nestor - Network of Expertise in Long-Term Storage and Long-Term availability of Digital Resources in Germany

1. The challenge

We still do not know how to archive digital scientific publications, works of art, images and sound recordings, files, primary data and music in such a way as to make them permanently readable and therefore accessible for all time. However, publications and information sources on new media are already ubiquitous as indispensable aspects of working in the fields of science, research, culture and public administration. The arts are also making increasing use of digital techniques in their attempt to reflect our age in words, images and sounds.

If we wish to preserve this cultural heritage for subsequent generations and to ensure the permanent accessibility of digital resources, we need to tackle the globally unsolved problems surrounding the long-term accessibility of digital documents. The necessity of coming up with viable solution strategies for the preservation of digital resources presupposes new forms of collaboration between the major libraries, archives, museums and other organisations involved in the fields of science and media. This is because digital objects lose the technical and formal properties required for their long-term usability just as quickly as new technologies and storage formats are developed.

nestor has been created in reaction of the awareness that no single institution can be successful in finding solutions for the long term preservation of digital content. The nestor project bundles the national available long-term preservation know-how, energies and skills – forming the basis for a future alliance dedicated to preserving Germany's digital heritage. In the same way as no single institution can face the challenge of digital long term preservation alone, no single country alone can. Therefore, nestor also collaborates with international partners in various fields.

2. What is nestor?

The acronym nestor was taken from the English version of the official BMBF project name "Network of Expertise in long-term STOrage and long-term availability of digital Resources in Germany".

The project nestor has derived from an initial multi-institutional group on long-term preservation funded by the Federal Ministry of Education and Research. 2003, six partner institutions created nestor as a network of expertise in long-term storage of digital resources for Germany. Since 2006, nestor 2 runs with an additional partner and a clearly enlarged range of tasks. The long-term goal is a permanent distributed infrastructure for long-term preservation and long-term accessibility of digital resources in Germany comparable e.g. to the Digital Preservation Coalition in the UK.

nestor has seven partner institutions:
• Deutsche Nationalbibliothek
• Niedersächsische Staats- und Universitätsbibliothek Göttingen
• Computer- und Medienservice und Universitätsbibliothek der Humboldt-Universität zu Berlin
• Bayerische Staatsbibliothek, München
• Fernuniversität in Hagen, Fachbereich Informatik
• Institut für Museumsforschung
• Bundesarchiv

Within the project, a web-based information forum and a platform for information and communication have been created. Both are available in German and English: http://www.langzeitarchivierung.de/.

3. Who is addressed by nestor?

This appeal for collaboration is aimed primarily at individuals, institutions, organisations and companies already addressing the issues surrounding long-term preservation and in possession of the relevant know-how and experience. But it is also aimed at those expecting to be heavily involved in the field in the future.

nestor's target groups include research institutes at universities, in industry and within specialist organisations. Further targets include libraries, museums and archives as users.

Producers of digital resources such as publishers and specialist information providers are invited to get involved, as are commercial companies offering long-term preservation services and products.

Additionally nestor has to focus at the general public, the media and especially for specific lobby groups like politicans# and other people, which have public responsibility.#with the aim to raise the awareness on the importance and consequencies of the long-term accessability of digital objects.#

4. Some main tasks of nestor are…

… Training

nestor has recognised a need for qualification in the area of long-term preservation and therefore, the field of initial, further and advanced training is a crucial element within the project.

In order to assist institutions in their digital preservation efforts it is important to provide them with recommendations which highlight the kinds of difficulties involved, but not necessarily specify which precise steps are mentioned. Studying the vast range of literature available is not sufficient here. According to a Research Library Group study[1], there is a fundamental link between staff training levels and the preservation of electronic documents. If we distinguish between three knowledge levels, it is apparent that all the top-level experts are to be found in those institutions which already have practical experience in the archiving of electronic documents. 80% of the individuals with medium-level knowledge are also to be found in such institutions. Without having become involved in the practical implementation of electronic archiving it is therefore scarcely possible to obtain the necessary knowledge in this field. However, people can only gain such practical experience if they commence the electronic archiving task before knowing precisely in advance what the ultimate structure will look like. nestor reflected this conclusion.

At the start of 2007 nestor, in collaboration with German, Swiss and Austrian universities, began work on developing a workable proposal for digital preservation training and putting it into practice. The resulting programmes are aimed at trainees and students, but also at technical staff and researchers. Furthermore, special archives and museums have been approached to examine topics such as safeguarding the evidential value of electronic documents, classification standards for digital archive contents or exchange formats.

… Research/networking with the GRID and eScience community

Main focuses are on the synergy between Grid-Technology and long term preservation, on digital raw data and on multimedia-based objects deriving from eScience communities.

