Associação dos Arquivistas Brasileiros XV Congresso - Goiânia 2008

#### The ICA-AtoM Project and Open Source Software for Archives

Peter Van Garderen ICAAtoM



### **Presentation Overview**

- ICA-AtoM Software Demonstration
- ♦ What is Open Source Software?
- Open Source Software for Archives
  - $\diamond \operatorname{Pros}$  and Cons
  - ♦ Examples
- ♦ More About the ICA-AtoM Project
- ♦ ICA-AtoM Future Directions
  - ♦ Web 2.0
  - ♦ Digital Preservation



## **Key Beta 1.0 Features**

♦ fully web-based application ♦ full ICA standards compliance ♦ Multi-level description  $\diamond$  Authority files ♦ search/browse ♦ multi-lingual ♦ multi-institutional union lists ♦ EAD XML export ♦ digital media upload/view







## http://ica-atom.org



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|  | User manual  |   |                         |  |
| navigation   |  |   |                         |  |
| Main Page  | System overview  | Translate content / interface                                       |                         |  |
| Community portal   | What is ICA-AtoM?  | <ul> <li>Design principles</li> </ul>                               |                         |  |
| search   | Technical requirements   | <ul> <li>Translate descriptions</li> </ul>                          |                         |  |
|  | Entity types   | <ul> <li>Translate terms</li> </ul>                                 |                         |  |
| Go Search  |  | Translate static pages  |                         |  |
| toolbox  | Getting started  | Translate interface   |                         |  |
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| Upload file  | User roles   | Import / export content   |                         |  |
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| <ul> <li>Printable version</li> <li>Developert liek</li> </ul>                       | <ul> <li>Switch language view</li> </ul>   | Import content  |                         |  |
|  |  | Export content  |                         |  |
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|  | Add / edit archival descriptions   | Administer ICA-AtoM   |                         |  |
|  | <ul> <li>Add / edit authority records</li> </ul>   | Install ICA-Atom  |                         |  |
|  | Add / edit archival institutions   | Set up and manage user accounts                                     |                         |  |
|  | Data entry: control area   | <ul> <li>Customize settings</li> </ul>                              |                         |  |
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|  |  | Glossary  |                         |  |
|  | Access content   | <ul> <li>Glossary of terms used throughout documentation</li> </ul> |                         |  |
|  | Search content   |   |                         |  |
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|  | Navigate ICA-AtoM  |   | <b>v</b>                |  |
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| Special pages     Secial pages                        | the Delete button in the Button block.   | Edit archival description   | search  |  |  |
| Permanent link     4. ICA-A   | AtoM prompts you to confirm the delete request; click "OK".  | • identity area   | subject Trowse  |  |  |
| 5. ICA-A  | AtoM deletes the record and returns you to the List screen.  | • content and structure area  | archival institution<br>City of Vancouver Archives<br>creator |  |  |
| 6. Note   | the following consequences of deleting an archival description:  | Scope and content<br>The fonds consists of architectural drawings, photographs and textual<br>materials related to the partnership's activities surrounding the design and<br>implementation of architectural projects. The majority of the records are | Townley, Matheson and Partners<br>foods                       |  |  |
| <ul> <li>If the lowe</li> <li>or ite</li> </ul>   | e record has lower-level descriptions registered to it (is a "parent record"), <b>all the</b><br>er-level records are also deleted - e.g. if you delete a series, any sub-series, files<br>erns that belong to the series will also be deleted.  | graphical in nature. Architectural drawing files specific to a particular           Appraisal, destruction and scheduling           3   | Partners fonds  |  |  |
| = Any   | access points assigned to the description are deleted.   |   |   |  |  |
| Any   | date events associated with the description are deleted.   | delete cancel save  |   |  |  |
| The :   | authority record of the associated creator is not deleted.   | add new archival description list all archival description  |   |  |  |
| • The :   | archival institution record of the associated repository is <b>not</b> deleted.  | Delete an existing description  |   |  |  |
| Done  |  |   |   |  |  |

### **Presentation Overview**

ICA-AtoM Software Demonstration

♦ What is Open Source Software?

- Open Source Software for Archives
  - $\diamond \operatorname{Pros}$  and Cons
  - ♦ Examples
- ♦ More About the ICA-AtoM Project
- ICA-AtoM Future Directions
  - ♦ Web 2.0
  - ♦ Digital Preservation

# Free Software!!







# Copyleft



#### The Open Source Definition: www.opensource.org/docs/osd

#### **1. Free Redistribution**

#### **2. Source Code**

#### **3. Derived Works**

# 4. Integrity of The Author's Source Code

#### 5. No Discrimination Against Persons or Groups

### 6. No Discrimination Against Fields of Endeavor

#### **7.** Distribution of License

### 8. License Must Not Be Specific to a Product

#### 9. License Must Not Restrict Other Software

### **10. License Must Be Technology-Neutral**

#### GNU GENERAL PUBLIC LICENSE Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

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When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.













