Non-English PhD dissertations and associated English journal papers

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Abstract − **This paper presents an approach for referencing publications and PhD dissertations. This approach has been implemented within an ETD repository (PhD UNS) integrated with CRIS system at University of Novi Sad, Serbia (CRIS UNS). More than 90% of PhD dissertations of the republic of Serbia have been written in national language (Serbian). Authors of scientific publications usually want to attract interest to their work to enhance their reputation both nationally and internationally. Serbian PhD dissertations are usually catalogued in two languages: Serbian and English. This improves discoverability of Serbian PhD dissertations. However, non-Serbian researchers can't read PhD dissertations written in Serbian language. The Serbian Ministry of Science prescribed a rule that each dissertation before its defend has to be verified by publishing its main results in at least one paper published in a journal belonging to the Web of Science JCR list. In this way, results published in Serbian language in a PhD dissertation are also visible to world science community through journal papers published in English. Journal papers metadata, i.e. bibliographic references for journal papers, can be stored in CRIS UNS system and connection of those journal papers with a PhD dissertation stored in PhD UNS repository can be established. Taking into account that data set can be also stored in CRIS UNS system using entities of CERIF data model, the similar approach can be adopted for connection of data sets and PhD dissertations.**

Keywords - **PhD dissertations, journal papers, University of Novi Sad, PHD UNS, data set**

1. Introduction

The primary goal of the organization NDLTD (Networked Digital Library of Theses and Dissertations) is to help future and contemporary generations of doctoral students to deal with science in accordance with digital age in which they live [1], i.e., storing ETD (theses and dissertations in digital form) in digital libraries improves education of future doctoral students by facilitating access to ETD, thus promote the dissemination of knowledge and research presented in ETD, and promotes cooperation between universities or researchers from various universities. Copeland in his paper [2] discusses the importance of visibility of research which can be found in ETD, and about dangerous if theses researches are hidden, because the discoverability of ETD enables better and faster access to the previous researches, and thus it enables writing better dissertations by future students. Citation analyses of dissertations such as an analysis presented in the paper [3] confirm importance of dissertations for further development of science.

English has become global language in economical, scientific and cultural World largely dominated by Anglo-American countries. Any scientist should master English (at least to some extent) to obtain international recognition and to access relevant publications. However, even if English is the dominant language in science, it is certainly not the native language for the majority of scientists and there is a science beyond science published in English. Having in mind that 25 winners of the Nobel Prize in Literature up to 2001, wrote only nine of their masterpieces in English and remaining 16 laureates in other native languages [3] it is clear that significant scientific results are created in many languages. Because of that, some countries are making extra efforts to gain scientific visibility in their own language. E-Revista is a platform for searching open-access scientific outputs written in Spanish language

(http://www.erevistas.csic.es/). SciELO (Scientific electronic library online - http://www.scielo.br/) publishes a collection of the best Brazilian journals online following the open-access model, under which fulltext articles can be freely accessed to achieve wider national and international visibility [4;5]. Brazilian scientists publish about 50,000 articles each year, of which 60% are in Portuguese.

There are a lot of ETD repositories containing mainly non-English PhD dissertations. More than 90% of PhD dissertations of the republic of Serbia have been written in national language (Serbian). Authors of scientific publications usually want to attract interest to their work to enhance their reputation both nationally and internationally. The Serbian Ministry of Science prescribed a rule that each dissertation before defend has to be verified by publishing its main results in at least one paper published in a journal belonging to the Web of Science JCR list. In this way, results published in Serbian language in a PhD dissertation are also visible to world science community through associated journal papers published in English. This paper presents an approach of connecting those journal papers and PhD dissertations in order to enable better discoverability of scientific results presented in PhD dissertations by implementing the following features:

1. The connection between a PhD dissertation and journal paper which presents the main results of PhD research should be established by author of dissertation or by librarian of institution where the dissertation has been defended.
2. If a PhD dissertation is a result of local searching of ETD repository, a reference to the associated journal paper written in English should be provided.
3. If a PhD dissertation has been exported to ETD repositories networks such as DARTEurope (www.dart-europe.eu/full.php?id=1058428), link (identifier) to the PhD dissertation stored in an ETD node should open web page which provides a reference to the associated journal papers written in English as well
    (www.cris.uns.ac.rs/record.jsf?recordId=93783&source=DARTEurope&language=en).
    Connected journal papers can be searched and downloaded using other scientific outputs repositories: Scopus, Google Scholar, etc.

