Products).

5. Timing of delivery

18. The decision on the timing of the delivery of the 2006 EP Manager was based on several considerations:
 - The time available to TEOs to prepare EPs;
 - The effect of the 'partial' round on volumes of EPs;
 - The volume of EPs expected from the likely users;
 - Planned IT development work by the TEC; and
 - The desirability of reusing the IT infrastructure planned for the DSS for the 2006 Quality Evaluation
19. The TEC timeline for the 2006 EP Manager anticipates that TEOs will have 20 weeks between the delivery date of the software (28 February 2006) and the submission date for EP data (21 July 2006). This is 4 more weeks than was the case in 2003.
20. It is expected that fewer EPs will be submitted by TEOs that participated in the 2003 Quality Evaluation as a result of the 'partial' round provisions. Overall, this is expected to give TEOs more time to prepare fewer EPs for submission.
21. For the 2006 Quality Evaluation, the reduced requirements around internal TEO assessment mean that the time required for this component of the process should be reduced.
22. In 2003, the 2003 EP Manager was used by some large TEOs including one that submitted 536 EPs within the 16-week period available. In 2006, most large TEOs will use commercially-available software to manage EP data. Based on the volume of EPs submitted in 2003, it is anticipated that TEOs using the TEC software will submit no more than 100 EPs each (such as Institutes of Technology and Polytechnics) for the 2006 Quality Evaluation.² Many other TEOs will submit significantly fewer EP, e.g. the largest number of EPs submitted in 2003 by a PTE or wānanga was 23.

6. Security

23. The 2006 EP Manager will utilise existing authentication systems. This minimises the transactions costs for TEOs and the TEC. The Website will use secure internet technologies, based on Single Internet Authentication (SIA). The SIA is the standard login (security) system for internal and external users of the external facing applications in the Ministry of Education and TEC. The use of the SIA has been extended to allow the users of certain TEC systems (e.g. ER) a common log on to those and MoE systems covered by SIA.

² For example, in 2003 Unitec New Zealand submitted 106 EPs and Waikato Institute of Technology submitted 55.

24. There are two main functions to the SIA. The access management function which provided the login service to applications, and also lets applications apply different privileges or roles to different groups of users. The second major function of SIA is the "SIA Admin" web application which lets administrators add and modify users (capture identity information) and add/modify applications in SIA database.
25. The software will enable TEOs to self-manage access to the software. This will give TEO managers considerable flexibility around the extent to which staff will prepare EPs. The TEC anticipates that TEOs will allow one or more staff access to approve the submission of EP data to the TEC.
26. TEOs may be concerned that the integrated solution might lead TEC to access EPs when they are in their draft form. To avoid this, neither TEC staff with operational responsibility for the PBRF, nor any panellists associated with the peer review panels, will have access to EP data until it has been approved for submission to the TEC by TEOs. TEC IT staff will, however, require access from time to time as part of their ongoing support of the software.
27. The format of the login ID and password to the software will be released prior to release of the software.

7. Reporting

28. The 2006 EP Manager will allow TEOs to print pdf versions of EP data in draft and submitted form. This is designed to enable TEO staff to check the data they have entered into the EP Manager and to facilitate any internal TEO assessment process.
29. A mechanism will be provided by TEC to confirm submission to TEC of the TEOs users EPS.
30. Via searching and displaying an EP, TEO Administrators will be able to see all NROs and Staff associated with that NRO.

8. Support

31. It is envisaged that the Web will be supported 7am to 7pm Monday to Friday. However there will be scheduled maintenance outages and these along with updates on any technology issues will be communicated to the TEOs.

9. Beyond 2006

32. Following the conclusion of the 2006 Quality Evaluation, the TEC does not intend to support this software. Access by TEOs to the database will be retained until the publication of the public report on the 2006 Quality Evaluation which is scheduled for April 2007.
33. At this stage, the TEC does not anticipate providing any similar EP manager software for the third Quality Evaluation. This is because the TEC expects that either the commercial marketplace or TEOs themselves will provide comprehensive and better-quality solutions for those TEOs that wish to participate in future Quality Evaluations.

