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INTEGRATED INFORMATION

International Conference on Integrated Information

Kos, Greece   September, 29 – October, 3 2011

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Preface: Proceedings of the International Conference on Integrated Information (IC-ININFO 2011)

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Aims and Scope of the Conference

The International Conference on Integrated Information 2011 took place in Kos Island, Greece, between September, 29 and October, 3, 2011. IC-ININFO is an international interdisciplinary conference covering research and development in the field of information management and integration.

The conference aims at creating a forum for further discussion for an Integrated Information Field incorporating a series of issues and/or related organizations that manage information in their everyday operations. Therefore, the call for papers is addressed to scholars and/ or professionals of the fields of Library and Archives Science (including digital libraries and electronic archives), Museum and Gallery Studies, Information Science, Documentation, Information Management, Records Management, Knowledge Management, Data management and Copyright experts the latter with an emphasis on Electronic Publications. Furthermore, papers focusing on issues of Cultural Heritage Management and Conservation Management are also be welcomed along with papers regarding the Management of Nonprofit Organizations such as libraries, archives and museums.

One of the primary objectives of the IC-ININFO will be the investigation of information-based managerial change in organizations. Driven by the fast-paced advances in the Information field, this change is characterized in terms of its impact on organizations that manage information in their everyday operations.

Grouping emerging technologies in the Information field together in a close examination of practices, problems and trends, IC-ININFO and its emphases on integration and management will present the state of the art in the field. Addressed jointly to the academic and practitioner, it will provide a forum for a number of perspectives based on either theoretical analyses or empirical case studies that will foster dialogue and exchange of ideas.

Topics of general Interest

Library Science, Archives Science, Museum and Gallery Studies, Information Science, Documentation, Digital Libraries, Electronic Archives, Information Management, Records / Document Management, Knowledge Management, Data Management, Copyright, Electronic Publications, Cultural Heritage Management, Conservation Management, Management of Nonprofit Organizations, History of Information, History of Collections, Health Information

Symposia

The Conference offered a number of sessions under its patronage, providing a concise overview of the most current issues and hands-on experience in information-related fields.

- Symposium on Integrated information: Theory, Policies, Tools
- 4th Symposium on Business and Management and Dynamic Simulation Models supporting management strategies

- Session on Open Access Rrepositories: Self-archiving, Metadata, Content policies, Usage
- Session on Evidence-Based Information in Clinical Practice
- Session on Business Management and Communication Strategies supporting Decision Making Process in Tourism Sector
- Session on Electronic Publishing: A Developing Landscape
- Session on Information and Knowledge Management
- Session on Information Content Preservation as Outcome of Conservation of Cultural Heritage: Ethics, Methodology and Tools
- Session on Advances Information for Strategic Management
- Session on Information History: Perspectives, Methods and Current Topics
- Session on Divergence and Convergence: Information Work in Digital Cultural Memory Institutions
- Session on Contemporary issues in Management: Organisational Behaviour, Information Technology, Education & Hospital leadership.

The wide range of aspects that the sessions covered, highlighted future trends in the Information Science.

Paper Peer Review

More than 300 papers had been submitted for consideration in IC-ININFO 2011. From them, 91 were selected for presentation, after peer review in a double blind review process. The accepted papers were presented at IC-ININFO 2011.

Thanks

We would like to thank all members that participated in any way in the IC-ININFO 2011 Conference and especially:
- The famous publishing house Emerald for its communication sponsorship.
- The co-organizing Universities and Institutes for their support and development of a high-quality Conference scientific level and profile.
- The members of the Scientific Committee that honored the Conference with their presence and provided a significant contribution to the review of papers as well as for their indications for the improvement of the Conference.
- All members of the Organizing Committee for their help, support and spirit participation before, during and after the Conference.
- The Session Organizers for their willing to organize sessions of high importance and for their editorial work, contributing in the development of valued services to the Conference.
- PhDc Marina Terzi for her excellent editorial work, contributing in the production of the Conference proceedings.

