

# Trusted Digital Repositories

Definition & Tools

Ina Smith



# What is a “Trusted Digital Repository”?

“A trusted digital repository is one whose mission is to provide **reliable, long-term access** to managed digital resources to its designated community, now and in the future.”

(RLG-OCLC Report 2002)



# A TDR must ...

- Accept responsibility for **long-term maintenance** of digital resources
- **Organizational system** that supports long-term viability of repository & digital material
- Demonstrate **fiscal responsibility & sustainability**
- Commonly accepted **conventions & standards** to ensure ongoing management, access, security



# A TDR must ... (cont.)

- Methodologies for **system evaluation**
- Policies, practices, performance that can be **audited and measured**
- **A TDR is a well managed repository ...**

(RLG-OCLC Report 2002)

# Validation, Auditing & Risk Assessment Tools



**D** SPACE

DRIVER Repository Registration - Windows Internet Explorer

http://validator.driver.research-infrastructures.eu/validatorWeb/

File Edit View Favorites Tools Help

Google Search

Convert Select

Bookmarks Check Translate AutoFill

DRIVER Repository Regis...

SEARCH THE REPOSITORIES | LEARN ABOUT DRIVER | FIND SUPPORT | REGISTER YOUR REPOSITORY

Digital Repository Infrastructure Vision for European Research

**driver**

Home | Registration | Validation | Studies | Statistics

MyDriver

Home

**Validate your repository**

Even when accepted standards, like Dublin Core and OAI-PMH, are being applied, local interpretation often compromises data quality and technical interoperability. Preliminary testing indicates that, while very few repositories are non-harvestable, only a handful deliver 100% valid XML - the result is that only limited information is made available for searching. The DRIVER team has developed a web-based tool, whose task is to check the degree of conformance with the DRIVER guidelines (v 1.0) and the OAI-PMH protocol.

[Find more about the validation process...](#)

**Register your repository**

You may request to register your repository with DRIVER, so that its contents are harvested periodically, indexed into the DRIVER platform and presented in the DRIVER European Repository search portal. In this way, publicly funded research deposited in your repository can achieve wider distribution - to be read, used and cited more widely by the global research community. Repositories successfully harvested by DRIVER are entitled to display the DRIVER logo on their library website, to certify quality and global networked status of their content.

[Find more about the registration procedure...](#)

**DRIVER Guidelines**

The DRIVER consortium has developed a set of Guidelines for Content Providers, which aim to improve the quality of available metadata and assist DRIVER in integrating and simplifying the use of these metadata by the DRIVER search portal and other service providers. Managers of new repositories may use them to define their local data management policies.

**Explore the European landscape**

Within the DRIVER project, three strategic studies on digital repositories and related topics have been carried out. They provide an excellent survey for best practices, methodologies and technologies used throughout the European data space.

Done Internet 100%

<http://validator.driver.research-infrastructures.eu/validatorWeb/>



DRIVER Start New Validation - Windows Internet Explorer

http://validator.driver.research-infrastructures.eu/validatorWeb/validateInfo.do?action=load

File Edit View Favorites Tools Help

Google Search

DRIVER Start New Validation

SEARCH THE REPOSITORIES | LEARN ABOUT DRIVER | FIND SUPPORT | REGISTER YOUR REPOSITORY

Digital Repository Infrastructure Vision for European Research

driver

Home | Registration | Validation | Studies | Statistics

MyDriver | Logout

Validation > Start new validation

upspace@up.ac.za

DRIVER Validation

Choose repositories

- You may choose one or more repositories to validate. For each repository chosen you may define one or more sets.
- If you cannot find the repository in the list (which is updated periodically by the DRIVER consortium) you may enter the base URL repository address.
- To retrieve and validate specific sets select the option "Choose another set..." from the sets list.

Apply rules

- You may apply three types of validations on your repository by clicking on the corresponding checkbox.
- You can select specific rules for each validation type.
- Warning:** The content rule which checks for the presence of the PDF/digital object in the dc:identifier field is very time consuming (may take hours for all sets) and will considerably delay the validation.