10. EP Manager Requirements Documentation

Overview

These sections summarise the key functional requirements of the EP Manager. Each section is numbered separately to the numbers in previous sections to enable traceability for any subsequent system specifications. The following topics are covered:

1. Application Structure/Presentation
2. Security
3. Audit
4. Portfolio Validation
5. Available Text Formats
6. System Outputs
7. Online Help
8. User Interface
9. Form Details
10. Encoded Values
11. Schema Diagram

1. Application Structure/Presentation

1.1 The EP Manager will be operated under any standard web browser, and so operates to browser conventions. This includes being assessable by mainstream browsers (Explorer 6, Safari, and firefox).

1.2 Each Evidence Portfolio (EP) will be presented using a tree structure, with a separate form for each of the following entities:

- Staff/Administration
- Panel
- Nominated Research Outputs
- Other (Research) Outputs
- Comments
- Peer Esteem
- Contribution to the Research Environment (CRE)

1.3 The tree structure is illustrated in the (example only) screen display below. This example shows an indicative layout of the form for entry of Nominated Research Outputs.

The screenshot shows a web browser window titled "about:blank - Microsoft Internet Explorer". The address bar contains "about:blank". The page header features the Tertiary Education Commission logo and the text "Te Amōrangī Mātauranga Mātaua". A navigation menu on the left lists "Assessment", "Staff Details", "Nominated Output", "Panel", "Other Outputs", "Comments", "Peer Review", and "Contribution". The main content area is titled "Nominated Outputs" and contains a form for "Nominated Research Output Details".

The form includes the following fields and sections:

- Nominated Research Output Details:**
 - Output Type* (dropdown menu)
 - *Quality Assured
 - Title* (text input)
 - Author(s)* (text input)
 - My Contribution (if applicable) (text input)
 - Year* (dropdown menu)
- Location Details:**
 - Location 1* (text input)
 - Location 2 (text input)
 - Volume (text input)
 - Page(s) (text input)
 - Other Relevant Location Details (text input)
 - URL (text input)
- Comments relevant to this Output (text area)
- Buttons: Add, Delete
- back to top
- Navigation: << Previous, Next >>, Help

Further details of the fields that make up each of the forms can be found below (*Form Details*).

1.4 Also included below (*Encoded Values*) details the values that are available for each of the encoded fields that are used within the EP Manager, which will be presented as dropdown picklists through the browser.

2. Security

2.1 A User will sign on to the EP Manager through the web interface. Access will be restricted by password. TEC will set the format of the login ID and password.

2.2 An EP will progress through various states as it is prepared for assessment, and different security restrictions apply depending on its current state. These states are:

- **Pre-review** - when an EP is first created it will be in this state. Remains in this state until it is ready for internal TEO review.
- **Ready for internal TEO review** – the EP will change to this state once the Staff Member has finished editing their EP.
- **Submitted for TEC assessment** - the EP will change to this state once the TEO Administrator has approved it for submission.

2.3 There will be two levels of Security covering the pre-submission states:

A **Staff Member** will have security rights to:

- enter details of their EP
- edit details of their EP, while it is in a state of pre-review
- view and print details of their EP, regardless of the state
- assign their EP to a state of 'Ready for internal TEO review'

A **TEO Administrator** will act as a representative of the TEO. For EPs created by Staff Members that work for their TEO, these 'TEO Administrators' will have security rights to:

- create an EP, and associate it to a nominated staff member
- edit details of the EP, while it is in a state of 'Ready for internal TEO review'
- view and print details of the EP, for all states **other** than 'Pre-review'
- extract details of the EP, after the EP has been 'Submitted for TEC assessment'
- assign the EP to a state of 'Submitted for TEC assessment'

2.4 Security Business Rules:

- While an EP is in a state of 'Pre-review' or 'Ready for internal TEO review', the TEC will have not be able to view the EP
- If a Staff Member needs to edit their EP after it has been assigned to their TEO for review, their TEO Administrator will have to re-assign it to a state of 'Pre-review'

- If a TEO Administrator needs to edit an EP after it has been assigned to the TEC for assessment, the TEC will need to be contacted and asked to re-assign it to a state of 'Ready for internal TEO review'. Such requests may be declined after the assessment process has begun.