This approach is implemented within ETD repository of University of Novi Sad - PHD UNS. The same approach can be adopted for establishing connection between data sets and PhD dissertations taking into account that CRIS UNS system can also store data set using the cfResultProduct entity of CERIF data model.

2. PHD UNS

The CRIS UNS system (www.cris.uns.ac.rs) is a web based research information system of the University of Novi Sad which is under development since 2008 [6]. It is the main result of DOSIRD UNS project (http://dosird.uns.ac.rs/). Aboard all commercial CRIS platforms such as Pure and Converis, University of Novi Sad has decided to develop own system due to specific local requests aimed at evaluation and accreditation demands. These requests are mainly reports prescribed by faculties, universities, Provincial Secretariat for Science and Technological Development of Autonomous Province of Vojvodina and Ministry of Education, Science and Technological Development of Republic of Serbia. While modeling the system, particular attention was paid to interoperability issues in order to increase accessibility to scientific references and therefore the rating of the University of Novi Sad. The PHD UNS digital library

is integrated with CRIS UNS system [7] and search of digital library is available at http://www.cris.uns.ac.rs/searchDissertations.jsf [8]. The digital library is created in order to increase the discoverability of the dissertations from the University of Novi Sad. The discoverability of the knowledge stored in these dissertations and its impact on world scientific community are increased by publishing dissertations under open-access licenses via searchable PHD UNS digital library which can export metadata in the world well-known networks of digital libraries.

3. Data Model

The CRIS UNS system is built on a CERIF compatible data model based on the MARC 21 format [9]. Besides compatibility with CERIF and MARC 21 format, the system can export data via OAI-PMH protocal in Dublin Core, ETD-MS and DIM formats [10]. PHD UNS is integrated within the CRIS UNS system, and PhD dissertations, journal papers and researchers (authors of PhD dissertations and journal papers, as well as PhD dissertations advisors, committe members, etc.) are stored in MARC 21 bibliographic and authority format in the data model. Figure 1 depicts the data model entites important for establishing connection between PhD dissertations and journal papers. The entity MARC21Record_MARC21Record is used to establish the connection between two research publications represented using MARC 21 format and that connection can be classified using the "Relation" classification of the CERIF Semantic Layer (http://eurocris.org/Uploads/Web%20pages/CERIF-1.5/CERIF1.5_Semantics.xls).
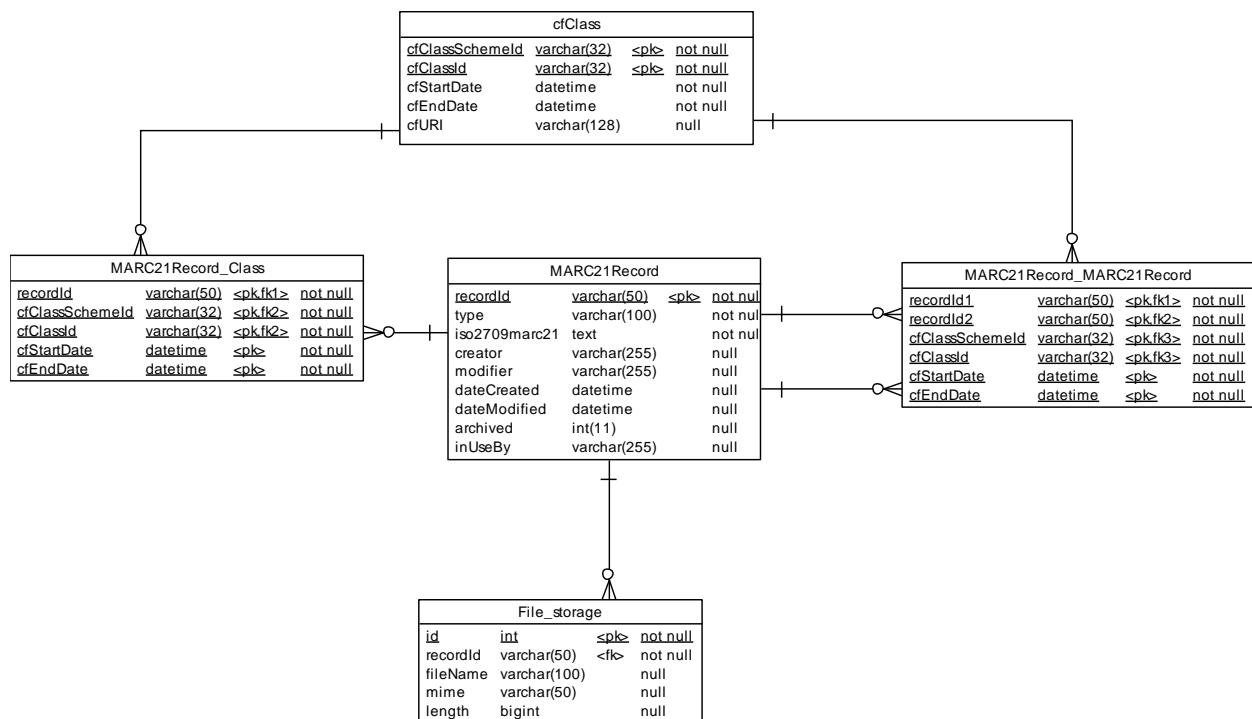

