

ED MWW.eprints.org



Meeting Institutional Requirements

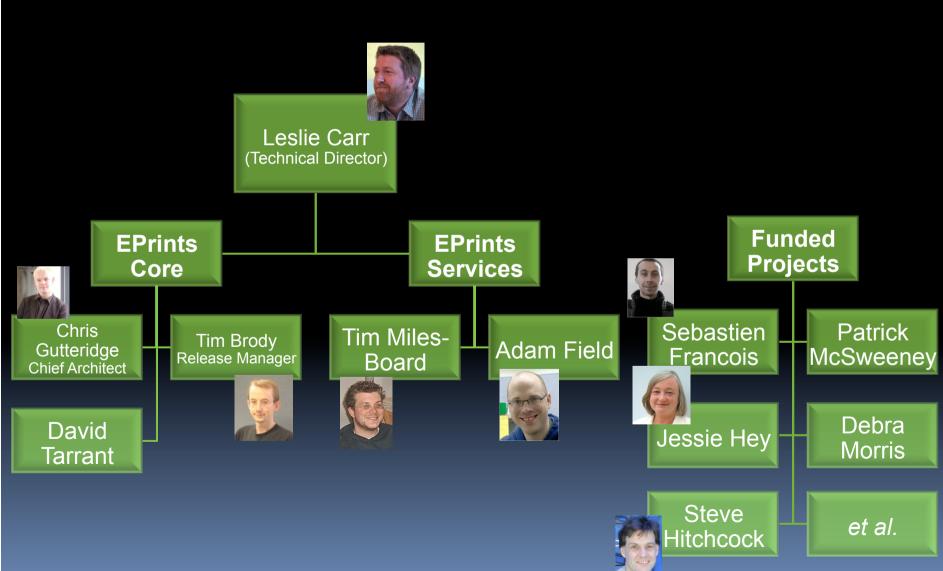
EPRINTS 3.2

Outline: Session 1 & 2

- Introductions
- What is the point
 - Mission, motivation and drive
 - Where have we got so far
 - Where do we want to be
 - Where is version 3.2 taking us
- Outline of version 3.2
- Discussions
 - Future technical directions
 - Future community possibilities
 - Relationships with other communities

EPrints Org Chart





EPrints Services

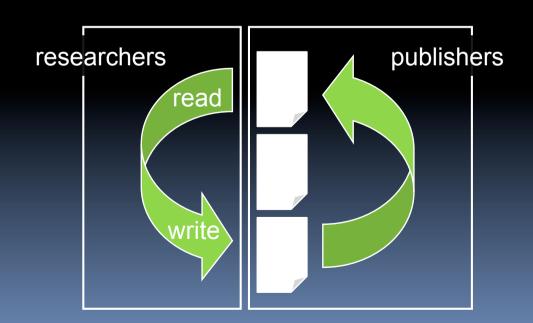
- For-pay commercial hosting, bespoke development, training, support
 - two fulltime repository developers/supporters
- Provides resources to sustain EPrints O/S development
- Provides customer contact
- Contributes code back to O/S
- Now starting to fund PhD studentships

What is the Point?

- Universities and researchers are knowledge producers and knowledge consumers
- The Web has radically altered the potential for knowledge dissemination in society in ways that we haven't yet fathomed
- We want to understand and facilitate that change
 - Research and development

The Point 1: Open Access

- Scholarly comms have been outsourced
- Literally nothing to show as evidence of research activities



The Point 2: Knowledge Management

Researchers have have just enough IT support for daily

activity

- Many problems intervene
 - Disk crashes
 - Stolen laptops
 - Software upgrades that go wrong
 - Backups that never quite get restored
- Life intervenes
 - Draws and folders full of old stuff that eventually fall off the radar
- "Lost in some research assistant's computer, the data are often irretrievable or an undecipherable string of digits"

Lost in a Sea of Science Data. S.Carlson, The Chronicle of Higher Education (23/06/2006)



EPrints History

- Open Archiving Initiative October 1999
 - Originally called UPS
- Among the Participants
 - Paul Ginsparg (Los Alamos, arXiv)
 - Carl Lagoze (Cornell, NCSTRL)
 - Stevan Harnad (Southampton, Cogprints)





EPrints

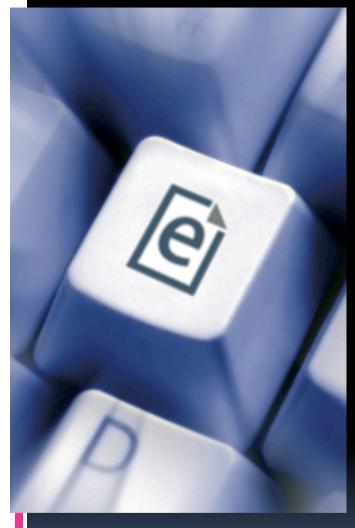
- proposed as a 'build your own repository' solution
- enable institutions and groups to participate in OAI metadata sharing initiative

