

Digital Preservation Europe newsletter

ISSN 1752-9220 (Print)

ISSN 1752-9239 (Online)

November 2006 - Issue 1

A Newsletter on the Digital Preservation Europe Coordination Action

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digitalpreservationEurope



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ISSN 1752-9220 (Print)

ISSN 1752-9239 (Online)

November 2006 – Issue 1

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I. ABSTRACT OF PROPOSAL

Electronic resources are a central part of our cultural and intellectual heritage, but this material is at risk. Digital memory needs constant management, using new techniques and processes, to contain such risks as technological obsolescence. Risk begins before the digital record is created and continues for as long as the digital object needs to be retained. **Digital preservation** is about a series of actions that need to be taken and managed to make sure there is continued access to digital materials for as long as is necessary. Digital preservation is too big an issue for individual institutions or even sectors to address independently. Concerted action at both national and international level is required. DigitalPreservationEurope, building on the earlier successful work of ERPANET, facilitates pooling of the complementary expertise that exists across the academic research, cultural, public administration and industry sectors in Europe.

DigitalPreservationEurope (DPE) fosters collaboration and synergies between many existing national initiatives across the European Research Area. DPE addresses the need to improve **coordination**, **cooperation** and **consistency** in current activities to secure

effective preservation of digital materials. DPE's project partners lead work to:

- a. raise the profile of digital preservation;
- b. promote the ability of Member States acting together to add value to digital preservation activities across Europe;
- c. use cross-sectoral cooperation to avoid redundancy and duplication of effort;
- d. ensure auditable and certificated standards for digital preservation processes are selected and introduced;
- e. facilitate skills development through training packages;
- f. enable relevant research coordination and exchange;
- g. develop and promote a research agenda roadmap; and
- h. help both citizens and specialist professionals recognise the central role that digital preservation plays in their lives and work.

DPE's success will help to secure a shared knowledge base of the processes, synergy of activity, systems and techniques needed for the long-term management of digital material.



1.1. OBJECTIVES

Digital Preservation Europe (DPE) has three main objectives, each of which has one or more sub-goals.

1. To **create a coherent platform for proactive cooperation**, collaboration, exchange and dissemination of research results and experience in the preservation of digital objects.
 - a. To identify and raise awareness of sources on the issues surrounding the curation and preservation of digital objects across the broad spectrum of national and regional cultural and scientific heritage activity in Europe.
 - b. To contribute to the elimination of the duplication of effort of research activities by researchers at different institutions and to enable identification, collection and sharing of knowledge and expertise.
 - c. To create a conduit between the research community and practitioner community that will foster collaborative approaches to preservation needs.
 - d. To stimulate further research on digital preservation in key areas and encourage the development of standards where gaps and opportunities have been identified; this will include promoting and developing research agendas.
2. To **increase the prevalence of preservation services** and their viability and accountability.
 - a. To support the development of a European-wide approach to the audit and certification of digital repositories as an essential stage in creating content management and delivery services, and to repository federation.
 - b. To stimulate ICT companies and software developers to incorporate some of the curation and preservation thinking into newer generations of software.
 - c. To relate the digital preservation research agenda more directly to the development of exploitable product opportunities and to develop links with the industrial sectors.
3. To **improve awareness, skills and available resources**.
 - a. To examine core issues that will deliver essential guidelines, methods and tools to enable preservation action with European public and private sectors.
 - b. To implement a suite of training seminars based on best practice and to identify where and what further practitioner training and staff development initiatives might be undertaken.

1.2. THE INSTITUTIONS AND WHO WE ARE



Humanities Advanced Technology and Information Institute (HATII), (UK)

<http://www.hatii.arts.gla.ac.uk>

HATII is a world-leading Institute researching the application of advanced technologies to the cultural and scientific heritage and in the area of digital curation and preservation. It provides academic undergraduate and postgraduate programmes in arts and media informatics and digital preservation for archivists, records managers and digital librarians. HATII's research concentrates on the areas of technologies, methods and theoretical developments that enable (a) access, (b) content analysis and appraisal, (c) evaluation and impact methodologies, and (d) preservation.

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Technische Universität Wien (TUW), (AT)

<http://www.tuwien.ac.at>

The Department of Software Technology and Interactive Systems addresses the broad spectrum of tools and methods that are relevant in the life-cycle of software and information systems, beginning from abstract models for problem analysis to the implementation of software products. Current activities include cultural heritage projects in cooperation with UNESCO and with several museums, as well

as digital preservation projects within the DELOS Network of Excellence.

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Statsbiblioteket, Aarhus (SB), (DK)

<http://www.statsbiblioteket.dk>

The State and University Library of Denmark is the keeper of major national collections and contributes to world-class research in Digital Preservation. Digital preservation is a new focus area of the Library and one in which it has conducted groundbreaking research. It has taken the initiative to create a coalition along the lines of the British Digital Preservation Coalition to foster a national infrastructure to support collaboration in, and create awareness of, digital preservation activities across Denmark.

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Nationaal Archief van Nederland (NANETH), (NL)

<http://www.nationaalarchief.nl>

The Dutch National Archives is responsible for preserving archival records with continuing value and has to deal with digital records also.

