

The Third International Conference

**NEW TECHNOLOGIES AND
STANDARDS:
DIGITIZATION OF NATIONAL
HERITAGE 2004**

Abstracts

**Faculty of Mathematics, Belgrade
Studentski trg 16, Belgrade, Serbia and Montenegro
Jun, 3-5, 2004**

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CONTENTS

Micheál Mac an Airchinnigh: The Graven Image — Digitized and Philosophized	5
Vesna Bižić-Omčikus, Miroslav Mitrović, Zoran Cvetković: Museum Information System - Design Methodology, Implementation and Perspectives	6
Dragan Blagojević: Some Problems with Serbian Cyrillic Letters in TeX	6
Reneta Vankova Bozhankova: Cultural Memory And Cultural Hybridization On The Internet. The Slavic Joining.	7
Filip Brčić: DjVu: The Standard for Scanned Documents	7
Robert Davies, Jasmina Ninkov: CALIMERA: Coordinating Europe's Research And Technologies For Local Cultural Institutions	8
Tomaž Erjavec, Matija Ogrin, Jože Faganel: e-Slomšek: a TEI Encoding of a Critical Edition of 19th Century Slovenian Rhetoric Prose	9
Vladimir Filipović, Dušan Tošić, Jozef Kratica: Using SVG – XML for Representation of Historical Graphical Data	10
Aleksandra Fostikov, Nenad Milenović: Problems Regarding the Application of Internet During the Historical Research	11
Vesna Injac: Strategy of the Development of the Digital Library in the National Library of Serbia	12
Vitomir Jevremović, Nenad Tasić: Archaeopack - New Experiences	13
Adolf Knoll: Digitized Cultural Heritage	13
Aleksandar Krapež, Žaklina Marjanović: A Digitalization of Data on Fungal Biodiversity in Serbia	14
Jovan Krstić: Legislation and Intellectual Property Rights Protection: Legislation in the Domain of Criminal Procedure Act	14
Molnar B. Lehel: A Historical Approach of the Cultural Heritage	15
Eugenio R. Luján: <i>Hesperia</i> : The Electronic <i>Corpus</i> of Palaeo-Hispanic Inscriptions and Linguistic Records	16
Mirko Marković, Mirjana Lazić: NGO Potentials in Cultural Web Portals	16
Žarko Mijajlović, Vladimir Ćorović, Tijana Zečević, Nada Đorđević, Marija Ilić, Nikola Šćepančević, Zoran Ognjanović: Virtual Library, Data Base of Textual Data	17

THE GRAVEN IMAGE — DIGITIZED AND PHILOSOPHIZED

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Abstract: Each people in its time uses the technology of its age to create, transmit, and preserve its own cultural heritage within the conceptual framework of the understanding of its own purpose and existence. Before the recent emergence of the Digital Age, characterized and typified by the World-Wide Web, cultural heritage of the other was often a matter of physical tourism or of scholarly inquisitiveness or even of a certain kind of xenophilic voyeurism. That cultural heritage ought to be singled out by name as such with respect to its own people suggests that it has become commodified and therefore begins to lose its meaning for the very people whose identity qua people depends on it.

On the other hand barring the complete yet conceivable destruction of the Digital Age each people is invited to rediscover its purpose and existence by reaffirming its past and its culture and by becoming even more human in a globalized sense by engaging the culture of the other by choice.

To engage with one's own people and the other through presentation of one's own digitized cultural artefacts is probably one of the greatest challenges facing a people in the Digital Age. We are at the beginning. Natural language is a natural barrier. Even with automatic translation between languages the nuances of the other will not come through easily. Therefore it might be supposed that the more visual form of the image is the more suited to such globalized understanding. But...

Herein is presented a framework based on the notion of pattern language whereby the digitized cultural artefact may be exposed, explored, weighed up, accommodated, and possibly assimilated by each one, by everyman, who comes into contact with it in the Digital Age.

Key words: artefact, digital age, everyman, iconoclasm, image, humanism, pattern language, philosophizing, technology.

CULTURAL MEMORY AND CULTURAL HYBRIDIZATION ON THE INTERNET. THE SLAVIC JOINING

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DJVU: THE STANDARD FOR SCANNED DOCUMENTS

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Abstract: DjVu (pronounced "déjà vu") is a document standard for efficient storing the scanned paper documents that could include color graphics, photographs in relatively small files suitable for web publishing.

