

National Library of Latvia,
Latvian Standardization Technical Committee 22: Museum Work, Archives,
Records Management and Librarianship
and
State Agency "Culture Information Systems"

Seminar
**Sharing Information and Resources: Cooperation of Museums, Archives
and Libraries in the Field of Standardization**
April 20, 2007

Venue: Conference Hall at the Freeport of Riga Authority,
Kalpaka bulvaris 12, Riga, Latvia

Programme

- 9:00-9:30 **Registration**
- 9:30-10:00 **Opening**
Sandra Ozoliņa, *Deputy Director, State Agency "Culture Information Systems" (Latvia)*
Tomas Lidman, *Director, National Archives of Sweden*
Anita Goldberga, *Deputy Director, National Library of Latvia/Chair of the Latvian Standardization TC 22: Museums Work, Archives, Records Management and Librarianship*
- 10:00-10:20 **Standardisation activities in the National Library of Estonia**
Endla Sandberg
Senior specialist on standardization, Research and Development Centre of the National Library Estonia/Secretary of EVS/TC 22 "Information and Documentation"
- 10:20-10:40 **International standards in practice: Lithuanian approach**
Nijolė Bliūdžiuvienė
Chief librarian, Centre of Bibliography and Book Science of the Martynas Mažvydas National Library of Lithuania
Liubovė Buckienė
Head of the Standardization Department, Centre of Bibliography and Book Science of the Martynas Mažvydas National Library of Lithuania
- 10:40-11:00 **Standards for the preservation and exchange of e-documents in archives**
Inta Feldmane
Head of the National Archival Fonds Accumulation and Information Technologies Section, Directorate General of Latvia State Archives
- 11:00-11:30 Coffee break

- 11:30-11:50 **Making one from four - and mastering the authorities: two glimpses from the ALM-area in Sweden**
Hans Rengman
Consultant in museum documentation, standards, terminology and ALM issues, "META - kunskap om kunskap" (Sweden)
- 11:50-12:10 **Conceptual and terminological changes in the field of records management and archives**
Veiko Berendsens
Department of History, Tartu University/Chairman of the EVS/TC 22 "Information and Documentation" (Estonia)
- 12:10-12:30 **Adopting standards related to records management: Latvian experience**
Gatis Karlsons
Director of the Recordkeeping Department, University of Latvia/Vice Chair of the Latvian standardization TC 22: Museum Work, Archives, Records Management and Librarianship
- 12:30-12:50 **Short essay on document/object in the standards for libraries, museums and art galleries**
Jarmila Majerova
Deputy Director, National Library of Slovakia
- 12:50-14:00 Lunch
- 14:00-14:20 **Long term preservation of Lithuanian cultural heritage: digitisation and harvesting**
Regina Varnienė
Deputy Director, Martynas Mažvydas National Library of Lithuania
Genutė Jokubaitytė
Chief librarian, Centre of Bibliography and Book Science of the Martynas Mažvydas National Library of Lithuania
- 14:20-14:40 **Choosing metadata standards for a digital library system**
Artūrs Žogla
Information systems designer, National Library of Latvia
- 14:40-15:00 **Digitisation of culture heritage in Latvia museums: performance, problems and solutions**
Una Balode
Manager of the project "Joint Catalogue of the National Holdings of Museums" (Latvia)
- 15:00-15:30 Coffee break
- 15:30-15:50 **Developing collaborations with Digital Preservation Europe**
Jurate Kupriene
Manager of the project "Digital Preservation Europe" in Lithuania/Doctoral student at the Institute of Library and Information Science of the Vilnius University Faculty of Communication (Lithuania)

- 15:50-16:10 **The science of context: sharing knowledge among archives, libraries and museums descriptive systems**
Stefano Vitali
The State Archives of Florence
- 16:10- 16:30 **Do we have to formalize the ALM-co-operation? Some practical experiences from Sweden**
Tomas Lidman
Director, National Archives of Sweden
- 16:30-17:00 **Discussion „Advantages and disadvantages of the ALM work standardization”**

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National Library of Latvia



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Abstracts

STANDARDISATION ACTIVITIES IN NATIONAL LIBRARY OF ESTONIA

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Under the National Library of Estonia Act (RT I 1998, 34, 488) the National Library of Estonia (NLE) has a task to support the application of international standards in the field of information science and publishing in the Estonian library network. To fulfil this task NLE participates actively in the development Estonian Standards (EVS) and leads the drafting of NLE Standards (RRS) for use in the Estonian library network.

