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The Sixth SEEDI Conference Digitization of Cultural and Scientific Heritage

Zagreb, Croatia, 18-20 May 2011

Book of Abstracts

Organizers:

NACIONALNA I SVEUČILIŠNA KNJIŽNICA U ZAGREBU

Republika Hrvatska Ministarstvo kulture
Republic of Croatia Ministry of Culture

HRVATSKI DRŽAVNI ARHIV

MDC

MSU MUZEJ SUVREMENE UMJETNOSTI ZAGREB MUSEUM OF CONTEMPORARY ART www.msu.hr

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Dunja Seiter-Šverko (Croatia)

Dear attendees of the Sixth SEEDI conference,

Digitization of cultural and scientific heritage is often seen as a simple process of scanning various objects (books, journals, monuments, smaller or larger museum items, sound recordings). However, the fact is overlooked that it is [about] the creation of a system, which entails the scanning and creation of a model of metadata, used to simultaneously describe the object of digitization, place it into relation with other digitized objects, and determine the method of search on the level of a collection, or a system. The development of a repository which ensures ingestion, storage and use of the objects, as well as allows participation in the large systems dispersed across the Internet, and the national, European, and international systems, is the most democratic form of knowledge dissemination.

In this sense, the digitization projects are initiated based on the value of the materials, their physical condition, and their importance for the institution, and the local, regional and national identities. The National and University Library in Zagreb is a synergy point of the Croatian library system, as well as an information source, used for learning about tradition, uniqueness and authenticity, and also used to continuously observe the history and development of the nation, its institutions and their activities through centuries. The library is a hub of communication, a place where new competences are acquired, regardless whether it is using the physical space of the library, or one is located in the virtual space of the materials available. It is an interdisciplinary space, where information and knowledge are shared, a multimedia centre of culture and art, founded on creativity and accessibility.

When conducting digitization projects, relying primarily on its own materials, the National and University Library in Zagreb saw each project as national in its scope, building systems open to others. The notion of sharing knowledge, skills and competences as an indispensible aspect of digitization is also reflected in this Conference.

It is, therefore, a pleasure and an honour to be the main organizer of the Sixth SEEDI Conference, where experts and scientists have gathered from the countries of the south-eastern Europe, and colleagues from other parts of the world, as well as Croatia. Sharing ideas is the main objective of this year's Conference, as it was of all the previous ones.

With my gratitude to the Organizing and Programme Committees, a special thank you is due to the colleagues from the National and University Library in Zagreb, as this Conference would be impossible to organize without them. The fact that the national programme of digitization is a strategic objective is reflected in the strong support given to this Conference by the Ministry of Culture, and to them I extend my particular appreciation.

Dunja Seiter-Šverko
Programme Committee Chair
Acting Director General
National and University Library in Zagreb

Dear attendees of the Sixth SEEDI Conference,

it was with great pleasure that I have accepted to participate in the work of the Organizing Committee of the Sixth International SEEDI Conference, which is being held between the 18th and 20th May 2011 in Zagreb.

The development of the cultural and scientific heritage, sharing experiences in digitization, encounters of scientists and professionals from the area of humanities and social sciences, as well as sciences and information sciences, and particular care for the protection and accessibility of heritage are all part of the pledge for the increase in knowledge and skills, and ultimately, a requirement for the creation of a successful society, which is also the aim of the countries of the South-Eastern Europe.

Allowing the creation of new values through the option of further use and remodelling of knowledge, the digital media are conducive to knowledge dissemination and its further use. Therefore, the Ministry of Culture is the initiator, the administrator, and the implementing force behind the National Digitization Programme, with strong footing in the budget of the Republic of Croatia.

Endorsing the co-organization of the SEEDI Conference in Zagreb, we have also provided the financial support, having realized the significance of this international initiative for the development of the digitization of cultural and scientific heritage in the countries of the South-Eastern Europe. With its programme, the Conference demonstrates its place among the projects of development on the Pan-European level, and confirms the support from prominent European experts and scientists.

I would like to thank the main organizer, the National and University Library in Zagreb, for the efforts invested in the Conference organization and programme design, as well as for gathering other institutions, their natural allies – the Croatian State Archives, the Museum Documentation Center, and the Museum of Contemporary Art.

I believe that the Festival of the Croatian Digitization Projects will also show the efficiency and variety of the projects of digitization of the archive, library and museum materials, the value of their keepers and promoters of their importance, as well as the unique nature and originality of the Croatian cultural heritage.

Jasen Mesić
Minister of Culture of the Republic of Croatia and
Chair of the Organizing Committee

About the SEEDI Conference

The aim of the Conference is to present and exchange experiences on new information technologies, standards and the other topics in the area of digitization of cultural and scientific heritage, including, but not limited to:

- digital capture and transformation from analogue to digital form,
- describing and representations of heritage objects and documentation about them,
- processing of digitized content,
- presentation and long term preservation of digitized content.

SEEDI is an international effort to develop awareness about digitization of cultural and scientific heritage in the South-Eastern European countries and to bring together:

- archivists, librarians and curators responsible for the preservation of and permanent access to cultural and scientific heritage;
- information technology researchers developing projects on digitization of cultural and scientific heritage,
- scholars in the arts and humanities, social sciences, history and computer science, students and all the other interested in digitization of cultural and scientific heritage.

The official language of the Conference is English.

PROGRAMME

Tuesday, 17th May 2011

Hotel Palace / Arrival of participants

19.00 Welcome drink

Wednesday, 18th May 2011

Croatian State Archives

08.00 – 09.00 Registration

09.00 – 09.30 Welcome addresses and opening of the conference

09.30 – 11.00 Horvat, Aleksandra; Živković, Daniela: Copyright Issues in Digitization Projects in Croatia (invited lecture)

Dreyer, Malte: Digitization and Beyond: Infrastructures for Digitized Resources (invited lecture)

Zlodi, Goran: Virtual Catalogue of the Exhibition „Slavonia, Barany and Syrmia – the Origins of European Civilisation"

(invited lecture)

Discussion

11.00 – 11.30 Coffee break

11.30 – 13.00 Uhlíř, Zdeněk: Manuscriptorium: Cooperating, Networking, Virtualising (invited lecture)

Velagić, Zoran; Jakopec, Tomislav: Utilizing Comparative Advantages of New Platforms in Digital Collection Edicija: "Dual Approach" in Presenting the Old Prints

(invited lecture)

Pintarić, Snježana: Digitization of Contemporary Art

(invited lecture)

Vučković, Vesna: Digital Watermark in Digital Images and E-Books

Discussion

13.00 – 14.00 Lunch break

14.00 – 15.00 **Krstulović, Zoran; Šavnik, Mojca:** Library Material Digitization Project Coordination and E-Content National Aggregator in the Field of Culture

Lemić, Vlatka: Croatian State Archives and ICARUS – Cooperation in the Framework of European Archival and Cultural Networks

Sofronijević, Adam; Mitrović, Jelena: "Europeana Libraries" Project: Fostering Digitization Across Europe

Hadjikolev, Emil; Vragov, Georgi; Totkov, Georgi; Ivanova, Krassimira: Towards an Aggregator of Heterogeneous Cultural Artifacts

Discussion

15.00 – 16.00 **Marinković, Bojan; Ognjanović, Zoran; Butigan Vučaj, Tamara:** A Distributed Implementation of a Catalog of Digitized Cultural Collection

Pescarin, Sofia; Rizvić, Selma; Selimović, Dino: V-MusT.net – The Virtual Museum Transnational Network

Radovanlija Mileusnić, Snježana: A Project for the Digitization of a Manuscript Bibliographic Unit – Opportunities for and Implementation of the Virtual Contextualisation of Text

Mijajlović, Žarko: Overview of Certain Digitization Projects in Serbia

Discussion

16.00 – 16.30 Coffee break

16.30 – 18.00 Brumen, Matija; Blatnik, Alenka: Recent Developments and Results from EOD – eBooks on Demand from European Libraries at National and University Library

Dobreva, Milena: Testing and Evaluation in Digital Preservation Projects: the Case of KEEP

Hadži-Purić, Jelena; Vesić, Dušan; Rančić, Sandra; Dobrić, Jasmina: Multimedia Project "Behind Rockovnik"

Bulatović, Nataša: ESciDoc, VIRR and Digitization Lifecycle – Insights Into an Infrastructure for Management of Digitized Resources

Jeremić, Nenad: Online Search and Redaction System

Discussion

18.30 Guided tour of Zagreb (departure from the Croatian State Archives)

Thursday, 19th May 2011

National and University Library in Zagreb - Conference room, mezzanine

8.30 – 9.30 and

11.30 – 12.30 Tours of the National and University Library in Zagreb

Workshop by Milena Dobreva and Pierluigi Feliciati: User Studies for Digital Libraries Development

9.30 – 11.00 Worshop – first part

11.00 – 11.30 Coffee break

11.30 – 13.00 Workshop – second part

13.00 – 14.00 Lunch break

14.00 – 15.30 Jerele, Ines; Erjavec, Tomaž; Pokorn, Daša; Kavčič-Čolić, Alenka: Optical Character Recognition Problems in Mass Digitization of Historical Newspapers and Journals: End-User Focused Applicative Solutions for Slovenian Newspapers from the 18th to the 20th Century

Zajec, Jasenka; Klarin Zadravec, Sofija: Digitized Croatian Historic Newspapers and Journals

Šavnik, Mojca; Musek, Tine; Baždar, Saša: Digitization of Old Newspapers in the National and University Library of Slovenia (NUK) – Examples of Good Practice

Golubović, Dragan: Digitization of BiH Press and Magazines – Experience of INFOBIRO Digital Archive

Nenezić, Snežana; Veljković, Miljko: Digitization of Historical Newspapers and Journal "Synthesis – Journal for Arts and Culture (1970 - 1987)"

Discussion

15.30 – 16.00 Coffee break

16.00 – 17.00 Horošavin, Boris: Digital 3D Technology and Cultural Heritage: Standards and Innovations

Čajavec, Tanja; Skočir, Primož; Dolenc, Franc; Vidmar, Gregor: Project ARTOTEKA – The Modern Way of Digitization, Inventorization and Popularization of Contemporary Visual and Intermedia Art

Antlej, Kaja; Celec, Kristjan; Menaf, Sinani; Mirtič, Erazem; Ljubič, Darja; Slabe, Janja; Lemajič, Gorazd; Kos, Mateja: Restoration of a Fruit Bowl with a Leg Using 3D Technologies

Pavlov, Zoran: Information about the Regional Centre for Digitization

Poster reports

Milovanović, Miloš: About the Book Chess – a Symbol of the Cosmos

Rajić, Sanja: Digitization in Secondary-School Teaching

Šegan, Marija: Identification of Some Historiographic Dilemma on an Example of Digitization of Selected Publications of the Hydrographic Institute in Split

Discussion

17.30 SEEDI Board Meeting

Friday, 20th May 2011

Museum of Contemporary Art Zagreb

First Festival of Croatian digitization projects

9.00 – 11.00 **Seiter-Šverko, Dunja:** Introductory Speech

Brkić, Križana; Jelavić, Anja: EU Programme > Culture 2007-2013

Ziherl, Jerica: Digitizing Contemporary Art (DCA Project)

Klarin Zadravec, Sofija; Leščić, Jelica: DAR – Digital Academic Repository

Kružić, Borut: Natural History Museum Rijeka Collections Online Project

Horović-Vuković, Bruna: Digitization of the Map Archive for Istria and Dalmatia

Bužleta, Nadia: Project „Virtual Local Collection": Virtual Access to the Cultural Heritage of Istria

Tomšik Krmpotić, Dubravka: Digitization Project of the Museum Holdings of the Ilok Town Museum Permanent Exhibition

Dražin-Trbuljak, Lada; Franulić, Markita; Živčec, Doroteja: Digital Heritage of Croatian Museums in the Context of the Project 'Croatian Virtual Museums'

Volić, Ladislav: Digitization of the Record Group „The Magistrate of the Free Royal Town of Varazdin (1209-1850)", Series The Radical Archives, and of the Collection of Grants of Coats of Arms

Juričić, Vedrana: The Digital Collection of the Croatian Academy of Sciences and Arts

11.00 – 11.30 Coffee break

11.30 – 13.00 Filipčić Maligec, Vlatka: Digitizing Collections of Postcards and Photographs of the Museum of Peasant Uprisings: Expectations, Experiences, Doubts

Jurić, Mirjana: Cadastral Heritage in Digital Environment

Meić, Ismena: Digitized Zagreb Heritage – Metropolitan Library in the Web Environment

Zahtila, Dean: Underground City XXI (UC XXI)

Kuzman Šlogar, Koraljka; Miholić, Irena: Digitization of Melographic Notations

Ujlaki, Kristijan: Projects of Local Cultural Heritage Digitization in Fran Galović Koprivnica Public Library

Vrkić, Iva: Andrija Mohorovičić Digital Collection

Discussion

13.00 – 14.00 Tour of the Museum of Contemporary Art

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INVITED LECTURES AND PRESENTATIONS

COPYRIGHT ISSUES IN DIGITIZATION PROJECTS IN CROATIA

Aleksandra Horvat and Daniela Živković
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A proliferation of the EU programmes and action plans on digitization proves that there is a political will to digitize and make available to the public the rich cultural heritage of Europe. The presentation tracks the development of these ideas and actions and focuses on one of the obstacles to overcome - the lack of consistency in approaches to intellectual property rights. The aim of the investigation described in the paper has been to find out how copyright issues related to the digitization performed by public institutions such as libraries and archives have been dealt with in Croatia. Information collected from the national electronic portal Croatian Cultural Heritage was further enriched by interviews held with the persons responsible for digitization projects in four major public institutions in the country. A lack of suitable registries or databases with data on the national authors has been noted. Institutions show different approach to digital copies they produce; some consider themselves to be publishers and rights holders of new digital editions of works, while the others take digitization primarily as a means of protection of originals. As a rule institution have a policy of copyright management, even if a rudimentary one. All institutions provide copyright information, sometimes with a copyright disclaimer.

DIGITIZATION AND BEYOND: INFRASTRUCTURES FOR DIGITIZED RESOURCES

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Digitization and dissemination of digitized resources online is only the first step. Integrated digital research environments can extend the insight into the digitized

resources by weaving a network of additional semantic meanings and relations between them. The presentation will show the major German digitization endeavors, as well as examples of integrated virtual research environments for working with, and enriching digitized resources.

