

The ARROW project after 2 years

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The ARROW Project is funded by the Australian Commonwealth Department of Education, Science and Training, under the Research Information Infrastructure Framework for Australian Higher Education.

arrow.edu.au

The ARROW Consortium comprises Monash University [lead institution], National Library of Australia, The University of New South Wales and Swinburne University of Technology.



arrow

australian research
repositories online
to the world



MONASH
University



UNSW



Presentation outline

- where to start? developing the ARROW solution
 - starting point
 - strategies
 - structures
 - partnering for success, survivability and support
 - software solutions
 - policy frameworks
 - implementation strategies
- what is the state of play now?
- what do we still need to achieve?
- what have we learnt so far?
- where to from here?

Starting point...

What is the ARROW project?

- funded by the Australian Commonwealth [Department of Education, Science and Training](#) (DEST), under the Research Information Infrastructure Framework for Australian Higher Education
- funded for 3 years until December 31, 2006
- consortium comprises:
 - [Monash University](#) (lead institution)
 - [National Library of Australia](#)
 - [University of New South Wales](#)
 - [Swinburne University of Technology](#)

“The ARROW project will identify and test software or solutions to support best practice institutional digital repositories comprising e-prints, digital theses and electronic publishing.”

Why did we want a repository?

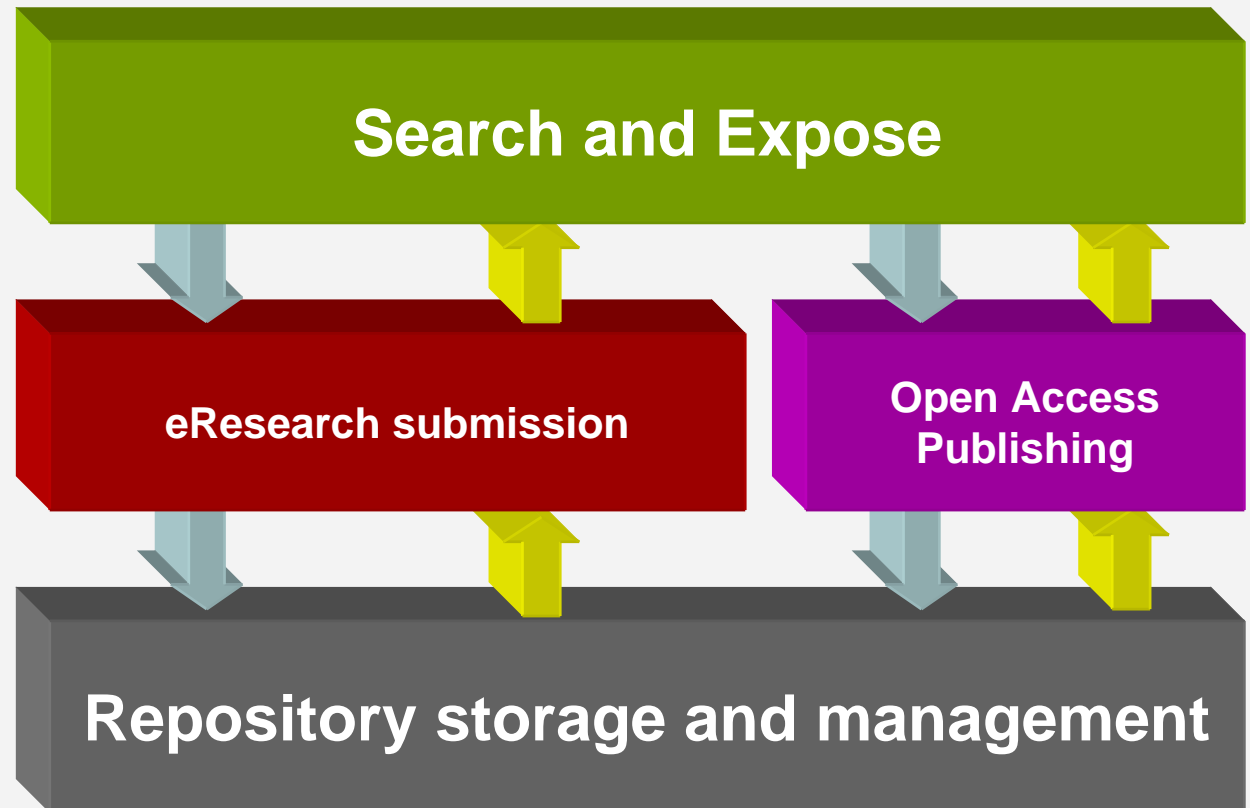
- provides a platform for promoting research output in the ARROW context
- safeguards digital information
- gathers an institution's research output into one place
- provides consistent ways of finding similar objects
- allows information to be preserved over the long term
- allows information from many repositories to be gathered and searched in one step
- enables resources to be shared, while respecting access constraints (when software allows access controls)
- enables effective communication and collaboration between researchers

What did the ARROW project set out to achieve?

- a generalised institutional repository solution for research information management
- not only about Open Access
- initial focus on managing and exposing traditional “print equivalent” research outputs
- expanded to managing other digital research outputs
- design decisions accommodate management of other digital objects such as learning objects and research inputs such as large data sets
- DEST Research reporting and audit, and Research Quality Framework likely to drive deposit of content by academics in ARROW universities
- employing Open Standards where possible
- deliver Open Source Software tools for other users

ARROW's original vision

OAI-PMH
SRU/SRW
Web Exposure



Partnering for success, survivability and support

ARROW needed to partner with a developer who could not only produce the software but could provide ongoing user support and development after December 31, 2006

- Why VTLS Inc.?
 - VTLS wanted to be a development partner
 - had begun work on a repository solution already
 - willing to produce a combination of a proprietary solution and Open Source software tools
 - familiar with library sector

More partners

Current partnerships

Government:

- DEST
- FRODO/MERRI projects
- APSR
- MAMS
- DART
- RUBRIC

Open source development

- Fedora

Commercial

- VTLS
- Thomson Scientific – Web Citation Index

Future potential partners

- OCLC – Metadata Interoperability

Strategy... using Open Source Solutions

Open repository storage and management

- **Fedora**[™] (Flexible Extensible Digital Object Repository Architecture)
<http://fedora.info>
 - Cornell and University of Virginia
 - ARROW is a founding member of the Fedora Development Consortium
 - core software of the ARROW project

Open Access Publishing

- **Open Journal Systems** (OJS) from Public Knowledge Project
<http://www.pkp.ubc.ca/ojs/>
 - University of British Columbia
 - for open access journal publishing

eResearch submission

- **VALET for EDTs** from the ARROW project and VTLS
<http://www.fedora.info/tools/>
 - configurable web-based self submission tool for thesis
 - jointly developed by the ARROW project and VTLS

Why Fedora?

- ARROW project needed a robust, well architected underlying platform
- ARROW wanted a flexible object-oriented data model
- ARROW wanted to be able to have persistent identifiers down to the level of individual datastreams, accommodating its compound content model
- ARROW wanted to be able to version both content and disseminators (think of software behaviours for content)
- ARROW required clean and open exposure of APIs with well-documented SOAP/REST web services.

