



## Issue 5

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### Editorial

As you will see in this issue of the DELOS Newsletter, there is coverage of a number of different events ranging from the large-scale ECDL 2005 in Vienna to much smaller affairs but no less important in what they have set out to achieve. Nonetheless I cannot but wish to highlight for readers the significance of what was envisaged in the brainstorming meeting at the beginning of December. The necessary steps towards a European Digital library as highlighted by Horst Forster and other presenters will not necessarily surprise practitioners within the DELOS Network of Excellence but the ultimate information space they presage and the research and development they will require are of paramount importance to us all.

On a lighter note, we also note with interest the promising work evident at ECDL 2005 and acknowledge the efforts not only of its award winners and contributors but also the successful exchanges of researchers, and of course pay homage to the DELOS members who have been so hospitable and encouraging towards their visiting colleagues.

If you have an item to contribute for the next issue, however small or large, do not hesitate to contact the editor at [r.waller@ukoln.ac.uk](mailto:r.waller@ukoln.ac.uk)

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Further information:

- DELOS website  
<http://www.delos.info/>
- DELOS Work Programme including JPA

<http://www.delos.info/workprogramme.html>

- DELOS NoE Digital Library  
<http://delos-dl.isti.cnr.it/>

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## ECDL 2005

Over 18-23 September 2005, around 400 researchers and practitioners met in Vienna, Austria for the 9th European Conference on Research and Advanced Technology for Digital Libraries (ECDL 2005).

The conference offered a fascinating and varied programme, starting with a set of six tutorials on the Sunday, covering general concepts and formal frameworks for digital libraries, context-enhanced digital library services, thesauri and ontologies in digital libraries, building digital library collections with Greenstone and DL interoperability standards.



**The imposing exterior of the Austrian National Library by night and venue for the welcome reception of ECDL 2005**

Tutorials were followed by a dense two-and-a-half-day programme of presentations. Keynote speakers were Neil Beagrie (British Library and the Joint Information System Council, UK) who addressed the potential of personal digital libraries, considering specifically the massive amounts of data that are and will be collected by the population at large as part of their day-to-day life, and the resulting potential of, and consequences for, personal information systems.

The second keynote by Erich Neuhold (former head of Fraunhofer-IPSI, now at

Vienna University of Technology) picked up this topic and pointed out future directions in DL development, focusing particularly on the promises and challenges of integrating and combining DL, peer-to-peer and GRID technologies.

The quality of the presentations, held in two parallel sessions, was excellent, with only 32% of all papers submitted to the conference having been accepted for presentation. In addition to the presentations ECDL featured two panels. Donatella Castelli discussed with a prominent group of panellists one of the key messages addressed in the second keynote, namely whether digital libraries on the GRID will turn out to be heaven or hell; Tamara Sumner in her panel attempted to answer the question whether e-science needs digital libraries. The whole range of current digital library research as well as project activities was presented in a poster session, featuring research posters and application demos, as well as current project activities of the DELOS Network of Excellence on Digital Libraries (DELOS). Furthermore, a large group of PhD students had the chance to present and discuss their work not only within the ECDL Doctoral Consortium, but also with the whole ECDL community as part of the poster session.

Following the main conference programme, ECDL was rounded off with a set of well-attended workshops. CLEF, the cross-language evaluation forum, drew more than 100 participants during its two-and-a-half days of presentations and evaluation sessions. IWAW, the ECDL Workshop on Web Archiving and Digital Preservation was extended to fill an intensive two-day programme this year, with about 60 participants.

Both the NKOS Workshop on Mapping Knowledge organization Systems, as well as Healthcare in Digital Libraries (HDL), ran their successful 1-day format, generating intensive discussion.



**Delegates to ECDL 2005 visit the many splendid rooms of the Austrian National Library**

Apart from the scientific programme, ECDL 2005 provided plenty of social activities, allowing participants to get together, enjoy themselves, and discuss matters in an inspiring setting. An ice-breaking event on Sunday evening provided a chance to sample a variety of magnificent Austrian wines. The Austrian National Library hosted the welcome reception in its magnificent State

Hall which made such an impression that many delegates were left wondering whether the move to make libraries all-digital was the right direction to go! Finally, the conference dinner was held in the grand Festival Hall of the Town Hall of Vienna, opened according to Viennese tradition with a dancing performance by the dance sports centre UTSK Casino Wien. It also provided the perfect venue for the two awards presented at ECDL, namely the ECDL Best Paper Award, sponsored by the IEEE Technical Committee on Digital Libraries (TCDL), which was awarded to Wolf-Tilo Balke, Wolfgang Nejdl, Wolf Siberski, and Uwe Thaden for their paper entitled *DL meets P2P - Distributed Document Retrieval based on Classification and Content*. The DELOS young researcher award was presented to Christos Tryfonopoulos, the primary author of the paper *LibraRing: An Architecture for Distributed Digital Libraries Based on DHTs*, co-authored by Stratos Idreos and Manolis Koubarakis.