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[1] Margaret Hedstrom and Sheon Montgomery, Digital Preservation Needs Member Institutions, 1998, in: http://www.rlg.ac.uk/preserv/digpres.html

eScience stands for collaborative and distributed form of science, enabled by innovative infrastructure. eScience based on Grid-Technology creates huge volumes of digital data, for which long-term preservation solutions are needed. Reciprocal, these technologies have a great potential to contribute to the implementation of long-term preservation systems and tools. nestor tries to outline the chances and risks of a collaboration between Grid and long-term preservation.

nestor brings together stakeholders of the German D-Grid initiative, eScience and long-term preservation representatives. They coordinate three surveys on this topic: one focuses on raw data, one on Standards/Standardisation in the context of Grid-Technology and long term preservation and one on the synergy potential between GRID/eScience -Technologies for long term preservation. The final goal is to formulate a Roadmap for consolidation of Grid and long term preservation/ Grid and archival systems in Germany.

… Standardisation and Certification

Since digital long-term preservation is a cooperative task, the creation of technical, interoperable standards is a crucial task. Of particular need is a common and accepted method for audit and certification of trusted digital repositories.

nestor supports the development of standards and certification in two working groups and collaborates with the relevant standard setting bodies, e.g. DIN and ISO.

The Working Group Trusted Repositories- Certification established a Catalogue of Criteria for Trusted Repositories in accordance with nationally and internationally coordinated procedures. The nestor criteria catalogue takes into consideration approaches and findings such as the DINI Certificate for document and publication servers [Dokumenten- und Publikationsserver der Humboldt-Universität zu Berlin: Ziele und inhaltliche Kriterien, 2006], the RLG-OCLC report "Trusted Digital Repositories: Attributes and Responsibilities" (May 2002) and the draft "Audit Checklist for Certifying Digital Repositories" (2006) published by the RLG/NARA Task Force. The working group is also in contact with the RLG/NARA Digital Repository Certification Task Force, the Digital Curation Centre, the EU project "Digital Preservation Europe" and the DELOS Digital Preservation Cluster. The nestor Catalogue of Criteria for Trusted Repositories was nominated for the 2007 Digital Preservation Award.

The Working Group Standards for digital long-term preservation focuses on Ingest-Processes (on the basis of PAIMAS, the Producer-Archive Interface Methodology Abstract Standard), on Metadata and on Persistent Identifier (PI). Especially the fields of Metadata and Persistent Identifier are characterized by a multitude of coexisting de-facto standards.

… International Collaboration

nestor collaborates in EU-projects, e.g. PLANETS and CASPAR. With regard to technology research, the EU-sponsored research projects PLANETS and CASPAR represent key developments. CASPAR intends to focus on the implementation of the Open Archival Information System (OAIS). PLANETS has been set up to provide the community with practical, usable tools, such as a preservation planning tool and an interoperability framework.

PLANETS and CASPAR, as most of the international initiatives, are project-based and are characterised by their restricted duration. The great challenge in the coming years will therefore be to establish and maintain an expandable European infrastructure for accessing the information, supported by the member states. The 7th EU Supporting Programme is pursuing precisely this objective with its research programme, as infrastructure still requires more precise and concrete development, and also political and administrative decision-making. An example of an infrastructure created at the European level is the Alliance for Permanent Access to the Records of Science (PARSE) founded in 2007 which is purposely interdisciplinary in nature and brings together a large number of communities.

The initiative stems from an international conference "Permanent Access to the Records of Science" held at the Royal Library of the Netherlands on 1 November 2004. The participants of this conference approved a series of concrete conclusions and recommendations and urged the KB to take the initiative to create a high-level European Task Force Permanent Access. The main points of criticism were that, at the European level in particular, there was too little coordination and consultation and that there had hitherto been insufficient success in establishing the subject of digital preservation at the cross-discipline and cross-community level. Also of particular interest was the support work of the EU which up until now has often disintegrated into a heterogeneous group of activities with little common purpose. Against this, the Task Force suggested a three-pronged approach: a strong alliance should be formed, consisting of parties from the scientific, library and publishers' world. This alliance should become the driving force in the efforts to realize a European organizational infrastructure for the preservation of digital scientific information. Finally, the alliance should develop and execute an action programme in which those activities are defined that are required to realize that European infrastructure.

In 2007, the Alliance was formally formed. Its members include presently: the European Organisation for Nuclear Research (CERN), the European Space Agency (ESA), the Computational Science & Engineering organisation (CCLRC) in the UK (now the 3rd Scientific and Technology Facilities Council), the Joint Information Systems Committee (JISC), the UK and Netherlands national libraries, the STM publishers' association, the National Archive of Sweden and the national competence networks in the UK, Germany and France.

5. Some additional information on nestor

nestor is supported by the Federal German Ministry of Education and Research from September 2006 until August 2009 - following the first project phase of June 2003 to June 2006. A scientific advisory board accompanies and supports the project activities.

The nestor Flyer (in English) is available at
http://www.langzeitarchivierung.de/downloads/oeff/nestor-flyer.pdf.

nestor publications such as studies and guides can be downloaded from http://www.langzeitarchivierung.de/modules.php?op=modload&name=PagEd&file=index &page_id=18   (in German only).
nestor Press releases can be found at http://www.langzeitarchivierung.de/presse (in German only)

If you would like to contact nestor, please feel free to turn to:

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