The National Archives has carried out internationally recognised research to build a (digital) repository for preservation of digital information.

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Národní knihovna České republiky (NKP), (CZ)

<http://www.nkp.cz>

The main mission of the National Library is twofold: to be the archive library for documents issued on the territory of the Czech lands and to be a public research library especially in the domain of humanities, pure natural sciences, culture and arts. The library is a leading institution in preservation of and access to documentary heritage.

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Direzione Generale per i Beni Librari e gli Istituti Culturali (DGBLIC), (IT)

<http://www.librari.beniculturali.it>

The General Directorate for Library Heritage and Cultural Institutes (DGBLIC) of the Ministry for Heritage and Cultural Activities (MIBAC) preserves and exploits the national book heritage held by the 46 Italian state libraries; coordinates and supports the activities of the national cultural institutes; encourages the spread of books and reading in Italy and abroad. The General Directorate has

stimulated the use of technologies for enhancement and preservation of national heritage during the past year, carrying out coordination programmes for a digitisation project (Italian Digital Library), improving the integrated access system for traditional and digital resources with the creation of a cultural portal (<http://www.internetculturale.it>), and being involved in European projects (NEDLIB, TEL) along with some important centres of excellence (National Library of Florence, ICCU). Its participation in DigitalPreservationEurope will be supported by the National Centre for the Union Catalogue (ICCU), which is responsible for setting guidelines and producing and spreading awareness of standards and technical recommendations in Italy.

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Maurizio Messina

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Fondazione rinascimento digitale (FRD), (IT)

<http://www.rinascimento-digitale.it>

The 'Digital Renaissance – New Technologies for Cultural Heritage' Foundation works to stimulate the adoption of new ICT technologies and, in collaboration with other research institutions, facilitates documentation, promotion, training in best practices in the management of digital materials, and the preservation of digital memory. The FRD supports the establishment of an Italian national network, involving different actors interested in digital memory preservation, such as cultural institutions, e-government bodies, the research community, industry and multimedia content producers to bring coordination to action at national level.

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Vilniaus Universiteto Komunikacijos fakultetas (VUFC), (LT)

<http://www.vu.lt/lt>

VUFC is the leading Higher Education establishment working in the wide field of information and communication professions in Lithuania. Established in 1991, VUFC adopts an integrated approach to information and communication, looking at libraries, museums, archives, media, publishing enterprises, information agencies and information businesses as parts of the information infrastructure of society.

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FernUniversität in Hagen (FUH), (DE)

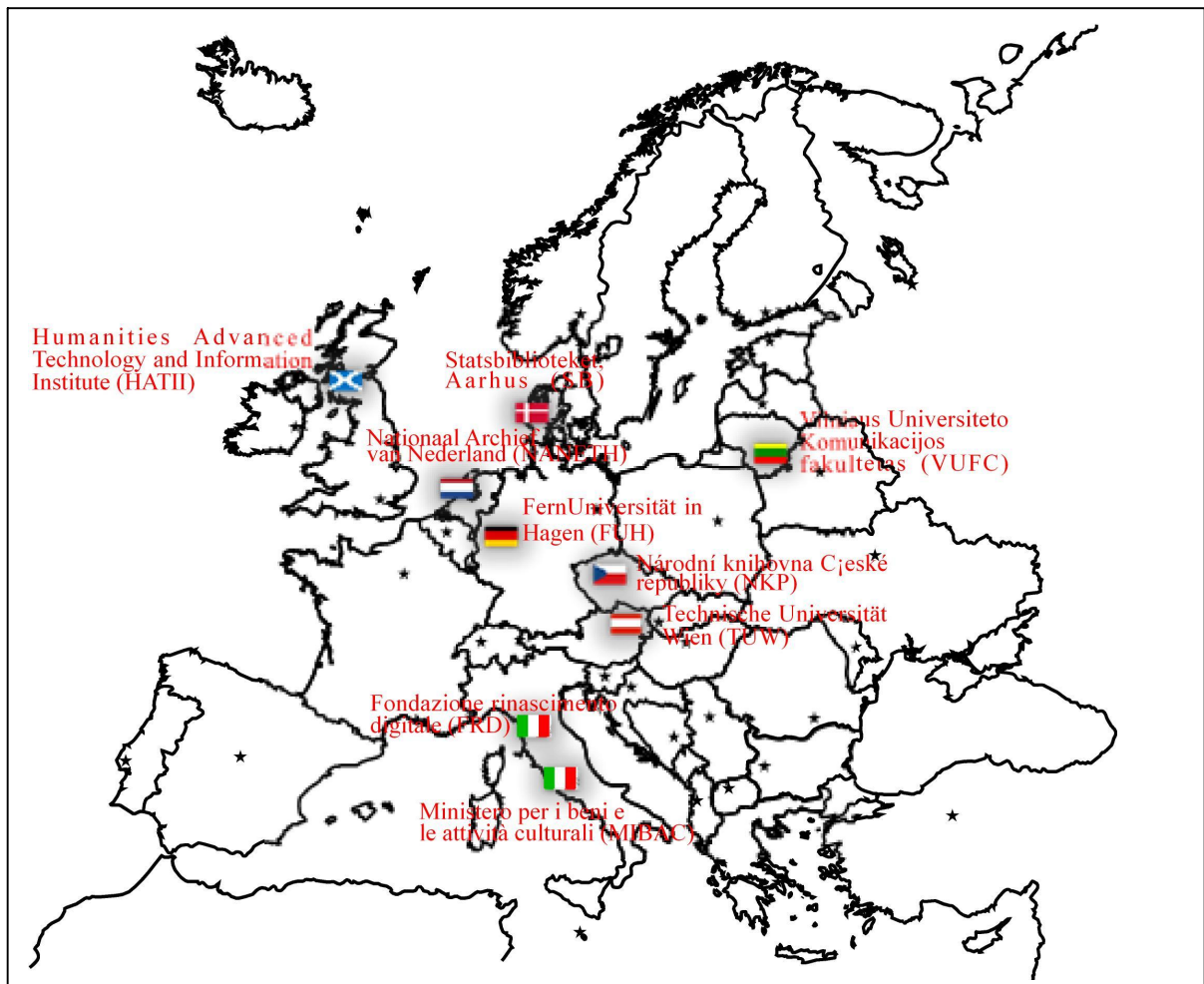
<http://www.informatik.fernuni-hagen.de/ia>