3. Audit

To cater for the Complaints process a complete history of all actions against a EP and its related data must be held in a format that can be reported on by a business user. Audit information will be stored only on Save. It will not be stored for every field. The Audit information stored at the time of "Save" will show the fields that have been changed with previous and new values.

4. Portfolio Validation

The EP will be validated against the schema. Refer to sections *Form Details* and *Schema Diagram* for details of the schema and the validation rules that will be applied.

5. Available Text Formats

When keying data into text boxes of the EP Manager, the user will be limited to the ASCII character set that is available through their keyboard.

In order to enter characters from the UTF-8 character set that are not part of the ASCII set, the user will have to cut and paste the data from an editor that supports UTF-8 (for example LaTeX – post March2004).

Padded blanks will be accepted.

Note that MSWord content can generally be pasted into text boxes- but non-ASCII symbols and structures (e.g. bullet lists) may not format correctly and may require manual correction.

6. System Outputs

A Staff Member or TEO Administrator can **print** details of the EP. The system will create a PDF file containing the details, which can then be directed to a printer. The option to save to a directory will also be available depending on the TEOs technology. When printed the PDF footer details will contain the EP's status at time of creation of the PDF file and the printed date stamp.

The option will be made available to all TEOs to use HTML mark-up tags for superscript, subscript and italics when creating a PDF print file. This will reassure submitters of EPs that such things as publication titles are not distorted by the use of Unicode.

A TEO Administrator can request an **extract** of the XML details of an EP. This extract can then be saved locally, or opened by the user in an XML

editor. Note that this function is restricted to TEO Administrators in an effort to restrict the number of XML extracts that may be out of sync with the submitted version of the EP – since the TEO Administrator should be able to co-ordinate the XML extract with any post-submissions changes that are made to the EP.

7. Online Help

Help will be invoked via the Help button displayed on-screen.

8. User (UI)

- The EP software needs to be user friendly and intuitive to users who have only had access to the on-line help. The User interface should follow TEC standard online rules/formats.
- The EP Worksheet should be scrollable where appropriate, minimising response time.
- As a “Nice to Have”, the ability to cancel input on screen via a “Clear Form” function.
- The ability to “Save” data to an in completed form. The ability to save should be viewable at all times to the user on the screen.

9. Form Details

In this section fields that are marked with a * are mandatory.

9.1 Staff/ Administration

This form contains a unique identifier for the EP and details the researcher's TEO, full name, preferred salutation and the qualification round that the EP relates to. Any internal TEO comments regarding the portfolio are recorded in the Status text field.

In the event of the EP containing confidential information, this, and any permission to disclose is indicated on this form.

Name	Attribute	Details	Comment
First Name*	FirstName	32 characters Required	
Middle Initial(s)	MiddleInitials	5 characters Optional	
Family Name*	FamilyName	50 characters Required	
Salutation	Salutation	25 characters Optional	
Unique ID*	PortfolioID	Integer Required Length 10	
Institution*	InstitutionID	Integer Required Length 4	The Institution name is sourced from a configuration file. The associated integer code is saved to the data file – this will be assigned automatically to the EP.
Status	Status	100 characters Optional	Free text field for internal use at the TEO
Evaluation Round	QualityEvaluationRound	Integer Length 4	Set to 2006 by default
Does research include 'Pacific' research?	PacificResearch	Y/N	Set to 'N' by default
Does portfolio contain confidential research outputs?	ConfidentialOutput	Y/N	Set to 'N' by default
Has permission been obtained for release of any confidential nominated research outputs?	PermissionObtained	Y/N/X	Set to 'X' (= not applicable) by default
Other Information	OtherEPInformation	256 characters Optional	Blank by default. For information concerning the EP.