In September 2001 NLE established a Standardisation Working Group (NLE/WG), since 2005 named as Standardisation Expert Council. The Council includes senior specialists of NLE and also representatives from other Estonian libraries, Consortium of Estonian Libraries Network, Ministry of Culture etc. All the NLE standards are recommended for use not only at NLE, but also in all Estonian libraries. Up to now, there are published only 3 NLE standards (under preparation are 3 drafts), because priority is given to implementation of International Standards as Estonian Standards.

NLE is a member of the Estonian standardisation technical committee EVS/TK 22 "Information and documentation" and is holding its secretariat.

The scope of standardisation activities of NLE is determined as mirror to ISO/TC 46 "Information and documentation" (SC 4, SC 8, SC 9) and ISO/TC 171 "Document managing applications".

At present time NLE is more actively following the work of ISO/TC 46/SC 8 (statistics and performance indicators) and SC 9 (identification and description).

NLE specialists participate at the ISO/TC 46 and its Subcommittees (SC 8) meetings. It gives NLE possibility to get information about new standards and revisions at very early stage. It also gives possibility to comment drafts and to be prepared for implementation.

Great importance is given to the distribution of standards information to support the implementation of standards. Appropriate information is available on NLE Website (<http://www.nlib.ee>). The importance and situation of standardisation in librarianship has been introduced in many times in specialized publications (journal "Raamatukogu", in ELA Yearbook etc.), on special seminars.

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INTERNATIONAL STANDARDS IN PRACTICE: LITHUANIAN APPROACH

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This paper describes the current situation in implementation of International and IFLA Standards and development of standards in Lithuania.

ISO standards

Lithuanian Standards Board (LST) TC 47 “Information and Documentation” (till 2003 “Library Science”) TC is lead by Martynas Mažvydas National Library of Lithuania (NLL). In the activity of TC 47 “Information and documentation” are involved libraries, museums, archives, public and private offices of Lithuania. LST TC 47 “Information and documentation” is a mirror committee of ISO TC 46. TC 47 “Information and documentation” became the observer member of four subcommittees (SC) of ISO TC 46 in 2002

Standards in Lithuania, like in the other European countries, are applied on a voluntary basis. There are thirty-seven ISO standards adopted as Lithuanian standards. Seventeen of them are publications of identical texts and twenty are endorsements.

What are the benefits from those standards?

1. Lithuanian ISBN, ISSN, ISMN agencies are established. About 95 percent of books and serials carry standard identification numbers. ISMN are assigned to about 80 percent of printed music. Lithuanian publishers database has been created.
2. Bibliographic references standards are widely used in Lithuanian academic society. Lithuanian universities are publishing instructions on research paper writing containing recommendations to use bibliographical reference standards.
3. International library statistics standard facilitates the comparison process of statistical data issued by different libraries. Our libraries use the statistical data forms that are prepared by NLL according to ISO library statistics standard and approved by Lithuanian Department of Statistics. The recommendations of the standard also serve as guidance for international presentation of library statistics. According to this standard the Ministry of Culture of Lithuania

has issued a unified form for library statistics registration and nearly all-Lithuanian libraries use it.

4. The Centre of Bibliography and Book Science is committed to control the implementation of publishing standards by the Regulation of the Government of Lithuania (No.760, October 9th, 1992). Article No. 36 "Requirements Concerning Publications and Their Dissemination" of the "Law on Provision of Information to the Public" declares the following: *"Each publication shall indicate its circulation, other publishing data specified by the Lithuanian standard, and the international standard number of the document"*. Likewise in Article No. 173⁽¹⁹⁾ of the Code of Administrative Offence of the Republic of Lithuania "The violation of the requirements for publications and the violation of the order of legal deposit copy delivery to libraries" penalties are imposed for absence of circulation indication or false indication of circulation, violation of order of printing other publishing data set by the Lithuanian standard and/or absence of the International Standard Number of the document (ISBN, ISSN, ISMN).

IFLA standards

IFLA standards used in Lithuanian libraries match the frame of the new IFLA-CDNL Alliance for Bibliographic Standards (ICABS). The IFLA Universal Bibliographic Control and International MARC (UBCIM) Core Activity was established in 2003. One of the main goals of ICABS is to maintain, promote and harmonize existing standards and concepts related to bibliographic and resource control. ICABS maintain and develop ISBD, FRBR, FRANAR, promote the development and use of UNIMARC and its harmonization with MARC 21 and also promote the application of the Z39.50 interface.

The development and implementing of those projects directly affect the progress of machine-readable format. This format serves as a means for implementing all innovations proposed by international library informational community. One of the principle projects of the Alliance for Bibliographic Standards, namely, ISBD development, obliges National Bibliographic Agencies the world over to accept responsibility for creating the definitive record for each bibliographic resource issued in that the particular country, prepare the definitive description containing all the mandatory elements set out in the relevant ISBD insofar as the information is applicable to the bibliographic resource being described.