Figure 1 Data model

4. Implementation

PHD UNS has open-architecture which enables easy extension with new features. It can be easily integrated with existing MARC 21 based library information system. The application for cataloguing published results in the MARC21 format was implemented in the multi-tiered client-server architecture on the Java platform. User interface implementation is based on the JSF development environment extended with RichFaces library of JSF components based on AJAX. Metadata are stored in MySQL DBMS; files are stored in server file system and migration of all files to storage server supporting 30 days backup are performed each night; the Apache Lucene open-source information retrieval library is used for indexing and searching text contents. The server side of the PHD UNS digital library is executed within the Apache Tomcat application server.

The architecture of PHD UNS is integrated with the CRIS UNS architecture. The CRIS UNS system enables edit of University of Novi Sad research entities such as faculties and institutes, researchers, and scientific-research outputs including papers published in journals. Paper title and journal title are multilingual metadata, i.e., those metadata can be stored in the system joined with its translation into the other languages in order to improve discoverability of those scientific results.

The CRIS UNS database contains bibliometric data about journals including two-years impact factors of the JCR lists for each year. Journals' papers are classified into two groups [12]:

1. Papers published in journals belonging to JCR lists
2. Papers published in journals NOT belonging to JCR lists

ETD and Metadata are input into the PHD UNS repository using a wizard containing four dialogs. The first dialog enables uploading ETD and associated digital files such as board members' report and license. The rest three dialogs enable input of ETD basic metadata; ETD advanced metadata; advisors and board members, respectively. The ETD basic metadata are multilingual, i.e., those metadata can be stored in the system joined with its translation into the other languages in order to improve discoverability of those scientific results. All ETD defended at University of Novi Sad have basic metadata in at least two languages: Serbian and English. Although dissertations can be searched by metadata in English, more than 90% of ETDs are written in the Serbian language. As already mentioned, the Serbian Ministry of Science prescribed a rule that each dissertation before defend has to be verified by publishing its main results in at least one paper published in a journal belonging to the Web of Science JCR list. In this way, results published in Serbian language in a PhD dissertation are also visible to science World community through journal papers published in English. The connection between those journal papers and PhD dissertations can be established using the dialog show in Figure 2. Basic metadata about a PhD dissertation are shown including author, publication language and title, as well as list of all journal papers stored in CRIS UNS database which lists of authors contain the author of the certain PhD dissertation. A user (librarian or researcher) can select journal papers which presents the main results of the certain PhD dissertation.
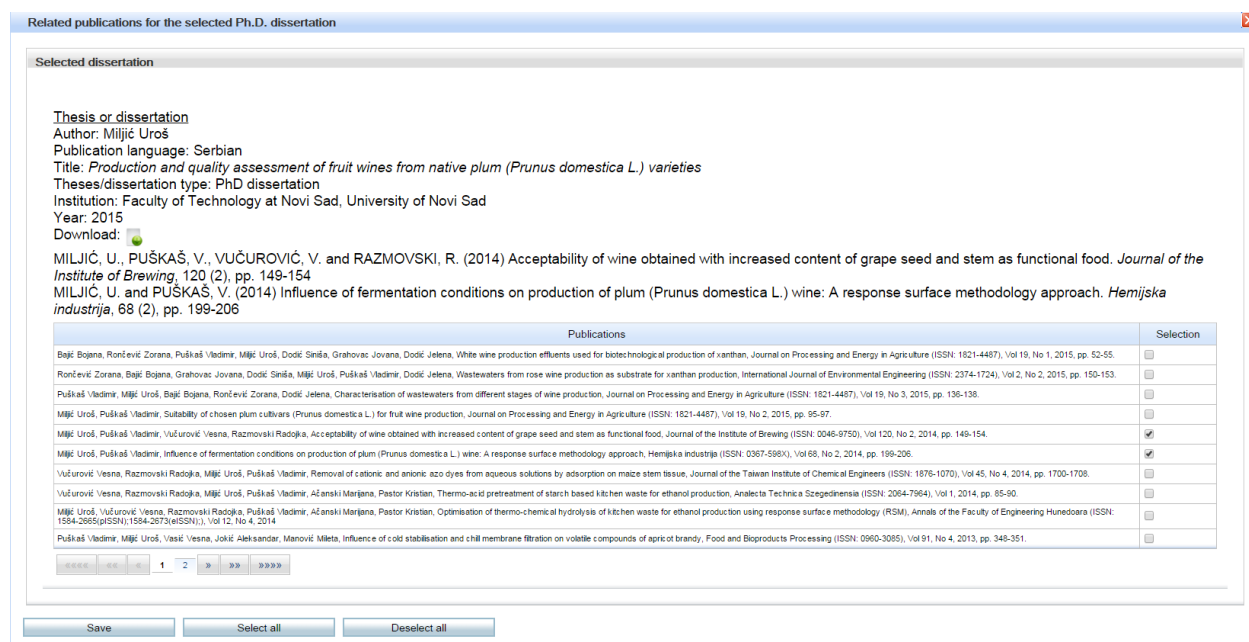
Figure 2 Selecting journal papers