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KEYNOTE SPEAKER

Professor Amanda Spink

Professor Amanda Spink has published over 340 scholarly journal articles, refereed conference papers and book chapters, and 6 books. Many of her journal articles are published in the Journal of the American Society for Information Science and Technology, Information Processing and Management, and the Journal of Documentation. She is Editor of the Emerald journal Aslib Proceedings. Amanda's research has been published at many conferences including ASIST, IEEE ITCC, CAIS, Internet Computing, ACM SIGIR, and ISIC Conferences. Her recent books include Information Behavior: An Evolutionary Instinct and Web Search: Multidisciplinary Perspectives, both published by Springer. Amanda's research focuses on theoretical and empirical studies of information behavior, including the evolutionary and developmental foundations. The National Science Foundation, the American Library Association, Andrew R. Mellon Foundation, Amazon.com, Vivisimo. Com, Infospace.com, NEC, IBM, Excite.com, AlltheWeb.com, AltaVista.com, FAST, and Lockheed Martin have sponsored her research. In 2008 Professor Spink had the second highest H-index citation score in her field from 1998 to 2008 [Norris, M. (2008)]. Ranking Fellow Scholars and their H-Index: Preliminary Survey Results. Loughborough University, Dept of Information Science Report].

Integration of Metadata in BWmeta-2.0.0 Format

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Abstract: *This article describes the BWmeta-2.0.0 format in terms of its use in an integrated digital library.*

Keywords: *Mathematical digital libraries, Metadata indexing format, YADDA*

I. INTRODUCTION

YADDA [1] is a document repository framework for digital publication of scientific works. It is built on an open architecture and therefore is flexible and easily adapts to the particular needs of publishers. It can aggregate contents from a diverse range of sources of varying data type, not only publications, but also programs, experimental results, movies etc. At present, in YADDA repository [2], 5 different collections are available. Those collections cover a wide range of disciplines from humanities to science to mathematics, containing both books and journals, with different access regimes. The variety of content to be held in the YADDA repository is on the one hand very attractive for users, while on the other hand challenging for programmers [3]. Proper description of the content, clear and detailed, is not an easy task. To obtain the required level of flexibility the new metadata format, called BWmeta, was implemented in the YADDA platform. The latest release of BWmeta is BWmeta-2.0.0, which has a range of new features, which further improve our digital library.

II. HIERARCHY

The Polish Digital Mathematical Library (PL DML) [4] contains both books and journals. In one of the most popular metadata format for scientific publications tag libraries for books and journals are separated. In BWmeta, description of an object does not depend on its type. Chapters of books and journal articles are all described with the same set of elements. The hierarchy of documents is not strictly defined. It can be:

- publisher – book series – volume – book – chapter

- publisher – journal – volume – issue – article

- series – conference – article

but also any other suitable to the situation and particular needs of a contributor, like: institution – Ph.D. thesis. Another flexibility is the ability to add detailed metadata to every level of hierarchy. It is very useful in journals like Banach Center Publications from the PL DML collection, in which every volume has its own title and editors.

```
<structure hierarchy="BWmeta1.hierarchy-
class.hierarchy_Journal">
<level="BWmeta1.level.hierarchy_Journal_Article"
position="169-178"/>
<ancestor
level="BWmeta1.level.hierarchy_Journal_Journal">
<name lang="eng">Banach Center
Publication</name> <contributor institution="false"
role="editor">
<name>Andrzej Hulanicki</name>
</contributor> </ancestor> <ancestor
level="BWmeta1.level.hierarchy_Journal_Volume">
<name>40</name> <name lang="eng"
type="subtitle">Mathematics of
Gravitation</name> </ancestor> <ancestor
level="BWmeta1.level.hierarchy_Journal_Issue">
<name>1</name> <name lang="eng"
type="subtitle">Lorentzian Geometry and Einstein
Equations</name
<contributor institution="false" role="editor">
<name>Piotr Chru´sciel</name> </contributor>
</structure> ... <name lang="eng">A stable class of
spacetimes with naked singularities</name>
<contributor institution="false" role="author">
<name type="surname">Kriele</name>
</contributor>
```

This feature is also helpful in multi-volume books like Ouevres of Stefan Banach, in which every volume has its own editors, title and every chapter can have different authors and date of publications.

Each object can belong to more than one hierarchy class. To describe the place in hierarchy one can use the reference to higher object. References can also be done in other elements like contributor or affiliation. It is enough to add the attribute id, which allows the element content to be referenced. For example:

```
<affiliation id="ICM_UW"> <text>Interdisciplinary
Centre for Mathematical and Computational Modelling,
University of Warsaw</text> </affiliation>
```

The reference to the "ICM UW" can be done later by the element:

```
<affiliation-ref ref="ICM_UW"/>
```

In BWmeta-2.0.0 an identifier is not an XML reference. The definition of the reference element does not

have to be declared in the same XML file. Moreover, during the import to the system the identifiers don't have to be available in the import package, like it was required in BWmeta-1.2.0.