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# How Do We Pay For Free?

- Individual contributions
- Grants and subsidies
- Membership fees
- Bounty system
- Advertising

# How Do We Pay For Free?

- Corporate sponsors
- Services
  - Development
  - Hosting
  - Support
  - Training

"Open source is a means to an end. It's a mechanism to grow the broadest market, build the largest ecosystem, reach the maximum set of opportunities"

 Jonathan Schwartz (CEO Sun Microsystems). "Sun's open-door policy" eWeek (April 21, 2008)





Peter Van Garderen President/Senior Consultant



Jack Bates Software Engineer



Richard Dancy Systems Archivist



David Juhasz Software Engineer



Evelyn McLellan Systems Archivist



Austin Trask Systems Engineer



contact

clients

**ICA-AtoM Support** 

Artefactual Systems is the lead developer of the ICA-AtoM open-source archival description application. ICA-AtoM is open-source software and available as a free download at the ica-atom.org website.

If your institution needs assistance in using or customizing the ICA-AtoM software we provide the following support services:

- On-site installation or off-site hosting
- Training and technical support
- Customization and new feature development

ICA-AtoM is fully web-based, multi-lingual archival description software that was commissioned by the International Council on Archives to make it easy for archival instutions worldwide to put their archival holdings online using the ICA's descriptive standards.

Through the flexibility of the underlying Qubit Toolkit it is easily configured to:

- use other national descriptive standards
- use descriptive standards from other professional communities (e.g. libraries, museums)
- act as a metadata management component to a digital archives repository
- serve as a multi-institutional union list portal

If your institution would like assistance in using or customizing the ICA-AtoM Software, please contact us for a complimentary cost estimate.





### **Presentation Overview**

♦ ICA-AtoM Software Demonstration
 ♦ What is Open Source Software?
 ♦ Open Control Control for Archiver

Open Source Software for Archives

 $\diamond Pros and Cons$ 

♦ Examples

- Over the ICA-Atom Project
- ICA-AtoM Future Directions
  - ♦Web 2.0
  - ♦ Digital Preservation
"Open source and proprietary software" Sept. 2007 UNESCO Report

| FOSS Proponents say   | FOSS Opponents say  |
|---|---|
| Total cost of ownership         ◊ Open source has a much lower price (true)         ◊ The total cost of open source is lower         (maybe)  | Total cost of ownership<br>◊ Some proprietary software are not<br>compatible with open source (true)  |
| Features & Quality         ◊ Open source is more reliable (maybe)         ◊ Open source is more secure (maybe)         ◊ Open source is more powerful (maybe)         ◊ Open source is more network friendly         (true)         ◊ Open source can be more customized         ◊ Open formats and standards are better         (true)         ◊ Open source supports better curricula in         technology (maybe) | Features & Quality         ◊ Proprietary software has more features         (true)         ◊ Proprietary software is more user friendly         (maybe)         ◊ Open source is not mature enough for         schools (false)         ◊ There are no open source solutions for         some school         needs (true)         ◊ Some curriculum software is         incompatible with open source (true) |
| Deployment & Maintenance         ◊ With open source you only pay for what         you need (true)         ◊ Open source makes license management         easier (true)         ◊ Open source means greater         independence from         companies (true)         ◊ Open source lets teachers & students take         software         home (true)  | Deployment & Maintenance<br>◊ Open source is harder to deploy (maybe)<br>◊ Proprietary software offers better service &<br>support (maybe)  |
| Users & Migration<br>§ Some open source software are just as easy<br>to learn and to use  | Users & Migration<br>◊ Migration to FOSS is too expensive<br>(maybe)<br>◊ Users are more familiar & comfortable with<br>proprietary software (true)<br>◊ It's difficult to integrate open source &<br>proprietary<br>solutions (maybe)  |
| Free Markets & Choice         ◊ Software should be a commodity (maybe)         ◊ Proprietary formats and standards lead to         vendor lock in (true)         ◊ Proprietary software leads to monopolies         (maybe)   | Free Markets & Choice<br>◊ Proprietary software may be needed to use<br>some third-party programs (maybe)   |

# **Open Source Considerations**

- Total Cost of Ownership
- Features and Functionality
- Deployment and Maintenance
- Security
- Accountability
- Philosophical Issues



# Total Cost of Ownership (TCO)

#### <u>PROS</u>

 Software purchase cost much lower (free!)