VIRTUAL CATALOGUE OF THE EXHIBITION „SLAVONIA, BARANY AND SYRMIA – THE ORIGINS OF EUROPEAN CIVILISATION"

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The exhibition and the cultural project "Slavonia, Baranya and Syrmia: the Origins of European Civilisation" presented in the Klovićevi Dvori Gallery in 2009, has shown the exceptionally valuable corpus of Croatian culture, built out of historical layers of culturally burdened spaces between the rivers Danube, Drava and Sava. The virtual catalogue of the exhibition (www.kultura.hr/slavonija-baranja-srijem) is a modern electronic version of the printed catalogue which, using the features of the electronic medium, provides new interactivity and experience of communicating this very numerous and rich heritage corpus. Two thousand exhibited items represent cultural treasure from 22 Croatian museums, galleries, libraries, church collections, archives, theatres, institutes and private collections. The catalogue of all the exhibits includes exhaustive metadata. The virtual catalogue provides multiple points of access to the items of heritage – through timelines, interactive maps, a list of thematic units and the inevitable search of the entire database. Furthermore, an exhaustive bibliography has been selected and compiled. Particularly noteworthy are the master photographs of the exhibition display by Vid Barac. Integration with the portal www.kultura.hr allows upgrades and networking of this valuable information resource. Such establishment of links among the many collections and heritage institutions involved in this complex cultural project ultimately provides a comprehensive access to heritage re-unified in the electronic medium.

MANUSCRIPTORIUM: COOPERATING, NETWORKING, VIRTUALISING

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National Library of the Czech Republic provides Manuscriptorium (www.manuscriptorium.eu) a resource which started to be developed as a manuscript digital library and after finishing the European ENRICH project (http://enrich.manuscriptorium.com) it became a base for the European digital manuscript library. It is based on cooperation on the European, eventually the global level, through creating network of memory institutions – holders of the older written and documentary heritage. Through creating a thick network of partners, integration of historic collections is done and consequently virtual research for work with written and documentary heritage is enabled. It allows both the reconstruction of disperse historic collections and goal-directed heuristics according to individual objects as well as topics. And when using an individual user account connected with Manuscriptorium, an important step to the publishing on the Internet is made. A new virtual environment of the Manuscriptorium is a big challenge to the traditional methodology of humanities because of the transformation from dealing with individual phenomena to working with mass phenomena.

UTILIZING COMPARATIVE ADVANTAGES OF NEW PLATFORMS IN DIGITAL COLLECTION EDICIJA: "DUAL APPROACH" IN PRESENTING THE OLD PRINTS

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The aim of the presentation is to identify and explore more effective and exploitable ways in presenting the old prints in digital (web and mobile) environment. The presentation has two main parts, the first facing the content development, and the second dealing with platform development. The content development strategy stems from the presumptions that two main approaches in the old print presentation, the one presenting only the text usually obtained through the OCR software, and the other presenting the print page in image file formats, deprive users either of the original context of the text presented (a print page with specific typography, margin size, position of page numbering and so on) or of the advantages of full text searchability. These two deficiencies can be solved by "binary" approach in content presentation, based on simultaneous view to both the image (a page) and the edited, searchable text. Regarding platform development, Edicija is developed on open source technologies. It runs on operating system Linux, web server Apache, relational database management system MySQL and server side programming language Hypertext preprocessor (PHP). Edicija implements web 2.0 principles using AJAX technology. The main goal on the technology level is to achieve visibility and functionality of the collection regardless of the device, operating system or browser. The application of the aforementioned strategies resulted in Edicija – the digital library of Croatian printed heritage, available at http://web.ffos.hr/EDICIJA.

DIGITIZATION OF CONTEMPORARY ART

Snježana Pintarić
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The process of digitization of the Contemporary Art collection at the Museum of Contemporary Art in Zagreb started six years ago, when we decided to post our collection on-line. At that point this was a very important decision, because the Museum was closed to the public, and our collection became invisible to the public. All the preparations for the presentation of the collection on-line went parallel with the works on publishing the Catalogue of the collection. Today we are working on two main digitization projects – 1. Digitization of the photo-documentation related to the collection and 2. Digitization of Conceptual art objects and documentation. The name of this project is Digitizing Ideas, and the project is financed by the European Union. Our partners in this project are the Museum of Contemporary Art Novi Sad, the Modern Art Gallery Ljubljana, and the Museum of Modern Art Warsaw. All contents (art works, documentation, photos, TV-and audio archives) referring to the Conceptual Art are digitized and will be available on a special website.

DIGITAL WATERMARK IN DIGITAL IMAGES AND E-BOOKS

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In the era of Internet and digital copies, there is a problem of copyright protection for intellectual property in digital format. Digital watermarking is recognized as one solution to this problem.

A brief description will be given of the results for images and e-books digital watermarking, which were obtained during author's work on cultural and scientific heritage digitization project.

LIBRARY MATERIAL DIGITIZATION PROJECT COORDINATION AND E-CONTENT NATIONAL AGGREGATOR IN THE FIELD OF CULTURE

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In 2007, the Government of the Republic of Slovenia designated in the Strategy of Information Society Development in the Republic of Slovenia – si2010 the vision and defined the goal of e-content development – to ensure access to the e-contents in the Slovenian language in all fields that significantly influence the life and work of an individual. In the field of culture accelerated digitization of existing analogue content, inclusion into the European digital cultural space and further development of the Digital Library of Slovenia have been especially stressed. In 2006, the National and University Library (NUK) established the Digital Library Development and Strategy Division, which manages all digital library processes and procedures. The article describes the basic tasks and objectives of the Division, including regular digitization of library material and digital collections' metadata creation. Recently, a new objective has been developed – co-ordination of digitisation in the Slovenian libraries. The Division will support the preparation of the technical documentation for digitization implementation, co-operate with selected digitization providers, provide digitization quality control and make the digitised material available on the Digital Library of Slovenia portal. Furthermore, the Division started to co-ordinate the planned digitization of library material at the national level. The Ministry of Culture has appointed the National and University Library in Ljubljana, Slovenia, as the national e-content aggregator for The European digital library Europeana.

CROATIAN STATE ARCHIVES AND ICARUS – COOPERATION IN THE FRAMEWORK OF EUROPEAN ARCHIVAL AND CULTURAL NETWORKS

Vlatka Lemić
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ICARUS - International Centre for Archival Research is an Association devoted to the creation and supporting of a common platform for mutual support in expert issues and project management consortium of various cultural and scientific European institutions. This Association founded in 2008 and situated in Vienna promotes international and trans-national cooperation between heritage institutions through the provision of professional, organisational and financial support for projects and strategies especially dedicated to accessibility of archival material in the digital form. The ICARUS network now comprises 84 members from 15 European countries and actively participates in several international projects: Monasterium, Matricula, Net.Archiv, Charters Network and ENArC. Monastarium, the virtual archives of medieval and early modern charters, is built as a multilingual internet portal and provides around 220,000 charters from more then 90 institutions, including those from Croatia. The Croatian State Archives joined ICARUS in 2009 and since then has actively participated in various programs and activities which aim to meet the challenges facing archives as a result of the ongoing changes in the society, economy and technology. In 2010 ICARUS started the international project ENArC (European Network on Archival Cooperation) guided in the framework of the EU Culture Programme (2007-2013). The Croatian State Archives is one of the project partners, in charge of the design, technical implementation and maintenance of the common information platform and the project's web site.

"EUROPEANA LIBRARIES" PROJECT: FOSTERING DIGITIZATION ACROSS EUROPE

Adam Sofronijević and Jelena Mitrović
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The paper presents details of the project "Europeana libraries: Aggregating digital content from Europe's libraries" with a special focus on the participation of the Svetozar Marković University Library. This CIP-Best Practice Network ICT-PSP project brought together 24 institutions, including some of Europe's leading research libraries from 11 countries. During the two year course of the project, 2011-2013, with participation and support of LIBER, CERL, CENL and Europeana foundation, partnering institutions aim to build the library aggregator for Europeana and create the infrastructure that will allow the ingestion into Europeana of the digital materials from other research libraries across Europe after 2013. The Svetozar Marković University Library is the only partner in the project from a non-EU country and SE Europe. Two important collections, comprising 160.000 pages of old and rare books from the Ottoman collection, and the collection on Alexander the Great will be made available to international patrons through Europeana as a result of participation of the Svetozar Marković University Library in this project. The librarians from Belgrade will be partnering with colleagues from Europe on developing new metadata standard EDM (Europeana Data Model) and enhancing full-text searching capabilities and features of Europeana. Other libraries in the region will be profiting from the participation of the Svetozar Marković University library in this project, since one of the important aims is to create the aggregator for research libraries of the Western Balkan countries. In the course of achieving this goal, the research libraries from the region will be getting help for kick-starting their digitization projects, creating digital repositories and preparing metadata for the ingestion into Europeana.

TOWARDS AN AGGREGATOR OF HETEROGENEOUS CULTURAL ARTIFACTS

Emil Hadjikolev[1], Georgi Vragov[2], Georgi Totkov[1], Krassimira Ivanova[2]
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While Europeana already developed its strategy to include new digital objects through a network of aggregators and there are projects which prepare objects of specific types, the relatively low presence of objects from some countries could be explained by lack of digitisation strategy and respectively, a critical mass of digitized resources. This article presents an example of a project which addresses such a situation and aims to gather a significant amount of heterogeneous materials (presenting a wide range of movable and unmovable cultural heritage, e.g. historical buildings, archeological sites, museum and art galleries objects, etc.) which would be both used locally and would meet the requirements of Europeana for subsequent aggregation. Our approach is based on open access solutions and offers possibilities of personalization of the repository interface. A particular difficulty we had to address was that there was no aggregator identified for museums and unmovable heritage content in Bulgaria, and due to specific conditions of introducing digitization in Bulgarian cultural heritage institutions, this work has not been done on large-scale level. The experimental Catalogue of the cultural and historical objects (http://www.plovdiv-eu.com) is our basic practical outcome.

A DISTRIBUTED IMPLEMENTATION OF A CATALOG OF DIGITIZED CULTURAL COLLECTION

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In this paper a distributed catalog of digitized cultural collections is presented. The implementation is based on the recommendation for the national standard for describing collections, and the distributed hash table (DHT) protocol Chord. DHT-based networks have emerged recently as a flexible decentralized solution to handle large amount of data without the use of high-end servers. Data storage and data retrieval from different content providers (libraries, archives, museums, universities, research centers, etc.) can be handled uniformly inside one distributed catalog, so that every provider is responsible for its own part of information. This approach can be extended to allow interconnection of different DHT-based networks using an overlay network protocol called Synapse.

V-MUST.NET – THE VIRTUAL MUSEUM TRANSNATIONAL NETWORK

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V-MusT (Virtual Museum Transnational Network) is a new EU FP7-funded network of excellence that aims to provide the heritage sector with the tools and support to develop virtual museums that are educational, enjoyable, long-lasting and easy to maintain. Virtual Museums (VMs) are personalized, immersive, interactive experiences that enhance our understanding of the world around us. The term 'VM' is a general one that covers various types of digital creations including virtual reality and 3D. The V-MusT.net partners believe that Europe has the capacity to become the worldwide leader in the domain of VM. This leadership can only be achieved if we resolve the problem of research fragmentation and share the knowledge required to integrate VMs into the broader museum domain in a sustainable way. We can achieve this by connecting different technological domains, integrating social and cognitive sciences, providing state-of-the-art digital preservation and authoring tools, proving the socio-economic impact of VM and establishing sound methods of quality assessment.

A PROJECT FOR THE DIGITIZATION OF A MANUSCRIPT BIBLIOGRAPHIC UNIT –OPPORTUNITIES FOR AND IMPLEMENTATION OF THE VIRTUAL CONTEXTUALISATION OF TEXT

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This paper presents the project "Digitization of old and rare material from the Bauer Collection" of the library of the Museum Documentation Centre (MDC), which, in its first phase, relates to the digitization of the manuscript bibliographic unit *Bibliography and material for art and similar disciplines.* The unit comprises 31 books that combine bibliographic, biographical and documentary records from the area of cultural history, particularly the history of the fine arts and historical museology from the 19th century to the 1950s, from Croatia and other parts of former Yugoslavia. These records are a unique document of exhibition events, and a point of departure for diverse investigations in culture studies, art history and museology. A description will be given of the first realised phase of the project, published in 2008 on the MDC Web site (http://antunbauer.mdc.hr/) with accompanying texts, search engines and digital copies. The second phase, currently underway, will be presented; this relates to the Web presentation and virtual contextualisation of a unique manuscript about stechaks from 1949 by Ivan Rengje, and the link of the MDC project with other heritage portals with similar depositary/digitized records.

OVERVIEW OF CERTAIN DIGITIZATION PROJECTS IN SERBIA

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The aim of this paper is to present the main results of a project in the area of digitization that was executed in the period 2008-2010 by the Mathematical Faculty in Belgrade and the Mathematical Institute of the Serbian Academy of Science and Arts. The project was financed by the Serbian Ministry of Science and Technology. The activities on the project were divided into the following parts: Virtual Library, the largest Serbian Internet oriented database of digitized books (about 1500 items); eCatalog of cultural monuments in Serbia, the most complete Serbian Internet oriented database of cultural and historical monuments in Serbia (data for about 2000 archeological and historical monuments are included in the database); eLibrary of the Mathematical Institute, a database of scientific journals in the area of mathematical sciences and Nikola Tesla - Clippings Library. Apart from the main goals of the project, other assignments of the project are presented too: organizations of the conferences in the area of digitization and publications in this area.

RECENT DEVELOPMENTS AND RESULTS FROM EOD – EBOOKS ON DEMAND FROM EUROPEAN LIBRARIES AT NATIONAL AND UNIVERSITY LIBRARY

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The article gives a statistical overview of the EOD eBooks orders in NUK and presents the results for orders and user patterns. Books on Demand (EOD) is a European libraries digitization service, co-financed by the European Commission (EC) under the Culture 2007 programme. The service enables customers to order old,

rare and precious books in public domain, published between the years 1500 and 1900, which are, due to their age and value, mostly accessible only to the local library users, as pdf files. The EOD project evolved from the Digitization on Demand (DOD) project, which started in 2006 and lasted until 2008. 13 European libraries from 8 countries were involved. The project was run under the eTEN programme and led by the University Library Innsbruck. Starting from 13 members in 2009, the EOD grew to 30 members at the beginning of 2011. Currently it is available in libraries and archives of the following twelve countries: Germany, Austria, France, Slovenia, Portugal, Switzerland, Estonia, Hungary, Slovakia, the Czech Republic, Denmark, Sweden. The number of member libraries is still growing, and is expected to reach at least 40 in the next couple of years. Apart from digitization-on-demand, a new service, print-on-demand, was started in 2009 and is available at some of the member libraries. Also, a joint catalogue for the partner libraries is being developed. The users will be able to order EOD eBooks from any EOD member library, regardless of the country in which the library is situated, or the language used. Since the ordering, production and delivery of the EOD eBooks is all done online, it is of no relevance where the user gets the desired book from.