E-SLOMŠEK: A TEI ENCODING OF A CRITICAL EDITION OF 19TH CENTURY SLOVENIAN RHETORIC PROSE

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Abstract: In this paper we describe the first Slovenian electronic critical edition, "The Three Sermons on Language" by Anton Martin Slomšek (1800-1862), Slovenian bishop, reformer and man of letters. The e-edition comprises digital facsimiles of the manuscripts, diplomatic transcription, critical transcription and apparatus. The e-edition is based on XML technology and all of the components are marked-up following the Text Encoding Initiative Guidelines, TEI P4 . It was published as a result of cooperation between two Slovenian research institutions, the Scientific Research Centre of the Slovenian Academy of Sciences and Arts and the Jožef Stefan Institute; it is freely available at <http://nl.ijs.si/e-slomsek/>

Key words: textual criticism, critical editions, XML, Text Encoding Initiative, Anton Martin Slomšek, 19th century Slovenian literature

PROBLEMS REGARDING THE APPLICATION OF INTERNET DURING THE HISTORICAL RESEARCH

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Abstract: The lecture consists of two different parts - theoretical and practical one. Theoretical part implies several problems regarding the application of internet during the historical research: its significance and positive sides, various problems a historian encounters during the course of such application, its prospects in the future, etc. On the other hand, practical part of this lecture comprises the review of a number of various Internet sites significant for medieval history as well as those important for the history of the period extending from the French revolution until the First World War. Information about the contents and the language are also given along with the addresses of these sites. This lecture will be also accompanied with apt presentation.

ARCHAOEPACK - NEW EXPERIENCES

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DIGITIZED CULTURAL HERITAGE

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Abstract: This paper presents the principles of two Czech national digitization programmes: Memoria and Kramerius. The presentation concerns the question of imaging and also that of complex metadata formats developed for digitized documents. Both programmes offer rare library materials – manuscripts, old printed books, historical maps, and endangered acid-paper periodicals and monographs on Internet.

Keywords: digitization; imaging; metadata document formats; access applications

A HISTORICAL APPROACH OF THE CULTURAL HERITAGE

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Abstract: Our material, spiritual and written values accumulated during the centuries constitute the cultural heritage. Heritage, that is related to the notion of eternity. The heritage is eternal, beyond the time. These values will remain beyond the time if we will assume responsibility through all ages for their preservation.

The notion of cultural heritage has become spread in the Western European political and scientific discourses only the last three decades – especially in France and Great Britain. In Hungary, the notion became present in the political discourses only through the establishment of the Ministry of National Cultural Heritage, in 1998. The Hungarian scientific life reacted and was involved in the codification process conducting to the legal definition of the term only afterwards. For different nations, the cultural heritage becomes national heritage, representing in the same time also the national identity of that nation. The term of national heritage (patrimoine nationale) was conceived in France in 1790, during the revolution, when generic noun of books, manuscripts, paintings confiscated from the clergy required a new category of expression.

Until the 1960s the term of national heritage included essentially the historical monuments, the selection being based on the age, respectively ancientness of their production. The term of heritage was broadened according to the national and European legislation only the late '60s, the Council of Europe itself defining for the first time the term only in 1985.

We can see that as yet the deep concern for heritage, more exactly for cultural heritage has not a broad historical tradition. For this reason, the research of heritage can reveal new perspectives. There is conceivable that some social scientists and philosophers will specialize themselves in heritage research and in thus will appear new fields of study in the framework of archives and library science, musicology, history of arts, archeology, ethnography etc., conducting to further specialization in the field of social sciences.

VIRTUAL LIBRARY, DATA BASE OF TEXTUAL DATA

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The overall aim for the digital library is to create a comprehensive and semantically interconnected collection of retro-digitized books and other digital documents. Our proposal is mathematically inclined, more specifically the project is concerned with digitization of books and other manuscripts satisfying the following criteria:

- Books and other manuscripts contained in Serbian public and semi-open libraries (departmental libraries and private collections).
- Books and manuscripts should be mainly with topics in mathematical sciences: mathematics, mechanics, astronomy, physics and mathematical geography.
- Books considered for digitization should be published before First World War (1914).
- Preference will be given to Serbian authors, or to works somehow related to Balkan area.

We note that there are relatively large collections of "rare" books. For example, the Faculty of Mathematics has in its possession about 500 mathematical books published in 19th century or earlier. On the other hand, just few of them can be found in joint catalogs of the network of largest Serbian libraries (that includes the National Library and all University libraries).

Important aspects of the projects are as follows:

- Rules for deciding of choice and priorities to which manuscripts should be digitized.

APPLICATIONS OF GPS IN PRESERVING CULTURAL MONUMENTS

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Abstract: The Global Positioning System (GPS) introduced a revolution in navigation and very precise determination of positions on Earth surface. It appears especially interesting for wide application after full implementation (1995) and removal of Selective Availability (which was used to degrade the accuracy of civilian receivers) in 2000.

We started a project three years ago which concerns the use of GPS in preserving cultural monuments and other sites of interest (sacral objects, archeological sites, old roads, unusual natural sites, etc.). The main uses of GPS we have in mind are:

Determination of geographical coordinates with accuracy to 10 meters.

Noting and drawing roads and paths to the sites.

Determination of boundaries and areas of the sites.

Besides geographical data, other information are collected as well, such as the type of the monument, dating etc. The project concerns *Toplica*, the south-central region of Serbia. The region consists of about 2000 km². It has more than 100 sacral objects and more than 50 archeological sites. During the project we found several archeological sites (remains of medieval churches and remains of Roman settlements) which are not noted in the literature, as it seems.