Choose repository (-ies) to validate

Select repository from the list

Or if you don't see the repository on the list above, enter the base URL

Apply the following validation rules

- Content validation according to the DRIVER guidelines [Show rules](#)
- DRIVER specific OAI-PMH validation [Show rules](#)
- General OAI-PMH validation [Show rules](#)

Select validation run options

Random check of 100 % records

Total, maximum number of records -1 (default is -1, i.e. 20)

Receive e-mail with the validation results

Depending on the number of concurrent or pending validation processes, the size of your sets as well as the parameters you

<http://validator.driver.research-infrastructures.eu/validatorWeb/validateInfo.do?action=load>



DRIVER - Validator status - Windows Internet Explorer

http://validator.driver.research-infrastructures.eu/validatorWeb/statusInfo.do?action=load

File Edit View Favorites Tools Help

Google Search

Convert Select

Bookmarks Check Translate AutoFill

DRIVER - Validator status

Home | Registration | Validation | Studies | Statistics

MyDriver | Logout

upspace@up.ac.za

Validation > Recent validation processes

**Recent validation jobs**

You may view all validation jobs instantiated from your account.

**Pending**

Repositories	Sets	Date
http://repository.up.ac.za	All sets	Sat Sep 05 22:22:29 CEST 2009

**Current**

There are no validations running...

**Completed**

Repositories validated	Sets	Date Added	View
http://www.up.ac.za/dspace/request	All sets	Fri Aug 14 15:31:06 CEST 2009	java.lang.NullPointerException
http://elib.suub.uni-bremen.de/cgi-bin/oaI2	DDC:840	Sat Sep 05 22:21:51 CEST 2009	
http://www.up.ac.za/dspace/request	All sets	Fri Aug 14 15:28:29 CEST 2009	<a href="#">View results...</a>

Internet 100%



DSPACE



DRIVER Validator Reports - Windows Internet Explorer

http://validator.driver.research-infrastructures.eu/validatorWeb/DB.do?action=directShow&procId=54d78fe121f343210123191859de01cd

File Edit View Favorites Tools Help

Google Search

DSpace Technical Workshop ... DRIVER Validator Reports

SEARCH THE REPOSITORIES | LEARN ABOUT DRIVER | FIND SUPPORT | REGISTER YOUR REPOSITORY



Home | Registration | Validation | Studies | Statistics

MyDriver | Logout  
upspace@up.ac.za

Validation > Validation Reports

**Validation reports**

If you want to see the validation detailed reports please click on one of the corresponding links.

**Note:** If the process has stopped without your intervention please contact the DRIVER helpdesk to report the problem.

Repository	Content (Guidelines)	OAI-PMH validation	DRIVER OAI-related
http://www.up.ac.za/dspace/request	Completed	Completed	Completed

DRIVER OAI-PMH Report for http://www.up.ac.za/dspace/request - Windows Internet Explorer


http://validator.driver.research-infrastructures.eu/validatorWeb/result.do?action=load&resultId=54d78fe121f3432101231a0552b801e0

File Edit View Favorites Tools Help

Google Search

DSpace Technical Workshop ... DRIVER OAI-PMH Report ...

SEARCH THE REPOSITORIES | LEARN ABOUT DRIVER | FIND SUPPORT | REGISTER YOUR REPOSITORY



Home | Registration | Validation | Studies | Statistics

MyDriver | Logout  
upspace@up.ac.za

Validation > OAI-PMH report

**OAI-PMH report summary**

Repository Information  
http://www.up.ac.za/dspace/request

More info  
Validation started on Fri Aug 14 19:43:54 CEST 2009  
Elapsed Time 2 minutes and 41 seconds.  
Current status - **Completed**

Request: ?verb=GetRecord&identifier=illegalIdentifier  
Response: Status: OK

Request: ?verb=GetRecord&metadataPrefix=illegalmetadataPrefix  
Response: Status: OK

Request: ?verb=GetRecord  
Response: Status: OK

Request: ?verb=Identify  
Response: Status: OK

Request: ?verb=ListIdentifiers&metadataPrefix=illegalmetadataPrefix  
Response: Status: OK

Request: ?verb=ListIdentifiers  
Response: Status: OK

Request: ?verb=ListMetadataFormats&identifier=illegalIdentifier  
Response: Status: OK

DRIVER Validator - Windows Internet Explorer

http://validator.driver.research-infrastructures.eu/validatorWeb/pages/scoreInfo.jsp

File Edit View Favorites Tools Help

Google Search

Convert Select

Bookmarks Check Translate AutoFill

DSPACE Technical Workshop ... DRIVER Validator

Below you will find a short description and explanation to see how the scoring mechanism works. If you have more questions or need further explanations please contact the DRIVER helpdesk.