#### <u>CONS</u>

- Potentially higher associated costs
  - Deployment
  - Training
  - Maintennance



#### BBC NEWS

"Brazil adopts open-source software, says it's \$120 million a year cheaper not to use Microsoft."





## Evergreen ILS for BC Public Libraries

Saving about \$15 million dollars in vendor license and support fees over the next few years

## Software Features & Quality

#### <u>PROS</u>

- Greater
   Compatibility and Interoperability
- Greater
   Customizability

#### <u>CONS</u>

- Narrower Range of Features
- Few Integrated Suites of Products

# Deployment & Change Management

#### <u>PROS</u>

- Easier licensing
- No limitation on number of users

#### <u>CONS</u>

- Can be more difficult to install/deploy
- Somewhat less user friendly

If the code is publicly-accessible, doesn't that make it less secure?

- Closed source code isn't more difficult to attack, but it is more difficult to fix
- OSS security holes are typically plugged faster because it easier for someone in the user community to spot and fix leaks themselves

- Secrecy ≠ Security
- security is more a result of how software is deployed and managed
  - The same processes, protocols, architecture designs apply to OSS and proprietary software
  - Both can be deployed securely or insecurely

- The U.S. DoD \$200 Billion integrated weapons system program
- "the army said they choose not to use Microsoft's proprietary software because they didn't want to be beholden to the company, opting instead to develop a Linux-based operating system based on publicly available code."
  - "The Modern Face of Warfare" Vancouver Sun (January 26, 2008)

- French Gendarmerie
  - Announced in January 2008 that it is migrating 70,000 police agent's desktops from Windows to Novell Suse Linux
  - Already 1145 PCs in French Parliament are running Ubuntu Linux

*Linux Magazine (February 2008)* 

- "There's no guarantee that an opensource community isn't just going to pickup and abandon a product"
- "We need to have somebody accountable"
- "Who's going to provide support and training?"

- No guarantee that software vendors won't abandon products
- Open-source projects are establishing foundations for long-term sustainability
- Can enter legal service agreements with third parties for support, training

- Choose OSS that is developed/used by major institutions
  - e.g, National Archives of UK, Australia, Netherlands, New Zealand, LAC
  - e.g., Universities: Harvard, Yale, Cornell, Stanford, California, MIT, Florida State
- Choose OSS that has a large/active user community

- Choose OSS that is backed by a formal governance/legal entity
  - Free Software Foundation
  - Apache Foundation
  - Drupal Foundation
  - Fedora Commons
  - ICA-AtoM Steering Committee

# Philosophical Issues

- Empowerment
- Transparency
- Universal Access

# **Other Considerations**

- Do you have a choice?
- Maybe the only option is an open source (or proprietary) product?
- Examples:
  - Web archiving: Heratrix
  - Format Validation: DROID, JHove
  - Format Normalization: XENA

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  - ♦ Web 2.0
  - ♦ Digital Preservation

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#### 🔮 Xena 4.0 - National Archives of Australia

<u>File Tools H</u>elp

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| Accessions  | Record 1 of 9  |
| Title: American Vacuum Society records,   | Accession #: AR.1998.421   |
| Basic Information Accession Notes User defined fields Names & Subjects          | Acknowledgements, Restrictions & Processing Tasks                          |
| Accession Number AR 1998 421  | Date Expression 1953-1997  |
| Accession Date 1/14/1998  | Date   |
| Resources Linked to this accession  | Begin 1953 End 1997  |
| Resource Identifier A Resource Title  | Bulk Dates   |
| AR. 1998. 421 American Vacuum Society records                                   | Begin End  |
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|   | ACP Other (See Notes) CHP Closet/MM's office                               |
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| Created: Feb 14, 2008 by admin   Modified: Feb 27, 2008 by mmatienz   Record Nu | umber: 18979   |
|   |  |

#### **Presentation Overview**

- ♦ ICA-AtoM Software Demonstration
- What is Open Source Software?
- Open Source Software for Archives
  - $\diamond \mathsf{Pros} \text{ and } \mathsf{Cons}$
  - ♦ Examples
- More About the ICA-AtoM Project
- ♦ ICA-AtoM Future Directions ♦ Web 2.0
  - $\diamond$  Digital Preservation

## **Project Background**

♦ ICA OSARIS project (2003)

♦ UNESCO funding for Human Rights Violations: Guide to Archival Sources (2005)