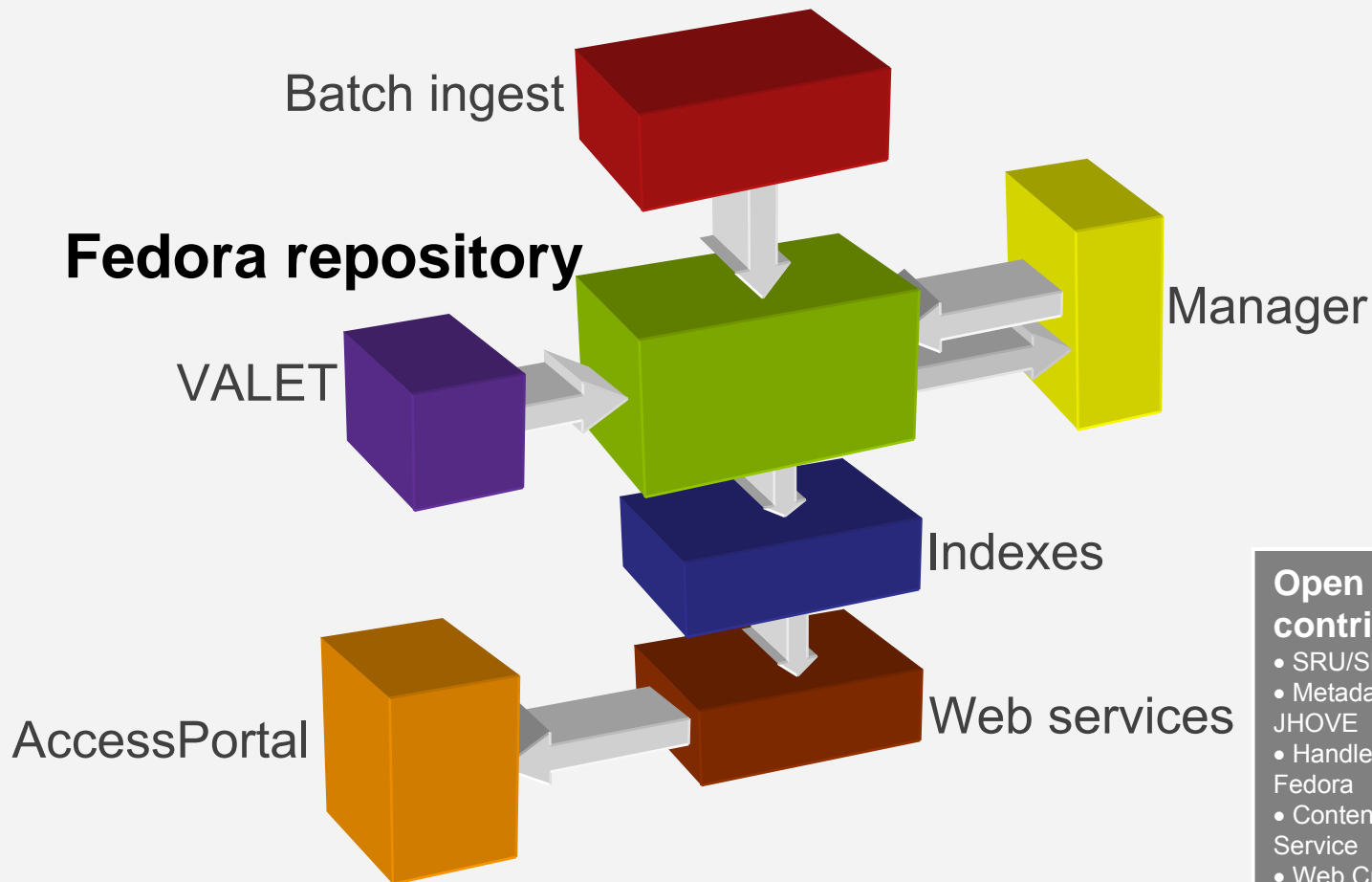
Filling in the missing pieces...

Proprietary software for searching, management and web exposure

VITAL from VTLS Inc <http://www.vtls.com>

- software produced by VTLS Inc. to meet ARROW's functional requirements
- VITAL's main components:
 - VITAL Indexes
 - VITAL utilises McKoi or MySQL Open Source Software
 - Oracle™ if preferred
 - VITAL Web services
 - AccessPortal
 - Explorer
 - VITAL Batch ingest
 - metadata
 - objects
 - VITAL Manager
 - windows client

VITAL architecture overview



Open source contributions:

- SRU/SRW Interface
- Metadata Extraction Service via JHOVE
- Handle System Integration for Fedora
- Content Model Configuration Service
- Web Crawler Exposure Service (e.g., to Google)

Policy frameworks and decisions

- project governance
 - Contracts and licensing
- atomistic or compound objects?
- descriptive metadata
 - adopt one or enjoy MANY types?
 - JHOVE validation
 - JHOVE metadata extraction
- use cases and content modelling
- what import /export formats?
 - honouring what standards?
 - validation, when and how?

Policy frameworks and decisions (2)

- direct or mediated deposit?
 - managing workflows
- open or closed access?
 - LDAP authentication?
 - XACML authorisation
 - creating policies -who can do what?
 - Shibboleth
- persistent URL format?
- external searching and harvesting?
 - OAI-PMH
 - spidering
- post ARROW project support

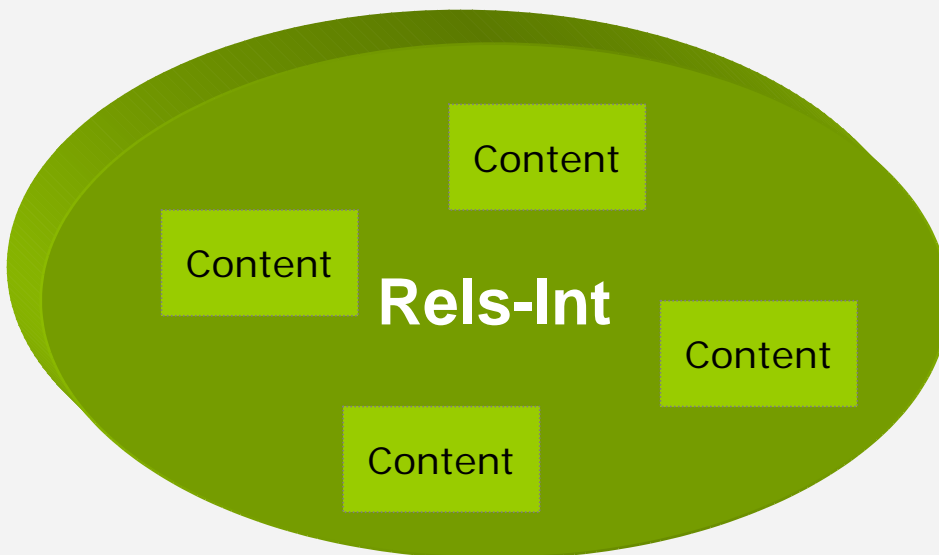
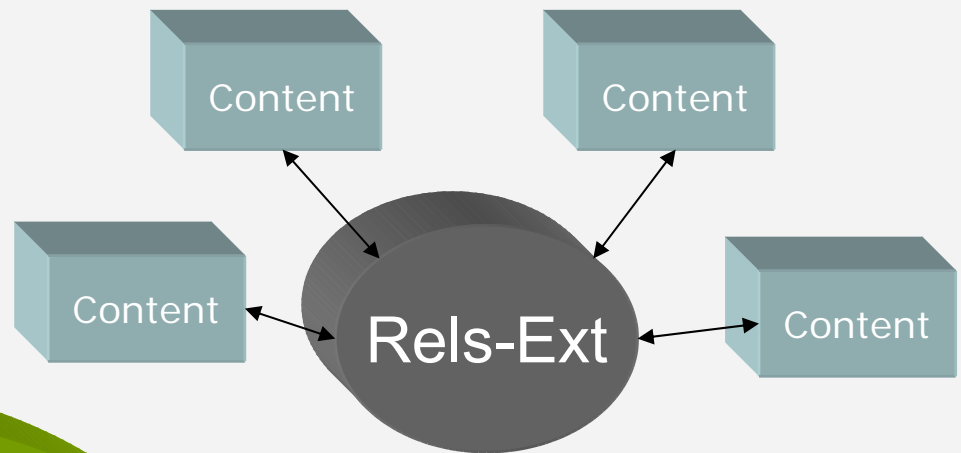
Project governance

Contracts and licensing

- Monash University is the lead institution, and has a Head License Agreement with VTLS
- VTLS required to release a certain amount of work Open Source
- ARROW project management team arranges a sublicense to participating institutions
- sub-licensees enter a separate maintenance agreement directly with VTLS for support of the Software
- ARROW project management team coordinates software development
- VTLS installs, trains and supports
- system and training documentation are made available by VTLS

Atomistic vs. Compound object model

Atomistic – a data object with one or more content datastreams that are all considered primary to the object.