EPrints History

- First release written by Rob Tansley
 - PhD student at Southampton
 - Left for HP & wrote DSpace



- EPrints funded under NSF / JISC DLI2
 - With Cornell, who were writing Fedora



An EPrints repository is a set of services offered to all the members of an institution for open access, preservation, scholarly collections, teaching, e-learning, e-publishing, data sharing, collaboration, administrative reporting, research management, publicity, marketing, digital profile enhancement, research assessment

and many, many other agendas.

EPrints Objectives

Lower the barrier for depositors while improving metadata quality and ultimate collection value

- Time saving deposits
- Import data from other repositories and services
- Autocomplete-as-you-type for fast data entry
- Name authorities

Enter once, reuse often

- Works with bibliography managers, desktop applications and new Web 2.0 mashups
- RSS feeds and email alerts keep you up to date
- Easily integrate reports, bibliographic listings, author CVs and RSS feeds into your corporate web presence
- Used for corporate reporting and national Research Assessment

Simple platform for open source contributions

- Tightly-managed, quality-controlled code framework
- Flexible plugin architecture for developing extensions







Quality

Goals for an EPrints Repository

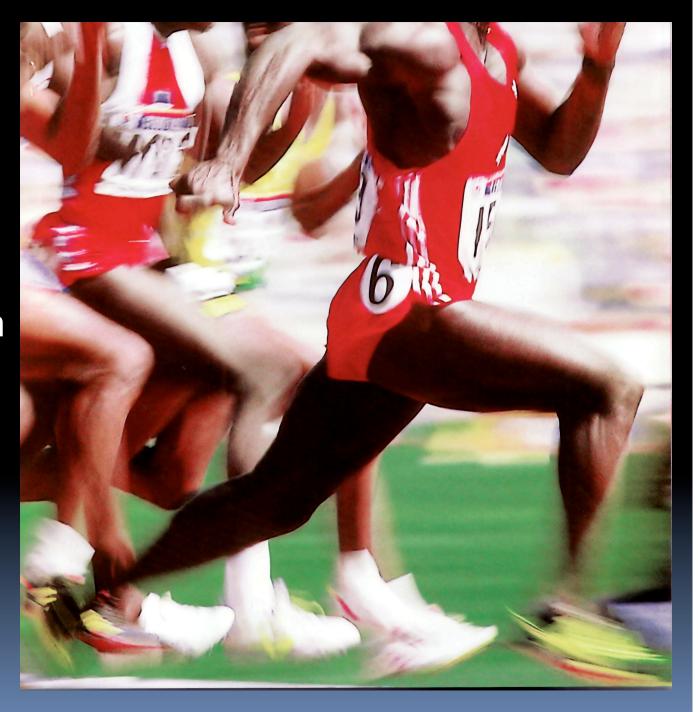
Value

Control

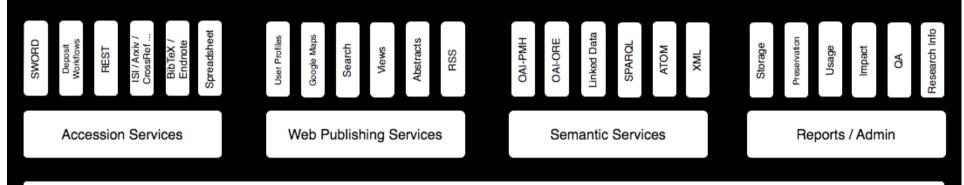
Running a repository is becoming a challenge in keeping up

Satisfy the demands of an entire institution

- diversity
- quantity
- quality
- deadline



EPrints 3: What Have We Got

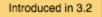


Repository of Persistent, Managed Objects



EPrints 3: What Have We Got

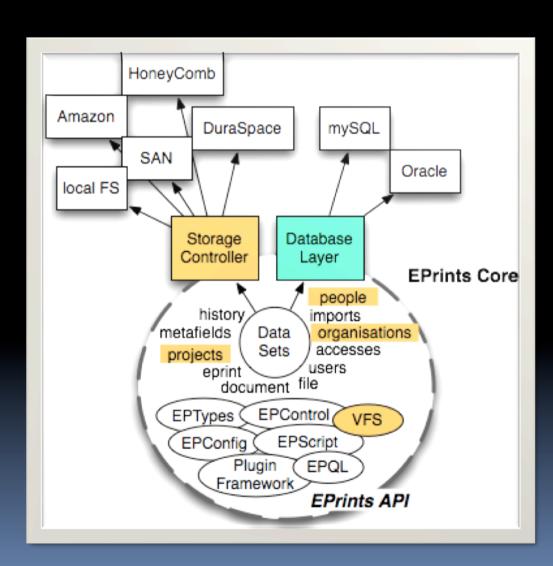
- Everything builds on the bottom layer
- Major part of v3.2 is strengthening the bottom layer
 - Improved data model
 - Enhanced data facilities
 - Enhanced metadata facilities
 - Improved programming & API