TESTING AND EVALUATION IN DIGITAL PRESERVATION PROJECTS: THE CASE OF KEEP

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Digital preservation systems present a real challenge for testing and evaluation, because they need to demonstrate a solution which will work in the future. The usual practice in digital preservation projects is to demonstrate that the system is robust, but this is not sufficient to demonstrate the interoperability of the digital objects in the future. More research and practice are needed to demonstrate the future interoperability of different preservation approaches. Keeping Emulation Environments Portable (KEEP) is a medium scale research project, started on 1 February 2009, co-financed by the 7th Framework Programme's ICT-3-4.3 Digital libraries and technology-enhanced learning priority. KEEP concentrates on the

use of emulation and is primarily aimed at memory institutions and computer games museums; however its approach is of definite interest to a wider range of organisations, which have to approach digital preservation. Within this paper we will address the overall setting of evaluation and testing for digital preservation and then we will present in more detail a case of emulation and its evaluation sharing the experience of the work on KEEP. The paper will explore various types of evaluation:

Front-end evaluation aiming at identifying technical requirements and workflows for different actors.

Normative evaluation taking the form of iterative circles of process-and-evaluation when implementing a preservation environment.

Summative evaluation, focusing on the final output and compliance with the expectations and requirements of the target communities/organisation structures/ the wider disciplinary domain.

MULTIMEDIA PROJECT "BEHIND ROCKOVNIK"

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This project is motivated by previous work of D. Vesić and S. Rančić, such as the 40 episode TV show *"Rockovnik"* (Radio Television of Serbia), and the movie *"EKV: Kao da je bilo nekad"* (premiered at the Zagreb Film Festival 2008). Extensive collaboration has been established with many cultural institutions from Belgrade, Zagreb, Sarajevo, Kragujevac, Pula, Rijeka, Ljubljana, Novi Sad, Skopje. At first, we preprocessed the materials, implemented a multimedia presentation, showing parts of the TV broadcasts, interviews, photographs. We used W3 technologies, specifically integrated multimedia language SMIL and HTML 5. A multimedia database has been designed and implemented. Interactive search of material is included. We shall present the characteristics of the multimedia material, and the technical solutions.

ESCIDOC, VIRR AND DIGITIZATION LIFECYCLE – INSIGHTS INTO AN INFRASTRUCTURE FOR MANAGEMENT OF DIGITIZED RESOURCES

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The eSciDoc is service-oriented infrastructure, based on Fedora Commons repository and used by the MPDL for the management of various types of digital resources, such as publications, scanned manuscripts, research data. Several web applications provide user-friendly applications for the end user. VIRR is a web application which publishes a collection of digitized law books dating from the Holy Roman Empire period. During continuous data curation activities, users have the option to define a table of contents and edit specific metadata for each logical part of the book. On-the-fly transformation for reuse of this data by external viewer web-services to present the books is integrated. The Digitization Lifecycle is an ongoing project, which will build additional software services and tools for the management of various digital collections and, additionally, develop expert guidelines for the digitization of various types of resources.

ONLINE SEARCH AND REDACTION SYSTEM

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The paper studies possible ways of online search and redaction system for digitized text material. Presented are examples of: 1) search and redaction systems made for Serbian retrospective bibliography for the National library of Serbia (www.digital.nb.rs/bibliografija/authors) and 2) electronic library of the Museum of contemporary arts, Belgrade (www.citajteo.msub.org.rs).The presentation comprises three parts. The first part deals with importing into database and preparing

for searching, automatic corrections of OCR output and preparing for database import, indexing scanned documents to enable search and advanced search. Part two tackles online redaction system, enabling multi-user redaction, huge redaction solution over file import, particular redaction over online redaction system and multi-user redaction. Part three looks toward options with advanced corrections of OCR output.

OPTICAL CHARACTER RECOGNITION PROBLEMS IN MASS DIGITIZATION OF HISTORICAL NEWSPAPERS AND JOURNALS: END-USER FOCUSED APPLICATIVE SOLUTIONS FOR SLOVENIAN NEWSPAPERS FROM THE 18TH TO THE 20TH CENTURY

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In the last couple of years mass digitization at the National and University Library of Slovenia (NUK) and other Slovenian libraries included many historical newspapers, afterwards published as complete volumes, or individual articles on the portal of the Digital Library of Slovenia – dLib.si. The title selection was made in accordance with the overall cultural heritage strategy and was focused on the most important Slovenian newspapers printed between the second half of the 18th and the first half of the 20th century. The digitized collection of newspapers was useless for full-text searches without further processing. In order to achieve a good transcription of the digitized documents programs for scan refinement and optical character recognition tools (OCR) were used. Problems were caused by the language and typography from the time of the production of the originals which differed from the ones currently used. Some major errors in the OCR texts appeared. Some further errors occurred due to bad conditions of the scanned originals. The possibilities of new solutions in page segmentation and digitization flows were analysed in the project IMPACT of the 7th EU framework programme

and the project EOD of the EU Culture 2007-2013 programme. In collaboration with the Jožef Stefan Institute (JSI) we have focused on lexicon building for the historical Slovenian to provide search options in modern Slovenian as well. This paper presents the latest research results for achieving the best quality OCR and full-text search options in the digitized old printed texts.

DIGITIZED CROATIAN HISTORIC NEWSPAPERS AND JOURNALS

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The National and University Library in Zagreb has started to develop a cooperative portal of digitized Croatian historic newspapers and journals from its own collection and from other Croatian heritage institutions. The main project aims were: production and publishing of digital reproductions on line, browsing the newspaper and journals issues and searching full text articles from journals, enhancing availability of printed national heritage, improving protection of unique and rare originals, creation of a cooperative database of all Croatian historic newspapers and journals, development of standardised and harmonised procedures for digitization, coordination and rationalisation of digitization efforts, as well as recommendations for a national strategy of digitization of serials.

A system was put into place enabling access to data and digital reproductions, and search of a cooperatively built database with bibliographic data, holdings data of original print serials, microfilms and digital reproductions, information on titles that are being digitized or planned for digitization in heritage institutions in Croatia, etc.

The portal represents the central point for search and access to digitized historic newspapers and journals and is a part of the national project of digitization of archival, library and museum collections Croatian Cultural Heritage, financed by the Ministry of Culture of the Republic of Croatia.

DIGITIZATION OF OLD NEWSPAPERS IN THE NATIONAL AND UNIVERSITY LIBRARY OF SLOVENIA (NUK) – EXAMPLES OF GOOD PRACTICE

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The National and University Library of Slovenia (NUK) permanently stores and makes available to the public library material *slovenica* including magazines and newspapers (periodicals). Old newspapers are available to users in the original analogue format, copies on microfilm and in digital format on the portal *Digital Library of Slovenia*. The article describes digitization of newspapers in analogue form, as well as the digitization of copies on microfilm. Examples of good practice describe the workflow of digitization in library and at the site of the outsourced contractor. There are specific procedures to select materials and its preparation for digitization which have to be made in the library. Shown are examples of technical documentation as the parameters or instructions for contractor how to carry out the digitization, implementation, and final quality control of digitized materials made by the library experts. Digitized materials, together with metadata, make a digital collection. Digital collection is put online on the portal of the Digital Library of Slovenia, after quality control carried out in the library.

DIGITIZATION OF BIH PRESS AND MAGAZINES – THE EXPERIENCE OF THE INFOBIRO DIGITAL ARCHIVE

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The author presents activities related to the process of digitization of cultural and historical heritage of Bosnia and Herzegovina from the aspect of digitization of BiH periodicals, and the increase in their accessibility through the INFOBIRO Digital Archive. In most countries, the digitization process is conducted under the auspices of the national cultural institutions (libraries, archives); however, in BiH, this process is run by the Mediacentar Sarajevo and its INFOBIRO Digital Archive. The author elaborates on the models of cooperation with the key stakeholders in BiH, the copyright issues, procedures for the selection of content for digitization, and schematic content description through metadata. Considering that the digitized content archived in the INFOBIRO is fully searchable, the author presents the advantages and disadvantages of such organization of the archive.

DIGITIZATION OF HISTORICAL NEWSPAPERS AND JOURNAL"SYNTHESIS – JOURNAL FOR ARTS AND CULTURE (1970 - 1987)"

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The paper presents the digitization of "Synthesis – Journal for Arts and Culture", which was continuously published in Kruševac, in the period 1970 – 1987. In the journal "Synthesis" the articles were published by prominent literary theorists and writers. The journal is particularly important in view of literature in translation. In the first phase of publishing, literature and arts were equally represented. The

journal has about 1,100 bibliographic units. The journal "Synthesis" particularly cultivated and cherished the surrealist tradition, there were articles by members of the international group "Fantasmagie" and Aubin Pasque, Manifesto of Surrealism by Andre Breton, The Klokotrism, Klokotristic Situactions in the Interpretation. The total number of digitized pages is 5504. This digital collection will soon be available at the Digital library - Digitalna biblioteka (www.nbks.org.rs). The aim was to create new and modern online image of the institution, providing information to virtual users and have created a new social contact with them, changed the philosophy of the library profession. The services are used to promote digitized resources online and the point is a new dimension of local history research in the library – digital heritage repository in the function of literary studies.

DIGITAL 3D TECHNOLOGY AND CULTURAL HERITAGE:STANDARDS AND INNOVATIONS

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The last several years have seen a significant breakthrough in the field of implementation of new, digital technologies in the domain of cultural heritage. Various projects have been conducted in our region using these new methods, some of them thoroughly documented and presented. The efficiency and utility of the digital 3D technology have been proven beyond any doubt, especially considering its multipurpose character. Its implementation can be multifarious, ranging from digital scanning and documenting an object, to creating elaborate 3D visualizations as a vital part of conservation project documentation. However, conservation and restoration practice in our region is not yet fully in tune with rapid technological development. Basic technical documentation for many significant objects is still kept in the hand drawn or analogue form, and concomitant photomaterial is old, inadequate and practically unusable. There is a strong need for a closer connection between traditional documenting, conservation and restoration processes and technical innovations. These are the main questions this essay will try to answer: How to gather and process data in a manner compatible with digital techniques? What are the new tools and methods in recording and docu-

menting material? What are the benefits and advantages of implementing 3D, and digital technology in general, in conservation and restoration procedures?

PROJECT ARTOTEKA – THE MODERN WAY OF DIGITIZATION, INVENTORIZATION AND POPULARIZATION OF CONTEMPORARY VISUAL AND INTERMEDIA ART

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This paper deals with the absence of, as well as the proposed solutions for, a transparent, competent and self-sustaining (endurable) market of Visual and Intermedia Art (ViMu), which would have to be publicly accessible, professionally maintained and in accordance with the law. The authors, members of the R&D initiative Artoteka, drew on the theory and practice of modern museology, international projects and national initiatives, as well as cutting-edge ICT approaches. Present is a proposed inter-disciplinary solution, which is in congruence with the existing good practice in both the field of heritage practice (e.g. Germany artothek, open depots, e-archives, art library) as well as the IT practice (e.g. digitization, visualization, interactive TV and Over the Top TV, etc.) called Artoteka. The proposed project Artoteka represents a link between the production, museum, gallery, library, and marketing fields. Drawing on examples from practice, namely the DCA project, d.Lib.si, Viminacium, Museum of Sarajevo 1878th-1918th, the Krapina Neanderthal Museum, the Ce-NOB project, the example of the 3D digitization of the Vače Situla and four of Nikola Tesla's objects, as well as the pilot interactive TV of the Kranj Central Library, the three most important functions of Artoteka will be presented: *inventorization, documentation* and *dissemination.* An innovative and highly scalable integrated multimedia platform called StudioInteractive will be

presented. The proposed solution, in the form of interactive TV, is primarily the result of the need to increase the level of interactivity, and to allow the user to monitor the content, as well as actively engage in choosing content and services, according to his needs and preferences. The implementation of a simple user interface for the administration of Artoteka (CMS - Content Management System) gives users autonomy and interactivity.

RESTORATION OF A FRUIT BOWL WITH A LEG USING 3D TECHNOLOGIES

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3D digitization is not used only for documentation, researching and presenting of three-dimensional objects in virtual environment but, with help of a computer reconstruction and 3D printing, also for restoration of museum objects. In this paper is described a restoration of a several damaged fruit bowl with a leg. The object is from the National Museum of Slovenia and its porcelain collection. Bowl is highly perforated throughout its surface, therefore making new fragments with conventional procedure would be a long standing and complicated restoration process. Consequently we try to improve already mentioned restoration process using 3D technologies. First, the object was 3D digitized with a portable 3D scanner. On the basis of digitized data a 3D reconstruction of missing fragments was made. Afterwards the fragments were 3D printed in plaster, inserted directly into fruit bowl and finally infiltrated during conservation-restoration process. A presented case shows that 3D technologies can improve standard conservation-restoration process and can make it faster, less complicated and more accurate. Process also gives a collateral product in a form of 3D digital model – of an original object and reconstructed one – that can be presented virtually.

INFORMATION ABOUT THE REGIONAL CENTRE FOR DIGITIZATION

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In the framework of the cooperation with UNESCO-BRESCE and the Italian Government, and as a result of the Regional workshop for digitization of cultural heritage, held in Ohrid, Macedonia (2005) in March 2008, the Regional Centre for Digitization of Cultural Heritage was officially opened in Skopje by UNESCO's Director General, Mr. Koichiro Matsuura. The aims of the future functioning and development of the Regional Centre for digitization of cultural heritage which is part of our National strategy for digitization are presented. Education comprised organizing thematic training for the application of new technologies concerning categorisation, conservation and management of documents and images, handling delicate materials and documents, and use of contemporary technical aids for digitization of cultural heritage. The Centre is oriented towards the strengthening of the regional cooperation in SEE, through implementation of the process of digitization of cultural heritage in close cooperation with the competent regional, national and local authorities. This would enable exchange of best practices, promotion of intercultural dialogue, development of cultural tourism, protection and promotion of the values of tangible and intangible cultural heritage, in other words, the establishment of an interdisciplinary approach to the preservation of cultural heritage in Southeast Europe. Monitoring and utilisation and harmonization of global standards for digitization, professional processing, storage and presentation of cultural heritage, as well as development of national reference systems and securing uninterrupted and systematic digitization of cultural heritage.