The FernUniversität in Hagen (FUH) is currently one of the largest universities in Germany, with some 45,000 students and 1,700 courses. The FUH is the German centre for distance collaborative teaching and learning in virtual communities, including development and use of respective solutions. FUH's role in DPE is twofold: as representative of the German NESTOR initiative for long-term preservation, it is on the one hand itself contributing with RTD-oriented activities focused on integrated information, content and knowledge management, peer-to-peer based memory systems, dynamic location knowledge management, task, context, resource and process modelling, information and knowledge visualisation. Furthermore, it is disseminating and coordinating additional contributions of other NESTOR members.

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1.3. WHERE WE ARE



II. HOW YOU SIGN UP AND PARTICIPATE

The potential partners of the DPE network can be divided into three categories:

1. **International or institutional partners:** This category comprises mainly international and institutional partners (for instance, UNESCO, NRG, PADI, RLG, DPC, DCC, IFLA), identified according to the objectives of undertaking strategic alliances, in order to spread information on digital preservation activities and research. The selected partners have specific tasks and benefits that derive from collaborating with DPE: some forms of cooperation are patronage for events or joint organisation, shared communication channels like newsletters, publications, web tools and website cross-referencing.

2. **Research projects:** These partners (such as NESTOR, PLANETS, CASPAR) are involved in European research activities. Their involvement in the project is decisive for clustering and sharing European Research Area findings and disseminating research capacities across Europe and worldwide. This will help to overcome the fragmentation of European activity and develop a common point of view on digital preservation. Project Partners should contribute to the exchange and dissemination of good practice, promoting recommendations and guidelines, and setting up expert workgroups. They could activate mechanisms to transfer information and training materials to small organisations interested in digital memory (e.g. libraries, museums, archives and the industry sector). They benefit from participation through the possibility of sharing experiences with other partners, acquiring visibility, and sharing and disseminating research findings. The partnership must enable DPE and all the partners to share experience and best practice, to contribute to test-bed recommendations, to develop common research agendas, to federate training activities, to contribute to joint publications or events, to create website cross-references and common calendars, to organise the help-desk, and to develop educational materials.

3. **User community:** These partners will be drawn from the broad user community,

composed of the different types of users, both content holders and final users, that have to cope with the issues of preserving digital content. The partners will include:

- policy makers;
- professionals involved in archiving institutions;
- cultural institutions;
- the research community;
- industry;
- citizens interested in acquiring competencies in the area of digital preservation.

The main objective of the DPE project is to draw digital preservation issues to the attention of the widespread **community of users**, in order to increase the degree of awareness and sharing of experience on the subject. The creation of a solid network is an effective means of accomplishing these objectives. DPE believes that each partner could be very significant for the dissemination of information and for the enlargement of the community. DPE does not set limits to partners' collaboration requests. Therefore two levels of partnership with DPE are offered:

1. **Participating partners.** Partners who intend to join the DPE community can subscribe to the 'Memorandum of Understanding', stating the terms of participation and the benefits offered.

2. **Contributing partners.** Partners who intend to cooperate actively with DPE can subscribe to a 'Cooperation agreement', not only stating some common objectives or declarations of interest but also listing what, how and when the cooperation is realised. A special type of contribution is the role of 'Associate partner', as stated in the Statute: the proposed DPE architecture foresees that in each country one or a number of partners can act as a focal point for DPE and as a representative for the network with specific duties, rules and benefits. A special agreement with a nondisclosure constraint will be developed with some repository initiatives.