It is recommended that libraries that share bibliographic data with each other follow this practice also. ISBD is used the world over and is applied either directly as cataloguing rules (this is exactly the practice applied in Lithuania) or as a foundation for national cataloguing rules.

In the framework of ICABS the Permanent Unimarc Committee has prepared and presented for library community the following documents:

1. UNIMARC Manual Bibliographic Format / 1994 Update 5, 2005
2. UNIMARC Guidelines no. 6 Electronic Resources (2000-08-22) www.ifla.org/VI/3/p1996-1/guid6.htm
3. UNIMARC Guidelines no.7 Music (2005-07-19) www.ifla.org/VI/8/projects/UNIMARC-Guidelines7Music.pdf

4. IFLA UNIMARC Programme. UNIMARC Guidelines no. 8 Serials and Other Continuing Resources

Those documents provide informational and linguistic support in realization of Lithuanian Integral Library Information System (LIBIS).

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STANDARDS FOR THE PRESERVATION AND EXCHANGE OF E-DOCUMENTS IN ARCHIVES

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At present, about 900 various types of state and municipal services have been made available to the inhabitants of Latvia, and in 2006 these services were used by approximately 80% of the population. In the state administration a variety of digital systems is used already: bookkeeping systems, statistical databases, tax revenue systems, E-mail systems and so on. In the last decades the Government of Latvia built up modern IT infrastructure. The Government started a new initiative "Information Society Development Guidelines 2006-2013 – The Road to Growth, Competitiveness and Welfare". With the implementation of the Information Society Development Guidelines all of the society in the country will be provided the opportunity to fully access and use the relevant modern communication technology based information resources and services subject to their needs.

The main policy of National programme "Development and improvement of the infrastructural foundation for electronic governance", elaborated by The Secretariat of Electronic Government Affairs is to improve and develop the existing state information systems by integrating their in unified state system, to ensure the online availability to public and public services, to facilitate the implementation of e-government and the optimization of state and local governments' work. National Programme include nineteen several projects. As a result of implementation of National programme, improvements will be made in state and local governments' information systems and mutual cooperation. This will enable exchange with the necessary data online, improving the quality and the work effectiveness of local governments and state institutions, the quality of services.

These different systems are producing electronic records, which are in part worth of archiving. They contain data from databases, graphical data, soon textual records from word

processing system with electronic signature, an image as result of a scanning system and so on. All these different kind of data are summarized under the term “electronic records”.

According to the specific law “Electronic Record Law” The Directorate General of Latvia State Archives are responsible for the appraisal, availability (id est, description) and long-term preservation of electronic records.

Measures for long term-preservation

The Directorate General and state archives have only four-year experience in archiving electronic records. Storage is often described as a passive stage in the life cycle of the records (archival documents and data), but storage media and formats of our digital era have changed so frequently. File formats encode information into a form, which can only be processed and rendered accessible by very specific combinations of hardware and software. The accessibility of that information is therefore very important now.

There are three possibilities of archiving the electronic records (data in databases, spreadsheets, text files, e-mails, et cetera):

- Archiving of *native* formats
- Archiving of *proprietary* formats
- Archiving of open standard – de Jure formats.

A key preservation issue is the format in which the archival version of the records should be stored. For file formats are three main categories – *de Facto* or driven by market, *Mandated* or stated by regulations and controlled by authorities and *de Jure* or developed by industry.

Archiving of electronic records creates costs. To cut down these costs is so important for the implementation of e-government. It is possible only by use of regulations and standardization of archiving and long-term preservation of electronic records. There are four main elements of our actual strategy, which we are incorporated, in our archival legislation.

Storage of records off-line: as much as possible two different and standardized storage media are used for archiving electronic records parallel, for example compact disc-recordable (CD-ROM) format, which complies with the requirements specified by ISO 9660 or ISO 10149 standards, or magnetic tape format, which complies with the requirements specified by ISO/IEC 15895 or ISO/IEC 16382 standards.

Specific solutions concerning preservation formats: depending on type and origin of data it is recommended to utilise *Baltic-1257* or *UCS* codes and platform-independent file formats for the electronic records selected for long-term or permanent retention - for structured text - *SGML (XML)*, for graphical information – *JPEG* or *TIFF*, for vector graphics – *CGM*, for audio information and video information – *MPEG II*.

Now available is PDF based de Jure standards for archiving - PDF/A (ISO PDF/A 19005-1 published Sept 2005). It is open file format standard based on PDF 1.4 and support reliable rendering of archived electronic records. The OpenDocument Format (ODF) is an

open XML-based document file format for office applications to be used for documents containing text, spreadsheets, charts, and graphical elements. The file format makes transformations to other formats simple by leveraging and reusing existing standards wherever possible.