Introduced in 3.1

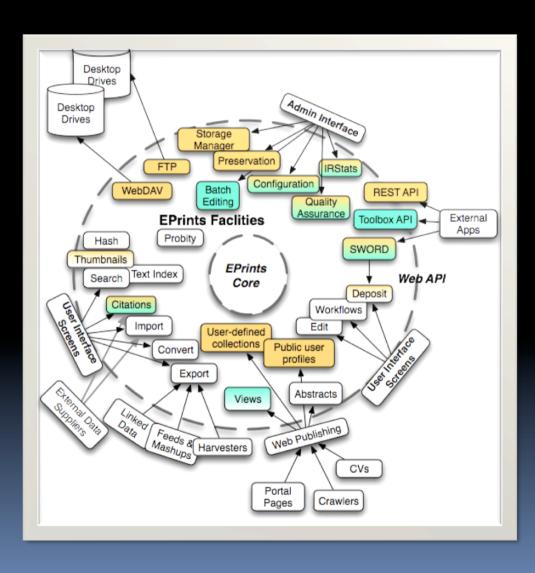
Introduced in 3.0





- Datasets
- Data storage
- Utility methods
 - Data types
 - Configuration control
 - Query languiage
 - Control language etc

EPrints Mantle



- External interactions
 - web pages
 - web services
 - other protocols

EPrints 3.2 Outline



EPrints 3.2 Outline

Improved Storage

- Storage Controller
- Virtual File System
- Preservation Analysis

- Extendable Datasets
- CRIS reporting
- Citation Framework
- IRStats

Extended Data Repertoire Strengthened Data Model

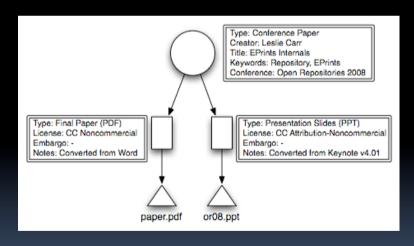
- Complex Thumbnails
- Coverpage Capabilities
- OpenXML support

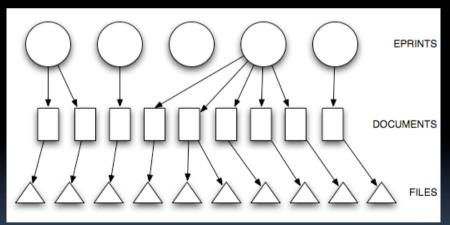
Inter-object Relations



Files are now data objects

 Previously, eprints & documents were data objects. Files were just items in a file system.





 Now files are data objects too, and file objects are abstractions of data streams.

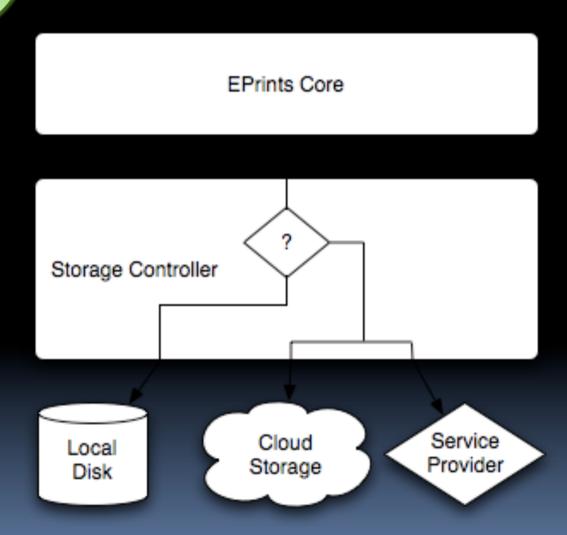


Storage Controller

- Files can be stored on multiple storage services
 - Local disk, SAN, NAS, Honeycomb, Cloud
- Various policies can be enacted through an EPControl XML files.
- Services can be monitored and files swapped between services.