WORKSHOP 2

USER STUDIES FOR DIGITAL LIBRARIES DEVELOPMENT

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The modern digital libraries have to address multiple diverging requirements and expectations of the users and at the same time to accommodate the rapidly changing technological novelties. User needs are always mentioned amongst the priorities in the multitude of policy documents which shape the scope and characteristics of digitisation and accessibility online. However, in reality, users seem not to be consulted in detail. The purpose of this workshop is to introduce a range of methods which can be applied to understand better user needs and expectations (surveys, questionnaires, interviews, deep log analysis, eye tracking, ethnographic studies) and to give a practical feel how they work in real practice through a series of recent studies. The workshop will also include a discussion on a real life case study which will help the participants to get a better understanding what studies could be particularly helpful according to the products and services they develop.

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POSTERS

ABOUT THE BOOK CHESS – A SYMBOL OF THE COSMOS

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In this paper we present the book *Chess – A Symbol of the Cosmos* (author Pavle Bidev) about relations between the chess game and the traditional cosmology of the Old East. The book was digitized at the Mathematical Institute of the Serbian Academy of Sciences and Art. It is the first step of the new project to enrich the Virtual library of the National Center for Digitization with reference works on chess.

DIGITIZATION IN SECONDARY-SCHOOL TEACHING

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The necessity for the implementation of digital content in the educational system has emerged with the development of science, and especially with the use of digital materials. This work has the aim to present digitization in secondary school teaching, as well as the impact of the use of digitization in the acquisition of new knowledge. With the impact of digitization, a greater activity of students, their independence in work and the interdisciplinary character of subjects are achieved. I find this approach to teaching history, the Serbian language and literature and physics very interesting for students, since, besides acquiring new knowledge, this approach encourages the students to study new materials independently. The teachers are inclined to apply this method, and to participate successfully in collecting the content, which is later digitized and presented to the students.

IDENTIFICATION OF SOME HISTORIOGRAPHIC DILEMMA ON AN EXAMPLE OF DIGITIZATION OF SELECTED PUBLICATIONS OF THE HYDROGRAPHIC INSTITUTE IN SPLIT

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In the early 1980s, the Hydrographic Institute of the Yugoslav Navy (HIRM) published a great number of papers and editions dedicated to astronomical navigation (for example: *Nautički godišnjak* [Nautical Almanac], *Grafikoni izlaza i zalaza Sunca i Mjeseca* [Graphs of the Sun and the Moon rise and set times], published annually). The goals are to find the answer to the question why writing these papers was considered necessary in the former Yugoslavia (to investigate the „fact" that the Yugoslav navy was the largest in the Mediterranean) as well as to show why digitization of these materials is necessary at the time when Yugoslavia does not exist any more (e.g. the role of digitization in avoiding the contemporary, often partial, fabrications of history; for example, in currently digitized elements of the HIRM editions of Dr. Stjepo Kotlaric's works).

The technical approach involves – with the use of free software (for example: FreeKapture, GIMP Image Editor, Inkscape Vector Graphic Editor, etc.) and digitization standards, given by various authors on previous SEEDI conferences – scanning the appropriate material, extracting the metadata, removing the defects from the scanned material and connecting to the appropriate databases available on the Internet (for example: http://adsabs.harvard.edu/abs, http://openlibrary.org/, http://www.ncd.matf.bg.ac.rs/, etc.).

Currently it is possible to demonstrate the future results, having in regard the copyright law, only at the local level, in the HTML environment.

FIRST FESTIVAL OF CROATIAN DIGITALIZATION PROJECTS

EU PROGRAMME > CULTURE 2007-2013

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The Culture programme aims to achieve three main objectives: to promote cross-border mobility of those working in the cultural sector; to encourage the transnational circulation of cultural and artistic output; and to foster intercultural dialogue. For the achievement of these objectives, the programme supports three strands:

Support for cultural actions enables a wide range of cultural organisations coming from various countries to cooperate on cultural and artistic projects. This strand includes three sub-categories:

- Multi-annual co-operation projects, running over a period of three to five years.
- Co-operation measures, running over a maximum period of two years.
- Special measures, which relate to high-profile actions of considerable scale and scope. The support to European Capitals of Culture and festivals with a European dimension fall under this sub-strand.

Support for cultural bodies > supports cultural bodies at European level. They encourage exchanges between cultural organisations in different European countries, identify the European artistic community's needs, represent the sector in dealing with EU institutions, participate in the public debate on cultural issues, and act as European cultural ambassadors. Support for policy analysis and dissemination activities > supports analysis and dissemination activities, which help to raise awareness of the Culture programme and its activities in various ways. European Community Cultural Contact Point Croatia is at www.min-kulture.hr/ccp.

DIGITISING CONTEMPORARY ART (DCA)

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Since January 2011 the European Commission and the DCA consortium, comprising 25 partners, have officially launched the project DCA initiating a significant increase in the presence of contemporary art in *Europeana*, the single access point to Europe's cultural heritage. Over 30 months, 21 museums and art institutions will digitise approximately 27,000 contemporary artworks and 2,000 contextual documents. The DCA project aims to create high-quality digital reproductions and assure the long-term preservation of, and online access to, such reproductions and their data. To support similar future digitisation projects, it will also publish guidelines and documentation on best practices regarding the digitisation of contemporary art. By July 2013 the metadata on the digitised objects will be mapped, enriched, contextualised, and aggregated for ingestion into Europeana. The partner institution can then make this digital content available through their own websites and other channels as well. This will facilitate the public online access to (parts of) the contemporary art collections of partner institutions and foster augmented user experience. At the same time the digital copies and metadata will also contribute to the preservation of the artworks and contextual documents. The DCA project intends to enhance the online visibility of contemporary art as an essential expression and an indispensible building block of European culture, and to stimulate the interest of the general public with a stronger presence of contemporary art in the Europeana portal.

DAR – DIGITAL ACADEMIC REPOSITORY

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DAR – Digital academic repository is a portal for search and retrieval of electronic theses of the University of Zagreb. The system serves as an OAI-PMH compatible repository for digitized research theses (1880-1952) and digitally born theses (from 1986 on). In cooperation with the Miroslav Krleža Institute of Lexicography, the portal provides a bio-bibliographic reference database on more than 800 authors. DAR was carried out under the project Scientific Heritage of 19th and 20th Century as part of the national digitization project Croatian Cultural Heritage (2009-2010) and was financially supported by the Ministry of Culture of the Republic of Croatia. The project objective was to preserve the oldest dissertation of the University of Zagreb and establish a system for the ingestion, management and access to digital theses and other academic resources in a digital form. The repository was built in collaboration with the Croatian company ArhivPRO.

NATURAL HISTORY MUSEUM RIJEKA COLLECTIONS ONLINE PROJECT

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The Natural History Museum Rijeka is a regional museum, which collects preserves and documents the objects of natural science primarily from the Primorsko-goranska County (Croatia). The number of collected specimens, organized in 28 museum collections, exceeds 90,000. The Museum collection management system is a custom made Filemaker relational database system, which we developed on our own. The relational database system is a backbone of our Collections Online Project. The aim of this Project was to create a searchable online

museum database, so our colleagues and virtual visitors can freely browse and access the basic information about many specimens from the **Natural History Museum Rijeka** inventory. Each database record includes information about an object or specimen, as well as an image. In addition, on the portal, there are also detailed descriptions and photos of particularly interesting, rare and protected species of inorganic nature, flora and fauna, not displayed in the permanent exhibition because of the special method of storage and protection. There are approx. 13,000 museum object records from those collections available online, and the data presented on the portal changes constantly as the result of ongoing curatorial research. The work on the Project of posting our collections online is an ongoing process, and includes digitizing museum objects and adding new ways to access and present them more easily.

DIGITIZATION OF THE MAP ARCHIVE FOR ISTRIA AND DALMATIA

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The State Archive in Split holds the materials of the Map Archive for Istria and Dalmatia. Included are the cartographic and written materials dating from the period after Francis I, emperor of Austria, issued the Patent for introducing a stable cadastre on 23 November 1817, which imposed general taxation on property in the Monarchy. A land survey of all Austrian countries was ordered. The result was 6,735 detailed papers, cadastral maps for 741 cadastral counties in Dalmatia and 304 in Istria. Apart from the cartographic material, the holdings also comprise written documents: economic description of each county, land registers, property registers, lists of toponyms, statements of all landowners. The digitization of the Map Archive started in 2005. Meanwhile, the project has developed and become more detailed. Today, one third of the cartographic material from the first Austrian survey is digitized. The project is co-funded by the Ministry of Culture, the State Archive in Split from its own resources, and by clients' request. The digitized material is saved on a special computer to which readers/clients have access, and

it is uploaded to the Archive's official website. Each map is filed separately in the Register of digitized material for security reasons, and, at the same time, a new digitized collection of the Map Archive is being made.

PROJECT "VIRTUAL LOCAL COLLECTION": VIRTUAL ACCESS TO THE CULTURAL HERITAGE OF ISTRIA

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As part of the Croatian Cultural Heritage national digitization project, Pula Public Library initiated a project in 2010 entitled the Virtual Local Collection (Virtualna zavičajna zbirka -ViZZ). The goal of the project is presentation online of digitized originals preserved in the public library collection. Selection of the material is based on the fact that the collection has a distinctive importance in providing fundamental information about the cultural, historical, social, and scientific life of the community. It requires specific means of usage, and as such, it is least accessible to the general public. In the first stage of the project, 124 postcards with the motifs of the city of Pula from the beginning of the 20th century have been digitized. Apart from the postcards, the book Croatian Folk Songs from Istria by the Istrian composer Matko Brajsa Rasan has been digitized. The book was published in Pula in 1910, at the time when Croatian print and publishing began developing in Istria. This book is of particular importance for both its typographic and content specificity. From the typographic aspect, it is the very first book of folk songs in which Istrian music is recorded using musical notation. As per content importance, the book represents part of the rich folk music heritage of Istria. The collection in the digitized database is organized and described using the Dublin Core element set, and can be viewed and searched by six fields of bibliographic description. The project Virtual Collection of Istria can be found online at www.vizz.gkc-pula.hr. The project continues with the digitization of important rare books from the collection, as well as the postcards of the city of Pula from the end of the 19th century, based on the photography templates made by the Austrian photographer Alois Beer.

DIGITIZATION PROJECT OF THE MUSEUM HOLDINGS OF THE ILOK TOWN MUSEUM PERMANENT EXHIBITION

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The Ilok Town Museum, founded in 1952, is the general regional museum of the Town of Ilok. Having launched the Museum's informatisation process, introducing the museum holdings processing programme M++, and reorganising the museum into six museum departments, since 2007 the Ilok Town Museum has kept pace with the needs of the present electronic age, despite all the difficulties it has encountered on the way. After setting-up the Museum's new permanent exhibition, the need has emerged to photograph the museum holdings selected for display in the recently restored rooms of the Odescalchi Palace, restored as part of the project *The Research, Restoration and Revitalisation of the Cultural Heritage of Ilok-Vukovar-Vučedol,* financed by a loan granted by the Council of Europe Development Bank and the Croatian Government. The proposed Digitization Project of the Museum Holdings of our Museum's Permanent Exhibition began in 2010 and was partly implemented within the framework of the allocated financial means. Its implementation continues in 2011. Understanding digitization as a process of protecting permanent museum exhibits and allowing their accessibility to interested external users, and bearing in mind the fact that they are part of the permanent exhibition, such a selection of the collection for digitization is a logical choice. Apart from the protection of museum holdings and making them accessible to a wider public, we are satisfying not only the needs of the museum for better presentation and marketing of the valuable cultural heritage of our region, but also of the national project *Croatian Cultural Heritage,* which is the final aim of this project. The digitization of permanent museum holdings also provides the conditions for qualifying as a cultural good for museum and gallery collections pursuant to the Ordinance on the Register of Cultural Goods of the Republic of Croatia, as well as for publishing a guide to the new permanent exhibition, which opened on 16 February 2010.

DIGITAL HERITAGE OF THE CROATIAN MUSEUMS IN THE CONTEXT OF THE PROJECT "CROATIAN VIRTUAL MUSEUMS"

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The Museum Documentation Centre (MDC) creates, collects, manages and communicates (museum) information, performing at the same time the museum, archive and library functions. MDC is the coordinator of the computerization of the Croatian Museum Network, which consists of the implementation of the museum information system, education, technical support and data protection. The last five years have seen the launch, completion and improvement of 8 MDC online databases, into which information is gathered about 280 museums, almost 2000 collections, 148 collections of religious communities, museum objects, museum personnel, and updated information about exhibitions and events organized by museums. The project Croatian Virtual Museums links the existing museum documentation (continuously collected, created and managed since the establishment of the MDC) and presents it on the museums portal **www.mdc.hr**. Different types of information about, and from Croatian museums, deriving from different funds and in different media, are accessible and searchable from one point on three levels (1. institution, 2. collection, 3. object). At the same time, the digital repository is created of museum objects from different Croatian museums, using data from museums' databases. Some museums are also presented with multimedia presentations of museums' permanent displays. The forthcoming restructuring and redesign of the MDC portal (2011) will bring a new, more flexible system, with a publicly accessible repository of knowledge about museums, a catalogue of digitized museum objects, virtual panoramas and exhibitions, as well as a space in which the users will be able to share their critical thinking, methods and experiences online via social networks.

DIGITIZATION OF THE RECORD GROUP „THE MAGISTRATE OF THE FREE ROYAL TOWN OF VARAZDIN (1209-1850)", SERIES THE RADICAL ARCHIVES, AND OF THE COLLECTION OF GRANTS OF COATS OF ARMS

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The presentation describes digitization of the charter collection – the grants of the coats of arms from the archive of the Free royal town of Varazdin. The archive is one of the most completely preserved municipal archives in continental Croatia, which covers a time span of nearly 8 centuries. A special section within this archive is the so-called Radical Archives, in which the most important documents and records are preserved. The digitized collection contains 11 grants of coats of arms created from the period between the second half of the 16th, and the beginning of the 20th century. Through their form and content we can follow the basic trends of development of heraldry in northern Croatia. The oldest type of grant of coat of arms is the grant issued by Archduke Charles. Four grants of coats of arms were created in the 17th century, also written on a piece of parchment with the image positioned in the upper right corner. The rest of the grants of coats of arms belong to the type of grants in the form of a book and they were made in the period between the early 18th and the early 20th century.

