THE THIRD SEEDI INTERNATIONAL CONFERENCE

DIGITIZATION OF
CULTURAL AND SCIENTIFIC HERITAGE

September 13-15. 2007
Cetinje, Montenegro

THE BOOK OF ABSTRACTS

List of papers

THE WORLD DIGITAL LIBRARY

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DIGITALIZATION OF THE LOCAL COLLECTION

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Abstract:
Public library Kruševac started with digitalization in 2003, with noon-book materials from local history collections. On our library's web site, (www.nbks.org.yu) visitors can see postcards of Kruševac, from our library, local historical archive and private collections. Our digital collection is on-line guide to our local area, our monuments, and churches. Also this site helps our communities to promote our heritage.
Now we start to digitalized photographs, which we have in our local history collection. You can find historic and modern pictures of the borough's streets and buildings as portraits of the people, communities and personalities of Kruševac, and another subjects as education, festivals, celebrations and events, sport, war etc.
Our aim is to promote local history.
We won't to provide free access to information about our local history, opening this library department we helping open our heritage for everyone to enjoy 24 hour open library.

Keywords: Cultural heritage, public library, digitalization

VIRTUAL RECONSTRUCTION AND DIGITALIZATION
OF CULTURAL HERITAGE SITES IN BOSNIA AND HERZEGOVINA

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Abstract:
Bosnia and Herzegovina is very rich with the cultural heritage sites. These historical sites nowadays look quite different from their original appearance, as a lot of time has passed from the moment of their construction. In addition, some of them were seriously damaged or completely destroyed during the recent war. This paper presents our experience in the digitalization of Bosnian cultural heritage, with the key purpose of preservation, reconstruction and virtual heritage applications. We describe virtual reconstructions and sun simulation of medieval Bosnian gravestone "stecak", virtual reconstruction of destroyed Sarajevo City Hall Vijećnica and virtual heritage application "Virtual Sarajevo – Baščaršija".

Keywords: virtual reality, visual perception, digital storytelling

DIGITIZATION OF LOCAL HISTORY COLLECTION AS THE MAIN PROMOTER CULTURAL HERITAGE OF LOCAL COMMUNITY

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Abstract:
New technology change the role of local history collection, and special cultural tourism and cultural heritage tourism became interesting for digitization. Initiative in digitization of local significant materials in electronic format as the cheap and the best way of presentation local history. Role of volunteers in collected materials for local history collection – Club of friends Sarajevo (example: workshops, multimedia lecture, exhibition, etc.). Presentation digital projects of Public library of Sarajevo: "Goodness of existence: Hasan Kikic on its own", 2003; "Digital collection of photographs Hadzici", 2003, „My name is poet: digital collection manuscripts of Sarajevo's anonymous poet Aco Mrnjevica who killed 1993. ", 2004 and „Sarajevo on old family photos", 2005.

Keywords: digitization, local history collection, cultural heritage, cultural tourism, digital collection

DIGITAL PRESERVATION OF CULTURAL AND HISTORICAL HERITAGE OF BIH: BIH PRESS 1866-2106.

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Abstract:
Project "Digital preservation of cultural and historical heritage of BIH: BiH press 1866-2016" is being implemented in cooperation with and with the support of Government of FBIH. The goal of the Project is to digitalize and make searchable through INFOBIRO all main newspapers and magazines published between 1866 and 2016. The idea is also to cooperate with archives and libraries in the region in order to return newspapers to BiH in the digital form.
During the first year of the project, from October 2006, four newspapers have been digitalized: Oslobodjenje 1992-1995., Nada 1895.-1903., Sineast 1967.-2007., Nasi Dani 1987.-1990.

NCD RECOMMENDATION FOR THE NATIONAL STANDARD FOR DESCRIBING DIGITIZED HERITAGE

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Abstract:
In this paper we present a proposal for the national standard for describing digitized assets of movable heritage in Serbia. The proposal was made by the National center for digitization and supported by the Committee for digitization of the UNESCO commission of Serbia. The main objective of the proposal is to guarantee interoperability among resources available by different providers and compatibility with the most popular existing international standards.