Improved Storage

Storage Architecture



Storage Ruleset (example)

```
<choose>
    <when test="datasetid = 'document">
       <choose>
         <when test="$parent{relation_type} = 'isVolatileVersionOf">
           <plu><plugin name="Local"/></pl>
         </when>
         <otherwise>
           <plu><plugin name="AmazonS3"/></pl>
         </otherwise>
      </choose>
    </when>
    <otherwise>
       <plugin name="Local"/>
    </otherwise>
 </choose>
```

Improved Storage

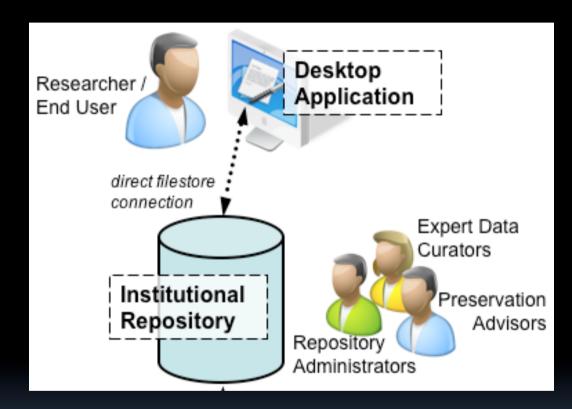
Storage Manager

Stora	age I	Manager	•
Amazon S3 storage			
There are 217 total files stored using this back-end, taking 3126Kb.			
Documents:	217	Copy to Delete Co	ppies
Local disk storage			
There are 289 total files stored using this back-end, taking 1649Kb.			
History:	289	Copy to	-
		Delete Co	Compressed local disk storage Amazon S3 storage
Compressed local disk storage			
There are 85 total files stored using this back-end, taking 293Kb.			
History: 8		ppy to elete Copies	<u></u>



Virtual File System

A VFS module invents a view of the repository's files and structures as a hierarchical file system.



 WebDAV and FTP servers are implemented to allow client desktops to mount the repository as a pseudo-filesystem.





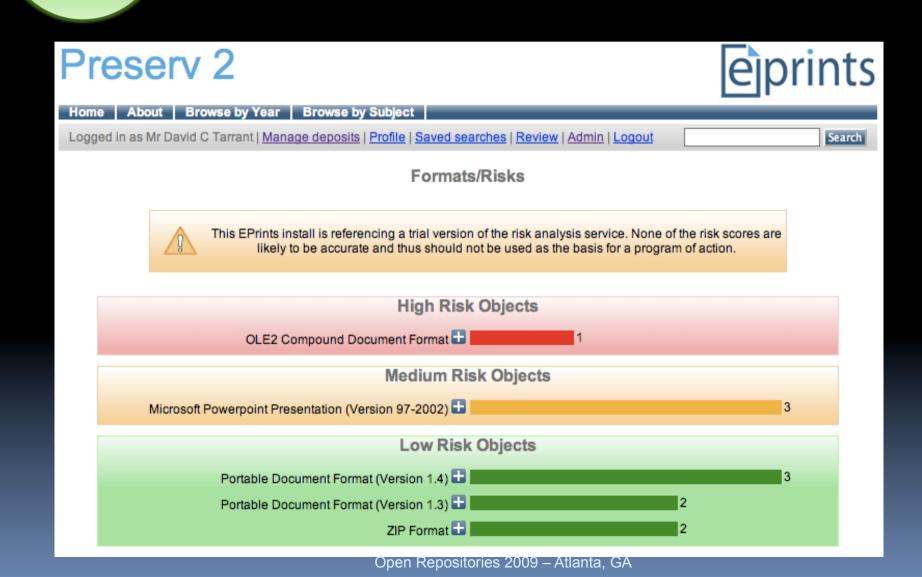
Preservation

- Creating abstractions of the files allows better preservation management
- A risk analysis process
 - catalogues all the available files and their file types
 - weighs the evidence for their preservability
 - assigns a score to each file

Improved Storage

Preservation Risk Analysis







Object Relationships

EPrints: repositories for grassroots preservation.

Carr, L. and Hitchcock, S. (2007) EPrints: repositories for grassroots preservation. In: The Sun Preservation and Archiving Special Interest Group (Sun PASIG), 14-16 Nov 2007, Paris, France,

Download

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Presentation

Microsoft PowerPoint



Presentation

PDF (Generated by "Save as PDF" in MacOS X) 9Mb



Presentation

Plain Text (Plain text conversion conv text/plain) 7Kb



Presentation

Rich Text (RTF) (Outline version save 29Kb



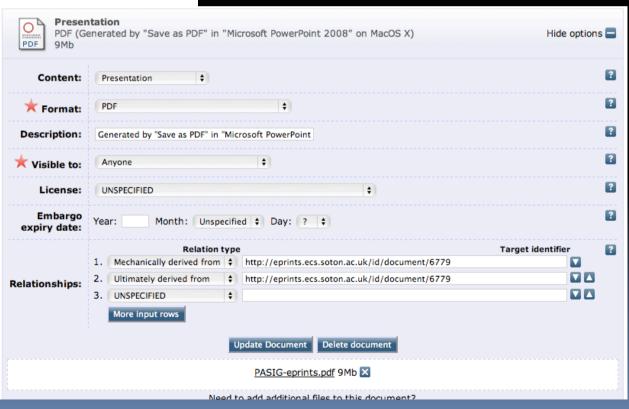
Presentation

Image collection or slideshow (Gener Powerpoint 2008 for OS X) 2280b

Abstract

The aim of this presentation is to tell a story. In the cont dealt with the issues of national libraries and enormous