Overall, ECDL 2005 proved to be a splendid opportunity for people to meet and discuss current core aspects of digital library research. Extensive photo documentation showing the highlights of ECDL 2005, are available on the ECDL website at <http://www.ecdl2005.org>

We are looking forward to continuing these discussions at the 10th anniversary of ECDL, which will be held over 17-24 September 2006 in Alicante, Spain. Details on ECDL 2006 are available at <http://www.ecdl2006.org>

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### **Newsletter Interview with Winner of the DELOS Young Researcher Award**

The Newsletter is delighted to print excerpts from an e-mail interview with Christos Tryfonopoulos who as lead author of *LibraRing: An Architecture for Distributed Digital Libraries Based on DHTs* (co-authored by Stratos Idreos and Manolis Koubarakis) was awarded the prize of DELOS Research Exchange Award at ECDL 2005 in Vienna for the best paper by a young researcher.



**Christos Tryfonopoulos (left) receives the congratulations of Prof. Andreas Rauber, ECDL 2005 Program Chair**

**DELOS Newsletter: Which aspects of your work do you think may have won you the Young Researcher Award?  
Christos Tryfonopoulos:**

I think the novel architecture proposed in the paper was clearly one of the reasons. The paper was written as a visionary statement for future digital libraries. However, it also contained a full protocol specification, and an experimental evaluation, which made it a self-contained work that touched upon an important problem.

**DELOS NL: What was your personal reaction to winning the award?**

**Christos:**

I was really happy, because it is always nice when other researchers value your work. The conference committee was made up of world-renowned researchers, and the fact that these people found my work interesting was of itself very rewarding.

**DELOS NL: Has the award brought benefits to you or your research already?**

**Christos:**

Apart from the exchange which was an invaluable experience, I believe that an award always gives more visibility to your work inside a research community.

**DELOS NL: What was the work you did in the context of your exchange?**

**Christos:**

I worked on incorporating information filtering functionality in Minerva, a P2P system developed at MPII that aims at P2P IR. Specifically, we worked on supporting approximate information filtering in a P2P context by utilising a network-agnostic architecture and new peer selection techniques suitable for a filtering scenario. These techniques view per-peer IR stats as time series data, and utilise statistical analysis to predict peer behaviour in a dynamic setting.

**DELOS NL: With whom did you work at MPII?**

**Christos:**

I collaborated with the Director of the Databases and Information Systems Group, Professor Gerhard Weikum. Initially we discussed our research interests, and found a stimulating area in which to work with other researchers from his group. From this point on, we had regular meetings that helped us to understand the problem and work towards an efficient solution. I also worked closely with Christian Zimmer and Klaus Berberich, PhD students in Prof. Weikum's group. Discussing the work with Christian offered me a clear insight of the Minerva approach to P2P IR and helped me to understand the philosophy of the system, while Klaus contributed more to the prediction and statistical analysis part of the work.

**DELOS NL: What were the main benefits of your stay at MPII with regard not only to your work but also from the personal point of view?**

**Christos:**

It was an excellent opportunity to work with one of the leading groups in P2P and IR in Europe and to make new research contacts. The stay at MPII has been very productive, and will surely be the basis for further and closer co-operation. We have already submitted a joint poster paper that highlights our ideas and we plan to extend this work to a full paper submission by the end of this spring. In fact I visited MPII again a few weeks ago to carry this work forward, an indication in itself, in my view, of the success of the research exchange.

From a personal perspective, it was an invaluable experience. I had the chance to spend a period of time in an attractive city in Germany and meet new people. Gerhard was an excellent host, and that was not only research-wise! He made me feel part of the team and he devoted a lot of his time to helping me get acquainted with the group's interests. I would also like to thank Georgiana Ifrim and Fabian Suchanek, the students with whom I shared an office for making me feel so welcome. It was an invaluable experience, one I would happily repeat!