**Score calculation**

Each rule is assigned a weight. The score is estimated as the weighted average of the percentage of errors for each rule.

For example, for rules r1, r2, r3 with corresponding weights w1, w2, w3, if the percentage of errors is p1, p2, p3, then the score is calculated by the following formula:

$$\text{score} = (w1*p1 + w2*p2 + w3*p3) / w1+w2+w3$$

rule description	weight
dc:language field to use the ISO 639-3 format	0.5
dc:date field appears only once, preferably containing the creation date	0.2
mandatory dc:title field	0.5
dc:identifier contains a direct URL to a pdf	0.6
dc:type field is used only once	0.5
dc:format field contains the MIME-type in type/subtype format	0.2
dc:title field not empty	0.5
dc:type field not empty	0.5
mandatory dc:type field	0.5
mandatory dc:creator field	0.5
mandatory dc:date field	0.5
dc:date field encoded in the ISO 8601 format	0.5
dc:type field uses a strict vocabulary to enable semantic interoperability	0.3
mandatory dc:language field	0.5
mandatory dc:identifier field	0.5

© 2007 - 2009 DRIVER - Digital Repository Infrastructure Vision for European Research

Done, but with errors on page. Internet 100%

UP Score = 80/100





# DRIVER Guidelines 2.0

Guidelines for content providers - Exposing  
textual resources with OAI-PMH

[http://www.driver-support.eu/documents/DRIVER\\_Guidelines\\_v2\\_Final\\_2008-11-13.pdf](http://www.driver-support.eu/documents/DRIVER_Guidelines_v2_Final_2008-11-13.pdf)



CRL - TRAC Checklist & Report - Windows Internet Explorer

http://www.crl.edu/content.asp?l1=13&l2=58&l3=162&l4=91

File Edit View Favorites Tools Help

Google Search

Convert Select

Bookmarks Check Translate AutoFill

DSpace Technical Workshop ... DRIVER Search portal RSP - Repository Software S... CRL - TRAC Checklist & R...

**Center for Research Libraries**

about CRL membership collections **preservation** projects & programs sales

**auditing and certification of Digital Archives**

**Trustworthy Repositories Audit & Certification (TRAC): Criteria and Checklist**

The *Audit Checklist for the Certification of Trusted Digital Repositories*, originally developed by [RLG-NARA Digital Repository Certification Task Force](#), has been revised and expanded. The revised version is entitled: [Trustworthy Repositories Audit & Certification: Criteria and Checklist \(TRAC\)](#).

- [Introduction](#)
- [Table of Contents](#)
- [Using this checklist for audit and certification](#)
- [Audit and certification criteria](#)
  - [Section A : Organizational Infrastructure](#)
  - [Section B : Digital Object Management](#)
  - [Section C : Technologies, Technical Infrastructure, & Security](#)
- [Audit Checklist: Criteria for measuring trustworthiness of digital repositories and archives](#)
- [References](#)
- [Appendix 1: Glossary](#)
- [Appendix 2: Understandability and use](#)
- [Appendix 3: Minimum required documents](#)
- [Appendix 4: A Perspective on ingest](#)
- [Appendix 5: Preservation planning and strategies](#)
- [Appendix 6: Understanding digital repositories and access functionality](#)

Done Internet 100%

<http://www.crl.edu/content.asp?l1=13&l2=58&l3=162&l4=91>



http://www.crl.edu/PDF/trac.pdf - Windows Internet Explorer

http://www.crl.edu/PDF/trac.pdf

File Edit Go To Favorites Help

Google Search

Convert Select

Bookmarks Check Translate AutoFill


smith...

DSpace Technical Workshop ... DRIVER Search portal

http://www.crl.edu/PDF/...