Object relationships already appeared in v3.1 Now we start to build new facilities using them





Complex Thumbnails

- Thumbnails were hidden files
- Now they are documents

Main Document

Presentation
PDF (PDF Version of Slides)
2757Kb

haspreviewThumbnailVersion

hasVolatileVersion

is preview Thumbnail Version Of

Preview Document



isVolatileVersionOf

- Now thumbnails can be different formats
 - png, jpg, flv...
- Thumbnails can be uploaded manually



Thumbnail Addressing

- Main document
 - http://eprints.com/123/4
- Thumbnail
 - http://eprints.com/ 123/4.haspreviewThumbnailVersion
- Chaining Relationships
 - http://eprints.com/123/
 4.haspreviewThumbnailVersion.ispreviewThumbnailVersionOf



Object IDs & REST

- All data objects have their own data set and id
 - http://eprints.com/id/eprint/123
 - http://eprints.com/id/user/123
 - http://eprints.com/id/document/123

- Type these into a browser URL and EPrints will redirect to the appropriate display object
 - e.g. the eprint that contains document id 123

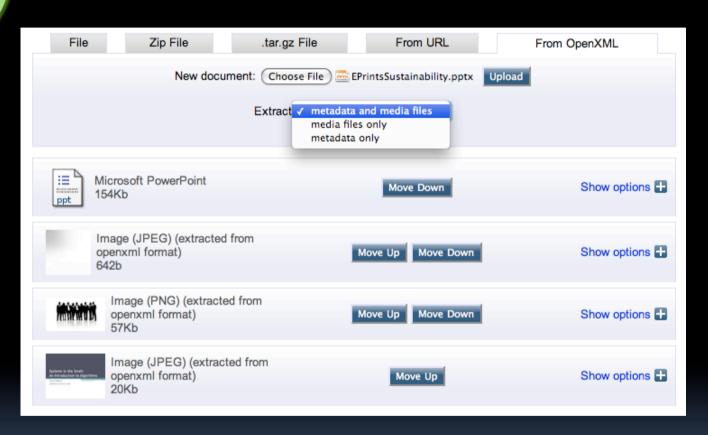


Object IDs & REST

- EPrints objects are exposed as data for reading and writing through a Web interface
- http://devel.eprints.org/cgi/rest/eprint/4.xml
 - The XML output of an eprint
- http://devel.eprints.org/cgi/rest/eprint/4/creators/2/ name/family.txt
 - The text of the surname of the second author of eprint 4



Microsoft Office Support



- A new document upload tab allows PPTX/DOCX files to be burst open
 - Media files stored as related documents
 - Metadata added to the eprint
- Also happens with SWORD plugin



Microsoft Office Support

- Potential application
 - auto generation of copyright auditing form for teaching materials
 - or theses



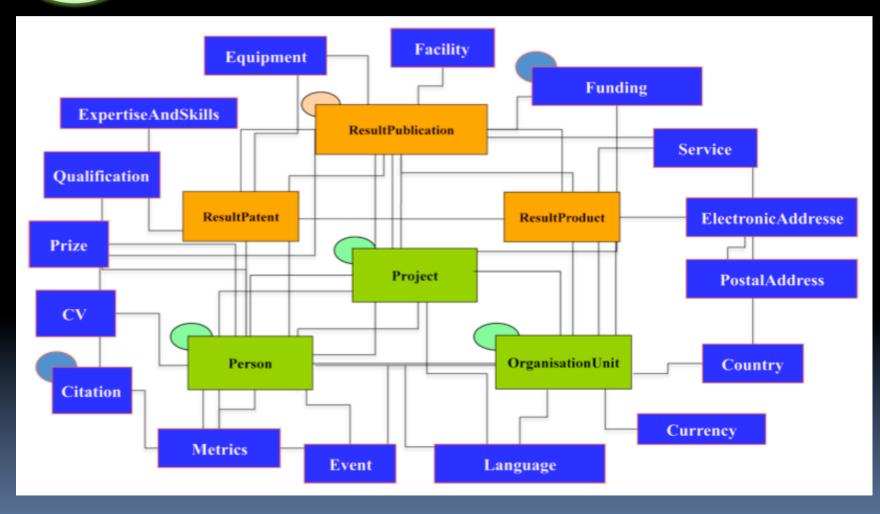


Extendable Datasets

- A repository needs to be aware of more than just publications
 - users
 - projects
- The Current Research Information Systems (CRIS) community have a mature standard for describing this information
 - CERIF

Extended Data

Extendable Datasets



CERIF 2008 data model. http://eurocris.org/



Extendable Datasets

New Datasets can be created: e.g. project

Manage Metadata Fields

This tool allows you to add metadata fields to your repository. Only fields added using this tool can be removed by this tool. To start configuring fields choose a dataset to add/remove fields from the following list.

