*Milena Dobreva, Nikola Ikonomov*

**PREFACE**

The idea of this volume was born in 1999 when the Institute of Mathematics and Informatics in Sofia, Bulgaria hosted the International Summer School *Digital preservation of Mediaeval Manuscripts and Early Printed Books* (http://www.math.bas.bg/~dpm/). One of the events that happened during the school was a Solar Eclipse. This would be a really frightening experience in earlier times, but for the school participants it was astonishing…

In contrast to the Solar Eclipse, schools like this one, especially held in Eastern Europe, serve the lofty goal to bring light through raising awareness and practical knowledge amongst specialists from the region. The international teaching staff of the school agreed that the practical value of the event should be enhanced by producing a printed set of materials designed to help curators of collections in the Central and Eastern Europe who do not have any experience in the field, and specialists who already have some experience but would like to have their knowledge updated.

The edition was intended to offer a gentle introduction to different aspects of the practical work in the field of digital preservation of manuscripts (having in mind the region's needs); to present a general picture to people who already have *some* experience in one or more of the associated activities, and to answer specific needs in the region (in the sense of presenting local material accordingly and assuring interchange).

The idea of the school lecturers was not only to write a collection of guidance materials on various subjects related to digitization of cultural heritage, but also to put them within a local frame. In the subsequent years, the enthusiasts of this idea had several more chances to meet and bring new people. In this rapidly developing world their work and methods were changing too. The group 'grew' beyond the manuscript field.

Thus, about five years later, when the region has also the current specialized edition, *The NCD Review,* we offer to the reader a collection of articles which present a variety of topics.

The initial papers in the volume deal with manuscript digitization and processing. We are honoured to start this collection with the paper of **Dr. Kevin Kiernan, Dr. Brent Seales and Dr. James Griffioen** *The Reappearances of St. Basil the Great in British Library MS Cotton Otho B. x.* The authors share some of the experience gained during the work on the interdisciplinary project called "The Digital Atheneum: new techniques for restoring, accessing, and editing humanities collections," (http://www.digitalatheneum.org/) which focuses on restoring manuscripts by using novel lighting methods and 2D/3D digital image processing algorithms, as well as on searching and editing manuscript collections. Most important from Central and Eastern European perspective are the methods already applied to the study of Anglo-Saxon texts and not used in our region.

The second paper in the collection comes from yet another writing tradition. **Dr. M. J. Driscoll** from Arnamagnæan Institute, Copenhagen presents his 'view from the

North'. The paper sketches several Scandinavian projects (SagaNet, Menota, The St Laurentius Digital Manuscript Library and The virtual reunification of the Arnamagnæan Manuscript Collection) – all of them including digitization of medieval manuscripts. Again, the curators of collections of Central and Eastern Europe can learn from the approaches, methods and problems faced by the project team.

The next paper describes the experience of a collection from Central and Eastern Europe, the Unitarian Archives and Library in Cluj/Koloszwar. **Lehel Molnár B.** and **Dr. Deborah J. Youngman** present some general European trends in digitising. The field of digitisation in Romania is still not yet well developed, compared to the European trends, but the practical work done for the collection of the Unitarian Church in Cluj/Koloszwar which is presented in the paper is an excellent example of an approach that works for a collection with curators highly motivated to move ahead.

The reader can explore areas beyond manuscript digitisation reading the paper of **Yoana Sirakova** and **Dimitar Iliev** from the University of Sofia, Faculty of Classical and Modern Philology – Department of Classics. They present the project **Romulus Bulgaricus** aimed at building a corpus of Latin texts and various existing translations into Bulgarian**.** The approach in such endeavours would be of growing importance with the collection of multiple text versions.

The 'manuscript-oriented' group of papers is closed by the contribution of **Andrej Boyadžiev** from the Faculty of Slavic Studies at Sofia University. He presents an initiative aiming at the collection of catalogue data on mediaeval Slavonic manuscripts called *Repertorium of Old Bulgarian Literature by Computer Means* (http://clover.slavic.pitt.edu/~repertorium). The initiative goes back to the 1993–1994. By 1996, about 300 descriptions of manuscripts in TEI format were collected. The work on this project is of interest because it illustrates the important issue of computer representation. In this case, on the 10-year life span of the project, the material in electronic form had to be migrated to XML.

The papers which follow present on-going work on other types of cultural heritage. The paper of **Dr. Žarko Mijajlović** (FM Uni Belgrade, Serbia and Montenegro) and **Dr. Zoran Ognjanović** (IM SANU, Serbia and Montenegro) "A Survey of Digitization Projects Carried Out by Mathematical Institute and Faculty of Mathematics – Belgrade" presents several projects on digitisation of various material – from the works of a famous Serbian mathematician to archaeological objects.