THE DIGITAL COLLECTION OF THE CROATIAN ACADEMY OF SCIENCES AND ARTS

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The digital collection of the Croatian Academy of Sciences and Arts includes the digitized materials of the Academy's research units, and the Academy Library. It

was launched in 2009 with aim of serving as a unique digital repository, representing the Croatian Academy's scientific and artistic collection on one website, offering free web access and modern, standardized development of technical support. The following Academy units: The Fine Arts Archives; the Institute of the History of the Croatian Literature, Theatre and Music: the Division of the History of the Croatian Theatre and the Division of the History of the Croatian Music; and the Academy Library as initiator, have established the Digital Collection. The Glyptotheque is the latest unit in the repository. Its task is to collect the digitized reproductions of major works of statuary art by means of plaster casts. The Digital Collection currently comprises materials in the following original formats: books, journals, cast sheets, microfilms and plaster casts. The criteria for the selection of materials to be digitized are based upon the principles of scientific, cultural and historical value and interest, preventive protection of old and rare items, and the promotion of the scientific, research, artistic and publishing activity of the Croatian Academy of Sciences and Arts.

DIGITIZING COLLECTIONS OF POSTCARDS AND PHOTOGRAPHS OF THE MUSEUM OF PEASANTS' UPRISING: EXPECTATIONS, EXPERIENCES, DOUBTS

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Collecting, processing, and accordingly, digitization of postcards (to a lesser extent this is true of photos) appears a simple task which does not require much thinking, and does not cause too many doubts. However, as our experience has shown, it is not always as simple as it looks. There are many questions: what to collect, why, sort out simultaneously and later, identify and select the material. It should provide answers to the questions for whom we are collecting and digitizing this type of material, who our future users are, and what information they need, taking into consideration the protection of personal data at the same time.

CADASTRAL HERITAGE IN DIGITAL ENVIRONMENT

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The Croatian State Archives in Zagreb is the major archival institution in Croatia, focused on the process of archival preservation and access to the archival heritage. The aim of this paper is to present the digitization of cadastral heritage (cadastral plans of "the first stable cadastre") and a description of the cadastral plans using ARHiNET, with emphasis on the program's potentials for end users. ARHiNET is a system for description, processing and management of archival materials and an online registry of archive fonds and collections. The intention is to draw attention to the improvements in the field of protection and processing of the cadastral plans, especially regarding the digitization process and online accessibility of cadastral heritage on the Internet through the use of ARHiNET.

DIGITIZED ZAGREB HERITAGE – METROPOLITAN LIBRARY IN THE WEB ENVIRONMENT

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Following their vision and building an online society with entirely new cultural needs, the Zagreb City Libraries started developing a digital collection in 2008. The web site entitled Digitized Zagreb Heritage, as part of the Zagreb City Libraries' web pages (www.kgz.hr), collocates digital reproductions of valuable and rare resources stored within different collections. Each digital reproduction, as a new electronic edition, has a separate bibliographic record within the ZAKI library system. This system supports the XML format and allows retrieval of metadata. Bibliographic records of the digitized resources provide direct access to any document at the Digitized Zagreb Heritage website, as well as easy navigation towards

other related digital documents. To provide better and more complete services to the users of our digital collections, an acceptable, interesting and functional presentation interface for these contents was designed. Digital reproductions are available for public access and can be viewed and searched according to resource type within collections and projects, or searched by author name, title and keywords. The main concepts behind the web site design were simplicity and easy navigation. In cooperation with ArhivPRO company, a browsing in Microsoft Silverlight plugin was enabled, to enhance the perception of value and pleasure of resource use. The interface makes possible distinguishing between different types of print and binding, colours and soft gradations, recognizing different paper textures, distinguishing between the materials of hard covers, and displaying traces of use on the original. The Zagreb City Libraries' digitization project, which represents the collective memory of the city, preserved on the pages of various newspapers and books, on photographs and postcards, on the city-maps, invitations, and various cultural and other events, as well as on the sound recordings.

UNDERGROUND CITY XXI (UC XXI)

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Underground City XXI (UC XXI) is a project of Labin Art Express XXI (HR) dealing with the protection and revitalization of the closed Istrian coal mines in Labin (Albona) and Raša (Arsia) - one of the greatest technological achievements in mining at the beginning of the 20th century, the only mine with a seashore exit, today a national cultural monument - through its conversion into a cultural-tourist attraction: futuristic underground city, a never-ending 'social sculpting' work of art. From 1st of June 2009 to 30th April 2001, the first phase of the project, entitled UNDERGROUND CITY XXI – European interdisciplinary platform, was realized in the partnership with LIBAT (FR), Nomad theatre (AT), Prague College (CZ), and supported by the Culture Programme of the EU. Its main goal was the establishment of a specific cultural & art community, as an online collaborative interdisciplinary network (www.undergroundcityxxi.org), by developing virtual 3D multi-

user environment, based on the exact dimensions and location of a closed coal mine, obtained by laser measuring, shared and distributed on the Internet (www.undergroundcityxxi.com). The main idea of the project, linking art, architecture, new technologies and interdisciplinary research, was to use the mining heritage for the creation of an avant-garde cultural & art project – the virtual city as a model for the construction of a real one. Its first and one of the most important cells is the virtual Museum of Mining and Industry of Istria, based on digitized archival and museum documentation on mining in Istria from 17th – 20th c. (in progress). The next phase, a detailed UC XXI architectural and spatial development plan, will start in 2012 and end in 2015.

DIGITIZATION OF MELOGRAPHIC NOTATIONS

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Institute of Ethnology and Folklore Research (IEF) has the largest and unique Archive for intangible cultural heritage in Croatia. From the establishment of the IEF in 1948, its scientists began creating a collection, which now includes extensive autographic, video and audio material on the traditional culture of the Croats and various minorities, collected and recorded in all the regions of Croatia, as well as among the expatriate Croats. The collection of unique and rare melographic records of traditional music is part of this fund. Their tremendous value and a high degree of vulnerability are the reasons why, along with the audio recordings, this part of the Institute's archive is a top priority for digitization. In this paper, a collection of original materials, its uniqueness and importance, along with the method of their digitization and processing will be presented. The emphasis will be placed on the challenges of identification of digital images and their link with the original records, as well as on the storage, presentation and access to the digital content.

PROJECTS OF LOCAL CULTURAL HERITAGE DIGITIZATION IN "FRAN GALOVIĆ" KOPRIVNICA PUBLIC LIBRARY

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The paper will present digitization projects of local cultural heritage, organized and realized by the Fran Galović Koprivnica public library: *Digitization of local and cultural heritage –„Glas Podravine" newspaper 1950-2007, Digitised Koprivnica press 1950-2008, and The writer Fran Galović Online.* The main goals of the digitization projects will be stressed: the protection of original materials, better searchability and availability. In addition, the projects' main features will be presented – the local character, partnership and cooperation with the local heritage institutions, and professional companies in digitization. It will also be stressed that the Fran Galović public library realized the first project within the national digitization project *Croatian cultural heritage* (2007-2009) conducted by the Croatian Ministry of Culture in cooperation with the National and University Library in Zagreb, the Museum Documentation Centre, and the Croatian State Archives. The paper will also present library's current project – *Digitization of the old postcards collection, and the project Portal Cultural heritage of Koprivnica,* to be realised in the near future.

ANDRIJA MOHOROVIČIĆ DIGITAL COLLECTION

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Andrija Mohorovičić (1857-1936) is a world-renown seismologist and one of the greatest Croatian scientists of all times. In the year 2010 the Department of Geophysics Library, Faculty of Science, University of Zagreb was engaged in the project of digitizing and electronic publishing of his legacy in order to celebrate

the 100th anniversary of his epochal discovery of the discontinuity in the Earth ("Moho"). This legacy collection includes personal and professional documents, photographs of his childhood, education and family, his scientific articles and notes, calculations, written manuscripts and correspondence with some of the greatest seismologists such as G. Agamennone and B. Gutenberg. These documents outline and testify to the significance of his scientific work in the world of science. The main goal of this project was to provide a high-quality surrogate digital copies of original documents in order to protect and preserve them, provide their backup in case of loss or damage and improve their accessibility. The project ensures that digital collection of Andrija Mohorovičić's inheritance will be publicly accessible and searchable on the Internet (www.gfz.hr/Moho_repozitorij) for utilization of interested researchers. Andrija Mohorovičić's Digital Collection project was financially supported by the Foundation of the Croatian Academy of Sciences and Arts and Ministry of Culture of the Republic of Croatia.

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BIOGRAPHIES

Biographies (in alphabetical order)

Antlej, Kaja is a junior researcher at the IB-PROCADD d.o.o. company. Her research includes the potential of the 3D technologies in movable and immovable cultural heritage. In 2008 she graduated in industrial design from the Academy of Fine Arts and Design with the thesis titled *The Development of an Industrially Designed Product Through the Use of 3D Technologies*. She is continuing her education at the Faculty of Arts, University of Ljubljana, through the Interdisciplinary Doctoral Programme in the humanities and social sciences in the field of heritage studies, the studies of the preservation of cultural heritage. Currently she works on the thesis titled *3D Technologies as a Support for Industrial Design Museum Exhibition*.

Baždar, Saša was born in Glina, Croatia, in 1980, moving early to Ljubljana, where he completed his education. For the past eleven years he has been working at MFC.2 d.o.o. as key accounts manager. His work focuses primarily on pre-sales and post-sales customer relations. Among other things, he organized a conference covering the digitization of library material, which was very well received by the attendees and professional peers alike. Recently, he has been devoting a lot of time and effort to the company's penetration into the markets of ex-Yugoslavia. During his career, he wrote several professional articles covering various topics, published in numerous local printed media. Among others, some of the topics include conservation of printed cultural heritage, and presentation of the material cultural heritage to the general public via the Internet.

Blatnik, Alenka a digitization engineer, has been with the National and University Library of Slovenia for two years. She gave a presentation on the technical aspects of library digitization at the 5th International Symposium on Novelties in Graphics, held 27-29 May 2010 in Ljubljana. Blatnik holds a Bachelor's degree in graphics technology from the University of Ljubljana, NTF (the Faculty of Natural Sciences and Engineering) and is expected to complete a Master's degree in Graphics and Interactive communications in 2011. As a student, Blatnik gained experience at BAM (Federal Institute for Materials Research and Testing – Berlin) regarding Visual Methods and Image Reproduction in Non-Destructive Testing, elaboration of standardized ISO/IEC test charts for ICC colour managed office equipment. At Canon Adria d.o.o., and Cetis d.d. she was securing the digital proof

for standardized offset printing in terms of use by the FOGRA Technical specification.

Brkić, Križana holds a BA in art history and Italian language. She worked as a high-school art teacher, then, for several years as an advisor at the Culture Department of the Ministry of Foreign Affairs and European Integrations. Since 2009 she has worked as a senior advisor at the Ministry of Culture, Cultural Contact Point for the Culture Programme of the EU.

Brumen, Matija born 1975 in Maribor, has been working on EOD, eBooks on Demand project, at the Library research Centre of the National and University Library since 2009. In 2009 he worked for three months at the City Library of Ljubljana. He studied and worked in Japan, Germany and the Czech Republic for some years and has worked as a freelance interpreter, writer and photographer. He presented EOD at the 13th conference Archives, Library, Museums in Rovinj, Croatia, in 2009, at the Open Access to the Achievements of Slovenian Scientists conference in Ljubljana in 2010, and he co-published several articles on the EOD project. Brumen holds a Bachelor's degree in Japanology and philosophy from the Faculty of Arts, University of Ljubljana, and is continuing his studies in the field of photography at the Academy of Fine Arts and Design.

Bulatović, Nataša is responsible for the software development activities at the Research & Development Department of the Max Planck Digital Library. The Department of Research & Development designs and develops software infrastructure and applications in the domain of scientific information management for Max Planck Institutes. She is involved in several e-Research infrastructure development and publishing projects, such as eSciDoc, DARIAH, PEER, Astronomers Workbench (AWOB).

Butigan-Vučaj, Tamara graduated from the Faculty of Electrical Engineering in Belgrade. She worked as librarian at the National library of Serbia since 1997, occupying various positions. Currently heads the Digital Library and Microfilming Department. She is active in the initiative of National Center for Digitization, Belgrade, since 2002; former vice president of the former Committee for digitization of the UNESCO commission of Serbia (2006-2010); member of the European

Library Technical working group (2005-2009); also worked on a number of projects of digitization in libraries, recently in AccessIT and currently on the EMBARK project.

Bužleta, Nadia graduated from the University of Zagreb with a Bachelor's degree in Library Sciences. Since 1993 she is employed as a librarian at the Pula Public Library. She is actively involved in all the programs related to the library development. In 2009 she became the head of the Central Office for the Library Services in the County of Istria. Particular areas of interest: historical research of Istrian print and publishing, collections of Istrian publications, preservation of the Istrian written heritage. Nadia is involved in the project *Bibliographia Histrica online,* initiated by the Istrian Library Organization, as one of the participants in the drafting of the Istrian retrospective bibliography of the books, magazines, and newspapers published in Istria before 1918. She leads the *Virtual Collection of Istria (Virtualna zavičajna zbirka -ViZZ)* the project of the library material digitization within the Pula Public Library**.** Since 2010 she has been enrolled in the Library and Information Sciences Graduate program at the University of Zagreb.

Čajavec, Tanja, born 1977, TIA junior researcher in economy; graduated in art history and sociology of culture, curator, conservator and qualified to work with archives, with 9 years of working experience in R&D investment projects in the field of culture, heritage and tourism. Since 2011 she is also a junior researcher at TSE ltd. Her field of work includes inter alia: research and development of new services in the field of culture, heritage and tourism, with an emphasis on the permanent storage and protection, and procedures of digitization. Since 2007 she is actively engaged in research, development and project support to companies in the acquisition of the EU grants, restoration and management of cultural heritage, project management, e-commerce, electronic archiving, 2D and 3D, AV and MM, telecommunications and remote management, and computerization of business processes as an external expert consultant. Since 2003, she is a doctoral student of information science - museology at the Faculty of Humanities and Social Sciences, University of Zagreb. Since 2010, she is a doctoral student of business information in the field of optimizing business processes at the FKPV CE. Since 2009 she is head researcher of two new interdisciplinary development projects: a digital center and a cultural incubator. Her professional interests in the last two years in the management of material heritage turned to the field of digital capture of sources of culture and cultural heritage (digitization). Her goal is

further in-depth study of the process of managing information in digital capture, particularly in ViM.