The PHD UNS digital library can be searched by the web application available at the link http://cris.uns.ac.rs/searchDissertations.jsf. Results of the search can be shown in the form of basic and advanced metadata, as well as in standardized bibliographic format MARC 21, Dublin Core and ETD-MS. Also, there is a link for downloading ETD if it is published under open-access license. Besides that, there is a list of related journal papers as it is shown in Figure 3. Those journal papers can be searched and downloaded using other scientific outputs repositories: Scopus, Google Scholar, etc.
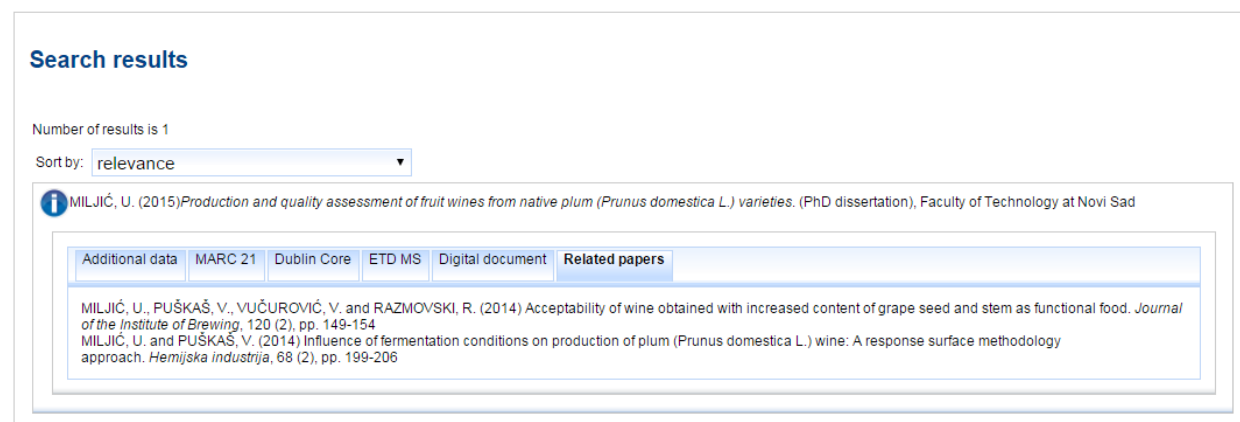

Figure 3 Result of search

Also, PHD UNS exports data to digital libraries networks: DARTEurope, OATD, OpenAIRE+, etc. The record of the previously shown PhD dissertation in the DARTEurope portal is shown in Figure 4. There are two URLs (identifiers) in this record, the first for direct downloading of ETD from PHD UNS node, and the second for showing the record page in the PHD UNS web application.