1 / 94 130% Collaborate Sign Find

# Trustworthy Repositories Audit & Certification: Criteria and Checklist



Trustworthy metadata preservation repository CRL  
specifications certification criteria RLG Programs oclc au-  
dit digital object management NARA trustworthy meta-  
data

## Contents:

- Introduction
- Establishing Audit and Certification Criteria
- Towards an International Audit & Certification Process
- Using this Checklist for Audit & Certification
- Applicability of Criteria
- Relevant Standards, Best Practices & Controls
- Terminology

Done Unknown Zone

<http://www.crl.edu/PDF/trac.pdf>





Welcome to DRAMBORA Interactive: Log in or Register to Use the Toolkit - Windows Internet Explorer

http://www.repositoryaudit.eu/

File Edit View Favorites Tools Help

Google DRAMBORA

DRAMBORA interactive Digital Repository Audit Method Based on Risk Assessment

Register for DRAMBORA

Username:

Password:

Remember:  Log In

Forgot Password?

Home

Latest News

Get Expert Help

Download Offline Version

Submit Feedback

DRAMBORA Training

About

Objectives

Benefits

The DRAMBORA Team

Collaborations

Dissemination

DRAMBORA Users

Welcome to DRAMBORA Interactive: Log in or Register to Use the Toolkit

Welcome to DRAMBORA Interactive

Please register, log in or read about the toolkit, get an overview of its objectives, or learn of the benefits that it can offer you and your repository.

The Digital Curation Centre (DCC) and DigitalPreservationEurope (DPE) are delighted to announce the release of the Digital Repository Audit Method Based on Risk Assessment (DRAMBORA) toolkit. This toolkit is intended to facilitate internal audit by providing repository administrators with a means to assess their capabilities, identify their weaknesses, and recognise their strengths. Digital repositories are still in their infancy and this model is designed to be responsive to the rapidly developing landscape. The development of the toolkit follows a concentrated period of repository pilot audits undertaken by the DCC, conducted at a diverse range of organisations including national libraries, scientific data centres and cultural and heritage data archives.

For more information, why not download the DRAMBORA Flyer in PDF or JPEG formats?

News

DRAMBORA for the ISO/TC 46/SC 11 standard  
6th Feb 2009

DRAMBORA Auditor's Training Courses 2009  
5th Jan 2009

DRAMBORA Interactive around the world  
15th Dec 2008

Download

Please register to download the offline copy of the DRAMBORA Toolkit

Comment

Submit feedback via our feedback form or email us.

Get Help

Get help in the DRAMBORA evaluation process by volunteering to host a

Done

Internet 100%

<http://www.repositoryaudit.eu/>



- [NESTOR catalogue](#) - NESTOR is the German agency assigned to the task of auditing and certifying digital archives in Germany. <http://www.langzeitarchivierung.de/>
- [Digital Asset Assessment Tool \(DAAT\) Project](#) - University of London Computer Centre's assessment of the risk factors which may affect survival of digital assets [http://www.ulcc.ac.uk/uploads/media/Assessment\\_of\\_Risk\\_Factors.doc](http://www.ulcc.ac.uk/uploads/media/Assessment_of_Risk_Factors.doc)
- [DINI certification criteria](#) - Deutsche Initiative für Netzwerkinformation (German Initiative for Networked Information.) For more information see <http://www.dini.de/>
- Automated Assessment Tools  
[IBM Research's Long Term Digital Preservation \(LTDP\) Automated Assessment](#)  
LTDP is an automated tool developed by IBM for assessing the maturity level of Long-Term Digital Preservation archives. The tool is based on TRAC criteria <http://www.haifa.il.ibm.com/projects/storage/datastores/ltdp.html>
- Standardization Efforts  
[Moims-rac \(MOIMS-Repository Audit and Certification BOF\)](#)

OAI Repository Explorer - Windows Internet Explorer

http://re.cs.uct.ac.za/

File Edit View Favorites Tools Help


Convert Select

Google Search + - Bookmarks ABC Check Translate AutoFill

DSpace Technical Workshop ... DRIVER Search portal CRL - TRAC Checklist & Report OAI Repository Explorer

smith...

Home RSS Print Page Tools



## Open Archives Initiative - Repository Explorer

*explorer version - 1.46c ; protocol version - 1.0/1.1/2.0 ; December 2006*

This site presents an interface to interactively test archives for compliance with the OAI Protocol for Metadata Harvesting [ [Click here for details](#) ]

JavaScript is required

Note: To avoid HTTP errors, please wait for each page to finish loading before clicking on any link.