9.2 Panel

The Panel form holds data regarding the choice of Primary Panel, Subject Area and Field of Research a researcher considers to be most appropriate for their Nominated Outputs. The researcher must select a Primary Nominated Panel and Primary Subject Area of Research related to that Panel. A free text Primary Field of Research value must also be specified. This Panel must have the Primary Panel Indicator set ON.

The researcher can nominate for cross-referral to any one of the other 11 Peer Review Panels. These must have the Primary Panel Indicator set OFF.

Name	Attribute	Details	Comment
Nominated Panel*	PanelID	10 characters Required	The Panel name is sourced from a configuration file. The associated 10 char ID is saved to the data file.
Primary Panel Indicator*	PrimaryPanelIndicator	Y/N Required	Must be set to Y for one and only 1

Primary Subject Area of Research*	SubjectAreaID	Integer Required	Nominated Panel The Subject Area name is sourced from a configuration file. The associated integer ID is saved to the data file. Can only be specified for the Primary Panel.
Primary Field of Research*	FieldofResearch	60 characters Required	Enter a number of keywords. Can only be specified once and only in relation to the primary panel

9.3 Nominated Research Outputs

Details of (up to) four research outputs produced over the quality evaluation assessment period can be provided as Nominated Research Outputs. The various text boxes are filled in with the relevant information and the appropriate selections are made from coded lists that are specified in a configuration file.

Name	Attribute	Details	Comment
Index*	NominatedOutputIndex	Integer Required	
Research Output Type*	ResearchOutputCode	2 characters Required	The Output Type name is sourced from a configuration file. The associated 2 char code is saved to the data file
Quality Assured	QualityAssured	Y/N	Set to 'N' by default
Title*	Title	255 characters Required	
Author(s)*	Author	255 characters Required	
My Contribution (if applicable)	MyContribution	1024 characters Optional	
Year*	Year	Integer Required	
Location 1* (who/what)	Location1	255 characters Required	
Location 2 (where)	Location2	255 characters Optional	
Location 3 (when)	Volume	255 characters Optional	
Pagination (size)	Pagination	50 characters Optional	
URL	URL	255 characters Optional	
Other Relevant Location Details	OtherLocationDetails	255 characters Optional	
Comments Relevant to this Output	Commentary	1024 characters Optional	

9.4 Other (Research) Outputs

Researchers can provide up to 30 other research outputs to support their EP. It is intended that these outputs be collected in the form of a recognised bibliographic format, though as a free-text field any data can be entered.

Name	Attribute	Details	Description/Behaviour
Index*	OtherOutputIndex	Integer Required	
Research Output Type*	ResearchOutputCode	2 characters Required	The Output Type name is sourced from a configuration file. The associated 2 char code is saved to the data file
Description*	ResearchOutput	1024 characters Required	
Quality Assured	QualityAssured	Y/N	Set to 'N' by default

9.5 Comments

This form contains other comments, and information regarding special circumstances, pertaining to the Portfolio as a whole. Up to three special circumstances can be noted. Special circumstances are defined as items from a coded list – dates and seriousness of the special circumstances must be detailed.

Name	Attribute	Details	Description/Behaviour
Other Comments	OtherComments	1500 characters Optional	
Index*	SpecialCircumstancesIndex	Integer Required (if there is any Special Circumstances reference)	
Special Circumstances Type*	SpecialCircumstancesCode	2 characters Required (if there is any Special Circumstances reference)	The Special Circumstances Type name is sourced from a configuration file. The associated 2 char code is saved to the data file.
Special Circumstances Start Date*	SpecialCircumstancesStartDate	Date Required (if there is any Special Circumstances reference)	Restricted to the assessment period Format is ccyy-mm-dd
Special Circumstances End Date*	SpecialCircumstancesEndDate	Date Required (if there is any Special Circumstances reference)	Restricted to the assessment period Must be later than or equal to StartDate Format is ccyy-mm-dd
Special Circumstances Seriousness Type*	SpecialCircumstancesSeriousnessCode	2 characters Required (if there is any Special Circumstances reference)	The Special Circumstances Seriousness Type name is sourced from a configuration file. The associated 2 char code is saved to the data file.
Special Circumstances Comment	SpecialCircumstancesComment	1024 characters Optional	

9.6 Peer Esteem

Peer Esteem is an indication of the regard in which the researcher is held in relation to his/her research. Details will typically include dates, bodies involved and a brief description of the Peer Esteem Type.