Datasets with Configurable Fields

Eprints:	Used to store eprints records	View Dataset Fields
Documents:	Used to store documents metadata, for ALL of archive,inbox,etc.	View Dataset Fields
Users:	Used to store info on eprints users	View Dataset Fields
Saved Searches:	Used to store what seaches users have and the frequency of alert emails	View Dataset Fields
Import:	Stores the details of an import.	View Dataset Fields
Files:	Used to store info about files	View Dataset Fields
Projects:	Used to store CRIS-type information about projects	View Dataset Fields

Projects

cois:	Co-Investigators	From cfg.d
datestamp:	Datestamp	From cfg.d
description:	Description	From cfg.d
funder:	Funder	From cfg.d
grantid:	Grant ID	From cfg.d
pis:	Principal Investigators	From cfg.d
projectid:	ID	From cfg.d
title:	Title	From cfg.d
value:	Grant Value	From cfg.d
workers:	Project Team	From cfg.d

Extendable Datasets

New Datasets can be created: e.g. project

```
$c->{datasets}->{project} = {
    class => "EPrints::DataObj",
    sqlname => "project",
    datestamp => "datestamp",
    };

$c->{fields}->{project} = [
    {name => "projectid", type => "int"},
    {name => "datestamp", type => "time"},
    {name => "title", type => "text"},
    ...
    ];
```

Just like eprint_fields!



Extendable Datasets

- v3.2 will support CERIF
 - Standard CERIF data types
 - Project
 - Person
 - Organisation
 - Funding
 - Citation
 - Metrics
 - ResultPublication
 - Import, export and update via CERIF XML

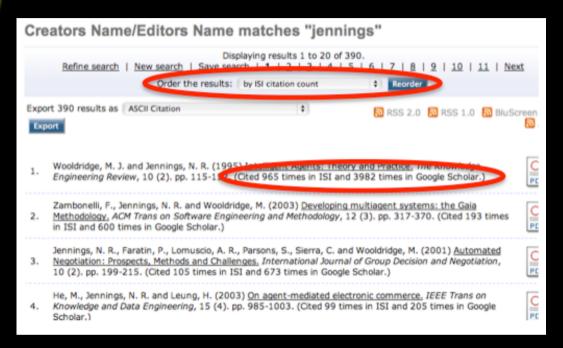


Citation Framework

- EPrints has supported Google Scholar citation counts since 3.1
 - But we didn't enable it due to licensing issues
- Now Thomson ISI are changing the licenses for Web of Science data
- Package to support Web of Science citation counts (works for 3.1)
 - http://files.eprints.org/446/
- (Similar package to be produced for GS)

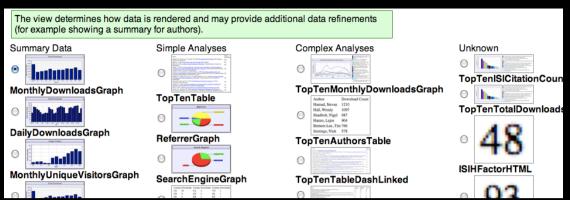
Extended Data

Citation Framework



- Adds a WoS harvesting script, metadata fields and config changes
- In future will add citation data support for Scopus, ACM/IEEE etc





- IRstats has been integrated into EPrints and is no longer a standalone install
 - Package available from files.eprints.org
 - Works on v3.1 repositories

- Is being extended to work with citation statistics and other evidence of use
 - ISI citation counts, h factors etc

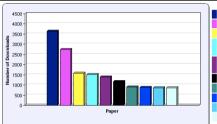


The view determines how data is rendered and may provide additional data refinements (for example showing a summary for authors). Summary Data Simple Analyses Complex Analyses Unknown Latentile MonthlyDownloadsGraph TopTenMonthlyDownloadsGraph TopTenTable 0 DailyDownloadsGraph

ReferrerGraph

SearchEngineGraph

TopTenAuthorsTable 0 TopTenTableDashLinked **TopTenISICitationCoun TopTenTotalDownloads ISIHFactorHTML**