Office Open XML (commonly abbreviated as OOXML) is a file format specification for the storage of electronic documents such as spreadsheets, charts, presentations and word processing documents. The specification was developed by Microsoft for its Microsoft Office product suite and was standardized by Ecma International as Ecma 376 in December 2006. Securing a precise documentation about the electronic records and the systems they come from: without documentation of the data the long-term preservation and description is not possible. The documentation has to comprise information about files, technical details, concerning media and so on.

Measures for description

The technical documentation is to be completed by further information about origin and context of electronic records, the agency they come from, legal base, aim or function of the IT-system, date of existence, quantity et cetera.

For this purpose it is developed Latvian standard LVS 369:2004 "Arhīviskais apraksts. Vispārīgie principi: aa(vp)" based on International Council on Archives/Committee on Descriptive Standards: ICA/CDS) accepted standard ISAD (G): General International Standard Archival Description. This standard provides general guidance for the preparation of archival description – to explain the content and context of archival material in order to promote its accessibility.

Other important standard for securing archival material accessibility is ISAAR (CPF) International Standard Archival Authority Record for Corporate Bodies, Persons, Persons and Families. The Latvian standard based on this International standard is now submitted to Latvian National Agency of Standardization. This standard is so important for all public collective memory institutions, because it deliver common access point for searching in Latvian Library Information System, National Comprehensive Museum Artefacts Catalogue, and Unified Latvian State Archives information system.

Now we are working out guidelines for implementation of both standards. These will provide unified methodology tat will facilitate the implementation in all organizations – both archives and other institutions.

For developing of the archives information system important tool is the EAD Document Type Definition (DTD). It is a standard for encoding archival finding aids using Extensible Markup Language (XML). The Society of American Archivists (SAA), with the Library of Congress, serves as the maintenance agency for the EAD DTD, and SAA's Committee on Archival Information Exchange EAD Working Group did much work on its development.

Measures for efficient and inexpensive management of electronic records

As I have told before state archives carry out the monitoring of that State and local government archives ensure the storage and accessibility of electronic documents and have got a formal authorizations to carry out the consultative functions of records management.

As reliability and authenticity of electronic records belonging to the Latvian National Archival Fonds depends from common principles of record management and quality of records management system it is important to implement ISO/TR 15489-: 2001(E) Information and documentation- Records management in Latvia.

Other significant precondition for efficient management of electronic records is MoReq specification (Model Requirements for the management electronic records), which describes a large range of functionality to be implemented. The MoReq specification is primarily intended to serve as a model and practical tool in helping organizations meet their business needs for the management of both computer – based and paper–based records. This specification is widely used de facto standard.

The important stage in provision of long-term preservation is transfer of electronic records to state archives. Most popular are OAI-PMH [Open Archives Initiative Protocol for metadata Harvesting] and METS (Metadata Encoding and Transmission Standard). The Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) provides an application-independent interoperability framework based on *metadata harvesting*. The METS schema is a standard for encoding descriptive, administrative, and structural metadata regarding objects within a digital repository, expressed using the XML schema language of the [World Wide Web Consortium](#).

The ability to exchange electronic records with other users and IT systems is frequently an important consideration. Formats, which are supported by a wide range of software or are platform-independent, are therefore highly desirable in many situations.

Conclusion

Accessibility of the information is one of the general human rights and our main task is to make archival information available. Long-term preservation of authentic electronic records is very complicated task and success in this work depends not only on our will to do it but also on the available information recourses and knowledge. From witch point of view exchange of information and sharing with best practices with representatives from other countries and related fields is very helpful in our common work.

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MAKING ONE FROM FOUR - AND MASTERING THE AUTHORITIES: TWO GLIMPSES FROM THE ALM-AREA IN SWEDEN

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This paper will outline two recent projects in Swedish museum documentation that is possible to draw general knowledge from. My theme will focus on the experience from these two projects and maybe draw some general conclusions on standardisation.

The National Museums of World Culture is a National authority including the Museum of Ethnography, the Museum of Mediterranean and Near Eastern Antiquities and the Museum of Far Eastern Antiquities, all located in Stockholm, along with the Museum of World Culture in Göteborg. During the last Year a group of experts have been working on finding the general lines in the very diverse database landscape. The Knowledge Management in Museums, KMM, project at Uppsala University is a consortium of museums, universities and companies, heading for development and research in the museum documentation field by using modern technology and advanced ideas in a maybe unorthodox manner to test and develop methods for reaching higher quality in documentation by coordinated terminology and authorities, to mention one of the main focus areas.