Name	Attribute	Details	Description/Behaviour
Index*	PeerEsteemIndex	Integer Required	
Peer Esteem Type*	PeerEsteemCode	2 characters Required	The Peer Esteem Type name is sourced from a configuration file. The associated 2 char code is saved to the data file
Description*	PeerEsteem	512 characters Required	

9.7 Contribution to the Research Environment (CRE)

Contribution to the Research Environment is an indication of the contribution the researcher has made to a high quality research environment.

Name	Attribute	Details	Description/Behaviour
Index*	ResearchContributionIndex	Integer Required	
Research Contribution Type*	ContributionCode	2 characters Required	The Research Contribution Type name is sourced from a configuration file. The associated 2 char code is saved to the data file
Description*	Contribution	512 characters Required	

10. Encoded Values

Panels

Biological Sciences
Business and Economics
Creative and Performing Arts
Education
Engineering Technology and Architecture
Health
Humanities and Law
Māori Knowledge and Development
Mathematical and Information Sciences and Technology
Medicine and Public Health
Physical Sciences
Social Sciences and Other Cultural/Social Sciences

Types of Special Circumstances

Extended leave
Limited numbers of research outputs
Other circumstances
Part time employment
Research active for first time
Significant and sustained other responsibilities
Significant and sustained community responsibilities

Seriousness of Impairment for Special Circumstances

Low
Medium
High

Contribution to the Research Environment Type

Consortia Membership
Research Discipline
Facilitating Networks
Research Environment
External Research Funding
Researcher Development
Student Supervision
Other
Student Assistance

Peer Esteem Type

Prizes and Awards
Fellows/Memberships
Editorial/Refereeing
Conference Addresses
Favourable Reviews
Appointments
Student Factors
Favourable Citations
Other