**Dr. Milena Dobreva** from the Institute of Mathematics and Informatics and **Dr. Nikola Ikonomov** from the Institute of Bulgarian Language present several new information technologies included in a recent survey of the EC-funded DigiCult project. The paper concentrates on radio frequency identification tags (RFID), innovative human interfaces, games technologies, virtual communities, virtual reality, robotic avatars and mobile communications. These technologies not only help in better organisation of the cultural and scientific heritage institutions, but also imply new forms of interaction with the users. Most of the innovations are still not implemented in our region and the purpose of this presentation is to raise the interest of the cultural and scientific heritage organisations to them.

The paper of **Dr. Žarko Mijajlović, Dr. Boško Jovanović, Filip Marić**, and **Miroslav Marić** (FM Uni Belgrade, Serbia and Montenegro) presents in depth the mathematical models beyond one of the technologies which are still not popular in the cultural heritage sector, but could bring the benefit of distant study of works of art and historical finds: 3D imaging.

**Dr. Nikolay Kirov** from the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences presents issues related to digitisation of Bulgarian folklore music. The paper concentrates on music archives, methods and techniques and the previous experience on electronic presentation of Bulgarian folklore music.In her paper 'Edutainment Games – Homo Culturalis vs Homo Ludens' **Kalina Sotirova** from the Institute of Mathematics and Informatics presents the field of edutainment games and it possible application to the cultural heritage sector. The study of this topic would be of growing importance having in mind the increased time spent by children and adults in gaming activities. Another interesting field is presented in the paper of **Dr. Jordan Tabov, Kliment Vasilev** and **Asen Velchev** from the Institute of Mathematics and Informatics – Bulgarian Academy of Sciences 'Mathematical Modelling of Monetary Minting in Mediaeval Bulgaria'. This article illustrates one possible application of quantitative methods to the study of data on archaeological finds.

**Trifon A. Trifonov**, MA motivates the need to develop a new generation of educational methodology based on the presentation of cultural values in a three-dimensional environment – virtual reality (VR) and augmented reality (AR).

This collection ends with an essayistic question mark: the paper of **Dr. Mícheál Mac an Airchinnigh** from Trinity College, Dublin. It puts many open questions. We have not choose to end with such a provoking text because of the idea that digitisation is still *terra incognita* where one does not have a clue what has to be done and how to do it. In this field, it is of utmost importance not only to present practical work done on a certain level of quality, but to find new ways to re-present and re-arrange our past through the new technologies. The paper of Dr. Mac an Airchinnigh raises these important philosophical issues in an untraditional manner presenting scientific argument in a poetic form. This appeals strongly to us, because in our work all of us have to find the right combination of practical, earthly approaches – this is our *terra,* which is yet *incognita* because we still explore the best ways to deliver content, and the content itself, and still have no answers to all questions *How? Why? In what form? When? Who? For Whom? Where?*

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One important result of this scientific meeting was that all participants realized the necessity of more active contacts between regional institutions and signed accordingly the so called "Borovets declaration" which aims to develop a network in digitisation of cultural and scientific heritage.

The tasks of utmost importance of the network were formulated as follows:
- To mobilise the human and material resources existing in the region;
- To disseminate scientific information as well as the results of research;
- To facilitate communication between centres having similar scientific interest.

For the time being, the network encompasses representatives of the Institute for Mathematics and Informatics, BAS, Bulgaria, the Institute for Bulgarian Language, BAS, Bulgaria, the Institute of Information Technologies, BAS, Bulgaria, Sofia University, Bulgaria, Arnamagnæan Institute, Copenhagen University, Denmark, University of Dublin, Trinity College, Dublin, Ireland, Unitarian Archives and Library in Cluj/Kolozsvár, Romania, Faculty of Mathematics Belgrade University, Serbia and Montenegro, Mathematical Institute SANU, Serbia and Montenegro, and ARISTOS company, Ukraine.

A project which will be developed with the support of the Marie Curie Programme of FP6 at the Institute of Mathematics and Informatics in Sofia is entitled Knowledge Transfer for the Digitisation of Cultural and Scientific Heritage to Bulgaria and should start in April 2004.

We hope that within the frameworks of this and other projects the cooperation of researchers from the region and beyond will continue to grow and will contribute to present the local scientific and cultural heritage – as it undoubtedly deserves – on the common European ground.

We would like also to express our gratitude to NCD Review for publishing this volume; our guest editors from abroad Matthew Driscoll and Micheal Mac an Airchinnigh, all authors for their interesting contribution and Kalina Sotirova for her technical support.

*Milena Dobreva, Nikola Ikonomov, February 2004*