The differences (and maybe even some similarities) between the four museums databases within NMWC shows us both how curatorial and research tradition influence terminology – the stuff you put into the databases as well as the labels on the fields. Trying to make the vocabularies merge rises obstacles where differences in viewpoint not always are possible to override. Influences from outside and contacts with external partners, target user groups etc makes the landscape even more complex.

KMM tries to gather "all" useable authorities in one service as a base for forthcoming documentation and studies in automation of the processes. A ClassMaster is developed to house these classification schemes and vocabularies. Local museum data is poured into the system to be cleaned up and to expand the knowledge. Standardizing will lead to a more well known state of the art of many knowledge areas.

Both these processes tend to open a curatorial or heritage content focused discussion besides the challenging technical one. On the one hand the standardisation as a good for retrieval, on the other the risks of missing or even destroying knowledge in documenting the heritage. My point is that this discussion can be transferred to the ALM-field in general and is important to take prior to the technical phases of automation.

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CONCEPTUAL AND TERMINOLOGICAL CHANGES IN THE FIELD OF RECORDS MANAGEMENT AND ARCHIVES

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The presentation will analyse changes in records management and archives conceptual and terminological level during last 10 years.

In 1998 new Archival Act was passed, which introduced many new concepts borrowed from English speaking countries such as records life cycle, records and records series. These regulations have changed in different way everyday practice but in some areas like inventories (in Russian opis) the practice remained unchanged. As a new field of activity during the last five years the records management have brought new changes into the field. Government policy towards e-government have accelerated electronic records management. Concepts and terminology on these areas have changed also due to the influence from ICT side. These changes all together have been tremendous challenge to the professional language of archivists and records managers as well as for legislation and guidelines.

To better co-ordinate use of concepts and terminology the technical committee on Information and documentation was established in Estonia in 2002, which brought together librarians, archivists and records managers. Many standards – including ISO 5127 “Information and documentation. Vocabulary” – are overtaken.

The presentation will analyse some difficulties of implementation of different new concepts.

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ADOPTING STANDARDS RELATED TO RECORDS MANAGEMENT: LATVIAN EXPERIENCE

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In the years 2004-2006 the Technical Committee 22 for Museum, Archival and Library Standards of the national standards authority *Latvia's Standard* undertook adaptation of several standards related to records management, such as *ISO 5127 Information and documentation: Vocabulary*, *ISO/ TS 23081-1: 2004 Metadata for Records* and *ISO 15489 Records Management*. Huge issues rose when three different groups representing three formerly distinct areas of expertise started this work. Each of the involved group had their own understanding of the standards, their terminology and concepts. Records managers and archivists who likely had to be confident with the records issues were faced against previously unknown concepts and principles. This paper is going to analyse the problems of harmonizing domestic and international records management principles and cooperation of archival, library and museum experts.

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SHORT ESSAY ON DOCUMENT/OBJECT IN STANDARDS FOR LIBRARIES, MUSEUMS AND ART GALLERIES

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Author focuses on comparison of library and museum documents/objects from the point of view of their common and specific features. At the same time, gives the preview of mutual relations connected with the description reflected in both current standards and the ones being prepared. The paper outlines possible ways of convergency of cataloguing library, museum and art gallery collections which leads to one level of interoperability of participating

memory institutions. On the example of cataloguing the documents/objects in cultural institutions in Slovakia the author demonstrates the preparedness of Slovak libraries, museums and art galleries for interoperability when providing complex information and contents to users.

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LONG TERM PRESERVATION OF LITHUANIAN CULTURAL HERITAGE: DIGITISATION AND HARVESTING

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National strategy of long-term preservation of cultural heritage

The legislation of web resource harvesting

The National Library of Lithuania (NLL) on executing its function of cultural heritage depositing which is inherent to all national libraries follows *The Guidelines for Legislation for National Libraries* of UNESCO/IFLA which regulate the above-mentioned function by the Resolution on the substitution of the Resolution No. 1389 dated November 22, 1996 of the Government of Lithuania "Regarding the order of distribution of legal deposit copies of publications and other documents to libraries" ("Valstybės žinios", 2006, No. 136-5170) [1]. It warrants the delivery of legal deposit to the Library one copy of which is preserved in the National Archive of Published Documents.

On executing this function the National Library of Lithuania deals with the following problems:

- performs the control of free legal deposit copy delivery to the National Printing Archive and libraries;
- stores and preserves Lituania documents published in Lithuania and abroad;

- stores and preserves electronic resources in the Archive of Electronic Resources.

The Bibliographic and National Libraries Sections of IFLA, CDNL, CENL encourage the national libraries worldwide to update those laws and regulations on legal deposit which regulate harvesting of documents for archival storage taking into consideration the emergence of electronic resources and their exclusive status.