3635 The Semantic Web Revisited

2742 An Object Oriented Linkbase for Microcosm

1565 Conflict Overrules Consensus

1504 The Web of Community Trust - Amateur Fiction Online: A Case Study in Community Focused Design for the Semantic Web

and III

MonthlyUniqueVisitorsGraph

1386 Canonical correlation analysis; An overview with application to learning

1169 A Mobile Agent Architecture for Distributed Information Management

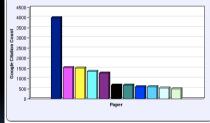
902 Open Hypermedia and Streaming Audio

875 A Framework for Web Science

869 Structure in Text and Hypertext

858 Ontology mapping: the state of the art

Top 10 papers by download



3982 Intelligent Agents: Theory and Practice

1543 A Roadmap of Agent Research and Development

1522 The Symbol Grounding Problem

1357 Orthogonal least squares learning algorithm for radial basis function networks

1270 Semantic Matching of Web Services Capabilities

673 Automated Negotiation: Prospects, Methods and Challenges

673 Automated Negotiation

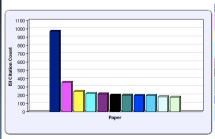
603 Ontology mapping: the state of the art

600 Developing multiagent systems: the Gaia Methodology

529 Text Classification using String Kernels

494 Agents that Reason and Negotiate by Arguing

Top 10 papers by Google Scholar Citation counts



969 Intelligent Agents: Theory and Practice

354 Orthogonal least squares methods and their application to non-linear system identification

244 Taverna: a tool for the composition and enactment of bioinformatics workflows 220 A clustering technique for digital communications channel equalization using radial basis function networks

216 GRASP-A Search Algorithm for Propositional Satisfiability

199 Agents that Reason and Negotiate by Arguing

198 Adaptive Multicarrier Modulation: A Convenient Framework for Time-Frequency Processing in Wireless Communications

193 Developing multiagent systems: the Gaia Methodology

193 Identification of MIMO non-linear systems using a forward-regression

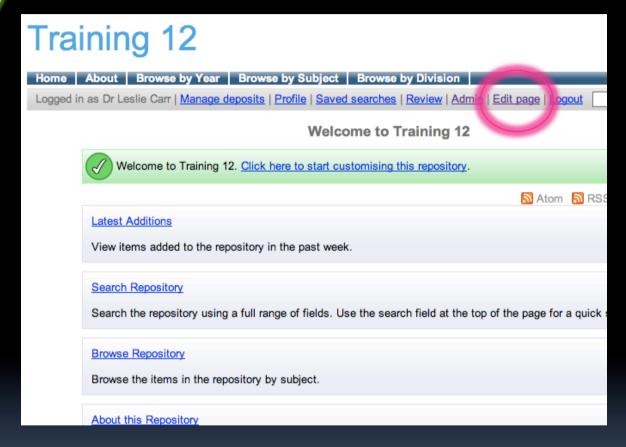
178 A Methodology for Agent-Oriented Analysis and Design

176 Ontology mapping: the state of the art

Top 10 papers by Web of Science Citation counts



Direct Page Editing



- Edit the contents of static pages directly
 - Home page, help pages etc

Better Management

Direct Page Editing



Either export to favourite HTML editor, or edit in place in a Web form. Images can be substituted.

Better Per-page Phrase Editing

Instead of editing ALL phrases in system, can edit only those used on current (dynamic) page

Training 1	e prints							
Home About Browse by Year Browse by Subject Browse by Division								
Logged in as Dr Leslie Carr Logout	Manage deposits Profile Saved searches Review Admin (Edit page	phrases Search						
Manage Metadata Fields								
Files								
classification_date:	["file_fieldname_classification_date" not defined]	From cfg.d						
classification_quality:	["file_fieldname_classification_quality" not defined]	From cfg.d						
copies:	["file_fieldname_copies" not defined]	Core Field						
data:	["file_fieldname_data" not defined]	Core Field						
datasetid:	Object dataset id	Core Field						
fileid:	Unique file id	Core Field						
filename:	File name	Core Field						
filesize:	File size	Core Field						
hash:	File checksum	Core Field						
hash_type:	Checksum type	Core Field						
in_pronom_uid:	["file_fieldname_in_pronom_uid" not defined]	From cfg.d						
mime_type:	["file_fieldname_mime_type" not defined]	Core Field						
mtime:	File modification time	Core Field						
objectid:	Object id	Core Field						
pronomid:	["file_fieldname_pronomid" not defined]	From cfg.d						
url:	["file_fieldname_url" not defined]	Core Field						



Better Per-page Phrase Editing

 Instead of editing ALL phrases in system, can edit only those used on current (dynamic) page

Training 12								
Home About Browse by Year Browse by Sub	pject Browse by Division							
Logged in as Dr Leslie Carr Manage deposits Profile Logout								
Editing phrases from page "Manage Metadata Fields"								
Return to Manage Metadata Fields.								
This tool writes modified phrases to zz_webcfg.xml. Click the phrase text to edit it. Javascript required.								
Identifier	Content							
datasets_typename_file	This phrase is used in the page, but has not been defin yet.							
	Save Reset Cancel Edit							
file_fieldname_classification_date	This phrase is used in the page, but has not been defin yet.							
file fieldname classification quality	This phrase is used in the page, but has not been defin vet.							



