

Preface

Conference RCDL-2014 is the sixteenth one in the series of annual scientific conferences “Digital libraries: advanced methods and technologies, digital collections”. The Conference is held for the third time in Dubna at the hospitable Laboratory of information technologies of the Joint Institute for Nuclear Research (JINR). Alongside with the Russian employees of scientific research institutes, professors and post-graduate students of the universities, specialists in the field of library science and information technologies, RCDL-2014 is attended by the representatives of France, Great Britain, India, Kazakhstan and Ukraine.

For the last fifteen years of holding the RCDL conferences, their scope has been essentially extended. To a large extent, it is explained by expanding of the application field of digital libraries, in particular, by the promotion of their applications in the scientific research. Thus, there was a need for technologies of not only comfortable work with text documents, but also for effective storage, processing and analysis of scientific data, integration of heterogeneous data from numerous sources. The development of Data Intensive Sciences in which data become a core of the research work, exponential growth of the observable, experimental and published scientific data give a revolutionizing effect for the technologies of scientific studies and provide for solving of the new tasks thus, in turn, generating new requirements to the digital libraries which become an important component of the tools for these technologies.

On the other hand, the important prerequisites for the development of functional capabilities of digital libraries consist in the new achievements in the technologies of information resource management, which naturally find application in the development of information systems of this class. First of all, these are technologies of semantic Web and technologies of storage, processing and analysis of big data. The tools for their practical use are produced by a number of industrial companies - designers of software and computing equipment. This provides a way for creating the systems operating with information resources and providing user interfaces at a semantic level. They also allow one to perform unobtainable before processing and analysis of enormous volumes of data during an acceptable time. The achievements in the technologies of searching and processing texts in natural languages are significant too.

That is why the Conference program includes not only issues of the digital library development, but also discussions of new technologies of the information resource management which find application in the digital library developments as well as new approaches to the organization of scientific research based on the latest achievements in the information resource management technologies. The Conference program includes three tutorials, two invited talks; 14 sessions will be organized which alongside with the invited talks include additionally 28 reports and 20 communications. 3 papers will be presented at a poster session. By the tradition of the last few years, the Conference foresees a PhD seminar of young scientists to discuss the directions and results of the scientific studies performed by the authors of reports submitted to the seminar.

The conference tutorials are devoted to discussing some features of the semantic digital libraries, directions and results of the activities of the international professional association of developers of scientific information systems (euroCRIS), research on the social networks in social sciences.

One of the invited talks gives a review of the recently developed methods of analysis and IT tools to support scientific computer experiments by hypothesis manipulation in the data intensive sciences. Prospects of the practical use of such approaches can be estimated by the results of research on the Besançon Galaxy Model discussed in the other invited talk.

The report dedicated to the JINR experience in the practical use of Grid-technologies for storage and processing of hundreds petabytes of data in the interest of the international scientific community of specialists in the area of nuclear research is of particular interest. Such work is carried out by the Institute in frames of its participation in the CERN research programs for LHC as well as in the projects on the development of big data technology and integration of various distributed computations systems.

Also the Conference participants will become acquainted with new results of the researches within the Conference scope from other reports and communications included in its program.

The organizers of RCDL-2014 express their confidence that this Conference will promote the further development of scientific researches as well as practical developments in the field of Digital Libraries and adjacent areas of the information technologies.

The chairs of the Organizing Committee and Program Committee of RCDL-2014 express their gratitude to the authors of the submissions as well as to the Russian Foundation for Basic Research and the Department of nanotechnologies and information technologies of the Russian Academy of Sciences for their support of the Conference. The RCDL Steering Committee thanks Director and employees of the JINR Laboratory of information technologies for their hard and responsible work on preparation and carrying out of the Conference as well as the members of the Program Committee for their important work on reviewing and selection of submissions.

Co-chairs of the Organizing Committee RCDL-2014
Co-chairs of the Program Committee
Chair of the RCDL Steering Committee

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