A lot of European countries are making efforts to improve legislation on legal deposit. These issues have considerable relevance to Lithuania as well. The adoption of a new legal deposit law on legal deposit based on UNESCO recommendations and EU standards would be of significant importance.

The revised Act on legal deposit [1] substituted the Resolution No. 1389 dated November 22, 1996 of the Government of Lithuania "Regarding the order of distribution of legal deposit copies of publications and other documents to libraries" ("Valstybės žinios", 1996, No. 115-2679) [2] cannot be treated as an act of law appropriate for legal deposit regulation because it does not:

- envisage and take into consideration unconventional format types (including web resources) the harvesting of which is not sufficiently explicated and is not legally validated;
- outline the policy concerning the copy of the legal deposit as the principal source for the National Archive of Published Documents;
- specify the type of the legal deposit copies, their number, the publisher and the receiver, the order of delivery and the staff responsible;
- regulate the legal aspect of delivering the documents to libraries, the protection of copyright law and access to documents.

The urgency for the new legal deposit law to be adopted is obvious. It has to indicate the relation between memory institutions and other products of intellectual property as well as their owners, project the principles of legal protection of legal deposit copies. The all-inclusive harvesting of documents (including electronic resources and copies of legal deposit) is closely connected with the protection of law on copyright and related rights. The emergence of new resources for library acquisition, namely, the web, may potentially lead to violation of copyright law because the display of information in electronic format may not be treated exactly in the same way as that in traditional format. The new legal deposit law would deal with problems concerning the documents of legal deposit obtained by the National Library as well as issues of copyright law and access.

Extensive discussions on this topic went on for several years and, finally, the National Library of Lithuania as a significant institution responsible for cultural heritage preservation has established a Working Group for preparation of the project of the legal deposit law for published documents, including web resources.

The legislation of cultural heritage digitisation

The Lithuanian State Long-Term Development Strategy (2002) [3], indicating the guidelines for economic, social, environmental and other policies until 2015 approved by the Seimas of the Republic of Lithuania, and the Provisions of the Lithuanian Cultural Policy state that the long-term strategy of Lithuanian culture is the preservation and actualisation of the Lithuanian cultural identity that combines the inherited and common values of the European culture as well as the security of its prolongation, open access and competitiveness in the modern context of Lithuania, the European Union and the rest of the world.

Although the most important legal documents and acts of the Republic of Lithuania define long-term preservation, actualisation and access of Lithuanian cultural heritage using ICT, the national strategy of digitisation and access has not been formulated yet.

During the period of 2003-2004 the National Library of Lithuania carried out some planning activities on digitisation of cultural heritage, integration of memory institutions and strove to draw the attention of state institutions to the demand for the integration into the medium of European electronic content.

The National Library of Lithuania has considered the above mentioned motives and has prepared the Draft of the Concept of Digitisation of Cultural Heritage in 2004 in accordance with the Lund Principles [4] and the Lund Action Plan [5] aiming to secure:

- creation of common digital information environment of the Lithuanian cultural heritage with the assistance of memory institutions and other bodies responsible for the cultural heritage;
- digitisation and distribution of the Lithuanian cultural heritage on the basis of the Integrated Virtual Library Information System;
- formation of efficient infrastructure for digitisation of the Lithuanian cultural heritage in order to warrant the fulfilment of obligations of memory institutions - libraries, museums, archives and others bodies responsible for the preservation of cultural heritage in order to pursue constant long-term digitisation of cultural heritage.

The Conceptual Framework of Digitisation of Lithuanian Cultural Heritage determines the aim, principles and objectives of digitisation of Lithuanian cultural heritage, objects of Lithuanian cultural heritage to be digitised and general criteria for selection. This Conceptual Framework establishes conditions for consecutive and purposeful work of state and municipality institutions and organisations aiming at preservation of national cultural heritage, improvement of access to cultural heritage and its actualisation using modern information technologies. This Conceptual Framework also allows to initiate and prepare the strategy, programmes, projects of cultural heritage digitisation, as well as coordination and control their implementation; it also ensures the coordination of activities of cultural heritage digitisation carried out by libraries, museums, archives and other institutions responsible for preservation of cultural values.

This year (2007), the National Library of Lithuania has initiated the preparation of the Lithuanian cultural heritage strategy. The Lithuanian Archives Department, the Lithuanian Museum of the Arts, the Library of the Lithuanian Academy of Sciences, the National Museum of Lithuania and the Library of Vilnius University have declared their readiness to collaborate in the project.