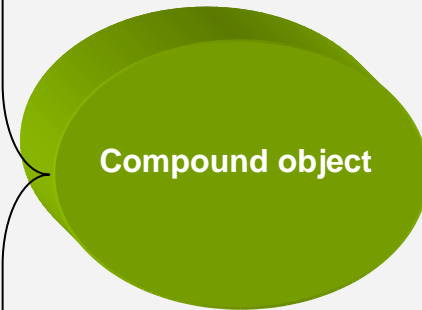
Compound – a data object consisting of multiple content datastreams that are not all primary to the object.

Arrow chose the Compound object model

Each object in the repository
comprises two or more
datastreams.

One object may contain
many different kinds of files.

Fedora PID
DS1:ExternalUniqueID
DC: Dublin Core
OMS1:Object metadata
CS1:Pub Body 1
CMS1:Body 1 metadata
CS2: Pub Body 2
CMS2: Body 2 meta
CS3: Images
CMS3:Images metadata
CS4:WebPages
CMS4: Web metadata
CS5: Multimedia
CMS5: multimedia metadata
CS6:Bibliography
CMS6:Bibliog metadata
CS17: Evidence
CMS7: Evidence metadata
DS18: Native Metadata
RELS-INT: RELS-INT
SM1: System Meta



Descriptive metadata

- decided to support the metadata generated by communities of practice to accompany their digital objects
- we have developed content models using for the most commonly used research objects
- VITAL transforms MARCXML and ETD-MS metadata into Dublin Core for OAI-PMH and internal purposes
- investigating possibility of using OCLC's interoperable core
- ARROW may need to write something ourselves

Use cases and content modelling

- developed content models using MARCXML
- based our work on majority use-cases
 - journal articles
 - conference papers
 - working papers
 - books
 - book chapters
 - theses
 - newer forms of research will lead to more content models and variations

Import and export formats

Decided to support formats that are widely used, documented and well supported

- Import
 - METS (Fedora profile)
 - batch processing allows wide range of other formats to be imported
 - migrating from another repository possible via batch processing
- Export
 - METS (Fedora profile)
 - XML (well formed)
 - CSV (for metadata)
 - MARCXML
 - Tab delimited

File validation

We decided to validate common file types on ingest

- JHOVE validation used

Some files can contain additional technical metadata

- JHOVE metadata extraction implemented

Direct or mediated deposit

Direct deposit — desired by some submitters but a potential nightmare for repository managers.

- mediated deposit allows:
 - review of metadata
 - review of content
 - ownership determination
 - copyright determination
 - review of access permissions

We decided we needed a flexible solution able to meet each institutions needs and capable of change.

Open versus Controlled access

- Open Access in the classical sense is not always appropriate
- institutional repositories may require access controls in some areas
 - LDAP
 - provides authentication of users
 - XACML implementation
 - working at the repository level
 - provides authorisation policies
 - according to content type
 - at datastream level
- coordinating work to develop standard XACML policy ontology

Persistent identifiers

Adopted CNRI handles

- wanted to be able to persistently cite both objects and components of objects
- handles are assigned to:
 - each compound object (such as a thesis)
 - every component or datastream of a compound object
 - (e.g. the metadata, the thesis abstract, the thesis body, and the reference list)
- minimum persistently citeable unit can be made as granular as is required
- repository managers can disaggregate and re-aggregate objects as required.

External searching and harvesting

External searching and exposure

Realised need to develop a discovery service for Australian institutional repositories

- The [ARROW Discovery Service](#) developed by the NLA, provides consolidated searching across many Australian repositories, (uses AOI-PMH)
- [Picture Australia](#) developed by the NLA, harvesting image collections (uses AOI-PMH)
- SRU/SRW interface released as Open Source Software

Harvesting

- Google and other service providers

Australian Discovery Service

A national harvested metadata repository which links:

- OAI-compliant trusted digital repositories to ensure long-term access and preservation of research output through a framework of digital repositories
 - seven so far
- complements work undertaken by the National Library of Australia
 - part of the national information infrastructure
- maximises interoperability:
 - uses XML, UTF-8 (Unicode), and the unqualified Dublin Core metadata schema
- ensures Z39.50 compatibility
 - first client – [Libraries Australia](#); second client – [AARLIN](#) Australian Academic & Research Library Network
- links to the [Australasian Digital Theses Program](#) (ADT)
 - Australian theses only

Australian Discovery Service

Provides a national resource discovery service including:

- providing an appropriate search interface
 - simple search, advanced search, & browse options
- contributing to other networks
 - OAlster, Yahoo, Google
- Ensuring appropriate local institutional and national “branding” of the service
 - occurs throughout the ADS interface and the exchanged metadata
- providing appropriate subject-based access
 - The Australian Standard Research Classification list



Contributions:

Australian Digital Theses	5196
Agrigate	56
Australian National University	2733
Australian Policy Online	2909
Curtin University of Technology	426
Monash University	126
Queensland University of Technology	1504
University of Melbourne	876
University of Queensland	2831
University of Southern Queensland	436
University of Tasmania	180



Arrow Discovery Home

A selection of the research most recently added to ARROW Discovery Service is:

- [Factors of risk variance in decentralized communications](#), *Hussain, Omar; Chang, Elizabeth; Hussain, Farooq*, 2005
- [Submission to the United Nations Study on Human Rights Compliance while Countering Terrorism \(Australia\)](#), .
- [The causes of changes in the distribution of family income in Australia, 1982 to 1997-98](#), .
- [Researching transmodal delivery at USQ: different horses for different courses](#), *Sankley, Michael D.; Birch, Dawn*, 2005
- [Dictionary module and UDC: Two new approaches to enhance embedding capacity of a steganographic channel](#), *Potdar, Vidysagar; Han, Song; Chang, Elizabeth*, 2005

The most recently accessed research is:

- [Digital Repositories at Queensland University of Technology](#), *Callan, Paula; Cleary, Colleen*, 2005
- [The Open Access model of research publishing](#), *Sullivan, Shirley; Horwood, Lynne*, 2005
- [Alcohol and other drug education and training for indigenous workers: a literature review](#), *Gray, Dennis; Haines, Ben; Watts, Sharyn*, 2004
- [Accounting for goodwill in an Australian context](#), *Dunstan, Keith; Percy, Majella; Walker, Julie*, 1993
- [Chemical Control of Blue Periwinkle \(*Vinca major* L.\) in Croajingolong National Park, Victoria](#), *Twyford, K. L.; Baxter, G. S.*, 1999

Some statistics...