Keywords: digitization, metadata, national standard

DIGITIZATION OF MATHEMATICAL GRAMOPHONE RECORDS OF 78 RPM IN THE NATIONAL LIBRARY OF SERBIA

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DIGITIZATION IN "CAROL I" CENTRAL UNIVERSITY LIBRARY OF BUCHAREST: RESTITUTIO PROJECT

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Abstract:
In the context of the extraordinary development of NTIC, the mission of the libraries changes radically, and the roles of the librarians become of critical importance for a healthy development in all domains, as universal access to information and quality in use for the broadest possible user population becomes a priority.

In the Romanian context, as brand-new citizens of the European Union, we are well aware of the global society we live in. As we aim at "unity in diversity", we have to take into consideration the possibility of loosing our "essence". One possible solution to the danger of loosing cultural identity is valorizing our rich cultural heritage.

This paper intends to give a general overview of the activities and perspectives in "Carol I" Central University Library of Bucharest.

It begins by describing shortly the evolution of the library since its establishment, in 1895. It goes on by presenting the current situation and perspectives in "Carol I" Central University Library of Bucharest, with an emphasis on activities and projects in the field of digitization. The RESTITUTIO Project, the main current digitization project of the library, is presented.

Keywords: digitization projects, "Carol I" Central University Library of Bucharest,

ONTOLOGY-BASED ACCESS TO DIGITIZED CULTURAL HERITAGE AND ARCHIVAL COLLECTIONS

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Abstract:
The paper discusses several aspects of the use of ontological knowledge and some concomitant Semantic Web technologies in the development of software tools for operative access to digitized cultural heritage and archival collections. The emphasis falls on a number of general issues like semantic mark-up of content, information integration, interoperability of ontologies etc. Some domain-specific problems e.g. the scope of the ontologies that are needed for the purpose (and which ones should the heritage sector develop and which ones will be possible to borrow from other sectors) have been also analyzed. Two successful projects directed to the implementation of ontology-driven access to various types of cultural heritage repositories have been analyzed. The experience in building software tools for knowledge-based search in repositories of digitized manuscripts and archival materials gained at the Institute of Mathematics and Informatics of the Bulgarian Academy of Sciences and the Faculty of Mathematics and Informatics of Sofia University has been discussed as well.

Keywords: Digitization, Metadata, Ontology, Semantic Annotation

DEVELOPMENT OF A DIGITAL BULGARIAN PHOTOGRAPHIC COLLECTION 'FACES TO REMEMBER'

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Abstract:
The poster will present a Bulgarian endeavour to build a digitized collection of historical photographs of high artistic and documentary value. The effort is not bound with one particular cultural institution; but aims to build an extensive representative set of resources from various archives, libraries and private collections, which should answer two basic requirements: quality and contribution to the overall collection idea. The initial effort is directed to select, digitize and organize the digital photographic compendium, and the result will be a combination of the virtual and traditional exposures of the collection: exhibitions, topical albums, etc.

Keywords: digitization, artistic & documentary photographs, collection building

CREATION OF A DIGITAL CORPUS OF BULGARIAN DIALECTS

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Abstract:
The paper presents our considerations related to the creation of a digital corpus of Bulgarian dialects.

The dialectological archive of Bulgarian language consists of more than 250 audio tapes. All tapes were recorded between 1955 and 1965 in the course of regular dialectological expeditions throughout the country. The records typically contain interviews with inhabitants of small villages in Bulgaria. The topics covered are usually related to such issues as birth, everyday life, marriage, family relationship, death, etc. Only a few tapes contain folk songs from different regions of the country.

Taking into account the progressive deterioration of the magnetic media and the realistic prospects of data loss, the Institute for Bulgarian Language at the Academy of Sciences launched in 1997 a project aiming at restoration and digital preservation of the dialectological archive. Within the framework of this project more than the half of the records was digitized, de-noised and stored on digital recording media. Since then restoration and digitization activities are done in the Institute on a regular basis. As a result a large collection of sound files has been gathered.

Our further efforts are aimed at the creation of a digital corpus of Bulgarian dialects, which will be made available for phonological and linguistic research. Such corpora typically include besides the sound files two basic elements: a transcription, aligned with the sound file, and a set of standardized metadata that defines the corpus. In our work we will present considerations on how these tasks could be realized in the case of the corpus of Bulgarian dialects. Our suggestions will be based on a comparative analysis of existing methods and techniques to build such corpora, and by selecting the ones that fit closer to the particular needs. Our experience can be used in similar institutions storing folklore archives, or history related spoken records etc.