III. DIVERSITY OF METADATA

Once the metadata scheme is defined, adding new tags to it creates problems. Instead of trying to predict all possible types of data, we decided to make the tag system as easy as possible. The detailed description of elements can be done by adding parameters. In the PL DML library, few types of description exist. All of them are marked by <description>. To distinguish between an abstract written by author or a comment add by the editor, it is enough to add the attribute type:

<description lang="eng" type="abstract">

where type can be: abstract, summary, comment, note. If it is needed a new type can be added, for example the table of content in a book, without redefining metadata or changing software presentation. In BWmeta-2.0.0 elements are not strictly defined, they can describe different types of data. For example: the original title and it's translation are described by the same element <name>, and distinctions between them can be made by attribute type:

<name lang="eng">Quantum Mechanics</name>
<name lang="pl" type="translated">Mechanika Kwantowa</name>

The attribute type doesn't have to be included. Most of the XML elements can be expanded with information which doesn't suit the schema. It can be done with the help of the element attribute. For example with citations, instead of creating a number of new tags, adding to the element <attribute> parameter key, we are able to keep in the same place the unstructured an structured citation forms.

<relation type="reference">
<attribute key="text">
<value>1. Winfree, A. T. The Geometry of Biological Time
(Springer, New York, 1980)."</value>
</attribute>
<attribute key="parsed">
<attribute
key="type"><value>book</value></attribute>
<attribute
key="position"><value>1</value></attribute>
<attribute key="authors">
<attribute key="author">
<value>A. T. Winfree</value>
<attribute key="forenames"><value>A.
T.</value></attribute>
<attribute
key="surname"><value>Winfree</value></attribute>
</attribute>

</attribute>
<attribute key="title">
<value>The Geometry of Biological Time</value>
</attribute> <attribute
key="publisher"><value>Springer</value></attribute>
<attribute key="city"><value>New
York</value></attribute>
<attribute
key="year"><value>1980</value></attribute>
</attribute> </relation>

IV. EMEBED TEXT FORMULA

In BWmeta-2.0.0 we decided that we don't want to limit text fields to any specific XML. We would like to allow adding to text: XHTML, MathML and probably some formats we don't know about. We use for text fields XSD type: xsd:any with namespace="##other". This allows us to easily add both XHTML and MathML. Below is example of HTML:

<name lang="eng">
Bcl-2-dependent modulation
of Ca<sup
xmlns="http://www.w3.org/1999/xhtml">2+</sup>
homeostasis and store-operated channels in
prostate cancer cells </name>

Thanks to this solution we get a nice view of calcium ion: Ca^{2+}. Using same construction we input MathML:

<tags type="keyword" lang="eng">
*   <tag>Euler</tag>*
*   <tag>Adding</tag>*
*   <tag>*
*   <math*
*   xmlns="http://www.w3.org/1998/Math/MathML">*
*   <mi>summand1</mi>*
*   <mo>+</mo>*
*   <mi>summand2</mi>*
*   <mo>=</mo>*
*   <mi>sum</mi>*
*   </mat*
*   h>*
*   </tag*
*   >*
*   </tags*
*   >*

What is important here is that we don't put MathML to CDATA section. This means that during the validation process of BWmeta XML documents, MathML, which is inside, is also validated.

V. CONCLUSIONS

The flexibility of BWmeta-2.0.0 makes it a more appropriate format for integrated libraries. It allows for easy addition of new attributes, descriptions, and names of elements, without the need to change the format of the metadata definition, presentation software and storage software. This flexibility is extremely important

during migration processes from one library system to another without loosing the elements which are not present in the new system.

ACKNOWLEDGEMENTS

REFERENCES

YADDA
http://yaddainfo.icm.edu.pl/?page%20id=46

The Virtual Library of Science http://yadda.icm.edu.pl

Katarzyna Zam lynska, Lukasz Bolikowski, Tomasz Rosiek Migration of the Mathematical Collection of Polish Virtual Library of Science to the YADDA platform. DML 2008 Towards Digital Mathematics Library, Birmingham, UK, July 27th, 2008 Proceedings , Masaryk University, r. 2008

The Polish Digital Mathematical Library
http://pldml.icm.edu.pl/mathbwn/search/article.action