Associate partner registration form: <http://www.digitalpreservationeurope.eu/users/register/>

2.1. DPE WEBSITE

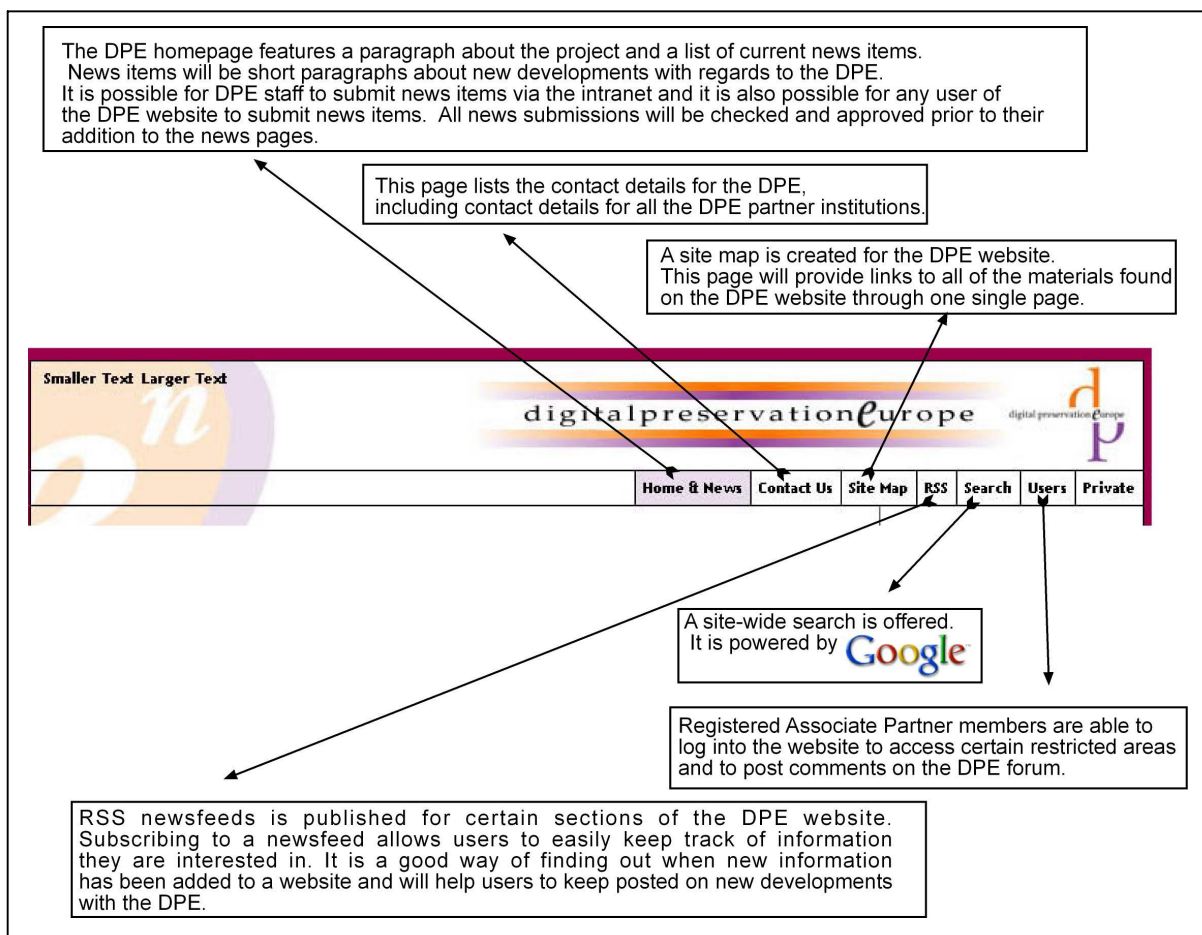


<http://www.digitalpreservationeurope.eu/>

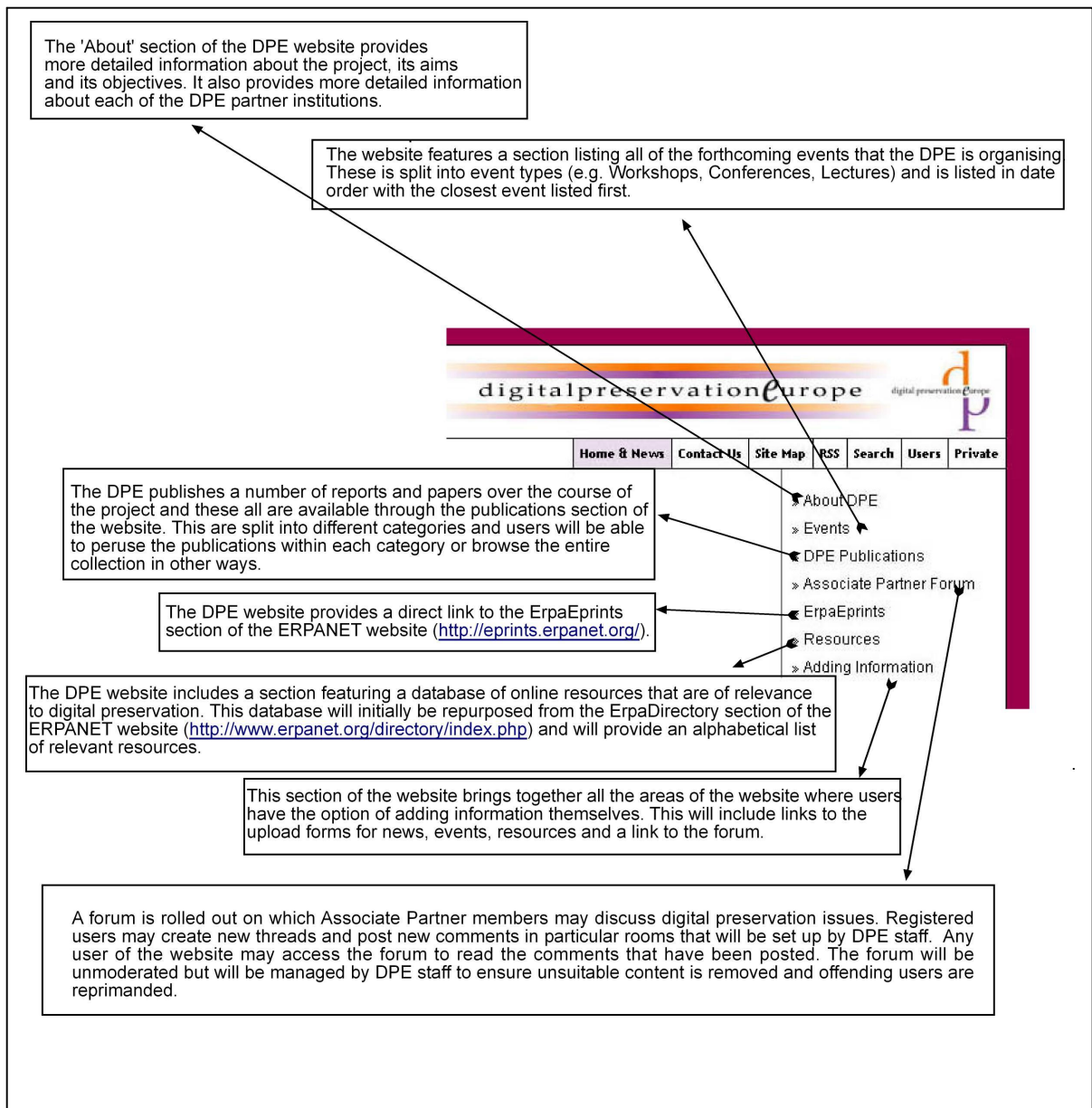
The DPE website complies with the XHTML 1.0 and CSS2.1 specifications as laid down by the W3C, ensuring that the website will be readable on all current and future browsers including hand-held devices, text-based browsers and screen readers for the blind.

Two sections are available to users:

1.



2.



Webmaster: b.aitken@hatii.arts.gla.ac.uk

III. DPE SURVEY

Under the umbrella of the Digital Preservation Europe (DPE) Project, the National Library of the Czech Republic (NKL), as one of the DPE partners, carried out a representative survey focusing on recent developments and plans concerning long-term preservation of digital documents in European national libraries. NKL distributed 54 questionnaires by both e-mail and postal mail. The questionnaire containing seven simple questions was accompanied by an 'explanatory letter' describing DPE project aims etc. The first five questions were intended to find out how important long-term preservation was for the libraries in general and what stage they had reached in the area of building digital repositories, whether there was a will or need to cooperate and, in the event of an affirmative answer, with whom. The final two questions dealt with DPE project issues.