Finally, I would also like to thank the DELOS Network of Excellence for funding this exchange and providing me with such a welcome opportunity.

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## **Other Autumn Research Exchanges**

The Newsletter has been in touch with two other researchers able to take advantage of the DELOS exchange programme in the autumn, Arne Jacobs and Nicola Ferro.

Arne, of TZI, worked on the Context-of-Capture-task of the Audiovisual and Non-Traditional Objects cluster while visiting the Technical University of Crete. He and his host colleagues, principally Nektarios Moutzidis and Georgios Ntampitzi, worked in particular on the creation of the system architecture integrating partners' contributions. They also manually analyzed several hours of news video material, creating a news structure model for one news series format, and they also began developing automatic detectors for "visual structuring tokens" characteristic for that format.

In addition to the benefits that such collaboration brought to his research, Arne remarked that speaking English all the time while in Crete proved to be very good practice. "The people at TUC are all very kind", Arne commented to the Newsletter, saying that being able to see Greece a little more from the perspective of the Greeks had also been very interesting.

Meanwhile Nicola had learnt of the Researcher Exchange Scheme from Prof. Maristella Agosti, his research co-ordinator for DELOS at the University of Padua and was thus able to collaborate with colleagues at University of Rome 1, principally Emanuele Panizzi and Rosa Trinchese. His researcher exchange was most concerned with DiLAS (Digital Library Annotation Service), a DELOS project with the aim of designing and developing an annotation service for digital libraries which will be tested and evaluated by users. A [paper](#) DiLAS: a Digital Library Annotation Service, co-authored with other partners, was presented in Paris in November.

Nicola was also involved in the integration of the FAST system, an annotation service for DLs developed by University of Padua, with the MADCOW system, a Web annotation system developed by University of Rome, in order to provide part of the first prototype of the DiLAS system.

Commenting on the advantages he saw in the exchange, Nicola felt it represented a distinct step forward for the DiLAS Project thanks to the face-to-face contact it provided and so allowing him and his colleagues to cover a pleasing amount of ground in the course of only two weeks. From a more personal standpoint, Nicola also felt the exchange provided the opportunity to see first-hand how other colleagues worked. He very much appreciated his Rome I colleagues' friendly and hospitable welcome.

#### Further Information

- Agosti, M., Albrechtsen, H., Ferro, N., Frommholz, I., Hansen, P., Orio, N., Panizzi, E., Pejtersen, A. M., and Thiel, U. (2005). DiLAS: a Digital Library Annotation Service. In Boujut, J.-F., editor, Proc. International Workshop on Annotation for Collaboration - Methods, Tools, and Practices (IWAC 2005), pages 91-101. CNRS - Programme société de l'information. [http://www.is.informatik.uni-duisburg.de/bib/docs/Agosti\\_etal\\_05.html.en](http://www.is.informatik.uni-duisburg.de/bib/docs/Agosti_etal_05.html.en)

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## **European Digital Library: Catalyst for Great Change**

Over 5 - 6 December 2005, the DELOS Network of Excellence on Digital Libraries held a brainstorming meeting in Nice, France. Practitioners including librarians and researchers in the digital libraries field came from within and outside the DELOS Network, from both Europe and the United States, as well of course as representatives of the European Commission. The aim of this gathering was to formulate responses to the i2010 Digital Library questions from the Commission and to discuss the DELOS vision of the future of Digital Libraries.

Much of the discussion focused on the requirements for the envisioned European Digital Library (EDL) whilst keeping in view the current effort emanating from existing operations such as The European Library (TEL) and the MICHAEL initiative. It was apparent at this meeting that there was a consensus upon the importance of delivering the large-scale digitization of materials and, equally significantly, the effective organisation of the latter into a system which could guarantee unified access across the Continent, a vision which forms a major plank of the i2010 Digital Library initiative.

Horst Forster, Director of Directorate E (Content) of the IST Programme represented much of this feeling in his opening presentation in a series of general views. He spoke on the aims, objectives and composition of the European Digital Library from the standpoint of the European Commission. He highlighted the need for the large-volume digitisation of content to which there needed to be universal online accessibility. The number of collections and items that will be accessible to the public will depend on the digitisation efforts by the Member States and Horst explained that the Commission will help to accelerate and co-ordinate their efforts. Equally importantly however in the view of the DELOS Network was the emphasis that Horst laid upon digital preservation without which the digital information that the EDL will acquire would eventually cease to be accessible to future generations.