Showing the growth of Australian Institutional Repositories over time:

- 5,492 records by Friday 11th March 2005
- more than 17,000 records one year on
further statistics available at <http://stats.nla.gov.au/arrow/>

Encouraging archival deposit

- the oldest item deposited so far was written in 1956

Contributors:

- eight institutional repositories
- subject gateways including Australian Policy Online

In negotiation:

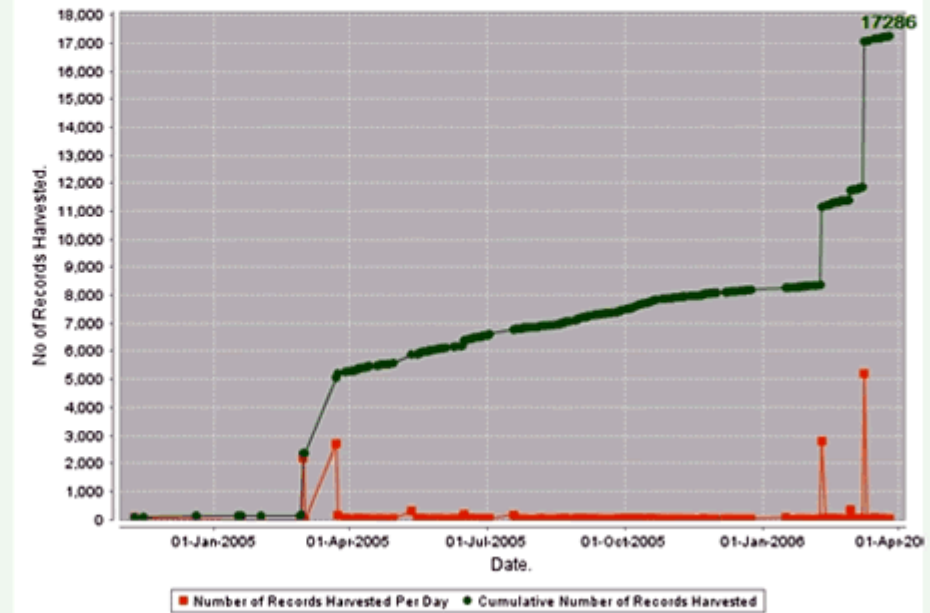
- new university IRs such as USQ added in March 2006
- datasets from the [Australian Social Sciences Data Archive](#), and [DART](#) Dataset Acquisition, Accessibility, and Annotation e-Research Technologies Project



[Web Statistics](#) for the ARROW Discovery Service

Arrow Record Harvest.

New Records Harvested By Date



ARROW project: what is the state of play now?

2004

- ✓ developed architecture, selected, tested and developed initial software (Fedora, VITAL and OJS)
- ✓ VITAL 1.0 demonstrated basic functionality

2004 – end 2005

- ✓ VITAL 1.3 development software released
- ✓ began populating repositories
- ✓ OAI-PMH harvesting by the National Discovery Service
- ✓ VITAL 2.0 development software released and in use at:
 - Monash University
 - University of NSW
 - National Library of Australia
 - Swinburne University
- ✓ extended participation to more Australian universities
 - University of Southern Queensland (RUBRIC Project)
 - University of Western Sydney
 - University of South Australia
 - University of Central Queensland

VITAL 2.0 software

- released December 2006 provides
 - improved searching
 - support for a range of content types
 - range of ingest alternatives
 - more management functions

- VITAL 2.1 (due this month) adds
 - a range of UI enhancements, including better browsing
 - collections support
 - OpenURL support
 - Endnote citation export
 - harvesting via Google and enhanced OAI-PMH support

What do we still need to achieve?

Today – December 31, 2006

Software development

- VITAL 2.1 software release (this month)
- VITAL 3.0 software release (3rd quarter 2006)
- VITAL 4.0 software release (4th quarter 2006)

Access and authentication issues

- XACML
- MAMS
- Shibboleth

Additional new members

- roadshows and workshops

Establish ARROW Community

- representing original and new members
 - strategy
 - structure
 - staff
- formulate post project development plans

What have we learnt so far?

- multiple partners are both good and bad:
 - Good:
 - Sharing of information and experiences
 - Sharing of development work
 - Multiple perspectives on issues
 - Bad:
 - Multiple perspectives on issues
 - Scope creep
 - Managing expectations
 - Pressure on the project management team
 - Pressure on development team and partners
- software development *feels* slow, both commercial and open source
- development with a commercial partner can be tricky

What have we learnt so far? (2)

- lots about the nature of digital repositories
- that there aren't enough real standards in this area
- open versus closed repositories, *or* information management versus accessibility is a **BIG ISSUE**
- repositories are only partly about software - advocacy, policy, institutional engagement and grunt work need equal attention
- constraints of dealing with copyright
- institutions are hungry for information - hence the ARROW community

The ARROW project after 2 years

Part II The good bits

The ARROW Project is funded by the Australian Commonwealth Department of Education, Science and Training, under the Research Information Infrastructure Framework for Australian Higher Education.

arrow.edu.au

The ARROW Consortium comprises Monash University [lead institution], National Library of Australia, The University of New South Wales and Swinburne University of Technology.



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NATIONAL
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TECHNOLOGY

ARROW project diversity

- [ARROW@UNSW](#)
 - Publications from:
 - National Centre in HIV Social Research
 - School of Biological, Earth & Environmental Sciences
 - School of Economics
 - School of Mining Engineering
 - ADFA
 - [Swinburne Research Bank](#)
 - Various working papers
 - ResearchMaster Metadata
 - [Journal of Applied Psychology](#)
 - Peer review management
 - Open Journal System
 - Assembling and publishing journal issues
 - Well liked by academics using the software
- [Monash University ARROW Repository](#)
 - Faculty of Business and Economics Working/Discussion papers
 - Centre for Gippsland Studies picture collection
 - Theses
 - Patents
- [National Library of Australia \(NLA\)](#)
 - ARROW Discovery Service
 - Picture Australia harvesting
 - Independent Scholarly Research repository
 - Email archive repository
 - Open Access Journal publishing

UNSW Research
Capture. Manage. Discover.



Welcome to ARROW@UNSW!

ARROW@UNSW is a repository of UNSW's research output. UNSW researchers can deposit their research into ARROW@UNSW so that it is searchable, managed and made discoverable. Where permitted, a link to the full-text publication or to the research output is available for viewing. [More on ARROW...](#)

What's in the repository?

Browse by:

- [Australian Defence Force Academy \(ADFA\) - Conference papers](#) (3 papers)
- [Australian Defence Force Academy \(ADFA\) - Journal articles](#) (4 papers)
- [Australian Defence Force Academy \(ADFA\) - Working papers](#) (1 paper)
- [Centre for Applied Economics \(CAER\) - Working papers](#) (22 papers)
- [National Centre in HIV Social Research - Annual reports](#) (2 reports)
- [National Centre in HIV Social Research - Conference papers](#) (2 papers)
- [National Centre in HIV Social Research - Factsheet](#) (1 paper)
- [National Centre in HIV Social Research - Issue paper](#) (1 paper)
- [National Centre in HIV Social Research - Journal articles](#) (4 articles)
- [National Centre in HIV Social Research - Monograph series](#) (42 papers)
- [National Centre in HIV Social Research - Report series](#) (4 reports)
- [School of Biological, Earth & Environmental Sciences \(BEES\) - Conference papers](#) (1 paper)
- [School of Biological, Earth & Environmental Sciences \(BEES\) - Honours theses](#) (44 papers)
- [School of Biological, Earth & Environmental Sciences \(BEES\) - Journal articles](#) (1 article)
- [School of Computer Science and Engineering \(CSE\) - Technical reports](#) (155 papers)
- [School of Economics - Working papers](#) (80 papers)
- [School of Mining Engineering - Conference papers](#) (7 papers)
- [School of Mining Engineering - Honours theses](#) (7 papers)

School of Mining Engineering Trial

Research publications - academic staff

Academic and research staff (including postgraduate students) in the School of Mining Engineering are trialling the deposit of research publications until the end of 2005.

Please use the [Deposit](#) link to submit your research publications and take note of the deposit guidelines. As this is a trial of depositing various different research publications, we are bound to come across workflows or ideas that we have not catered for in the interface. This is one of the important aspects of the trial for the ARROW project. Contact [the ARROW Project Team](#) for more information or speak to Paul Hagan or Bruce Hebblewhite.