1. Is digital long-term preservation (including migration, emulation, preservation metadata and planning etc.) one of the key strategic priorities of your library?

- 1 a) Yes
- 1 b) No
- 1 c) Not yet (please specify when it will be)

2. Do you (or will you) have a trusted digital repository (according to the criteria listed in An Audit Checklist for the Certification of Trusted Digital Repositories)?

<http://www.rlg.org/en/pdfs/rlgnara-repositorieschecklist.pdf>

- 2 a) Yes
- 2 b) No
- 2 c) Not yet (please specify when you plan to have it)

3. Digital preservation is too big an issue for individual institutions to address independently. Your library will cooperate in this area with:

- 3 a) Memory institutions (libraries, museums, archives etc.)
- 3 b) Research institutions (schools, universities etc.)
- 3 c) Digital document producers (publishers, broadcasting etc.)

- 3 d) SW developers and vendors, IT, computer science
- 3 e) Others (please specify)

4. The building and operation of a trusted digital repository is a big and expensive business. You will create and operate the repository:

- 4 a) Only for your library
- 4 b) Share it with other institutions (please specify)

5. The system used for your digital repository is (will be):

- 5 a) Developed in your library
- 5 b) Open Source based
- 5 c) Commercial
- 5 d) Combination of 5a), b), c) (please specify)
- 5 e) Another solution (please specify)

6. Which of the outputs listed in the model of DPE dissemination do you consider to be the most relevant for your library?