---

Enter the OAI baseURL :

OR

Select from the list :

[ [View Archive Website](#) ] [ [Test the specified/selected baseURL](#) ]

Verbs	Parameters
<a href="#">Identify</a> <a href="#">List Metadata Formats</a> <a href="#">List Sets</a> <a href="#">List Identifiers</a>	from (eg., YYYY-MM-DD) : <input type="text"/> until (eg., YYYY-MM-DD) : <input type="text"/> metadataPrefix : <input type="text"/> identifier : <input type="text"/>

Done Internet 100%

<http://re.cs.uct.ac.za/>





Ranking Web of World Repositories: Home - Windows Internet Explorer

http://repositories.webometrics.info/

File Edit View Favorites Tools Help

Google webometrics institutional repositories

Ranking Web of World Repositories: Home

# Ranking Web of World Repositories

July 09

home

> home

**Data**

- About Us
- About the Ranking
- Top 400
- Top 400 Institutional
- Directory
- Methodology
- Best Practices

**Information**

- Glossary
- Blog
- Links
- Contact Us
- Site Map
- Disclaimer

Search Repositories for:

Submit

Categories

Supporting Open Access Initiatives Worldwide

**NEW!** July 2009 Edition!

The number of repositories is growing fast worldwide but still many of them does not have their own domain or subdomain, and for this reason it is not possible to add them in our analysis. Some institutions maintain several databases with completely different URLs which penalize the global visibility they have. We are still unable to add usage/download statics but there are many initiatives already working on standardization of the collecting methods, so we expect that global data could be available soon.

Following several requests we now show two global Rankings. One that covers all repositories as was shown in previous editions (Top 400), and a new one that focus only on Institutional Repositories (Top 400 Institutional).

The major change introduced in this edition relates to the way the composite index (World Ranking) is computed, as we are now combining normalized values instead of ranks. The visibility is calculated giving extra importance to the external inlinks not coming from generic domains (.com, .org, .net). As in the last edition, the figures for rich files (pdf, doc, ppt, ps) are combined and not treated individually.

**Comments on results**

The composition of some repositories is so diverse that we decided to exclude those with only very large bibliographic databases (Dialnet, DTIC), CiteSeer is also excluded because is almost already replaced by the new version CiteSeerX. The French HAL central repository is excluded only from the institutional list in which

Rankings Web by the Cybermetrics Lab CSIC

Universities

Hospitals

Business Schools

Research Centers

Done

Intel(R) Graphics Media Accelerator Driver for Mobile

<http://repositories.webometrics.info/>



Ranking Web of World Repositories: Top 400 Institutional Repositories - Windows Internet Explorer

http://repositories.webometrics.info/top400\_rep\_inst.asp

webometrics institutional repositories

# Ranking Web of World Repositories

July 09

home > top 400 institutional repositories

**Data**

- About Us
- About the Ranking
- Top 400
- Top 400 Institutional
- Directory
- Methodology
- Best Practices

**Information**

- Glossary
- Blog
- Links
- Contact Us
- Site Map
- Disclaimer

Search Repositories for:

Submit

**Top 400 Institutional Repositories**

First | Previous | Next | Last | Repositories 1 to 50 of 400

WORLD RANK	REPOSITORY	COUNTRY	POSITION			
			SIZE	VISIBILITY	RICH FILES	SCHOLAR
1	Institut National de Recherche en Informatique et en Automatique Archive Ouverte		15	4	5	9
2	Smithsonian/NASA Astrophysics Data System *		5	1	510	1
3	Igitur Archive Universiteit Utrecht		49	66	1	23
4	Universitat Politècnica de Catalunya UPCCommons		19	5	26	17
5	MIT Dspace		10	75	3	4
6	Agecon Search Research in Agricultural and Applied Economics		40	84	2	11
7	University of Illinois at Urbana Champaign Ideals		25	67	4	55
8	King Fahd University of Petroleum and Minerals ePrints		59	23	11	21
9	University of California eScholarship Repository		14	10	103	7

Done Internet 100%



**D SPACE**

# Webometrics best practises

- URL naming
- Contents: Create
- Contents: Convert
- Interlinking
- Language (English)
- Rich & media files
- Search engine friendly designs
- Popularity & statistics
- Archiving & persistence
- Descriptive metatags

# References

- Trusted Digital Repositories: Attributes and Responsibilities. An RLG-OCLC Report. 2002.