In considering the future effort required to bring about the EDL, Horst predicted a substantial increase in funding over the existing 100 million Euros since 2001 for the years to



come. He highlighted some of the key research for future developments which included:

- More sophisticated treatment of digitised materials, automated indexing of texts, sound and image
- Improved multilingual search engines
- Services supporting annotation and collaborative working
- Improvements in the process of digitisation
- Provision of systems and services to guarantee the long-term preservation of and access to digital content

When speaking of the next few years to come, Horst said he expected to see full EU-wide collaboration between national libraries quite soon with searchable and usable multi-lingual access to collections becoming available in the next two years. By 2010 he stated that collections ought to have expanded to include archives, museums and other libraries.

In addition to this lead general view, Steve Griffin of the National Science Foundation (NSF) gave an overview of digital library activities in the US while Jill Cousins (Head of Office-The European Library) and Yannis Ioannidis (University of Athens) gave presentations on *The TEL Vision* and *The DELOS Vision*.

This brainstorming meeting equally evinced a commonly held view that any European Digital Library should evolve into a much broader and deeper system of closely connected information and services born of the collaboration and input from users and enriched by the contributions of automatic data capture. This future EDL would develop a greater fluidity in its boundaries between reading, annotating, and authoring and overall a richer level of functionality - many such future developments are already the subject of research by both DELOS and other organisations, while others still remain at the outline concept level.

This global vision therefore envisages a time when such a European Digital Library would be the bedrock of new methods of communication, research and individual intellectual processes as well as supporting new ways of operating for government, commerce and the individual citizen. If successful, this would ultimately presage a true European Information Space. Therefore digital libraries represent the potential to become repositories of universal knowledge and conduits for communication, providing a common vehicle by which everyone will access, discuss, evaluate, and enhance information in all its forms.

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## DELOS Clusters to Contribute to a Joint Prototype

One of the central planks of the DELOS Joint Programme of Activity is global prototype development with the objective of developing a joint prototype for the future DELOS Digital Library Management System (DELOS DLMS) capable of making available results from the many groups operating within the DELOS Network. The prototype is based on existing OSIRIS/ISIS middleware further developed and extended for data streams and medical objects at UMIT with plans for further extensions at the University of Basel. The system provides generic, i.e. application- independent, services that include the registration of services and processes, interface for application development, an engine for decentralized execution of (search and maintenance) processes, service for load balancing and failure treatment.

Plans are now afoot to replace existing components and add missing functionality through realistic and relatively small-scale close collaboration among several partners in the DELOS Network which will include many short-term exchanges of scientists. This work will be led by ARCH cluster colleagues and will be based on the OSIRIS/ISIS document on their cluster website. Examples of this collaborative effort across the clusters are as follows:

- From ARCH cluster, CNR and their OpenDlib prototype, use will be made of sophisticated term extraction from text, text indexing and collection management. Padua and relevant partners will contribute from their effort on annotation services. University of Basel will add reliable sensor data management to the existing prototype.
- Work from cluster IAP, especially that pertaining in part to the CNR MILOS system will inform developments in multimedia indexing and performance evaluation when applied to different multimedia collections. Furthermore search process generation and personalization services are under development in IAP also (University of Athens) and will be incorporated as a major improvement on the existing system.
- Tasks currently undertaken by cluster A-V/NTO will serve to enhance image feature extraction, 3D shape recognition and related special indexing techniques as well as video retrieval. Work being carried forward by Vienna in respect of audio feature extraction and audio retrieval will also be incorporated.
- Cluster UIV and partners will contribute work from their tasks in respect of visualization services and visual relevance feedback which will be included as well as SOM visualization work from Vienna. Furthermore, active paper from ETH will prove another very useful service at the interface.
- Cluster KESI will devote effort on services for various transformations between standards in order to increase interoperability and the use of ontologies. For

example, the Graphonto prototype system and natural language access from Crete's effort look to be very promising services in the work to improve functionality.

- Cluster PRESERV will provide preservation services.
- Multi-lingual capability will be provided by language translation services made available by cluster EVAL.
- Basel/Konstanz will take care of the OSIRIS/ISIS infrastructure that must be extended and will jointly investigate interoperability aspects as well as client services taken from the Daffodil prototype.

This list is not exhaustive. It gives examples of building blocks. Other building blocks will be identified in the course of the project and after a "call for service integration".