Thank you for participating in this trial!

ADFA Trial

Research publications - academic staff

The Academy Library is working with academic and research staff (including postgraduate students) across all Schools to trial the deposit of research publications.

Please use the [Deposit](#) link to submit your research publications and take note of the deposit guidelines. Contact [the ARROW Project Team](#) for more information or speak to [Sue Reatty](#) (Phone: 6268 8101)

Swinburne Research Bank

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- Search
- Policies and procedures
- Author benefits
- Contacts

Welcome to Swinburne Research Bank

Swinburne Research Bank is a digital repository for research at Swinburne. It contains published articles and conference papers, book chapters and other forms of written research output from Swinburne academic staff and postgraduate students. Published material covers a range of subjects and disciplines, both before and after peer-reviewed publication, and much of it is full text.

What's in Swinburne Research Bank?

- Centre for Advanced Internet Architectures technical reports
- Faculty of Information & Communication Technologies technical reports
- Institute for Social Research staff papers
 - Journal articles
 - Working/discussion papers
 - Book chapters

Swinburne PhD and Masters (by Research) theses can be accessed via the [Australian Digital Theses Program](#).

Swinburne Research Bank is part of a wider project entitled [ARROW](#). The aim of this DEST-funded project is to provide a vehicle for higher education institutions in Australia to transform the way we manage our research publications and research information in order to improve output and impact.

What are the benefits?

- You can safely store your research & share your research
- You can generate a comprehensive publishing record
- Your record of publication is indexed & searchable through Google and other search engines ([More benefits](#))



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Monash University ARROW repository

ARROW is a digital archive for Monash University's research output. ARROW contains published articles, working papers, conference proceedings, historic photographs. Its purpose is to store the research out put from Monash academic staff and postgraduate students and promote global online access to that content.

News story

Monash ARROW now has 577 Faculty of Business and Economics working papers for browsing and downloading via ARROW at Faculty of Business and Economics Working Papers

Monash University thesis:

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Full view

This screen contains the metadata and links to datastreams associated with this object.

Simple search Advanced search Expert search

Search query

thesis

Select a database...

VITAL Repository

Search collection

Show all

Title	Visual information retrieval via inference networks
Creator	Wilson, Campbell(Campbell Charles), 1971-
Description	See Abstract Document
Description	Thesis (Ph.D.)--Monash University, 2003.
Description	Includes bibliographical references (leaves 246-257) See Bibliography Document
Subject	Expert systems (Computer science) Image processing Probabilities. Information retrieval. Optical scanners. Inference.
Date	2002.
Identifier	Please use this identifier to cite or link to this item: http://arrow.monash.edu.au/hdl/1959.1/2132
Identifier	monash:2132
Rights	Copyright conditions may apply.
Format	x, 267 leaves :ill. (some col.) ;30 cm.
Format	application/pdf
Language	eng

Documents

Label	Date	Format	Download
Thesis Title, Contents and Abstract	December 12, 2005, 11:53 pm	Adobe PDF Document	Download



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[Simple Search](#)[Advanced Search](#)**Search Query**

mining

Title **Metals in fish and shellfish from Lake Illawarra, New South Wales, Australia****Title** BEES-JournalArticle-2005-Wetlands-v21n2-Brown.xml**Author** Brown, Paul L.**Author** Carolan, Vincent J.**Author** Hafey, Deborah J.**Author** Iko, Machiko**Author** Markich, Scott J.**Author** Morrison, R. John**Author** The University of New South Wales Faculty of Science School of Biological, Earth and Environmental Sciences

Summary Fish (dusky flathead – *Platycephalus fuscus* and luderick – *Girella tricuspidata*) and shellfish (*Anadara trapezia* and *Saccostrea commercialis*) samples from Lake Illawarra in south-eastern Australia were collected in 1993 and 2000 and analysed for a range of metals. Sediments with which the shellfish were in contact were also examined. The results were compared with shellfish data collected in 1976 and in an independent study in 1993. No reported data were available for comparison with the fish metal results. The results showed that trace metal concentrations in both fish and shellfish were generally low and represented minimal health risk. The dusky flathead, a predator species, had detectable concentrations of mercury, while the luderick, a herbivore, had values below detection limits. Metal concentrations in shellfish were in general agreement with those found in other studies, and showed that no apparent changes were occurring over time, except those that could be explained by changes in the age of the shellfish. Only copper in Lake Illawarra oysters showed greater concentrations than found in other south-eastern Australian estuaries. It is recommended that future studies focus on organic and microbial contamination.

Publisher Coast and Wetands Society Inc.**Source** BEES-JournalArticle-2005-Wetlands-v21n2-Brown.xml**Item Type** text**Item Type** journal article**Publication Date** 2004**Identifier** vital:1244**Copyright** © Coast and Wetands Society Inc.**Language** en-aus**Documents**

Label	Format	Download
View full-text journal article	Adobe PDF Document	Download

Swinburne journal article:

Swinburne Research Bank

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Full View

This screen contains the metadata and links to datastreams associated with this object.

Simple Search **Advanced Search**

	Full Text	contains	"institute for social rese	Add
And	Full Text	contains	"journal article"	Add Remove
And	Full Text	contains		Add Remove

Search Show All

Title Choice, diversity and coordination : improving access to social housing

Author Huise, Kathleen Jean

Author Swinburne University of Technology. Institute for Social Research

Summary Allocations systems lie at the core of social housing. They determine who is eligible for housing (and who is not), the order of providing assistance, and matching of households with specific properties, as well as affecting all aspects of housing providers' operations including tenancy management, asset planning and management, rent revenue, and ultimately financial viability. This article raises some issues about allocations, which are central to discussions about the future of public housing in Australia. It reports, and reflects, on some of the findings of recent research (Huise and Burke 2004) for the Australian Housing and Urban Research Institute (AHURI), although it should be emphasised that the views expressed are those of the author not AHURI Ltd.

Publisher Australasian Housing Institute

Subject 220000 Social Sciences, Humanities and Arts - General

Source Housing works, Vol. 2, no. 2 (Nov. 2004), pp. 17-18

Item Type Journal article

Publication Date 2004

Identifier Alternative URL: <http://www.housinginstitute.org/pubs/housingworks.php>

Identifier Please use this identifier to cite or link to this item: <http://hdl.handle.net/1959.3/1653>

Identifier swinburne:1653

Language English

Monash image in Picture Australia

PICTURE AUSTRALIA

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Your search within **Arrow** images found 41 images.
Displaying: 1-27

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Callignee South State School, 1911 [picture].
Arrow
[More Information](#)
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Callignee South State School, 1913 [picture].
Arrow
[More Information](#)
[Add to favourites](#)
[Order Image](#)




Callignee State School [picture].
Arrow
[More Information](#)
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Chinaman's Creek, Bancroft Bay, below Metung House [picture].
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Club Hotel, North Arm, Lakes Entrance [picture].
Arrow
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Cowarr Creamery, Morgan Street, 1890 [picture].
Arrow
[More Information](#)
[Add to favourites](#)
[Order Image](#)




Cr Hugh Dunbar [picture].
Arrow

Same Monash image in ARROW

skip to content Change view... ARROW

Home List Of Titles **Full View**



Full View


This screen contains the metadata and links to datastreams associated with this object.