Programmes and current projects of long-term preservation of cultural heritage

Harvesting and archiving of web resources

Following the recommendations of the IFLA and UNESCO to treat web resources as an important part of national heritage, the project of *Electronic Resources Subsystem - Archive of Electronic Resources - of Lithuanian Integrated Library System (LIBIS)* was developed in 2002.

The purpose of archiving web resources is to accumulate all web resources of the national web space and selection of web resources from other domains with national content.

The Archive of Electronic Resources is located in the LIBIS Centre of the National Library with a separate server for this purpose. For realisation of archival preservation and access functions of electronic resources Linux Operational System *RedHat* and database management system MySQL are used.

Harvester software (Version 1.0.1, last edited 31.08.2001) developed by NEDLIB was selected for accumulation of web resources. Practical realisation of harvesting, which has been lasting for 5 years, shows that this technology was efficient from the very start for:

- arrangement of files and their transmission to the Archive of Electronic Resources;
- duplicity control;
- transmission of new and validated URL's to the communications filter table.

Our experience with NEDLIB harvester shows that large number of dynamic web pages are not handled properly and this occasionally results in gathering only a small part if not just the starting page of the selected web site. Ideally a harvester should have a Java VM to be able to parse HTML page content properly but this is hardly achievable in the nearest future. Another similar problem concerns dynamically created web pages and URLs with parameters. A harvester is actually interacting with a web server when attempting to collect this type of documents. In pathological cases it could be getting new URLs perpetually from the same server. Therefore it can be dangerous to configure a harvester for gathering parameterised URLs despite the fact that a considerable part of the web space is occupied by dynamically generated content. An updated version of harvesting software will be implemented in the nearest future.

Co-operation of memory institutions on the grounds of Virtual Integrated System

At the beginning of 2005 13,3 million Litas (about 4 million Euros) from EU Structural Funds were received for the project "Creation of Integrated Virtual Library Information System" according to the 3rd priority's 3rd measure, of "The Development of Information Services and Infrastructure" of the Single Programming Document approved by the Government of the Republic of Lithuania in 2004 (Lietuvos zinios, 2004, No. 123-4486) .

The project "Creation of Integrated Virtual Library Information System" aims at forming a solid network of libraries, museums and archives by digitising cultural heritage and making it available to all users in Lithuania and worldwide through the public and free-access interfaces.

The basis for the creation of the Integrated Virtual Library Information System (IVLIS) is the Lithuanian Integrated Library Information System (LIBIS) which consists of the Local Automated Information Systems (LAN) of 75 Lithuanian research and public libraries and local subsystems.

The main beneficiary of the project, Martynas Mažvydas National Library of Lithuania, represents the only beneficiary of this project. The participants are the Lithuanian Museum of Arts and the Lithuanian Archives Department. Project duration is 30 months.

The concept of Virtual System used in the project is to indicate a digital information depository that performs the traditional functions of storage, preservation of information and providing access to it. It also functions as a shared system distributing all available information as well as positively promoting and maintaining the creation of such information.

The common Digital Assets Management System is created for the management of unstructured information and content, capture and incorporation of existing content from a variety of sources and from project partners - Lithuanian Archives and Lithuanian Integrated Museum Information System (LIMIS) (end-user URL is <http://www.epaveldas.lt>).

Web browser based interface has been developed for image and information retrieval, location, display and access.

Well-known interfaces, such as SRU (Search and Retrieve by URL) and CQL (Common Query Language), was also implemented in order to exchange data with LAFD, LIMIS and other systems.

The National Library of Lithuania, along with creation of e-content of Lithuanian cultural heritage has sent a request to the Information Society Development Committee to support a new project "The Creation and Dissemination of the Lithuanian Digital Content".

Conclusions:

The NLL project – "Creation of Integrated Virtual Library Information System" has brought the attention of state institutions to the problems of long-term preservation of national cultural heritage, the necessity to form the national viewpoint on the management of cultural heritage and the benefits of integrating memory institutions into the space of European eInformation

area. It has encouraged the Ministry of Culture and other institutions to initiate the validation of the Concept of Digitisation of Cultural Heritage and invent a strategy for it. The project serves as an important foundation for further preparation of cultural heritage strategies and promotion of co-operation between memory institutions securing the long-term preservation of the cultural heritage by digitisation and integration of the digitised cultural heritage into eEuropean information space.

1. Dėl Lietuvos Respublikos Vyriausybės 1996 m. lapkričio 22 d. nutarimo nr. 1389 „Dėl spaudinių ir kitų dokumentų privalomųjų egzempliorių siuntimo bibliotekoms tvarkos“ pakeitimo : patvirtinta Lietuvos Respublikos Vyriausybės 2006 m. gruodžio 11 d. Nr. 1240. *Valstybės žinios*, 2006, Nr. 136-5171.