Dobreva, Milena is a research fellow at the Computer and Information Science Department, University of Strathclyde. In 2008-2009 she managed the DiSCmap project on user priorities in digitisation of special collections funded by JISC, and recently coordinated a Europeana user and functionality study. Since 1990 she has worked at IMI-BAS where she earned her PhD degree in Informatics and Applied Mathematics. Milena coordinated a Transfer of Knowledge action in digitisation of cultural and scientific heritage within FP6 and was the lead IMI-BAS researcher in the projects COMTOOCI (Culture 2000 programme) and DIGMAP (eContentPlus programme). In 2002-2005 she collaborated with HATII at the University of Glasgow on three technology watch reports on the application of new/core/emerging technologies in the cultural and scientific heritage sector for the DigiCULT project funded by the EC, and in 2007-2008 she contributed in the work on the Policy and Quality domains within the DELOS DLMR (Digital Libraries Reference Model). A member of WG3 (object model) of Europeana v1.0, chair of the Bulgarian national committee of the Memory of the World programme of UNESCO. She is one of the founding members of SEEDI.

Dobrić, Jasmina was born in Sremska Mitrovica, Serbia. She works as a network administrator (Faculty of Mathematics, Belgrade). Her primary interests are numerical mathematics and computer networks.

Dolenc, Franc graduated from the Faculty of Electrical Engineering in 1979. He worked in Iskra Telematics on the development of 8 bit microcomputers. In 1988 he became head of development of the SI2000 telecommunications system; from 1993 to 2008 director for products and solutions in the company, which was renamed Iskratel. In 2008 he founded the company Mediainteractive which designs and introduces the most modern systems for media production and interactive TV.

Dreyer, Malte is the head of Department for Research and Development at Max Planck Digital Library in Munich, Germany. The Department of Research & Development designs and develops software infrastructure and applications in the

domain of scientific information for Max Planck Institutes. He is the head of the eSciDoc German Flagship project to develop an open source eResearch infrastructure and the publication repository PubMan on MPS side

Erjavec, Tomaž is a research associate at Department of Knowledge Technologies at the Jožef Stefan Institute in Ljubljana, Slovenia. His research interests lie in the area of language technologies, in particular in developing mono- and multilingual language resources, mostly for Slovenian, in the development of standards for language encoding, and in digital libraries, esp. for complex, text-critical editions. Tomaž Erjavec has served on the board of the European Chapter of the Association of Computational Linguistics, of the Text Encoding Initiative Consortium, and is the Slovenian representative for ISO TC 37, the technical committee for Terminology and other language resources. He holds an MS degree in computer sciences from the University of Ljubljana, MS degree in cognitive sciences from the University of Edinburgh, and a PhD from the Faculty of Computer and Information Sciences of the University of Ljubljana.

Feliciati, Pierluigi is a researcher of information science (ING-INF/05) at the University of Macerata (since 2007), previously working in the Italian Ministry of Culture, archives web information systems coordination (since 1986). Professor of information science applied to Cultural Heritage and Computing Humanities at the University of Macerata and the DILL International Master. At the moment involved in a 3 years research project on interface quality, user interaction with cultural heritage web content: social tagging, semantic marking, evaluation methods of user behaviour and satisfaction. He is technical coordinator for the Europeana local project-Italy. Member of the MINERVA, MINERVA Plus and MINERVA eC European working groups on cultural web quality; co-author of the European and Italian editions of the Handbook of quality of cultural web sites, the Quality Principles for cultural Web sites: a handbook and the Handbook on the cultural web user interaction. He is scientific coordinator for the State Archives, the Marche and Umbria Italian Regions workspaces for the MICHAEL project. Member of the board of directors 2010-2013 of AIDA Associazione Italiana Documentazione avanzata, member of the Scientific board of directors of Italian Central Institute for Archives.

Filipčić Maligec, Vlatka graduated in history at Zagreb University. Since 1995 she is employed at the Hrvatsko zagorje Museums, in the Museum of Peasant Revolts

in Gornja Stubica as museum's director and senior curator. Vlatka Filipčić Maligec is the author of several exhibitions and related catalogs, and co-author of the permanent exhibition of the Museum of Peasant Revolts. She has published several scientific, professional and publicist works and has participated with presentations in conferences on culture, history, museology and cultural tourism, and the congress of the Croatian historians and museum professionals. She is member of the Board SEE ICOM and the Croatian Museum Association and the editorial board of the edition Condition of the Cultural and Natural Heritage in SEE. She is attending postgraduate doctoral study of the Croatian culture. Special areas of interest include the Croatian national revival, history of women, and the relationship between museology and the history.

Golubović, Dragan holds a BA in comparative literature and library science and is a candidate for Master's degree in Library Science, University of Sarajevo. He is working as the manager of online digital archive INFOBIRO and is in charge of the development of a digital archive, the content and technical aspects. Dragan Golubović is head of the project "Protecting and archiving cultural heritage of BiH: BiH historical newspapers and magazines". During project implementation, he supervised the process of digitization of several magazines, such as: *Bosanski prijatelj* (1850-1870) – the first Bosnian magazine, *Glasnik Zemaljskog muzeja* (1889-1940) – the first science magazine published in BiH, *Bosanska vila* (1885-1914) *Nada* (1889-1903). Dragan Golubović was head of the project of digital protection of the *Feral Tribune* (1993-2008) – Croatian weekly magazine. As member of the working group Sarajevo City for the Establishment of a Digital Repository of publicly available documents of ICTY in Sarajevo, Dragan is in charge of the digitization process and the establishment of the digital library of ICTY public documents in Sarajevo.

Hadjikolev, Emil works at the Plovdiv University Paisii Hilendarski, Plovdiv, Bulgaria. He is attending a postgraduate doctoral course. His main professional interests include information systems, Internet programming, digitization of cultural heritage, quality assessment.

Hadži-Purić, Jelena was born in Belgrade, Serbia. She works as a junior researcher (Faculty of Mathematics, Belgrade). Her primary interests are in knowledge discovery, data mining, information retrieval. She likes arts and crafts.

Horošavin, Boris was born in Belgrade in 1980 and graduated from the Faculty of Philosophy, University of Belgrade and in 2006. Major projects he was working on are: Revitalization of Golubac Fortress project (Albo Inženjering/EU funded), Gamizigrad – Felix Romuliana visualization (RZZSK), Rogljevačke pivnice visualization (RZZSK), Day Night lamp modeling & visualization (OD DO Arhitekti), Baba armchair modeling & visualization (OD DO Arhitekti/awarded, Milano 2008).

Horović-Vuković, Bruna was born in Split in 1973. She graduated in 2000 from the Faculty of Humanities and Social Sciences, University of Zagreb (history and Italian language and literature). For three years she taught history and Italian language in Split and ran Italian courses in the Dante Alighieri, Italian and Croatian Society. From 2003 she has been working in the State Archive in Split as an archivist and the head of the department for the Map Archive of Istria and Dalmatia.

Horvat, Aleksandra is professor at the Department of Information Sciences, Faculty of Humanities and Social Sciences, University of Zagreb, where she teaches a number of courses to both graduate and postgraduate students. She is the author of books: Knjižnični katalog i autorstvo /Library Catalogue and Authorship/,1995; O katalogu: izbor iz radova dr. Eve Verona /On the Catalogue: Selected Works by Dr. Eva Verona/, 2005; and the co-author of Knjižnice i autorsko pravo / Libraries and Copyright/, 2009. She is a co-editor of a series of books of proceedings of the Round Table on Free Access to Information published by the Croatian Library Association. She delivered lectures to librarians in all the major towns in Croatia and in a number of countries abroad, and had helped in the establishment of the Centre for Continuing Training of Librarians in Croatia in 2001. An active member of the Croatian Library Association, she served as the president from 1992 to 1994. At present she chairs the Association's Committee for Copyright, and is also a member of EBLIDA/EGIL and IFLA/CLM. From 1997 to 2004 she was a member of IFLA/FAIFE.

Ivanova, Krassimira works at the Institute of Mathematics and Informatics – BAS, Sofia, Bulgaria as a researcher in Information System Department. She is in charge of the laboratory "Digitization of Scientific and Cultural Heritage". The main areas of interests: theories: data mining, image retrieval, data bases, information systems; application areas: digitization of cultural heritage, disaster risk management, analysis of economical processes.

Jakopec, Tomislav is a research assistant in the Department of Information Science, University of Osijek, Croatia. His main fields of interest are web and mobile technologies, web and mobile standards and ways of presenting specific content in the web and mobile environments.

Jelavić, Anja is the Head of the Cultural Contact Point office for the Culture 2007 – 2013 programme at the Croatian Ministry of Culture, where she previously worked as adviser and assistant for international cooperation. Member of the team of experts for the accession negotiations (chapters: Education and Culture, Information Society and Media). She holds a BA in art history and Italian language and literature, and a MA in European studies.

Jerele, Ines is a researcher at the Library Research Centre, the National and University Library, Slovenia. She studied librarianship at the Department of Library and Information Science and Book Studies at the Faculty of Arts in Ljubljana. She is a PhD candidate in the Department of History of Art and Department of Philosophy at Faculty of Arts, Ljubljana, with a thesis "Book as an art object in the 16th century Europe: on the examples kept in Slovenian libraries". Since 2008 she is a researcher on national and international projects and at the moment works on the international 7FP project IMPACT. She is an author of the exhibition and book Flores in colores, and many articles on digitization and cultural history.

Jeremić, Nenad, software development manager, programmer, mathematician, visual artist. Nenad has experience in most of the programming concepts and a number of programming languages as C/C++/C#, PHP/MYSQL, Perl, Assembler, Lex/Yacc. Some of his works include systems for the presentation of bibliography with multi-user editing access for big libraries, in use at the National Library of Serbia and the program for the automatic generation of bibliography web presentations, used by the libraries in the region. Also, he wrote the programming code for the M2J application, for online synchronisation between the Australian accounting software MYOB and cms Joomla. It was made in cooperation with Australian partners. In 2009 he founded the Blink N programming agency. Nenad holds a Bachelor's degree in mathematics and programming and a Master's Degree in Multimedia Arts.

Juričić, Vedrana is director of the Library of the Croatian Academy of Sciences and Arts since 2006. She graduated in music studies and Italian language (1978) from the University of Zagreb and received MA in information science, with the thesis Music libraries in Zagreb (1986). She worked at the Music department of the City Library, Zagreb (1978 – 1992) and at the Division for the History of Croatian Music (1992 – 2005). She is interested in music manuscripts cataloguing (collaboration on research projects: Collection, Cataloguing, and Processing of Written and Printed Music and other Music Sources in Croatia and RISM - Répertoire international des sources musicales, Frankfurt/aMain) and digitizing. She had founded the Digital Collection of the Library, since 2009 the Digital Repository of the Croatian Academy of Sciences and Arts.

Jurić, Mirjana was born in Zagreb in 1973. She obtained a degree history and philosophy at the Faculty of Humanities and Social Sciences, University of Zagreb, in 1997. After graduation, she was employed at the Croatian State Archives as an archivist in the Archival Division for Documents produced until 1945. Since 2007, she has worked as a senior archivist and head of the Map Collection and the cadastral documents in the Croatian State Archives. In 2010 she obtained a Master's degree from the Department of History at the Faculty of Humanities and Social Sciences, University of Zagreb. She has participated as an exhibitor at the conference organized by the Croatian Society of Archivists, Slavonski Brod, 2010, and at the International Workshop organized by the ICA Commission on Digital Technologies in Cartographic Heritage in the Hague, in 2011.

Kavčič-Čolić, Alenka is the Head of the Research and Development Division at the National and University Library, where she is in charge of coordinating the activities of the Training Centre, Library Development Centre, Library Research Centre and the Information and Documentation Centre. In the last ten years as Head of the Library Research Centre she took part in many European projects. Recently, she has been involved in digital preservation research and training activities. She is member of the Editorial Board of Slovenian scientific journal Knjižnica, has been a member of the executive committee of Slovenian Special Libraries Association and since 2006 a member and Secretary of the Standing Committee Board of the IFLA Information Technology Section. She holds an MA degree from the Faculty for Organization and Information of the University of Zagreb and a PhD in Information Science from the Faculty of Humanities and Social Sciences, University of Zagreb.

Klarin Zadravec, Sofija, MA, digitization consultant at the Croatian Institute for Librarianship, National and University Library in Zagreb. She coordinates several digitization projects, including Digitized Heritage (http://www.nsk.hr/Heritage.aspx?id=25), Digitization of historic Croatian newspapers and journals (http://dnc.nsk.hr) and Digital Academic Repository (http://dar.nsk.hr). Member of the working group within the Ministry of Culture in charge of developing a digitization strategy for the Croatian archives, libraries and museums (2006-2007) and "Croatian Cultural Heritage" Project Office - a national project for the digitization of archival, library and museum material (2007-2010).

Krstulović, Zoran graduated in musicology at the Faculty of Humanities and Social Sciences, University of Ljubljana. Since 2002 he has been working as a Deputy Director of the National and University Library in Ljubljana, Slovenia. Member of The European Library Management Committee (2004-) and the Standing Committee of the IFLA Section for National Libraries (2003-2005). He is the President of *Slovenian Music Information Centre* (2008-) and has been project leader and organizer of meetings, conferences and workshops.

Kružić, Borut was born in 1978 in Rijeka. Mr. Kružić completed Technical High School for Mechanical Engineering and Shipbuilding in Rijeka in 1996. In 2003 he graduated cum laude from Maritime Faculty of the University of Rijeka where he was awarded a title of graduate engineer of maritime traffic, in the course of traffic technology. Since November 2004 he has been employed as an information technician and document manager at the Natural History Museum of Rijeka. He is in charge of the Museum's secondary documentation, preparation of marketing materials and illustrations, poster presentations, as well as brief marketing clips. He collaborates with curators on various projects. Furthermore, he is the author of photographs, as well as an active promoter and presenter of Natural History Museum Rijeka at exhibitions, conferences, fairs, and in the print and electronic media. Currently, he is attending the "Marine environmental protection" postgraduate course at the Maritime Faculty of the University of Rijeka. Since 2011, he is the coordinator of the Section for Museum Documentation at the Croatian Museum Association.

Kuzman Šlogar, Koraljka graduated in history, ethnology and museology at the University of Zagreb. She gained her Master's degree in the field of ethnology/

cultural anthropology ("Feng Shui: an ethnological analysis of the socio-cultural phenomenon") and is currently working on her doctoral dissertation ("The Revitalization of Identity of the Slovakian Croats from 1989 up to the Present"). She has been working at the Institute of Ethnology and Folklore Research (Zagreb, Croatia) since 1998, first as an assistant on the project of digitization, and since 2001 as head of the Department of Documentation.

