

Rachel Heery
Liz Lyon (Eds.)

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Research and Advanced Technology for Digital Libraries

8th European Conference, ECDL 2004
Bath, UK, September 2004
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Preface

We are delighted to present the ECDL 2004 Conference proceedings from the 8th European Conference on Research and Advanced Technology for Digital Libraries at the University of Bath, Bath, UK. This followed an impressive and geographically dispersed series of locations for previous events: Pisa (1997), Heraklion (1998), Paris (1999), Lisbon (2000), Darmstadt (2001), Rome (2002), and Trondheim (2003).

The conference reflected the rapidly evolving landscape of digital libraries, both in technology developments and in the focus of approaches to implementation. An emphasis on the requirements of the individual user and of diverse and distributed user communities was apparent. In addition, the conference programme began to address, possibly for the first time, the associated themes of e-research/e-science and e-learning and their relationship to digital libraries. We observed increasing commonality in both the distributed information architectures and the technical standards that underpin global infrastructure developments. Digital libraries are integral to this information landscape and to the creation of increasingly powerful tools and applications for resource discovery and knowledge extraction. Digital libraries support and facilitate the data and information flows within the scholarly knowledge cycle and provide essential enabling functionality for both learners and researchers. The varied and innovative research activities presented at ECDL 2004 demonstrate the exciting potential of this very fast-moving field.

The 148 papers, 43 posters, 5 panels, 14 tutorials and 4 workshops submitted this year were once again of the highest quality. They covered a very wide range of topics and were submitted from many countries reflecting the standing and profile of this major European conference. Our international Programme Committee of 70 expert reviewers carried out an exacting peer-review process to assure continued quality standards and to generate an outstanding conference programme. We were able to accept 47 papers, 4 of which were short papers, which equates to a 32% acceptance rate. In addition we had three leading experts giving keynote presentations: Prof. Tony Hey (Director, UK E-Science Programme), Neil McLean (Director, IMS Australia), and Lorcan Dempsey (VP Research & Chief Strategist, OCLC). All information relating to the conference is located at <http://www.ecdl2004.org/>.

We recognize that there is a huge effort required to organize a successful major international conference and thanks are due to many individuals and organizations. In particular, we should like to extend our thanks to the Organizing Committee, the members of the Programme Committee, the additional referees, the conference Chairs, the invited speakers, panelists, all the presenters (panels, papers, posters, workshops and tutorials) and of course all the participants. We are grateful for the support of the University of Bath, Delos NoE, JISC, and MLA and for the helpful advice and guidance of many experts who willingly and freely gave their time and expertise for our collected benefit.

Finally we would like to extend our most sincere thanks to all our colleagues at UKOLN, who assisted and supported ECDL 2004 from conception to conclusion. Special thanks are due to Andy Powell, Greg Tourte and Richard Waller for their assistance in editing these proceedings.

July 2004

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Dynamic Digital Library Construction and Configuration

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Abstract. This paper describes a digital library architecture and implementation that is configurable, extensible and dynamic in the way it presents content and in the services it provides. The design manifests itself as a network of modules that communicate in terms of XML messages. All modules characterize the functionality they implement in response to a “describe yourself” message, and can transform messages using XSLT to support different levels of configurability. Traditional library values such as backwards compatibility and multiplatform operation are combined with the ability to add new collections and services adaptively. The paper describes the new design and shows how it can be used to build four different digital library systems. We conclude by showing how the design fits existing interoperability frameworks.

1 Introduction

This paper describes a digital library design that improves upon the Greenstone toolkit [7]. First, it provides more flexible ways of dynamically configuring the run-time system and adding new services to it. Second, it lowers the overhead incurred by collection developers when accessing this flexibility to organize and present their content. Third, it modularizes the internal structure and simplifies the addition of new modules. The design is based on widely-accepted standards such as XML, current software practices such as simple protocols (like SOAP), cross-platform development strategies (Java), and contemporary schemes for software modularization and dynamic updates. Most important of all, it is informed by our experience with the current Greenstone system and the problems and challenges faced by real users, international collection developers, and practicing librarians.

The structure of the paper is as follows. First we give some background out of which the requirements for the digital library software arose. Next we describe the new design, called Greenstone3, and discuss how it meets the identified needs. Fundamental to the approach is the use of XML throughout for data representation, combined with XSL Transforms to provide a flexible mechanism for adjusting the functionality of the runtime system without having to modify and recompile the source code. To promote cross-platform independence (which