Keywords: phonology, corpus, corpus linguistics, audio archive, digitization, restoration, metadata, alignment, transcription, phonetics

IMPOSSIBLE & ADVANCED OPTICAL CHARACTER RECOGNITION USING A CHEAP POINT & SHOOT DIGITAL CAMERA

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Abstract:

This study was conducted using a point & shoot digital camera Konica Minolta DiMAGE X1 with 8.1 Megapixels with no previous adjustment at 3264x2448 pixels with 72 dpi. Samples from four books were used:

1. [MILTON, JOHN.] *The Grand Case of Conscience concerning the Engagement Stated & Resolved*, printed in London 1650

2. [Petkov-Misirkov, Krste.] *Za makedonskite raboti*, printed in Sofia 1903

3. [de Montesquieu, Monsieur.] *Oeuvres*, Tome I, printed in London 1787

4. [VARIOUS AUTHORS] *Macedonian Review*, year IV, book#4, printed in Sofia 1933

Only JONH MILTON book was "scanned" at Alexander Library at Rutgers, the State University of New Jersey with expensive professional camera scanner. It is used here for the sake of the comparison in relation to the curve of the pages and the high-resolution professional cameras Vs cheap point & shoot digital cameras.

The "scanning" was performed using a light bulb of 50W in room conditions. Some pattern training was done using Abbyy Finereader 6.0. Different compression methods were used to reduce the file size to its minimum web centricity. Optical Character Recognition engines require the minimum of 150 dpi (the optimum is 300 dpi) for accurate results. Using an experimental program with Abbyy Finereader 5.0 engine at 72 dpi JPEG (instead of TIFF) files some amazing results appeared.

»SI-STORY: DIGITIZATION OF SLOVENE HISTORICAL CONTENTS«

Žarko Lazarević (Zarko.lazarevic@inz.si)

Abstract:

In paper, we wish to present the project of digitization of Slovene historical literature and historical sources as part of Slovene cultural heritage, which was launched at Institute of Contemporary History in Ljubljana with all the emphases on the needs and requirements of research community, i.e. Historians.

MICHAEL: A NETWORK OF PORTALS PROMOTING ACCESS TO DIGITAL CULTURE ONLINE

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Abstract:
MICHAEL (Multilingual Inventory of Cultural Heritage in Europe) is a multilingual online catalogue, which aims to provide quick and simple access to the digital collections of museums, libraries and archives from European countries. Students and researchers will be able to discover information about European digital collections that might previously have been difficult to find. The service aims to support also cultural tourism, the creative industries and other interests, and is provided taking into account a multilingual audience and interoperability issues. For cultural institutions, cataloguing their digital collections in MICHAEL is a way of advertising them to users an to make them available for everyone to find and use creatively.

Italian and French Culture Ministries and UK national agency responsible for cultural policy led the initiative, started in 2004; with the aim of implementing an innovative multilingual open source platform, equipped with a search engine providing the ability to search, browse and examine multiple national cultural portals from a single point of access. Eleven more European countries joined in 2006, with the MICHAELplus project. Further participations are ongoing and fostered, in order to achive a fully European inventory.

Keywords: collection description, interoperability, multilingualism, digital access

NATIONAL PROGRAMME OF DIGITIZATION OF ARCHIVAL, LIBRARY AND MUSEUM HOLDINGS

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Abstract:
The aim of this paper is to present the National Programme of digitization of archival, library and museum holdings of the Republic of Croatia and the National project "Croatian Cultural Heritage" as the outcome of the Programme.

The National Programme was adopted by the Croatian Government in October 2006 as the integral part of the Strategy for the Development of Broadband Internet Access.

The national programme of digitization of archival, library and museum materials is geared at promoting and assisting the systematic and standardized approach to the digitization of material in cultural institutions, forming and offering cultural content and services by way of digital copies and use of information technologies in the protection, processing and use of materials.

The programme is aimed at formulating the long-term policy of digitalization and promotion of institutional, technological, professional and organizational capacities and infrastructure considered necessary for developing comprehensive, usable and sustainable cultural contents and services in a digital environment.

It has been drafted in the compliance with fundamental European documents from that field, particularly with EU's i2010 strategy and i2010: Digital Libraries, which are essential part of Europe's drive towards an inclusive, knowledge-based economy and society.