- 6 a) Website
- 6 b) Press releases
- 6 c) Associate partnership
- 6 d) Recommendations
- 5 e) Tutorials
- 6 f) Guidelines

- 6 g) Newsletters
- 6 h) Conferences, seminars, workshops
- 5 i) Training
- 6 j) On-site visits and hands-on practice
- 6 k) Evaluations
- 6 l) Awards and prizes
- 6 m) Others – not listed here but desired (please specify)

7. In the vision of FP7, national competence centres are seen as an integral way of ensuring effective development of expertise and services. Which institutions in your country do you consider to have the best background for

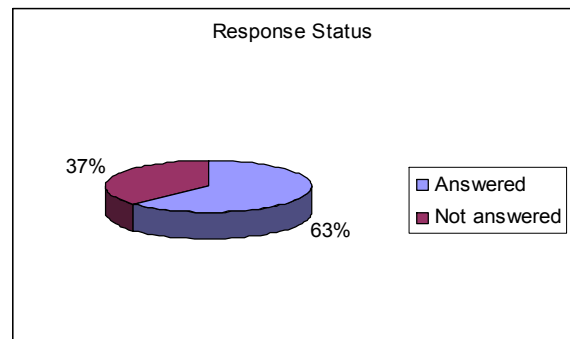
becoming fully operational and trusted national competence centres?

- 7 a) Memory institutions (libraries, museums, archives etc.)
- 7 b) Research institutions (schools, universities etc.)
- 7 c) Private companies and industry experienced in digital preservation
- 7 d) Governmental institutions
- 7 e) Others (please specify)

3.1. EVALUATION OF QUESTIONNAIRE

An evaluation of the answers received was carried out for 34 libraries.

Total sent	54
Answered	34
Not answered	20



The overwhelming majority of libraries/respondents considered the long-term preservation of digital documents to be one of their key strategic priorities. Only 2 of the 34 libraries answered that digital document preservation was not a priority for them at the moment. Four libraries did not include this topic among their key strategic priorities; however, they confirmed that this topic was one of their priorities for the future.

Digital preservation is too big an issue for individual institutions to address independently, which is the main reason why institutions try to cooperate. All the libraries stated that they are cooperating on this issue

with other memory institutions (for example, other libraries, museums, archives). Almost two-thirds of the libraries cooperate with research institutions, digital document producers and SW developers/vendors or IT

companies. In a few cases they indicated cooperation with other institutions such as policy bodies or specialised archives.

The building and operation/maintenance of digital repositories is a very complex and expensive business. It is clear that some kind of cooperation between the institutions is very likely in this business. Just five libraries responded that their digital repository was already created and is at present being operated only for their own needs. Almost all the libraries are cooperating or plan to cooperate with other institutions in the country, mainly with other libraries and archives.

The system used for repository management is of key importance in terms of its performance and reliability. It is absolutely necessary to guarantee its quality, integrity and ability to keep large amounts of digital documents permanently safe at the professional level and to provide sufficient access conditions/controls for the documents now and also in the future. Overall, the majority of European libraries do not have a trusted repository operating at the moment, so it may have been very difficult for them to say which software system for repository management would be the best one for the library and which one will be finally chosen for implementation. Six libraries would like to use, or are already using, commercial systems (independently/standalone or in combination with other tools). A number of libraries would like to use Open Source systems, very often in combination with other commercial or in-house systems. Seven libraries decided to develop their own in-house system for repository administration.

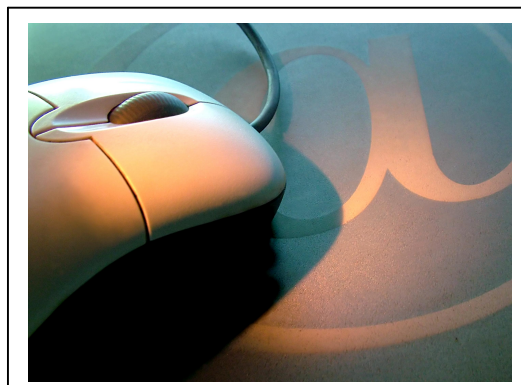
The last part of the questionnaire focused on obtaining feedback about the DPE outputs most suited to the needs of the different national libraries. The following outputs seem to be the most popular: conferences, seminars, workshops and websites. Other much appreciated types of dissemination included

guidelines, recommendations, training, tutorials, and on-site visits. At the end of the wish list we find press releases and associate partnerships. Newsletters and evaluations were also indicated as a suitable method of dissemination.

The last question in the survey concerned possibilities for creating so-called national competence centres responsible for digital document preservation at the national level, which would be cooperating with other similar centres in Europe, as mentioned in FP7. The vast majority of respondents classed memory institutions (national libraries or archives) as appropriate to play this role.

Most of the libraries in Europe are just starting out in this field and are trying to find the most important information, good examples and partners. They are trying to avoid blind alleys and any wasting of time and resources. This is clearly the right moment to foster cooperation among institutions at both national and international levels, which is one of the main DPE goals.

We firmly believe that the answers received on the basis of this survey will help to increase the level of awareness about digital preservation in general and that the DPE project will provide more information and support for implementing trusted repositories to keep European cultural heritage safe and widely accessible.



IV. TRAINING PRINCIPLES

Vilnius University of Communication concentrates on training and continuing professional development in the area of digital preservation in DPE. The main goal is to determine the main priorities in framing and guiding education and training initiatives in digital preservation and to provide recommendations to the course and curricula designers in both university and continuing professional development settings.