Lemić, Vlatka works at the Croatian State Archives since 1998, currently as the head of the Department for Information and Communication and Registry, Development and Documentation Service. Since 2003, lecturer in the Department of archival studies at the Faculty of Humanities and Social Sciences, University of Zagreb, coordinating the practical work of students. Participates and lectures at various national and international professional and scientific meetings and is the coordinator of ARHiNET project from its beginning. She is vice-president of ICARUS and one of ENArC project coordinators.

Leščić, Jelica, MA, library consultant, now employee of the Croatian Institute for Librarianship and Information and Reading Room Department at the National and University Library in Zagreb, previously librarian at the Central Library of the Croatian Academy of Sciences and Arts. Fields of work: public libraries, information work, authority files. She participated in several projects, several professional papers and translations (data partly in e-catalogue www.nsk.hr). She is member of Croatian Library Association and the UDCC. J. Leščić is the editor-in-chief of the Croatian library journal Vjesnik bibliotekara Hrvatske.

Marinković, Bojan, http://www.mi.sanu.ac.rs/~bojanm/, born in 1980, graduated from the Faculty of Mathematics, University of Belgrade, Serbia (Department of Computer Science) in 2004. In 2008 at the same faculty obtained MSc with the thesis: Applying XML Technologies for Digitization of the National Cultural Heritage. Currently, he is a PhD student at The Faculty of Technical Sciences University of Novi Sad, Serbia. Since 2006, has worked at the Mathematical Institute of the Serbian Academy of Sciences and Arts, currently as research assistant. During 2009 completed a three month internship at INRIA, Sophia Antipolis, France at LogNet team, funded by TEMPUS project DEUKS. He participated in several national and international summer schools, workshops, and conferences and a regular attendee of SEEDI events.

Meić, Ismena graduated from the University of Zagreb Faculty of Humanities and Social Sciences, Department of Philosophy and Department of Comparative Literature. Since 1995 has worked as a reference librarian in Zagreb City Libraries (City Library of Zagreb). Her current job position is co-ordinator of desktop publishing, webmaster and designer of thematic and virtual exhibitions. She is a member of Croatian Library Association. She has attended conferences and held lectures at The Annual International Conference and Course Libraries in the Digital Age (LIDA) 2009 and MetLib 2010 Conference. Her main fields of professional interest include: library digitization, web 1.0 and web 2.0 design and implementation, desktop publishing, exploring new media and digital arts. She is technical editor and webmaster of the project Digitized Zagreb Heritage.

Miholić, Irena graduated (1998) in musicology from the Music Academy, University of Zagreb. She obained her Master's degree (2005) and a PhD (2009) in the humanities, the field of ethnology, at the Faculty of Humanities and Social Sciences, University of Zagreb. She works as an ethno-musicologist, musician and music educator. Presently she works as senior assistant at the Institute of Ethnology and Folklore Research in Zagreb. Fields of interest: traditional music in Croatia, traditional instruments and ensembles, processes of preservation and education, Croatian popular music today.

Mijajlović, Žarko Dušan, professor of logic and algebra at the Faculty of Mathematics in Belgrade was born in Prokuplje, Serbia, 1948. He graduated from the University of Belgrade in 1971, and obtained a PhD in mathematics from the same university in 1977. He obtained the position of full professor in 1993 and since 2000 is the head of the Chair of Algebra and Logic at the Faculty of Mathematics, University of Belgrade. The main field of his scientific research is algebra and mathematical logic, specifically the model theory and applications in computer science. He has published around 120 papers in domestic and international publications. He is the author, or co-author of four books on logic and algebra, including the monograph "Model theory and applications" (in English, 1988). He is the editor-in-chief of editorial boards of scientific journals: Publication de l'Institute Mathematique, and NCD Review (SEEDI Communications). With an interest in the field of digitization, he led several projects in this field and was the editor of six compact discs on art and history of mathematics. In 2003, he started a new journal NCD Review in the area of electronic archiving and digitization. He is the editor of the following electronic editions: a. Old maps, engravings, and photo-

graphs, collection of the City Museum of Belgrade, (1996), b. Collected works of acad. Bogdan Gavrilović (2000 digitized pages, 1999), c. Gromans's photo album 1876-1878 (2003.). He is also editor-in-chief of the Virtual library, http://elibrary.matf.bg.ac.rs which contains more than 250 digitized rare books and doctoral dissertations (more than 50,000 digitized pages). Also, he was the main organizer of 9 national and two international conferences on digitization. He is the Serbian representative in SEEDI. Since 1995, he lead three projects in this field, financed by the Ministry of Sciences of Serbia, each lasting three years. He is a recipient of the first prize for papers awarded by the Balkan's Union of Mathematicians (1977). Also, he was awarded Fulbright scholarship twice (1973 and 1991) and was a visiting scholar in Warsaw, Courant institute (New York), University of Wisconsin (Madison), and the visiting professor at the Hebrew University in Jerusalem (1990). He delivered about ten invited lectures in foreign mathematical centers, or conferences. Avocation: history of mathematics and astronomy.

Mitrović, Jelena was born in Užice in 1980. She holds a BA in Greek language and literature, and English language from the University of Belgrade, as well as a MSc in LIS obtained at the same University. Her Master's thesis was on the Google Books Project. As of December 2010, she has been working at the Development and System Administration, Book Digitization and Cultural Activities Department of the Svetozar Marković University Library in Belgrade.

Musek, Tine is an employee of the Digital Information Infrastructure and Preservation Department of the National and University Library of Slovenia as head developer. He works mostly on developing specialized software, such as the Digital Library of Slovenia, the National Agregator for eContent, the National Repository for Cultural Heritage and Legal Deposit, the National URN Infrastructure etc. In the last 5 years he has specialized in web development in ASP.NET and SQL database handling. He is also actively involved in several international technical working groups, including TWG of the European Library, Workgroup for Persistent Identifiers, Relevance Ranking working group. Prior to his current job position he was working as an IT administrator for several years, which has given him a great insight into hardware infrastructure.

Nenezić, Snežana was born in 1964 in Kruševac. She graduated in art history from the Faculty of Humanities, University of Belgrade in 1989. She holds an

MA from the Department of Library and Information Science, Faculty of Philology, University of Belgrade 2003. She has worked at the Public Library Kruševac since 1991, obtaining the title of a senior librarian in 2001, and library adviser in 2006. She is one of the co-authors of the monograph *Narodna biblioteka Kruševac* (2002) and the author of the publication Scrapbook (2007) to celebrate the 150th anniversary of the Library. She lectured at accredited seminars for professional development of employees in education. She has participated in numerous professional meetings, seminars, international conferences, and has published articles on librarianship in national periodicals. She is member of the editorial board of the publication *Savremena biblioteka.* Her work is especially focused on the local history collections. She is a licensed cataloger for the online public access catalogue - COBISS.SR. On the task of digitizing the holdings of the Library – Digital Local History Collections she has worked with Miljko Veljković since 2005, with whom she participated in several related national and international conferences.

Ognjanović, Zoran, http://www.mi.sanu.ac.rs/~zorano/, research professor at MISANU, received PhD in 1999. He is/was the project leader of a number of projects, including two digitization projects within the UNESCO in the framework of the Participation Programme. He is the coordinator of the National Center for Digitization, Belgrade. He was the President of the Committee for digitization of the UNESCO commission of Serbia (2006-2010).

Pavlov, Zoran was born in 1960 in Veles, Macedonia. In 2002 he received his MA in history of the Ottoman art from the History of Art, Faculty at the Gazi University in Ankara, Turkey. Since 2005 he has been working at the Ministry of Culture – The Cultural Heritage Protection Office as head of the Department for Documentation, International Cooperation and Administrative Affairs. He was a participant and coordinator of several symposiums and conferences. He is also the author of articles related to culture and history of Macedonia and Turkey. He is member of the Macedonian National Committee of the Blue Shield (2003), and the Macedonian National Committee of ICOMOS.

Pintarić, Snježana, Director of the Museum of Contemporary Art in Zagreb since 1998. She graduated in history of art and German language and literature from the Faculty of Humanities and Social Sciences, University of Zagreb in 1983. She obtained the Master of Arts title in the field of the Humanities and Social

Science from the same faculty in 1993. In the period 1985 – 1990, Ms. Pintarić worked as an associate and researcher for the Institute of History of Art in Zagreb. From 1983 to 1991 she was a curator, and from 1991 to 1993 director of the Antun Augustinčić Gallery in Klanjec. She was also working as an expert adviser for museums and the protection of monuments in the Zagreb Town Office for Culture from 1993 to 1998. The priority in the expert work of Ms. Pintarić in the last several years, except the curator's projects, has been the re-establishment of organizational and financial predispositions for the construction of the new building of the Museum of Contemporary Art. In the period between 1998 and 2003, Ms. Pintarić was member of the Croatian Museum Council, member of the Cultural Council for the International Cooperation and European Integrations at the Ministry of Culture of the Republic of Croatia, as well as a Vice President of the Croatian ICOM Committee.

Pokorn, Daša graduated in history from the Department of History in 2008, and Comparative literature from the Department of Comparative Literature and Literary Theory in 2009, both at the Faculty of Arts, Ljubljana. Since 2009 she has been working at the Digital Library Development and Strategy Division at the National and University Library of Ljubljana, responsible for the coordination of digitisation.

Radovanlija Mileusnić, Snježana holds a Master's degree in information science. She is senior librarian and head of the Special Library of Museum Documentation Centre in Zagreb, Croatia. The focus of her activity is the project of computerization of library and other digital library projects. She is the author of the project electronic museological bibliographic on-line database with summaries. Her interests include matters of museum library and museum publishing. Since 1996, she has been head of a long-term exhibition project of the publishing activities of the Croatian museums and galleries. Participates in the organization of the MDC's international conferences; member of the editorial MDC's website. Actively participates in professional conferences and is published in library and museum professional journals.

Rančić, Sandra was born in Niš, Serbia. She has a lifelong interest in studying cultural phenomena. She works as journalist.

Rizvić, Selma completed her postgraduate doctoral study in 2007 at the University of Sarajevo. Currently she is appointed as the head of the Laboratory for Cultural Heritage Digitization, SSST, Sarajevo, as a associate professor at the Faculty of Electrical Engineering Sarajevo at the University of Sarajevo, and as head of Broadcast Design Department at the BH Radio Television. Selma Rizvić is the author and co-author of two books and several journal and conference papers. She participated in EU projects and had worked on several projects related to culture, history and museology. She is member of ICOMOS BH National Committee and EuroGraphics.

Selimović, Dino was born in 1981 in Sarajevo, Bosnia and Herzegovina. In 2007 he completed business studies at the Paneuropean University Apeiron in Banja Luka, qualifying as a manager-specialist in business economy. Since 2007 he has been working as Director of 5D-CADD d.o.o. Sarajevo. From 2006 to 2007 he was director of GEOPORTAL & BBM d.o.o. Sarajevo, from 2005 to 2006 marketing director at PROMOTIM d.o.o. Sarajevo, and from 2000 to 2005 director of Di-Am GROUPE d.o.o. Sarajevo. He participated in, and organized several projects in marketing, promotion and digitization.

Skočir, Primož, born in 1971, principal researcher, holds a PhD from the Faculty of Electrical Engineering in Ljubljana in the field of video coding and transmission. He was first employed as a junior researcher, and later as assistant at the Faculty. After the Master's degree he has started working with TSE ltd. as project manager. He is currently head of R&D department and is responsible for the management of major projects. The scope of his work is primarily focused on the preparation, processing, transmission, display and storage of multimedia content. It shows us that the scientific and research knowledge that may be required, as a research mentor MR. He is co-author of several papers and has been project manager for: planning and coordinating technical support for Slovenian presidency of the EU and development of interactive multimedia applications for Domina Grand Media Hotel. The project won the prestigious Cisco IP project in 2004 award.

Sofronijević, Adam was born in Belgrade in 1973. Holds a MSc in management, a MSc in LIS, a BSc in IT and CISCO CCNA. His first Master's thesis was on library business model, and the second one was on Enterprise 2.0, both from University of Belgrade. Has six years of experience in research of Serbian libraries and imple-

mentation of IT solutions in library environment. Has two years of experience in management of a department in main Serbian university library –the Svetozar Marković University library. Has implementation experience in kick starting Enterprise 2.0 tools in library environment. As of 2010 Adam is member of LIBER Working Group on Digitisation and Preservation.

Šavnik, Mojca was born in 1969 in Ljubljana, Slovenia, where she completed studies at the Faculty of Humanities (University of Ljubljana) in history, ethnology and anthropology. She has been working in Digital Library Development and Strategy Division of the National and University library as a digitisation coordinator since 2005. Her scope of work covers the complete process of digitization, with emphasis on preparation of metadata. She participated in the education of librarians on the topic of digitization in libraries. Her work also consists of curation of metadata for the Digital Library of Slovenia – dlib.si portal, as well as planning, implementing and coordinating digitization nationally. She has been actively involved in domestic and foreign R&D project since 2004.

Tomšik Krmpotić, Dubravka was born in 1965 in Vukovar. She graduated in business studies from the University of Applied Sciences in Split 2002. From 2004 employed at Ilok Town Museum as Accounting Manager, and since 1 January 2007 as Acting Director. With the taking-over of these duties, the Museum's Professional Council was founded, and after requirements had been met, the Ilok Town Museum Administrative Council was also established. In carrying out these duties, the following priorities were established: implementing the project The Research, Restoration and Revitalisation of the Cultural Heritage of Ilok-Vukovar-Vučedol, setting up the Museum's new permanent exhibition, restoring museum holdings, implementation of information technology at the Museum, reorganising the Museum and establishing museum departments as a requirement for employing professional staff, introducing multimedia content in exhibition activities, creating a website and digitizing museum holdings, promoting museum activities through improved co-operation with external users. As Secretary of the Town of Ilok Cultural Council, she has co-operated with many cultural institutions, is Vice-president of the Julije Benešić Cultural Artistic Society and President of Ilok Handball Club.

Totkov, Georgi is the vice-rector and professor at the Plovdiv University Paisii ilendarski, Plovdiv, Bulgaria. His main topics of interests are e-learning, computational linguistics, theory of approximation, digitization of cultural heritage.

Uhlíř, Zdeněk finished his postgraduate doctoral study in 1980 at the Faculty of Philosophy at the Charles University Prague, History, Auxiliary Sciences, Archival Science. He is acting as the General Coordinator of the European EMBARK project (2010-2012). He coordinated and participated in several European projects (REDISCOVER, ENRICH, COMTOOCI, VICODI, MASTER, MANUSCRIPTORIUM Digital Library). He is author and co-author of several book publications.