Keywords: digitization, archives, museums, libraries, National Programme, cultural institutions, cultural contents, cultural services, digital collections, long-term preservation, accessibility

DIGITIZATION OF MATHEMATICAL EDITIONS IN SERBIA

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Abstract:
We describe an ongoing project carried out by the Mathematical Institute of Serbian Academy of Sciences and Arts, and the Faculty of Mathematics, Belgrade. The project concerns building of electronic resources and presentations of electronic editions of mathematical works in Serbia, including retro-digitization of old books, articles and the other mathematical works, and development of the corresponding virtual library. The resources built in the project are freely accessible through Internet.

Keywords: digital libraries, retro-digitization, mathematical journals, mathematical books

IMAGE AND ITS MATRIX. MATRIX AND ITS IMAGE

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Abstract:
Grayscale image is stored in the computer in the form of pixels matrix (all its elements are from the set {0,1,...,255}). For color image representation, we use three (or four) such matrices. On the other hand, mathematicians (first of all numerical analysts, but also people who engage in image processing) often use matrices with high dimensions. High dimensional matrix is difficult to understand, and its presentation with image is proved useful. In such matrix presentation, we have to take into account that its elements may be arbitrary numbers (big and small, positive and negative, integer and rational, real and complex).

DIGITAL NATIONAL LIBRARY OF SERBIA

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Abstract:
National Library of Serbia has been developing a Digital Library since 2003. After these four years, Digital National Library of Serbia presents an unique resource of digitized cultural heritage in Serbia and closer environment, providing free and full access to 40 digital collections and to a half of million of digital documents. Built on the principles of an open access to the knowledge and information and offering Serbian national treasure online, Digital National Library of Serbia has reserved a place on the world digital library map.

The richest collections in this moment are digital copies of Politika newspaper from 1904 to 2000 with the period 1904-1941 available online and Serbian Cyrillic manuscript collection based on the National Library collection and enriched by the collections of several Serbian monasteries. Only the selected parts of this collection are available online. There are also very valuable special collections from the treasures of National Library: Graphics from Mount Athos, Gramophone records on 78 rpm, containing 600 digitized items, Playbills of Serbia and Kingdom Yugoslavia, Old maps and Plans, rich Photographic collection. Book collection is consisting of Serbian Children's Digital Library, Old and rare books and Serbian literature.

DIATHESIS, A NEWSPAPER DIGITIZATION SUITE

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Abstract:
The timely creation of metadata in a document classi_cation process poses a signi_cant challenge for the digitization of newspapers, magazines and other relevant archival material. Currently there are several approaches for classifying this type of digitized material. The _rst approach relies on manual completion of metadata given a speci_c thesaurus (reserved vocbularies). The second relies on the manual completion of text contained in the original document for full-text purposes. Finally the last approach makes use of OCR (optical character recognition) technology for full text indexing purposes.

Each one of the above mentioned approaches has its advantages and disadvantages. In the DIATHESIS system we tried to implement a novel hybrid approach based on the three previous ones. The system provides the user a web-based interface that enables him/her to annotate speci_c segments of a document, extract the OCR text that corresponds to that segment and describe the segment with detailed metadata information based on the CIDOC conceptual reference model.

XML ENCODING OF PLACE NAMES

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Abstract:
The version of the TEI Guidelines currently under development, P5, makes available greatly enhanced facilities for the encoding of data pertaining to people, as presented at the SEEDI conference last year. Closely related to this, enhanced facilities have now also been developed for encoding data about places of any kind - whether countries, regions, cities, buildings, battlefields, rivers or standing stones. These new facilities have been developed principally with the needs of historians and prosopographers in mind, but the TEI has also taken into account the needs of others who deal with place- and personal names, in particular onomasticians, for whom individual persons and places are first and foremost 'instances' of names; while there has hitherto been no fully satisfactory method within the TEI for recording canonical information about the name itself, as distinct from both its application to a person or place and the person or place to which it is applied, such a method is now available.

PRELIMINARY STEPS IN LETTER AND WORD MATCHING

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Abstract:
Three different preliminary steps are examined in letter and word-matching process based mainly on modifications of Hausdorff type distances. The adjustment of the image with respect to the model plays a crucial role for the proper searching results. Mass and geometric adjustments are compared numerically to translation adjustment of the image that minimizes the distance used as a measure of proximity. These approaches are implemented carrying out computer experiments using more than 300 pages of bad typed text. The results are reported in terms of standard estimations Recall and Precision.
They show that there is no superior adjustment and the strategy depends mainly on the size of the image.