2. Dėl spaudinių ir kitų dokumentų privalomųjų egzempliorių siuntimo bibliotekoms tvarkos : patvirtinta Lietuvos Respublikos Vyriausybės 1996 m. lapkričio 22 d. nutarimu Nr. 1389. *Valstybės žinios*, 1996, Nr. 115-2679

3. Valstybės ilgalaikės raidos strategija: patvirtinta Lietuvos Respublikos Seimo 2004 m. lapkričio 12 d. nutarimu Nr. IX-1187 [interaktyvus] [žiūrėta 2007 m. sausio 16 d.]. Prieiga per internetą: <<http://www.lrv.lt/main.php?cat=303&gr=1&d=3003>>

4. *The Lund Principles* [interaktyvus] [žiūrėta 2005 m. birželio 21 d.]. Prieiga per internetą: <<http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/05/98&type=HTML&aged=0&language=EN&guiLanguage=en>>

5. *Action Plan on coordination of digitisation programmes and Policies*: implementation framework for digitisation coordination actions in Europe [interaktyvus] [žiūrėta 2005 m. birželio 21 d.]. Prieiga per internetą: <http://www.cordis.lu/ist/directorate_e/digicult/lund_ap_browse.htm>

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CHOOSING METADATA STANDARDS FOR A DIGITAL LIBRARY SYSTEM

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In 2006 National Library of Latvia (NLL) chose an open-source digital library system Fedora to digitize its collections. Dublin Core metadata elements were used to describe digital objects, but it later turned out that Dublin Core elements were not sufficient. Additional metadata elements were added to metadata schemas to support describing images, music scores, maps and other materials. Digital collections must also use standards required by The European Library and TEL project.

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DIGITISATION OF CULTURE HERITAGE IN LATVIA MUSEUMS: PERFORMANCE, PROBLEMS AND SOLUTIONS

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A short review on museums' realm in Latvia, management and the collected culture heritage. Digitisation of the collection, problems, solutions and visions for the future. Projects: previous and current (national union catalogue of museums' collection).

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DEVELOPING COLLABORATIONS WITH DIGITAL PRESERVATION EUROPE

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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 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.

The main objective of the dpe project is to address digital preservation issues to 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 mean for accomplishing these objectives. DPE believes that each partner could have a strong importance for the dissemination of these issues and for the enlargement of the community.

Under the umbrella of the DPE Project, the National Library of the Czech Republic (NKL) as one of the dpe partners, carried out the representative survey focused on recent developments and plans concerning long-term preservation of digital documents in European national libraries. NKL distributed questionnaires. The questions were intended to find out how important the long-term preservation was for the libraries in general and how far they

were in the area of building digital repositories, if there was a will or need to cooperate and in case of the yes answer, with whom. All the libraries answered that they cooperate on this issue with other memory institutions (for example other libraries, museums, archives).

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 digital preservation field has been provided by defining the concept, research and practice landscape.

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. 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. There is a need for a multi-tiered audit and certification programme 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. DPE 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.

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.

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 project 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.

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.

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**THE SCIENCE OF CONTEXT:
SHARING KNOWLEDGE AMONG ARCHIVES, LIBRARIES AND MUSEUMS
DESCRIPTIVE SYSTEMS**

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The development of relationships between archives, libraries and museums descriptive systems as well as between digital reproductions of materials they hold has been theoretically analysed and discussed for some time and some interesting projects have been implemented in the recent past. There are various reasons for developing tools which let those systems communicate, share and/or exchange information. First of all, those tools should make easier, more efficient and effective the search for cultural information on the Net; secondly they should allow for the distribution of common aspects of the descriptive activities between various institutions and experts; last but not least, as archives, books, and museum belong to cultural heritage, they share many common characteristics.

According to the priority given to the goals envisaged, different practical solutions have been implemented. In some cases a single database has been developed for the descriptions of different materials; in other cases a common search engine has been built to search in archival, libraries and museums systems by a single query; alternatively common metadata have been adopted, such as Dublin Core metadata, to allow for metadata harvesting based

on OAI-PMH model; finally common authority lists of creators, owners etc. or common thesauri or conceptual maps have been built to navigate into and among different systems.

The contribution will present a concise survey of some projects which have developed tools for establishing relationships between different systems, trying to investigate their potentials and limits, taking into account that, on one hand, the solutions adopted should be able to emphasize what really archival, bibliographic and museums materials really share and in particular the various historical, cultural and conceptual context, in which they have been created and transmitted, used and interpreted over the centuries; on the other hand they should respect the peculiar characteristics of the different materials from which specific descriptive methodologies may originate.

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