♦ ICA ⇒ Dutch Archiefschool ⇒ Artefactual



## **Project Purpose**

provide free and open-source software:

- that enables institutions to make their archival holdings available online, especially those who could not otherwise afford to do so
- 2. that manages archival descriptions in accord with ICA standards
- 3. that provides multi-lingual interfaces and content translation features
- 4. that supports multiple collection types



## **Project Purpose**

provide free and open-source software:

- 5. that is fully web-based, user-friendly and follows accessibility best practices
- 6. that is flexible and customizable
- 7. that is useful to both small and large institutions alike
- 8. that supports single or multi-repository implementations



## **Project Background**

♦ ICA-AtoM (`Access to Memory')

- Sept 2006: Release 0.1 prototype
- Nov 2007: Release 0.5 alpha



## **Partners and Sponsors**

- International Council on Archives
- Archiefschool: Netherlands Institute of Archival Education and Research
- ♦ Artefactual Systems
- ♦ Alouette Canada Open Digitization Initiative
- United Arab Emirates Center for Documentation and Research
- ♦ French Archives Directorate
- ♦ UNESCO IFAP
- ♦ World Bank Archives



## **Project Funding to date**

| 2006      | UNESCO                      | 40,000   |
|-----------|-----------------------------|----------|
| 2006      | World Bank Archives         | 8,000    |
| 2006-2007 | Archiefschool               | 100,000  |
| 2007      | French Archives Directorate | 30,000   |
| 2008      | United Arab Emirates CDR    | 167,000  |
| July 2008 | TOTAL RELEASE 1.0 FUNDING   | €345,000 |



#### **ICA-AtoM Governance Model**

DRAFT FOR DISCUSSION. Version 3. May 20, 2008


## **Project Values**

conduct project affairs in the spirit of open source collaboration, including:

- 1. openly sharing technical expertise
- 2. promoting professional best practices
- 3. nurturing an active community of users and developers
- 4. leveraging existing open web technology to deliver best-of-breed archives software
- 5. providing solutions to organizations with limited financial and technical resources



## **Project Values**

conduct project affairs in the spirit of open source collaboration, including:

- engaging active participation from organizations that have the necessary financial and technical resources
- 7. providing a common ground for crossdiscipline collaboration with related communities
- generating revenue to support ICA-AtoM and other ICA activities through a business model that benefits from widespread ICA-AtoM adoption



### **Business Model**

- 1. apply for grants and subsidies
- 2. charge fees for delivering ICA-AtoM related training workshops
- 3. create a purely voluntary institutional membership model, based on fees or contributions in kind, to pool the resources of those institutions that are using ICA-AtoM
- 4. charge a commission for brokering ICA-AtoM technical services between recommended third-party contractors and institutions seeking assistance with ICA-AtoM installation, hosting, customization, new feature development, etc.



# http://ica-atom.org







### **Presentation Overview**

- ♦ ICA-AtoM Software Demonstration
- What is Open Source Software?
- ♦ Open Source Software for Archives
  - $\diamond \mathsf{Pros} \ \mathsf{and} \ \mathsf{Cons}$
  - ♦ Examples
- Over the ICA-Atom Project

### ♦ ICA-AtoM Future Directions

♦ Web 2.0
♦ Digital Preservation

## **Key Beta 1.0 Features**

♦ fully web-based application ♦ full ICA standards compliance ♦ Multi-level description  $\diamond$  Authority files ♦ search/browse ♦ multi-lingual ♦ multi-institutional union lists ♦ EAD XML export ♦ digital media upload/view



## Release 1.2

- ♦ Ajax user interfaces (improved usability)
- ♦ All language scripts (Arabic, Asian, etc)
- ♦ Workflow / Permissions
- ♦ Digital repository API
- ♦ Dynamic templating/ crosswalking
- ♦ Harvesting & WebServices API
- Accessioning module
- ♦ Dynamic translation system



### **Future Directions**

### Users & Developers?



### **Presentation Overview**

- ♦ ICA-AtoM Software Demonstration
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- ♦ ICA-AtoM Future Directions