Keywords: document text image, Hausdorff type metrics, image matching

DIGITIZATION OF MATHEMATICAL TEXTBOOKS USED IN SERBIA BEFORE SECOND WORLD WAR

Nada Pejović

EDUCATIONAL ASPECTS OF DIGITIZATION OF NATIONAL HERITAGE

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Abstract:
In this paper we present the role of the Center for Digitization of National Heritage (CDNH) in the educational process at the Institute of Informatics, FSNM, Skopje. CDNH acts as a bridge between the cultural institutions in Macedonia and the students taking the Multimedia course at the Institute of Informatics. The results show that the presented approach is highly motivating for the students.

Keywords: digitization, CDNH Macedonia, education, educational motivation

NIKOLA TESLA MUSEUM CLIPPING LIBRARY

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Abstract:
The archive of Nikola Tesla Museum contains the clipping library with thousands of clippings from newspapers and other publications. The library contains original clippings and many Tesla's annotations. In a joined effort, Faculty of Mathematics and Nikola Tesla Museum are committed to digitize and publish online the entire library. The clippings are processed to provide both original visual look and advanced search techniques. A web application is developed to provide the library online access.

OPTIMIZATION OF MUSIC DIGITIZATION

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Abstract:
The use of microtonal music scales (other than those, which is based on the equal tempered twelve semitones) is discussed. The western musical tuning notation is widely used now, but it is not quite adequate to record some modern genres (e.g. rock music) as well as many ancient and/or non-European compositions (E.g. Byzantine or Indian music). A mathematical approach based on solving simultaneous Diophantine approximation by the use of linear programming software is proposed and some experimental results are presented. An application towards the optimization of MIDI computer file standard is outlined.

Keywords: Digitization of music, Microtonal music, Simultaneous Diophantine approximation

DIGITALIZATION OF ARCHIVAL CULTURAL HERITAGE AND REPARATION FOR UPLOADING TO INTERNET

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Contents:
- Introduction
- Experiences in digitalization of archival and library material in Kotor
- Digitalization of documentary heritage and preparation for uploading to Internet (project of digitalization of Kotor church archives and library. Proposal for choosing the software for preservation and presentation of archival material. Importance of data format. Standards for the protection of records)
- Conclusion

RECENT TRENDS IN METADATA GENERATION

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Abstract:
The technical, descriptive and semantic metadata of the digital object are necessary for its inclusion into a repository and for all subsequent uses of the available digital materials. These metadata are also needed for the management of the repository and for the support of the processes of long-term preservation.

The manual extraction and revision of the relevant information is expensive and time and effort consuming. Since the amount of digital information being produced nowadays increases at an exponential rate with expectations for the 'Year 2010 problem', manual methods cannot answer the needs of the preservation sector. In addition, metadata should be easily accessible from applications for the Semantic Web, which are based on ontologies' use.

The paper will present an overview of current research on metadata generation. It will discuss some expectations for the future.

Keywords: metadata, generation, long-term preservation

STAR MAPS DIGITIZATION AND CONNECTION WITH DATA BASES

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Abstract:
The aim of the project is to preserve old astronomical star maps as the part of world cultural and scientific heritage. Star maps, besides visual information, contain information about space, relations between space of objects and some properties of each star map object. For complete digitalization of this specific cartographic material it is necessary to do next steps: to scan cartographic material, to manage metadata, to remove deformations of scanned material, to transfer data from scanned material into specific geospatial data base, and, to connect geospatial data base with astronomical data bases. The scanned star maps are integrated in Geographic Information System (GIS) working with maps in vector format. The star map projection, construction pole and main scale are automatically recognized by elements of cartographic net. We include mathematical formulas for coordinate transformation from recognized projection into celestial equatorial coordinate system (spherical) and transition to certain desired epoch. With star map digitization, we obtain an electronic map, which provides a full suite of powerful data analysis tools, including attribute and spatial query, buffer zones and spatial overlays. The query results can be sending as queries for researching specialized databases of celestial objects and bibliographic databases on Internet, which give us additional information sets about each celestial object.

Keywords: digitization, star maps, geographic information system, databases