Simple Search **Advanced Search** Expert Search

Search Query Select a database... VITAL Repository Search Collection Show All

Title	Callignee State School [picture].
Description	Group of students and their teacher, Joseph H. Anson outside Callignee School, a weatherboard building with shingled roof, in 1896.
Subject	Callignee School no 2649 Primary schools Callignee Clothing Anson, Joseph H.
Identifier	Please use this identifier to cite or link to this item: http://arrow.monash.edu.au/hdl/1959.1/2042
Identifier	monash:2042
Rights	Copyright expired under Copyright Act 1968 Commonwealth of Australia as at 23/06/05.
Format	1 photoprint :b&w ;19 x 24 cm.

Documents

Label	Date	Format	Download
View Photograph	January 27, 4:10 am		Download

Same image, magnified view via image navigator

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Home List of titles Full view **Image navigation view**

Full view

This screen contains the metadata and links to datastreams associated with this object.

Simple search Advanced search Expert search

Search query

Select a database...
VITAL Repository ▾

Search collection Show all



[-] ZOOM OUT | CENTER IMAGE | ZOOM IN [-]

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CHANGE LOCALE... English ▾

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Object types: images

JPEG Images

Composite weather image of a tropical cyclone Creator NASA

<http://arrowdev.lib.monash.edu.au/hdl/1959.100/459>

Or <http://hdl.handle.net/1959.100/459>

Satellite image of Victoria and Northern Tasmania Creator NASA

<http://arrowdev.lib.monash.edu.au/hdl/1959.100/457>

MrSid images with navigation

Victoria Dock, Melbourne, circa 1910 and 1942

<http://arrowdev.lib.monash.edu.au/hdl/1959.100/507>

Victoria Dock, Melbourne, circa 1972 and 2002

<http://arrowdev.lib.monash.edu.au/hdl/1959.100/516>

Object types: more...

XML plus images

Melbourne 2030: Chapter 5 - Residential infill and its threat to Melbourne's liveability

<http://arrowdev.lib.monash.edu.au/hdl/1959.100/283>

MPEG movie

Medical computer animation #20

<http://arrowdev.lib.monash.edu.au/hdl/1959.100/586>

Quicktime movie

Medical computer animation #10

<http://arrowdev.lib.monash.edu.au/hdl/1959.100/566>

mp3 audio

Ash Grunwald, Bakelite Radio and Blues Progression 5Mb

<http://arrowdev.lib.monash.edu.au/hdl/1959.100/571>

AVI movie

Fantastic Four, movie trailer

<http://arrowdev.lib.monash.edu.au/hdl/1959.100/551>

Where to from here – 2007 and beyond

Australia's Research Quality Framework (RQF)

The aim of the Research Quality Framework initiative is to develop the basis for an improved assessment of the quality and impact of publicly funded research and an effective process to achieve this. The Framework should:

- be transparent to government and taxpayers so that they are better informed about the results of the public investment in research;
- ensure that all publicly funded research agencies and research providers are encouraged to focus on the quality and relevance of their research; and
- avoid a high cost of implementation and imposing a high administration burden on research providers.

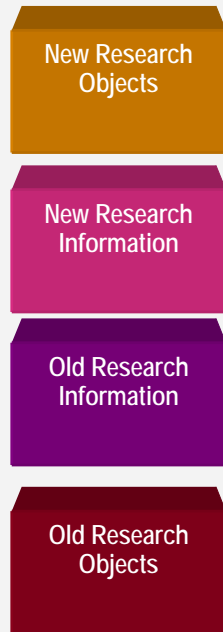
RQF support

ARROW proposal

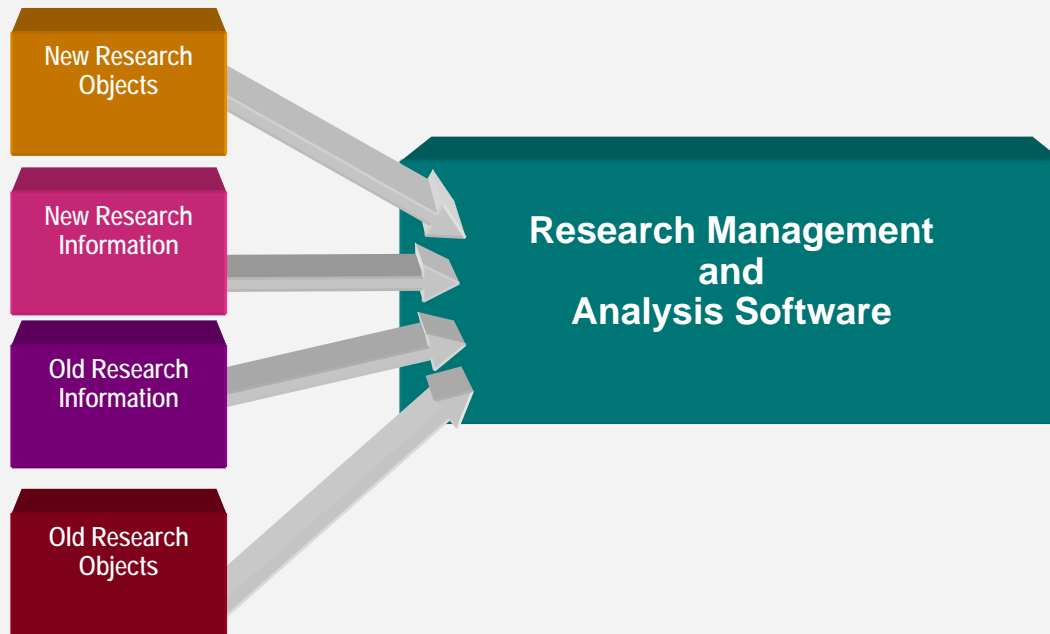
Solutions that work with or without research management systems to:

- store Research Digital Objects
- provide Persistent Links (HANDLES)
- provide Secure Access (XACML)
- expose Research Digital Objects
(Google, ARROW Discovery Service etc)