♦ Web 2.0

♦ Digital Preservation





DTones - Live at Abbey Road - Porto Alegre Added: 1 year ago

. 1



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| May 19, 2006<br>Open Schools Archive launched<br>The Open Schools Archive offers free archive content from the BBC for use<br>in educationmore<br>May 15, 2006<br>Experimental prototype of the BBC's archive catalogue launched<br>The BBC has launched a prototype of its programme catalogue which can<br>be browsed onlinemore<br>The Creative Archive Licence   | Site Links  Home Creative Archive Licence Group FAQs For download Get news updates Get news updates Tell us what you think! The BBC's plans What is the Licence? The Creative Archive Licence |  |  |  |  |
| More News         Image: Comparison of the second seco | → News<br>→ Vote  |  |  |  |  |
| Experimental prototype 15/05/06<br>of the BBC's archive<br>catalogue launched<br>Take the Teaching 15/05/06<br>Challenge   | Creative Archive Licence Group  |  |  |  |  |
| Teachers' TV release 15/05/06<br>1000 programmes<br>Artists awarded 22/03/06<br>placements to work with<br>Creative Archive  | Channel 4<br>Open University<br>British Film Institute  |  |  |  |  |
| The Museums, Libraries 16/03/06<br>and Archives Council<br>joins the Creative Archive<br>Licence Group   | Teachers'TV<br>more   |  |  |  |  |
| UK public getting creative 02/03/06<br>Open Earth Archive 27/02/06   |   |  |  |  |  |









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#### The ICA-AtoM Project is growing up

May 28th, 2008 · 2 Comments · ICA-AtoM, Meetings & Presentations, News

It was a little over two years ago now that Peter Horsman of the Dutch Archiefschool and I toyed around with the idea of trying to get an open-source archival description software project off the ground. We found a willing partner in the ICA and off we went. It's been a race to the ICA Congress in Kuala Lumpur ever since. We will launch our first beta 1.0 release there in July. When we drafted our initial project plan I had hoped to have a more polished, mature application ready for the ICA Congress but we have come reasonably far given the short time span, limited resources and very ambitious design which we are working with. Earlier this month we reached another important milestone when we held the first meeting of the ICA-AtoM Steering Committee in Amsterdam. Besides good software, documentation and an active user community, the other critical success factor for any open-source project is to clearly establish its purpose, licensing and governance structure. This is namely to assure potential users that thought and planning has gone into the long-term sustainability of the software. After the Steering Committee meeting in Amsterdam I think the ICA-AtoM project is well on its way to accomplishing this. See my discussion list post for more information about the ICA-AtoM mission statement and governance structure.

 $\rightarrow$  2 Comments

#### on the radar for next year. ArchivesGeekFest ended...

 Jeanne: Yes yes.. THATCamp was great fun - take a look at http://www.THATCamp.org to see info about what was...

#### RECENT BOOKMARKS

- how to create a Wordpress style theming sub-system in Symfony
- css for absolute position footers
- Virtualisation: A Symfony Developer's Best Friend - Part 1 | Symfony Stuff
- MapMyRun.com: Amsterdam -Herengracht flat/Vondelpark loop
- Cartiki Cartiki is a location database that anyone can edit.
- HighScalabilty.com tips, tricks, advice on improving website scalability
- Ohloh.net open-source project metrics and networking
- MapMyRun.com: NewWest1ok-SappertonStart

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#### **ICA-AtoM Goes Provincial**

April 26th, 2008 · 2 Comments · ICA-AtoM, Meetings & Presentations, News

Done

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# Web 2.0

- Open architecture
- User contributions
- Social networks













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- ♦ ICA-AtoM Future Directions ♦ Web 2.0

♦ Digital Preservation

### "Digital information lasts forever or five years, whichever comes first"

- Jeff Rothenberg, RAND Corporation

planning for the long-term accessibility and usability of authentic digital information




content structure context presentation behaviour





### essential characteristics? acceptable loss?





#### Open Archival Information System (OAIS) reference model (ISO-STD 14721)



| Original: English  | CI/INF/UAP/2007/WS/2 |
|--|----------------------|
| MEMORY OF THE WORLD  |                      |
| Towards an Open Source Repository  |                      |
| and Preservation System  |                      |
| Recommendations on the Implementation of an Open Source<br>Digital Archival and Preservation System and on Related<br>Software Development   |                      |
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| <b>Kevin Bradley</b><br>National Library of Australia<br>UNESCO Memory of the World Sub-Committee on Technology<br><b>Junran Lei,</b><br>Australian Partnership for Sustainable Repositories,<br><b>Chris Blackall,</b><br>Australian Partnership for Sustainable Repositories |                      |
| United Nations Educational,<br>Scientific and Cultural Organization  | Paris, June 2007     |





## **Future Directions**

 Improve professional best practices for managing Archives technology



# **Questions?**

# **More Info?**

http://ica-atom.org

http://artefactual.com

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Title: Place of publication: Date of publication: Author: The ICA-AtoM Project and Open Source Software for Archives Association of Brazilian Archivists Congress. Goiânia, Brazil July 4, 2008 Peter Van Garderen