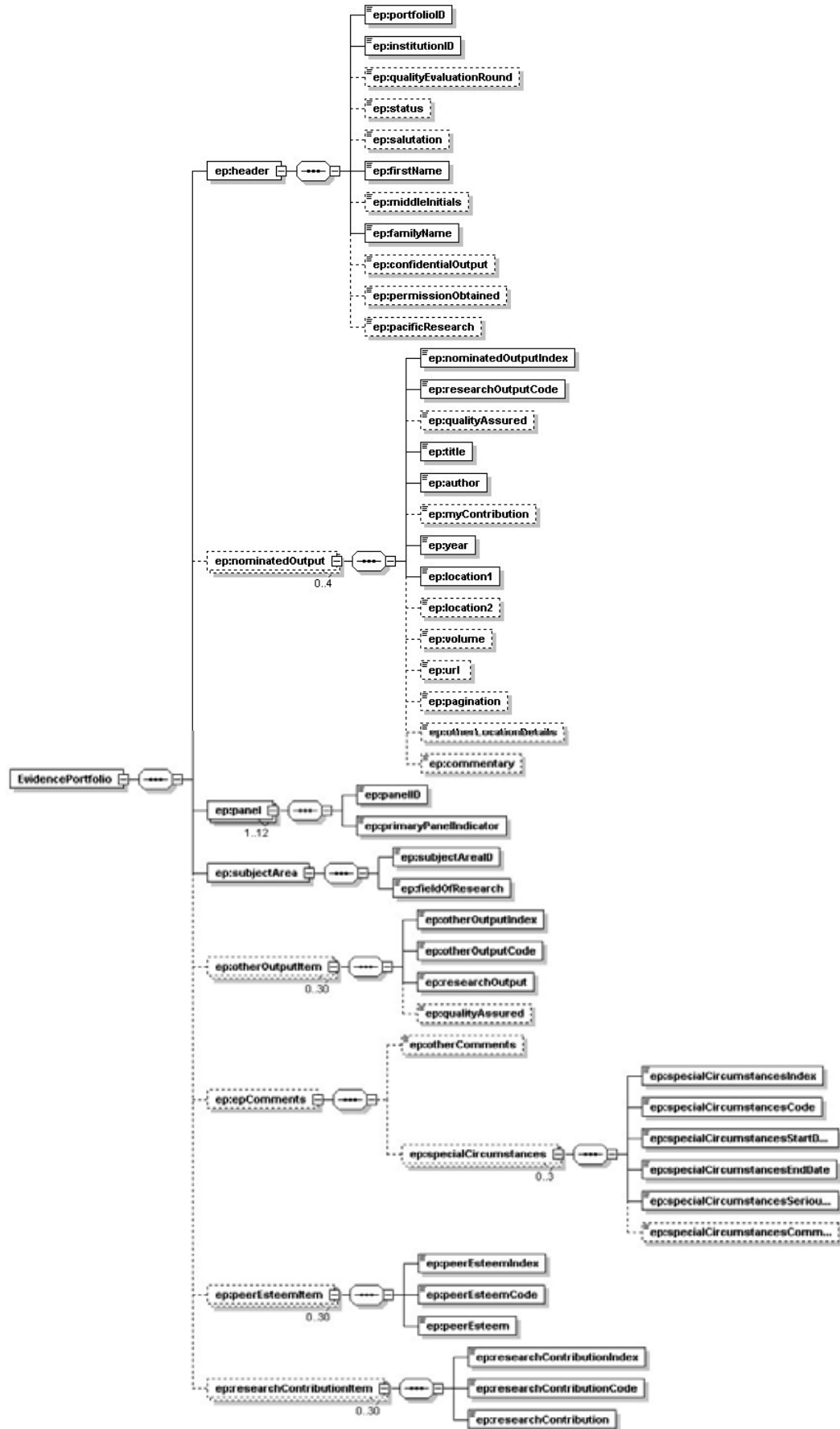
Research Output Type

Artefact/Object
Authored Book
Chapter in Book
Composition
Conference Contribution - Abstract
Confidential Report
Design Output
Edited Book
Exhibition
Film/Video
Intellectual Property
Journal Article
Oral Presentation
Performance
Report for External Body
Scholarly Edition
Software
Awarded Doctoral Thesis
Ineligible
Conference Contribution - Full Conference paper
Conference Contribution - Paper in published proceedings
Conference Contribution - Poster presentation
Conference Contribution - Oral presentation
Conference Contribution - Other
Awarded Research Masters Thesis
Discussion Paper
Monograph
Technical Report
Working Paper
Other

Subject Area

Māori Knowledge and Development
Law
History, History of Art, Classics and Curatorial Studies
English Language and Literature
Foreign Languages and Linguistics
Philosophy
Religious Studies and Theology
Political Science, International Relations and Public Policy
Psychology
Human Geography
Sociology, Social Policy, Social Work, Criminology & Gender Studies
Anthropology and Archaeology
Communications, Journalism and Media Studies
Education
Chemistry
Physics
Earth Sciences
Molecular, Cellular and Whole Organism Biology
Ecology, Evolution and Behaviour
Agriculture and Other Applied Biological Sciences
Pure and Applied Mathematics
Statistics
Computer Science, Information Technology, Information Sciences
Engineering and Technology
Architecture, Design, Planning, Surveying
Biomedical
Clinical Medicine
Public Health
Nursing
Dentistry
Veterinary Studies and Large Animal Science
Sport and Exercise Science
Other Health Studies (including Rehabilitation Therapies)
Management, Human Resources, Industrial Relations and Other Businesses
Accounting and Finance
Marketing and Tourism
Economics
Music, Literary Arts and Other Arts
Visual Arts and Crafts
Theatre and Dance, Film, Television and Multimedia
Design
Pharmacy

11. Schema Diagram



Generated with XMLSpy Schema Editor www.altova.com