Ujlaki, Kristian holds degrees in journalism and librarianship. Since 1999 he has been working at the Koprivnica town library (cataloguing & classification) and as of 2004 he has been appointed as the Head of Science & Study Dept. He is an active participant in the local librarians' association of the region (Bilogora, Podravina and Kalnik), at the domestic professional congresses of librarians (2005 in Pitomača; 2006 in Koprivnica and Plitvice; 2007 in Čakovec and Maribor, Slovenia; 2008 in Pula) and at the international congresses of IFLA (international federation of library associations) in Milan, Italy (2009) and Gothenburg, Sweden (2010). Kristian Ujlaki published professional papers in various local librarians› bulletins (Svezak, Pančevačko učiliste, etc.) and the Croatian Library Association›s journal (*Vjesnik bibliotekara Hrvatske*). He was also a team member in a national digitization project „Digitized Koprivnica newspapers", editions from 1950 to 2006. In 2003 he was a Finland study participant (Croatia's selection) for 'Ask a librarian' service development. In 2006 he was a Denmark study participant (Koprivnica's selection) for the "Blind and visually impaired" library service development.

Velagić, Zoran is an associate professor of book history and publishing studies at the Department of information science, University of Osijek, Croatia. He has published a number of articles on early modern book history and one book, *The Writer and Authority*. He is the editor of *Libellarium, journal for the history of writing, books, and memory institutions.* He is currently dealing with the use of texts in the 18th century and modes of publishing and presenting the old prints in digital environment.

Veljković, Miljko was born in 1969 in Kruševac. He graduated from Technical Faculty in Čačak, obtaining a degree in engineering and computer science. Worked from 1995 to 2003 in "14 October" AD Kruševac at the Centre for Development of Business Systems and IT in the Service of Standardization. From 2003 he worked at the Public Library Kruševac as a system engineer. On the task of digitizing the holdings of the Library has worked with the colleague Snežana Nenezić since 2005, with whom he participated in several national and international conferences related to the subject. He is also a web administrator of the official Library site – www.nbks.org.rs.

Vesić, Dušan was born in Belgrade, Serbia. He is a historian. In the 1980s he was a music critic, in the 1990s he was interested in marketing, and since 2002 he has been involved in TV production.

Vidmar, Gregor, born in 1974, has graduated from the Faculty of Natural Sciences and Engineering at the University of Ljubljana, Specialization: geology. He was employed at MFC.2 ltd. as assistant to the commercial-technical director from 2004 – 2008 and as the head of New Services Development. He was the manager of several successful projects: 1. digitization of the land registry documentation of the Surveying and mapping Authority of the Republic of Slovenia, 2. digitization of the land registry plans of the Surveying and Mapping Authority of the Republic of Slovenia, 3. digitization of the National and University Library of Slovenia publications and 4. Different projects of 2D and 3D digitization and visualization of cultural heritage.

Volić, Ladislav was born in 1963 in Travnik, BIH. He studied theology at the Franciscan Faculty of Theology in Sarajevo. He graduated theology in Zagreb. He worked as a teacher of Latin language. In 1993 he took up a position at the State Archives in Varaždin. Currently, he works as an archivist-document specialist-librarian. He is an author and co-author of several articles in the field of archival sciences and history, as well as of several exhibitions.

Vragov, Georgi works as a Researcher in Information System department at the Institute of Mathematics and Informatics – BAS, Sofia, Bulgaria. His main topics of interests are Information Systems, Education on Informatics, Digitization of Cultural Heritage.

Vrkić, Iva was born in 1980. She graduated in Pedagogy and Library Science from the Faculty of Humanities and Social Sciences, University of Zagreb. In 2007 she defended her diploma thesis "Bibliometric analysis of the scientific production of the Ruđer Bošković Institute and Ivo Pilar Institute of Social Sciences in Zagreb (1998-2002)". Since 2008 she has been working at the Department of Geophysics Library at the Faculty of Science. She attended EnIL International School on Business Information Literacy, participated in the 5th International Conference on Open Repositories in Madrid, and several national seminars. Her main interests are digitization of scientific heritage, bibliometry, quantitative aspects of the scientific publishing and communication.

Vučković, Vesna was born in Novi Sad, Serbia, in 1951. BSc, MSc, and PhD degrees in mathematics and computer science she received from Faculty of Mathematics in Belgrade, Serbia. She is working in the Computing laboratory at the Faculty of Mathematics. Her research interests include image processing and digital watermarking.

Zahtila, Dean born in Labin/Croatia, Bachelor of Economics (1981), artist (member of art group Metal Guru), cultural manager, civic and media activist, one of the founders and president of non-profit association Labin Art Express (L.A.E. / since 2005 Labin Art Express XXI), established in 1991 with a mission to develop civil and open society through alternative art and culture. From 1993-1996 director of Radio L.A.E., the first fully independent radio station in Croatia, since 1998 director of Cultural Centre 'Lamparna' Labin established by L.A.E. and „cultural promoter" of the Region of Istria. Initiator and project manager of the 'millennium' regional project Underground City XXI.

Zajec, Jasenka Library consultant, holds a BA in English, French and librarianship. She currently works at the National and University Library in Zagreb as head of the ISSN centre for Croatia, Croatian ISBN and ISMN agencies. She was the head

of the project: Digitization of Historical Croatian Newspapers. She is a member of the Croatian Association of Librarians and the Croatian Information and Documentation Society. As the representative of the Republic of Croatia she is a Member of the Governing Board of ISSN International Centre. She chairs the Croatian ISO TC 46 committee, which deals with the standards pertaining to the fields of information and documentation, archives, museums, publishing, as well as document management, storage and classification.

Ziherl, Jerica, born in Ljubljana 1959, art historian, curator and lecturers, PhD in art history. She participated and lectured at more than fifteen Croatian and international scientific and professional conferences. She has also collaborated on scientific projects and has been an editor of scientific collections, art monographs, publicist writings and approximately fifty exhibition catalogues. Since 2007 she has been lecturing at the Academy of Applied Arts in Rijeka and since January 2009 she is director of the Museum of Modern and Contemporary Art Rijeka. Jerica Ziherl curated around fifty exhibitions in Croatia, as well as seven international art shows, and acted as a selector at art events. Since 2007 she has been participating in the *EU Culture Programme X-Op exchange of Art Operators and Producers* and since January 2011 at *Digitising Contemporary Art (DCA).*

Zlodi, Goran, PhD, assistant professor, graduated in information sciences/museology and Czech language and literature at the Faculty of Humanities and Social Sciences, University of Zagreb in 1997. Obtained his Master's degree with the thesis "Museum visual documentation in digital form" in 2003 gained his PhD with the thesis "Possibilities of establishing interoperability among metadata schemes in museum environment" in 2007. After graduation he started working as a junior researcher on the research projects "Preservation and Communication of Cultural Heritage" (1999-2003) and "Heritage Users Research" (2007-). Presently Assistant Professor at Chair of Museology in the Department of Information Science, Faculty of Humanities and Social Sciences at the University of Zagreb. Member of the National programme for digitisation of archive, library and museum material in Republic of Croatia (2005-2007) and member of project office at the National Croatian Cultural Heritage project (2007-). He is member of ICOMs International Committee for Documentation. Main research interests: metadata interoperability, museum documentation, controlled vocabulary.

Živčec, Doroteja graduated in 2005 from the department of Mathematich at the University of Zagreb. Since July 2007 she has been working as the IT Specialist at the Museum Documentation Centre in Zagreb. From 2005 to 2006 she was employed by the 1st Primary School in Čakovec as Mathematics Teacher.

Živković, Daniela is associate professor at the Department of Information Sciences, Faculty of Humanities and Social Sciences, University of Zagreb, where she teaches courses to graduate and postgraduate students. She is the author of books: *Elektronička knjiga,* 2001; English ed. *The Electronic Book,* 2005; *Matija Smodek: Professor and Academic Librarian,* 2001; and the co-author of *Knjižnice i autorsko pravo* (Libraries and Copyright), 2009. She was a member of the negotiating team for the access of Croatia to EU in Screening Chapter 25 Science and Research in 2005. As a member of the Working Group of the Ministry of Culture of Republic of Croatia she participated in developing the National Programme of Digitisation of Archival, Library and Museum Holdings in 2006. She was a representative of the Croatian Library Association in the IFLA Committee on Copyright and Legal Matters from 2002 to 2007. At present she is a member of the Croatian Library Association Committee on Copyright.

ABOUT ZAGREB

About Zagreb

More than nine hundred years ago, two individual settlements developed on two adjoining hills: Kaptol, a rich spiritual centre and Gradec, settled by skilled craftsmen and merchants. In 1094, Kaptol became a Roman-Catholic diocese. The first mention of the name of Zagreb in an official document dates back to that period. The second important year is 1242, when King Bela IV awarded Gradec the Golden Bull, thus granting it the status of a free royal city. In 1557, Zagreb became the capital of Croatia.

The first grammar school was established in 1606 and the first university in 1669. In 1862, Zagreb was connected with other parts of the Austro-Hungarian Empire by railroad. In 1866, the Academy of Arts and Sciences was founded. The

year 1910 witnessed the formation of the Zagreb Assembly, as the forerunner of the Zagreb Fair and the organization of its first international economic exhibition.

Modern day Zagreb has one million inhabitants and constitutes the political, cultural and scientific centre

of Croatia, thus truly deserving the title of the Croatian metropolis.

Josip Jelačić Square is undoubtedly the very heart of the Croatian capital. Situated in the centre of Zagreb, it is dominated by a monument to Josip Jelačić, who became the royal administrator of the tripartite Kingdom of Dalmatia, Croatia and Slavonia on 23 March 1848.

The main town square is the best place to start a tour of the city. If you have little time, limit your sightseeing to Kaptol and the Upper Town (*Gornji grad*), which are among the best preserved medieval towns in Europe. Although Zagreb abounds with antiquities, monuments, museums, galleries and cultural events, there is no better place to get a true feel of its long history than in the Kaptol and the Upper Town.

Bakačeva Street will lead you straight to Kaptol, where you can see the Cathedral of St. Stephen and the chanceries surrounding it. To get to the Upper Town, take Radićeva Street to *Kamenita vrata* (*Stone Gate*); the only preserved medieval gate of the city), and follow the road to St. Mark's Square. You can return to the city centre with the funicular, which has connected the old part of the city with Ilica, the main shopping area, for hundreds of years. Wherever you go, you will feel the allure of the Old continent, manifested in Zagreb's architecture, parks, restaurants and inhabitants.

If you are spending an entire day in Zagreb, you should visit the Lower Town (*Donji grad*), with its beautiful parks and distinctive architecture. Visit Preradović Square, popularly called Flower Square, because you can buy flowers there all day long. Walk on to the Maršal Tito Square, where you can see the Croatian National Theatre, administration building of the Zagreb University and the Museum of Arts and Crafts.

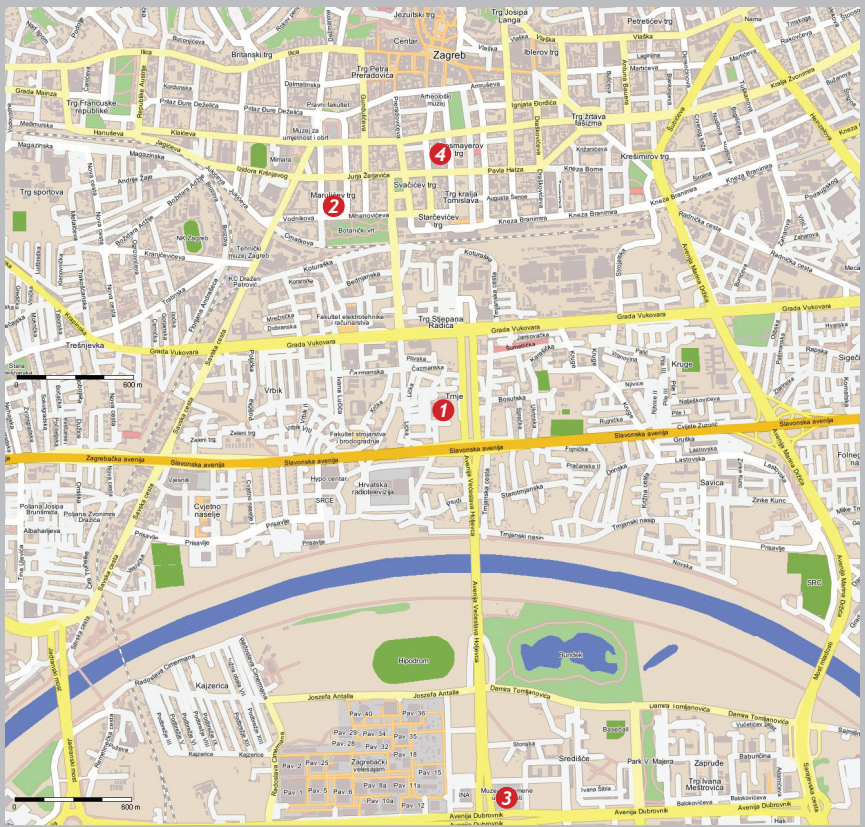
If you head south, you will come upon Mažuranić Square and the Ethnography Museum. One street to the west, and you are at Franklin Roosevelt Square and the Mimara Museum. Turn south, and you will come across the Botanical garden, a green oasis in the midst of the city.

There are three other squares in the vicinity, namely: Tomislav Square, Strossmay-

er Square and Nikola Šubić Zrinski Square. The three squares are connected and are rich in vegetation, monuments and institutions of learning. You can also find Strosmayer's Gallery of Old Masters and the Archaeology Museum.

Zagreb is a city in which something is always happening and attracts tourists throughout the whole year. Listen to a concert in the Vatroslav Lisinski concert hall, see a ballet or opera in the Croatian National Theatre, visit an avant-garde show in the Youth Theatre (ZeKaeM) or take a stroll down Tkalčićeva Street, full of cafés which is a favourite meeting place of the young. Zagreb is also an important fashion and trading centre in which you can find goods from all over the world. If you choose among the many snack bars, cafes or restaurants, you will be sure to enjoy their rich gastronomic offer.

Zagreb city map



1 **The National and University Library in Zagreb**
Hrvatske bratske zajednice 4, 10 000 Zagreb

2 **Croatian State Archives**
Marulić square 21, 10 000 Zagreb

3 **Museum of Contemporary Art**
Avenija Dubrovnik 17, 10000 Zagreb

4 **Palace Hotel**
Square J.J.Strossmayer 10, 10 000 Zagreb

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