In order to achieve this main goal, a report 'Outline of training principles and objectives' was prepared. A structured view of the digital preservation field has been provided by defining the concept, research and practice landscape. Implications of changes brought by digital preservation to the demands for knowledge and skills of digital curators were explored. Demands and objectives for digital preservation education and training stemming

from discussions in archival, library and museum communities and addressing the relevant European policies have been delineated. A thematic framework for education and training in digital preservation has been developed based on the investigation of issues discussed in the training events dedicated to digital preservation.

To implement a training and education framework, a series of workshops and training programmes will also be held in the Member States, and the course materials will be made available.

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V. CERTIFICATION



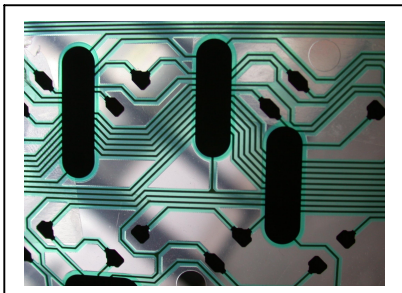
Constructing and managing **digital repositories** is a new and high-profile area: their number is growing rapidly as institutions and research teams (and even individuals) invest in digital content and networked access to it. Most of these digital repositories focus their initial activity on the processes of establishing and populating their repositories. Given the experimental and project-funded nature of many institutional and individual small repositories, it is not surprising that very few repositories can be considered to be 'doing

digital preservation' but, for all, digital preservation is becoming a growing and pressing issue. These repositories do not exist in isolation and **DPE will act to coordinate the sharing of information on strategies for the development of repositories** in Member States from local to national levels and promote an appreciation of the legal and cultural constraints to collaboration of repositories and the distribution of digital content across Europe.

As the numbers and types of repositories increase, data creators, funders and institutions are increasingly recognising that they need access to trusted repositories. Whether they create these themselves or rely on outsourced services, institutions need **mechanisms to validate the trusted status of repositories**. OCLC and RLG, in their Attributes of a Trusted Digital Repository paper, proposed a high-level model for the design, delivery and maintenance of a digital repository. Subsequently, RLG and NARA led efforts to construct audit and certification requirements for establishing and selecting reliable digital information repositories. *DigitalPreservationEurope* will work with the Digital Curation Centre (DCC) in the UK, which is already working with the Research Libraries Group and other partners in Europe, to test these audit and certification

requirements. Although there is growing awareness of the certifiable characteristics (e.g. activities, attributes, functions and processes) of repositories, the mechanisms for audit and the process by which certificates are issued (and revoked) remain to be agreed. The **Audit and Certification Services** workpackage will establish a working relationship with groups working on audit and certification validated by a memorandum of understanding. There is a need for a multi-tiered audit and certification programme (bronze, silver and gold certificates) that is acknowledged by the major cultural and scientific heritage communities in Europe to be the standard for assessing such services, as well as a suite of publicly and freely accessible tools (both online and paper-based) to enable repositories and other data holding organisations to conduct self-audits.

VI. COORDINATION OF EU REPOSITORY ACTIVITIES



Part of DPE is concerned with the current and future state of European Digital Repositories, and specifically with their response to the challenge of long-term preservation. We will begin by thoroughly surveying the territory. A registry of repositories will be used to identify and characterise more comprehensively than heretofore the repositories currently in existence. Through an online survey and in-

depth interviews with repository managers we will then seek to identify the preservation needs of those repositories and assess their preservation preparedness. Finally we will produce a set of guidelines, for example a checklist, to help current and future repository managers ensure that their collections have the best possible chance of remaining accessible for future generations.

Our other activities will include producing a generic memorandum of cooperation to be used by repositories planning cooperative arrangements, and developing a Unique Identifier and Resolver Service.

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VII. RESEARCH ROADMAP



© Christopher Rayan

Over the past five years there has been much discussion of the kinds of research that are needed in the area of digital preservation, but this has not resulted in a concise and well-developed strategy that represents the views of a broad community. Future research depends upon the availability of such a view.

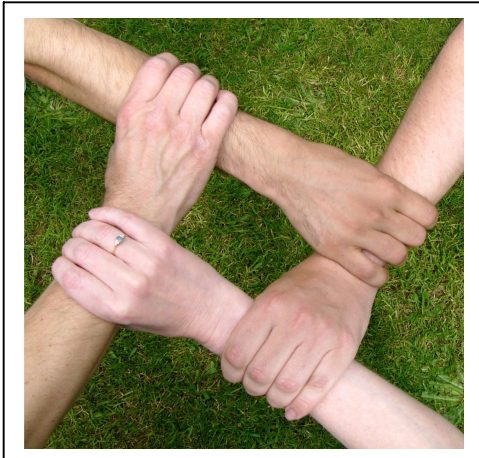
The DPE research roadmap currently under preparation aims at providing a decision aid for

- identifying the most important research issues for digital preservation
- specifying desired capabilities and technological requirements
- defining a time frame for addressing those issues.

Drawing on the expertise of professionals it is set out to assess the current situation of digital preservation and to derive the challenges of the future. Their input will be reflected in the roadmap and has a direct impact on its recommendations. The final DPE research roadmap will be published in 2007.