- The commandline import script now accepts a new argument
 - /opt/eprints3/bin/import –enable-updates
- Any imported item that specifies an eprintid that already exists will update the fields in that item that are given in the imported data.



Updates via Spreadsheet

New format 'Multiline Excel' makes updates easier

\$	Α	В	С	D	E	F	G	Н	I	J	K	L	M	N
	eprintid	rowid	type	creators_na	creators_na	creat	creat	creators_i	title					
2	9170	9170_0	conference	Ankolenkar	Anupriya				DAML-S: A	Semantic N	Markup Lang	guage For V	Veb Services	
3	9170	9170_1		Burstein	Mark									
4	9170	9170_2		Hobbs	Jerry									
5	9170	9170_3		Lassila	Ora									
6	9170	9170_4		Martin	David									
7	9170	9170_5		McIlraith	Sheila									
8	9170	9170_6		Narayanan	Srini									
9	9170	9170_7		Paolucci	Massimo									
10	9170	9170 8		Payne	Terry R.			4398						
11	9170	9170_9		Sycara	Katia									
12	9170	9170_10		Zeng	Honglei									
13	5741	5741_0	conference	Anthony	P.				Autonomou	us Agents fo	r Participatir	ng in Mulitp	le On-line Au	ctions
14	5741	5741_1		Hall	W.			1650		_				
15	5741	5741 2		Dang	V.									
16	5741	5741 3		Jennings	N. R.			2355						
17	6152	6152 0	conference	Bourne	R. A.				Dynamic e	valuation of	coordination	n mechanisi	ms for autono	mous a
18	6152	6152 1		Shoop	K.				_					
19	6152	6152 2		Jennings	N. R.			2355						
20	4234	4234 0	conference	Bussmann	S.				On the Ide	ntification of	Agents in th	ne Design o	f Production (Control
21	4234	4234 1		Jennings	N. R.			2355						
22	4234	4234 2		Wooldridge	M. J.									
23	5834	5834 0	conference	Carr	Leslie			60	Conceptua	Linking: O	ntology-base	ed Open Hy	permedia	
24	5834	5834_1		Hall	Wendy			1650						
25	5834	5834_2		Bechhofer	Sean									
26	5834	5834_3		Goble	Carole									
27	9196	9196_0	conference	Davis	H.C.			46	Linking Exp	periences: Is	ssues Raise	d Developir	ng Linkservice	s for R
28	9196	9196_1		White	S.A.			95						
29	9196	9196_2												
30	9196	9196_3												
31	9666	9666_0	conference	Davis	HC			46	Managing I	Diversity: Ex	xperiences T	eaching Pro	ogramming P	rinciple
32	9666	9666_1		Carr	LA			60					_	
33	9666	9666_2		Cooke	EC			45						
34	9666	9666_3		White	SA			95						
35	10529	10529_0	conference	Dominque	John				Supporting	ontology dr	riven docum	ent enrichm	ent within co	mmunit
36	10529	10529 1		Motta	Enrico					-				
37	10529	10529 2		Buckingham-	Simon									
38	10529	10529 3		Vargas-Vera										
70	40500	40500		Malfaalan	Manada			4440						

Each eprint assigned several rows to accommodate multiple field values.

Sort by row_id to return to proper order.

Can delete cols for any field, but all compound fields must be either completely present or completely absent



- Scheduler / Calendar interface to event planning
- Multistage Editorial Control
- Manual raising of Quality Issues



Improved Miscellaneous

- Geolocation-based autocompletors
 - cities / countries
 - research institutions
- Lightbox-based previews
- Progress bar
- Document ordering
- Coming soon
 - User profiles
 - User-defined collections
 - Funders / projects / grant id autocompleters

Conclusions

- EPrints as a competent and mature part of the researcher's information environment
- Integrating with their desktop knowledge creation activities (making and editing documents)
- Syndicating rich summaries to Web portals, Web 2 and social networking environments
- Participating in linked data / semantic web

Conclusions

- EPrints as a competent and mature part of the institution's information environment
- Providing open access, sustainable storage and management services to research community
- Leveraging information about research outputs for senior management to guarantee service sustainability