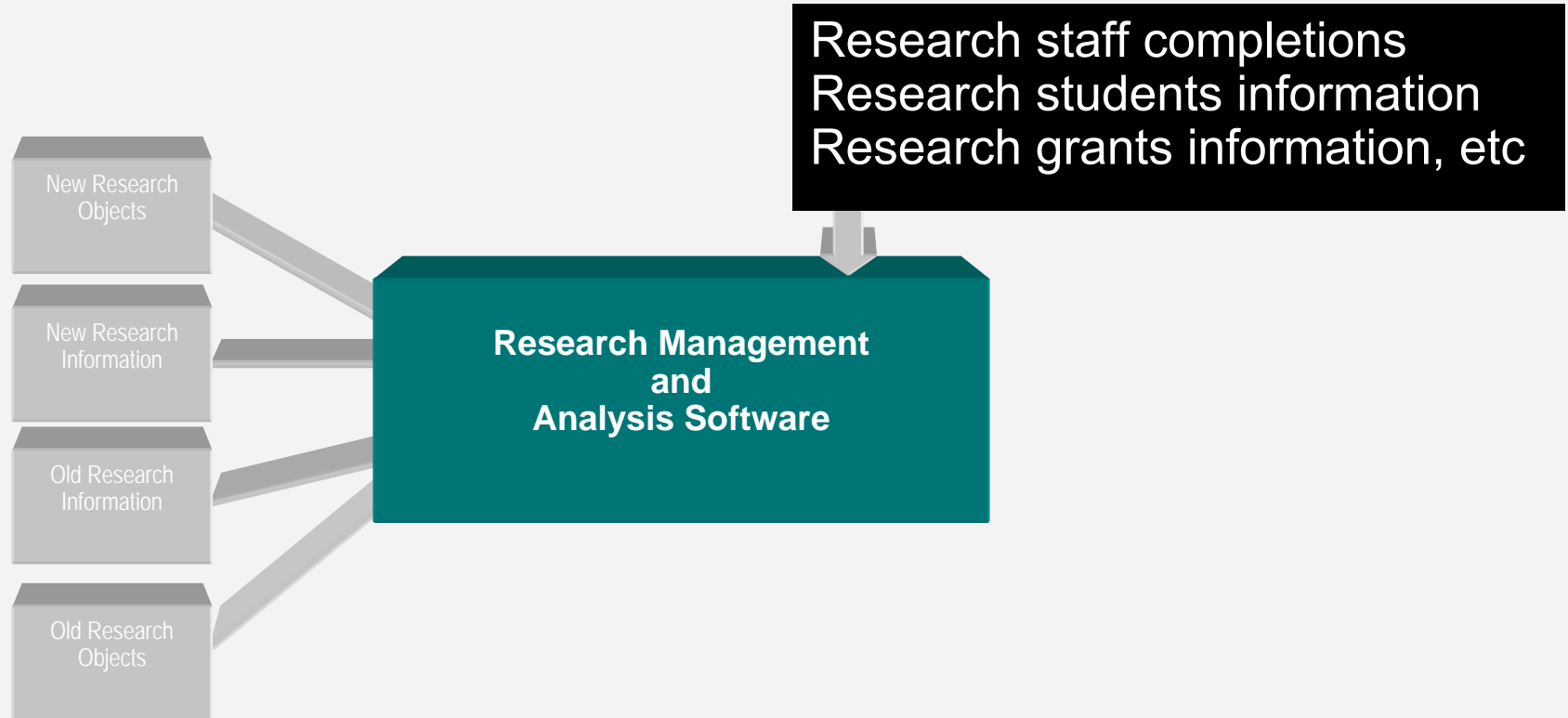
Part 1: gathering information



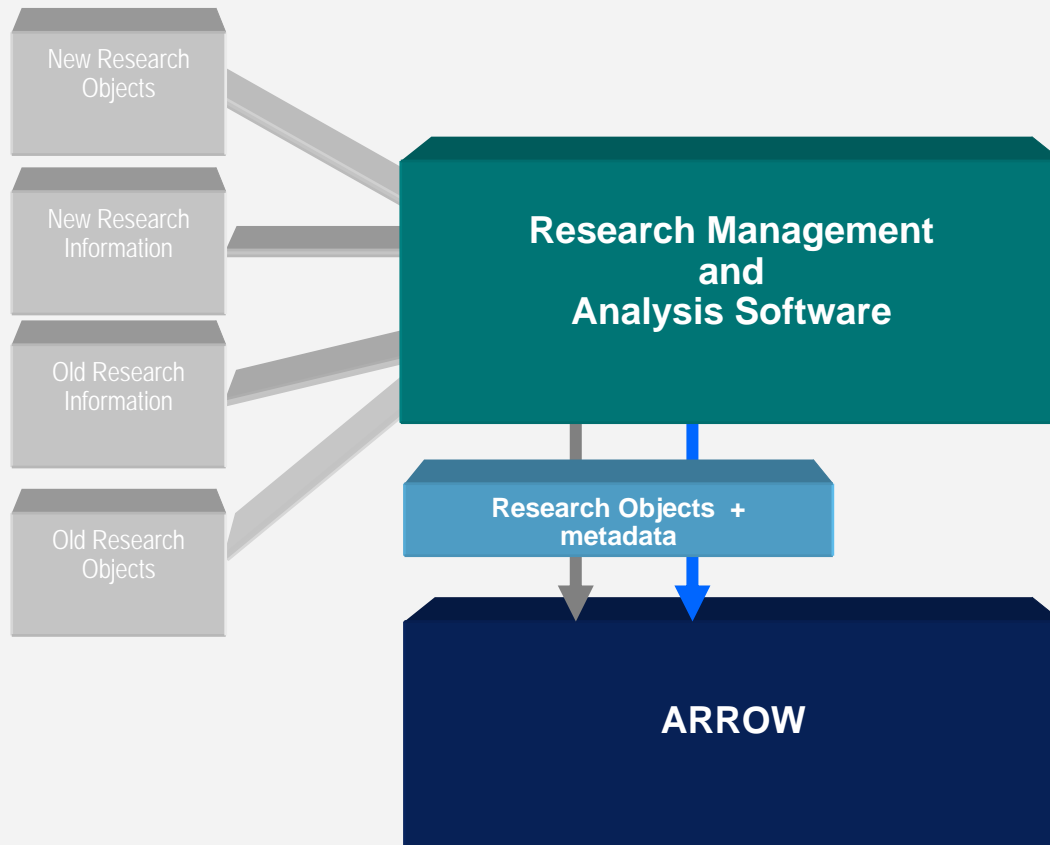
Part 2: recording inputs



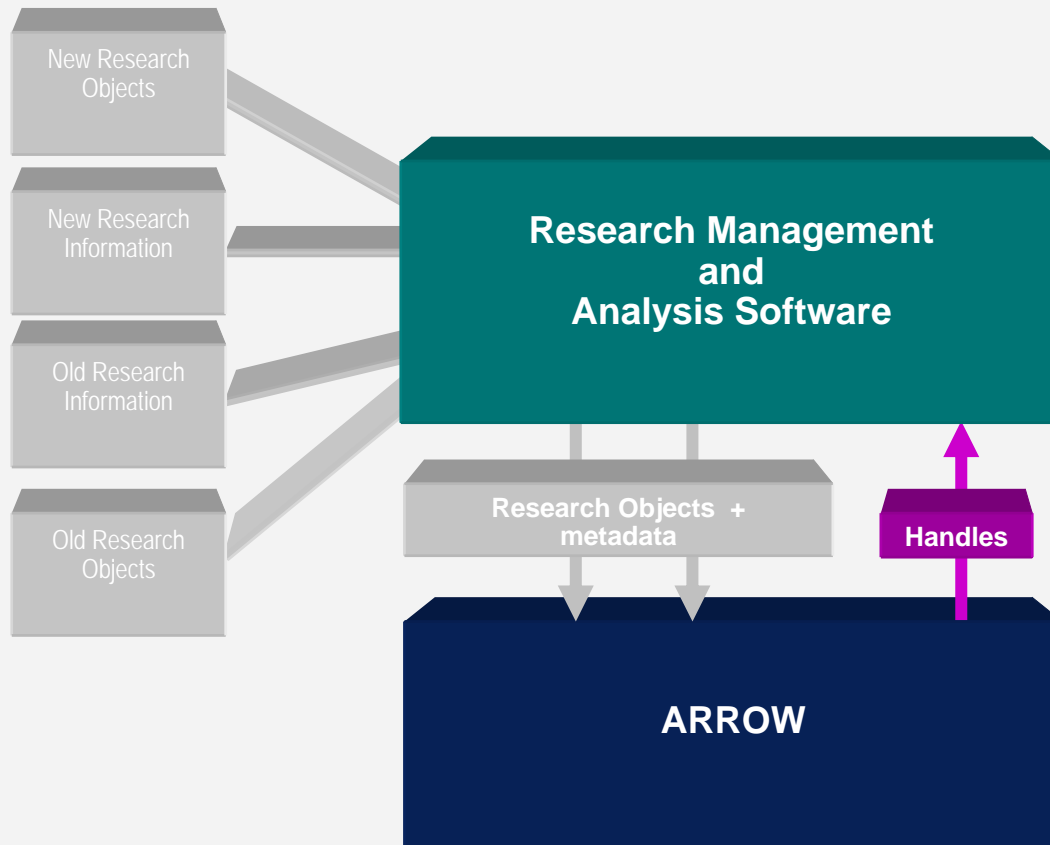
Sourcing additional performance metrics



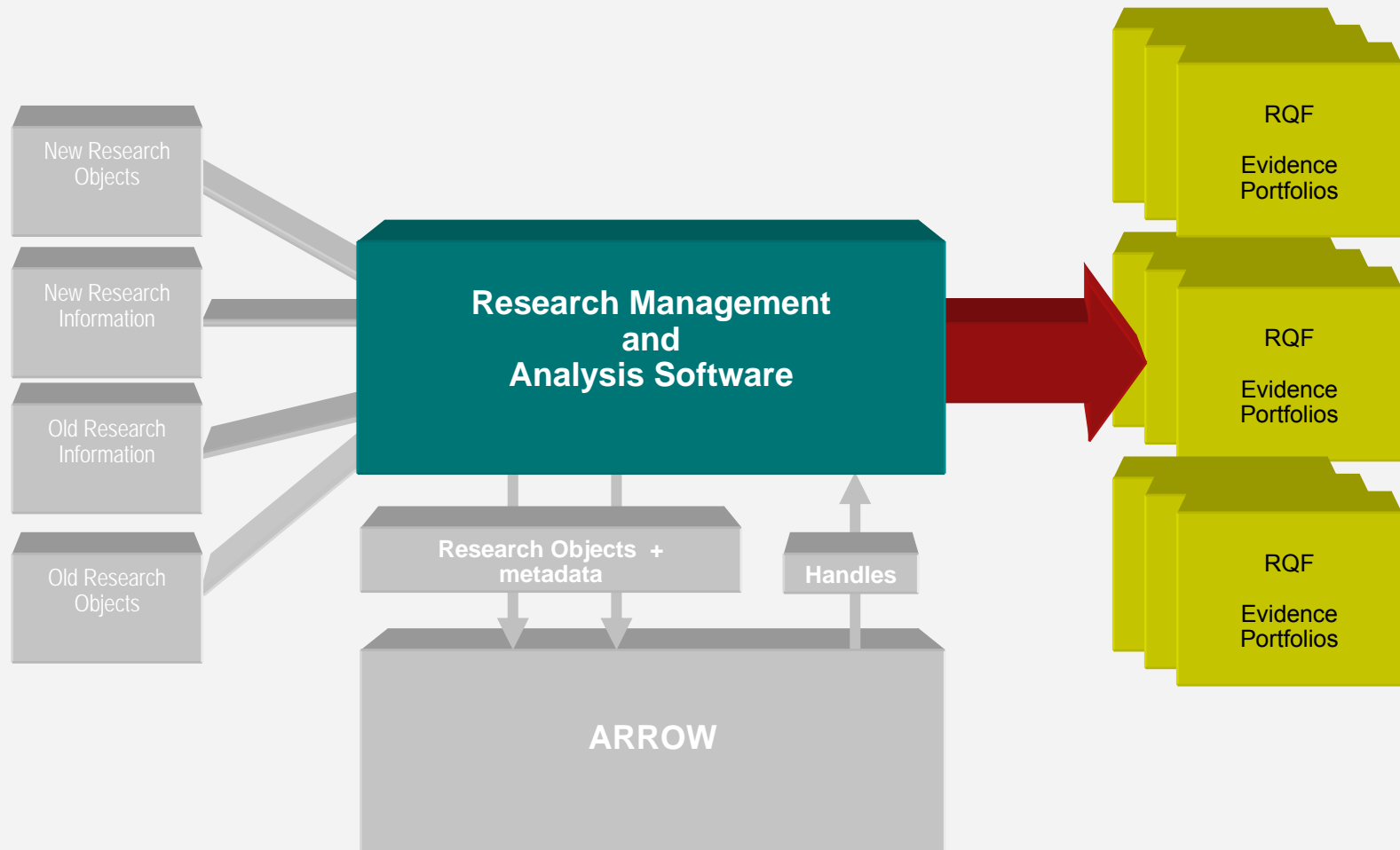
Part 3: deposit