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VIII. CALL FOR EXCHANGE AND PRESERVATION CHALLENGE



Digital Preservation Europe Exchange Programme (DPEX)

Digital preservation is a complex, interrelated set of technical, organisational, social and legal challenges. Successful approaches to resolving them benefit heavily from interdisciplinary and multiprofessional contributions and rely on innovative practice developed in a few leading competence centres or by specialist industry teams. The potential contribution of research to successful solutions and interaction between practice and research are currently underdeveloped. Research in digital preservation in Europe is patchy, fragmented and disconnected. Communication between different research groups is limited and does not always engage practitioners. This Coordination Action will encourage innovative practice through coordinating research collaboration, building bridges between practitioners and researchers, and developing a database of research activity. Research and Practitioner Integration will promote developments in this area by managing the exchange of researchers, running an industrial exchange programme, and creating a research activity and needs database.

The exchange of researchers between organisations is one of the most effective ways to propagate skills and results as well as a vital component in fostering collaboration among institutions across national borders. The Digital Preservation Europe Exchange Programme

(DPEX) was initiated to support the coalescence of European stakeholder communities in this domain.

The DPEX promotes better cooperation among research institutions and industry partners to address the pressing challenges in digital preservation. The initiative aims at better understanding of the institutional needs and the establishment of research linkages. Participants will get the opportunity to gain insight into new working environments on both a cultural and professional level. The DPEX will allow participants to get in touch with the most experienced individuals and renowned research labs in the area of digital preservation as well as the most important industry partners across Europe. The DPEX therefore offers opportunities to establish contact, and possibly stay in contact with key players of European research in digital preservation, probably the most important benefit for young researchers. Participants are encouraged to look beyond their professional environment, taking advantage of DPE's unique possibilities of crossing institutional borders, having partners from university as well as library and archival backgrounds.

DPE is providing funding to cover additional expenses that might be required for the exchange. The duration of the exchange is up to four weeks. After the exchange the applicant has to provide a public report about the exchange and the results.

The target audience are practitioners and researchers in the field of digital preservation. At least one of the exchange partners must be from a European Union member state. The first application deadline was 1 January 2006. There are three deadlines each year: January, May and September. Deadlines will be on the first day of the month.

Applicants are required to procure a letter of acceptance from their own employer as well as from the organisation at which they wish to work. In addition, the applicant must provide a copy of their CV and a two-page statement of the objectives of their exchange.

Proposals are evaluated by an independent review committee consisting of six professionals, chaired by Birte Christensen-Dalsgaard, Statsbiblioteket (Denmark) and Andreas Rauber, Vienna University of Technology (Austria).

How to apply:

Detailed information about the exchange and the application can be found on the DPE website

(<http://www.digitalpreservationeurope.eu/exchange/>).

European Digital Preservation Challenge

As well as establishing strong research ties and creating a conduit between the practitioner and research communities, DPE will design and implement an annual European Digital Preservation Challenge as a means of raising awareness among students and researchers of the various aspects of digital preservation.

The basic idea is to provide access to 'unknown objects' and invite participants to render these objects and provide access to their content using miscellaneous preservation approaches like emulation or migration. To this end, the European Digital Preservation Challenge will provide the collection of content, judging and delivery of the award.

The challenges will be released in December 2006, and the first evaluation will take place in March 2007. The Digital Preservation Challenge awards prizes of 5000 Euros in total, allocated as follows:

1. 3000 Euros
2. 1500 Euros
2. 500 Euros

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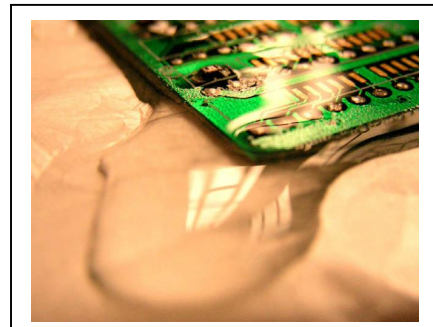
IX. WHO ATE MY FILES?



Computer users and many experts often consider lost data permanently destroyed, with no hope of recovery. And because much of the information about data loss is complex, inconsistent or inaccurate, it is not surprising that data loss and data recovery are some of the most confusing and misunderstood concepts.

In the majority of cases, one thinks that the data loss is caused by a hardware or system problem. In fact, this is true in a high percentage of cases (56%). The second cause of loss of data is human error (26%). Problems caused by software corruption or program problems are not rare (7%). Computer viruses account for only 4% of lost data.

Companies, leaders in data recovery services and data recovery software, like the Ontrack company, are able to recover data lost through several reasons. For example, a business-woman had lost her presentation for a meeting shortly before her plane took off by having given the wrong answer to a message saying the boot sector was corrupt. However, it was possible to recover her entire presentation through remote data recovery in the airport before her flight.



Also, natural catastrophes can cause considerable damage. In particular, water is one of the most harmful elements. The hard drive of a business company in Dublin, containing more than 30,000 files and four years of work, was completely recovered after a flood during recent bad weather.

These case studies are taken from the website of Ontrack, a data recovery services and data recovery software company: <http://www.ontrack.com>