XEDITMAN: A XML EDITOR FOR MANUSCRIPT DESCRIPTIONS AND ITS IMPLEMENTATION FOR CATALOGING OF BULGARIAN MANUSCRIPTS

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Abstract: The paper presents the specialized editor XEditMan (XML Editor for Manuscript Data) which is an XML-oriented tool for editing and browsing catalogue descriptions of mediaeval manuscripts. It offers a friendly interface for entering data on mediaeval manuscripts; visualisation and queries to the descriptions already available. The descriptions are compatible with the document type definition (DTD) structure suggested by the project MASTER (Manuscript Access through Standards for Electronic Records) and adopted by the Text Encoding Initiative. During the data entry the elements which are filled in appear in a sequence which is adopted in the manuscript cataloguing practice. The interface is in Bulgarian and this facilitates preparing electronic descriptions by people who are not acquainted in detail with the DTD structure. The tool can be used also for visualization of single descriptions in two modes: complete descriptions or user-selected group of elements. Comparative study of multiple descriptions is achieved through database queries. Currently, 250 descriptions are available. By June 2004 a collection of 800 descriptions on Mediaeval Bulgarian manuscripts stored in Bulgaria will be prepared.

Keywords: XML, manuscript cataloguing, visualisation

DIGITAL REPRESENTATION OF BOOKS FOR MULTIMEDIA STUDY

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Abstract: In this article we present an e-learning method suitable for educational purposes and various other forms of knowledge-gaining. Both the theoretical fundamentals and practical aspects of certain university syllabus courses are demonstrated in a digital format. The course includes various multimedia elements, such as text, tables, graphics and video clips, sounds, etc. The creative application of Information Technologies (IT) allows the user to organize and manage multimedia digital objects in a multimedia system. The course is presented in an electronic book and programmed as an independent multimedia system on single CD. In our experience, by working with the multimedia system, human "sensors" are stimulated for mastering the subject matter and the degree of responsiveness is increased.

It is possible to implement a similar multimedia representation of digital objects in order to provide easy-to-understand educational techniques and gain knowledge in many other fields, e.g. medicine, cultural heritage, architecture, etc.

Key words: multimedia, computer graphics, information technologies, e-learning and education

SOFTWARE AND TECHNICAL SUPPORT FOR LONG-LIVED PHYSICAL COPIES OF TEXT AND GRAPHIC DATA

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Abstract: Preliminary assessments of the harm caused by the floods in Europe (summer - 2002 and January - 2003) show that full restoration of damaged books, scripts, archives and other materials will be impossible.

The main obstacle isn't just financial issue. The task requires Herculean efforts, so, the key problem will be lack of time and professionals.

If we put all books and other materials in one shelf the length of this shelf only for Germany will be equal to 120 km.

Here are some basic principles of the activity scheme:

- Expert evaluation of the damaged materials and definition of work priorities;
- Maximum automatization of all routine operations:
 - image input;
 - elimination of the image distortions;
 - transformation of printed text images into text files;
 - generation of reserve machine-readable copies;
 - development and duplication of long-lived physical copies.

In the framework of our presentation we are going to demonstrate You the unique software which enables automatic elimination of distortions in diagrams, drawings and texts (both hand-written and printed) in any language. This software is designed to improve black-and-white images.

Besides, there will be demonstrated some samples of drawings and texts put on special metal plates with a help of technology allowing to store information for centuries. This issue seems to be of particular importance if we take into account that the life span of computer technologies is quite limited.

EDUTAINMENT (GAME) - DIGITAL (RE)DISCOVERY OF CULTURE.

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CHRONOLOGICAL DISTRIBUTION OF THE COIN FINDS IN BULGARIA - FOR A QUARTER CENTURY (1910-1934)

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Abstract: In this paper we put together the data for coin finds, reported in the early Bulgarian archaeological journals in the period 1910-1934, construct the chronological distribution of the coins described there and present it in a convenient form.

Key words: digitization, coin finds chronological distribution.

THE IMPORTANCE OF DIGITALISED DOCUMENTS IN THE PRESERVATION WORK OF CULTURAL HERITAGE

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The complex reconstruction and restoration works of heritage sites are greatly dependent on quality documentation of the existing state as well as planned work. It is also required to document the procedures and materials that were used. The experience of the Serbian preservation team in Hilandar Monastery and heritage sites in Kosovo and Metohija shows the importance and urgency of digitalisation of existing plans, photographs and inventory of fixed and movable objects at the same storage facility.

SERBIAN MATHEMATICAL LITERATURE AND ART IN *ARCA DI NOÈ*

Dragan Trifunović

Abstract: The author of this article is exploring the history of mathematics in Serbia for several decades. Accordingly, he has important recommendation for digitization in this area. Some of the proposals concern medieval and Renaissance works. The sources are found in frescoes in medieval Serbian monasteries, then in old monuments, incunabula, old paintings, engravings, old journals, albums, medaillons, etc.

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