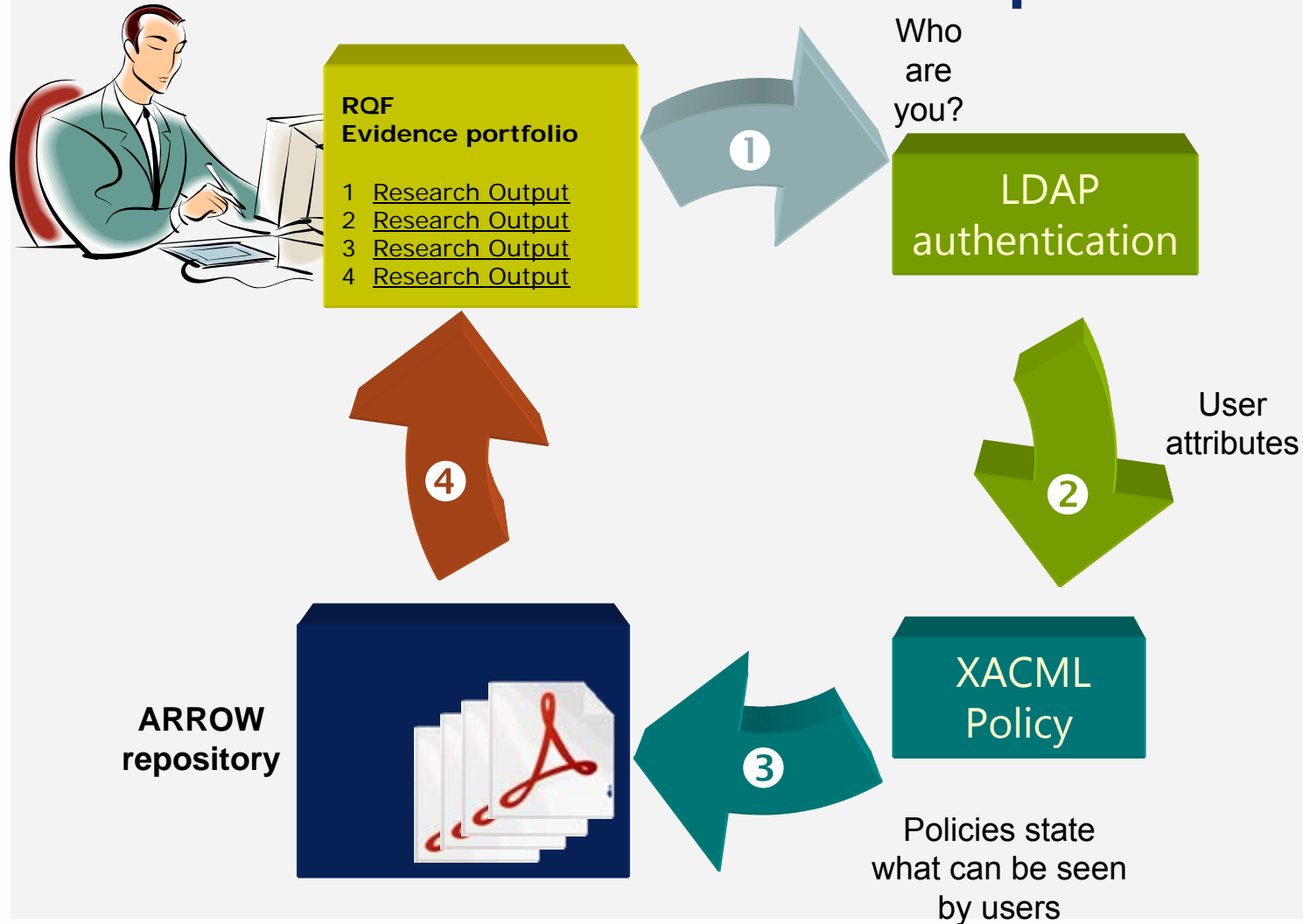
Part 4: handles



Part 5: evidence portfolios



Part 6: access to research outputs



Questions?

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- contact: David.Groenewegen@lib.monash.edu.au
- contact: Neil.Dickson@lib.monash.edu.au