Initially a careful analysis of the systems architecture will be performed in respect of all building blocks that are candidates for inclusion in the DELOS DLMS prototype. The aim will be to identify, from a technical perspective, if a building block can be integrated at all, and whether this should be done in a loosely-coupled or in a tightly-coupled way. Moreover, effort required to prepare a building block for integration will need to be estimated. Following such analysis, the actual integration effort will take place in close collaboration between the organization responsible for each building block included and the task co-ordinators.

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## **Support for Library Education in Digital Resources**

The DELOS Network of Excellence collaborated with the European Library Automation Group (ELAG) in providing a workshop entitled *Information Technologies Profiles and Curricula for Libraries* which took place at the Biblioteca Civica in Parma over 13-14 October, 2005.



**Biblioteca Civica, Parma**

The driving force behind such an initiative lay in the recognition that, with the evolution of digital resources as part of the holdings and services of our libraries, there is a growing demand for library professionals with the requisite information technology skills. In fact the demand for such competencies is currently outstripping supply and many library administrations are faced with the necessity of developing policies for the education and training of their staff to meet these new demands (increasingly covered through the role of System Librarian for example) in the medium and long term.

The principal aim of this workshop was to provide participants with the opportunity to identify and define the skill sets they might require in any programme to improve professional skills and define more closely the sort of professional development opportunities for colleagues together with the training investment such development might necessitate.

The workshop divided into three major parts. Firstly participants were offered an overview of the current position in educational issues with respect to ITC technologies for libraries and recent trends in research on digital libraries. To this end, Anna Maria Tamaro, University of Parma, Vittore Casarosa of DELOS, Paula Goossens, President of ELAG, Maristella Agosti, Università di Padova and Ragnar Audunson, President of EUCLID gave presentations on the theme *Relationships and cooperation between IT education and LIS schools*.

The second part of the workshop was devoted to contributors' own experience and case studies of skills and competencies. To this end, Pat Dixon, International Master, University of Newcastle, Krasi Angelova, University of Sofia, Keith Nairn, a Master student from the University of Northumbria and Annalisa Spinello, Università di Parma all gave of their own experience under the general theme of *Competencies and Profiles*. Both these sets of presentations were supplemented by a process of feedback through a series of parallel breakout sessions and workgroup discussions which reported back in a plenary session on the second day. Anna Maria Tamaro, University of Parma who had welcomed participants in her opening address then brought the workshop to a close with an overview of the workshop's conclusions and future activities.

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## **TEL and DELOS Confer on Common Interests**

At the beginning of February this year representatives from The European Library (TEL) and the DELOS Network of Excellence met at the Bibliothèque nationale de France in Paris to discuss areas of common interest with regard to the future development of The European Library. The approach to these discussions was overwhelmingly from a technological standpoint and a number of quite technical presentations and demonstrations were given over the course of 1 -2 February 2006.

The first day focused on the demonstration of Digital Library functionality developed by DELOS partners. For example Pasquale Pagano of ISTI-CNR gave a presentation on the OpenDLib Digital Library covering a series of issues including system requirements, architecture, document handling and overall functionality.

Klaus-Peter Klas of Duisburg University spoke on DAFFODIL and Strategic Support for User-Oriented Access to Heterogeneous Digital Libraries covering aspects such as searching with the DAFFODIL system, its personal library, active tools and the strategic support that it offers to less expert searchers in order to render their searching more effective and allow them to apply more complex search strategies in a user-friendly fashion.

The aims of the SOMLib-based Interfaces to Digital Libraries were not dissimilar in their attempt to provide support for intuitive browsing of document collections and this item was followed by five more presentations entitled *Eurovision: a text-based cross-language image retrieval system*, *Integration of services - Integration of Standards*, *Content based retrieval of images and 3D models*, *Annotation in Digital Libraries* and *Linking Paper and Digital*.

It was also particularly pleasing to see many representatives from MICHAEL in the audience for this first day.

The second day of this collaborative event was designed to engender discussion of wider technological issues as well as providing an opportunity for delegates to consider specific topics for closer co-operation.

It began with further presentations on evaluation plans for The European Library, search engines, DL architectures, DL services, annotation and personalization, multilinguality, metadata registries and finally user interfaces.

Jill Cousins of The European Library Office facilitated the selection of topics for further discussion which led to a series of discussion groups on action plans for the future

terminating in a plenary session where groups were able to report back on the outcomes of their discussion. Jill then rounded off the event by highlighting the next steps on from this review.

Slides from these two days are available at:  
<http://www.delos.info/eventlist/DemoDay.html>

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