Title	Proizvodnja i ocena kvaliteta voćnog vina od sorti domaće šljive (Prunus domestica L.)
Title	Production and quality assessment of fruit wines from native plum (Prunus domestica L.) varieties
Author	Miljić Uroš
Subject(s)	Plum, fruit wine, fermentation, quality assessment, characterization, Šljiva, voćno vino, fermentacija, ocena kvaliteta, karakterizacija
Abstract	Cilj ove doktorske disertacije je bio da se oceni mogućnost upotrebe tri sorte domaće šljive, različitih epoha sazrevanja (Čačanska rana, Čačanska lepotica i Požegača), kao sirovina za proizvodnju voćnog vina. Utvrđeni mehanički sastav plodova i hemijske karakteristike kljuka i soka ispitivanih sorti šljive ukazuju da se čačanska lepotica i Požegača mogu smatrati boljim sirovinama za proizvodnju voćnog vina u odnosu na sortu Čačanska rana. Vršena je optimizacija uslova alkoholne fermentacije (temperature, vrednosti pH, trajanja fermentacije i doze enzimskog preparata), u sklopu koje je, takođe, ispitana i upotreba različitih pektolitičih enzima za tretman kljuka i ocenjen uticaj upotrebe različitih sojeva kvasaca, kao proizvodnih mikroorganizama, na kvalitet vina od šljive. Utvrđeno je da, među ispitanim proizvodnim organizmima, kvasac Spriferm (S. cerevisiae) daje vino od šljive najboljeg kvaliteta. Postupkom numeričke optimizacije dobijene su sledeće vrednosti procesnih parametara fermentacije vina od šljive: temperatura 25 °C, vrednost pH 3,5 i doza pektolitičkog enzima 0,5 g/100 kg. Pri navedenim uslovima dobijeni fitovani modeli predviđaju prinos etanola od 7,5% v/v, prinos glicerola od 5g/l, prinos vina od 48% (48 ml vina na 100 g kljuka) i formiranje 710 mg/l metanola. Karakterizacija proizvedenog vina od šljive podrazumevala je određivanje sadržaja najvažnijih sastojaka: alkohola, kiselina, mineralnih materija, fenolnih i aromatičnih jedinjenja, kao i ocenu njegovih funkcionalnih karakteristika (antiradikalske, antimikrobne i antiproliferativne aktivnosti). Na kraju, ocenjena je mogućnost smanjenja produkcije metanola u vinu od šljive primenom različitih fizičko-hemijskih tretmana kljuka. Utvrđena je značajno veća efikasnost postupaka koji uključuju neki vid toplotnog tretmana kljuka u odnosu na postupke koji podrazumevaju upotrebu određenog enološkog sredstva.
Abstract	The aim of this PhD thesis was to assess the possibility of using three native plum varieties, with different ripening periods (Čačanska rana, Čačanska lepotica and Ponegača), as raw material for the production of fruit wines. Determined mechanical composition and chemical characteristics of fruit pomace and juice indicate that the Čačanska lepotica and Ponegača are considered as better raw materials for the production of fruit wine compared to Čačanska rana. Optimization of fermentation conditions (temperature, pH, the duration of fermentation and the dose of pectolytic enzyme) was conducted. This step also included investigation of the different pectolytic enzymes use for the treatment of pomace and evaluated the impact of using different yeast strains, as well as the effect of different production microorganisms on the plum wine quality. It was found that, among the tested production microorganisms, Spriferm (S. cerevisiae) yeast gives the plum wine of best quality. Numerical optimization procedure resulted with the following values of the process parameters of plum wine fermentation: temperature 25 °C, pH value 3.5 and pectolytic enzyme dose of 0.5 g/100 kg. Under these conditions the obtained fitted models predict the ethanol yield of 7.5% v/v, glycerol yield 5 g/l, the wine yield of 48% (48 ml from 100 g of pomace) and the formation of 710 mg/l of methanol. Characterization of the produced plum wines included the determination of the most important ingredients: alcohol, acids, minerals, phenolic and aromatic compounds, as well as evaluation of their functional characteristics (antiradical, antimicrobial and antiproliferative activities). Finally, the possibility of reducing the methanol production in plum wine was estimated by applying different physico-chemical treatments of the pomace. Significantly higher efficiency of procedures that involve some form of heat treatment of pomace, compared to treatments which involve the use of certain oenological means, was observed.
Publisher	Univerzitet u Novom Sadu, Tehnološki fakultet Novi Sad
Publisher	University of Novi Sad, Faculty of Technology at Novi Sad
Contributor(s)	Dodić Jelena; Grahovac Jovana; Magazin Nenad; Pajović-Šćepanović Radmila; Puškaš Vladimir
Date	2015-04-06
Type	PhD thesis
Identifier	http://www.cris.uns.ac.rs/DownloadFileServlet/Disertacija142832218315990.pdf?controlNumber=(BISIS)93783&fileName=142832218315990.pdf&id=3481&source=DARTEurope&language=en
Identifier	http://www.cris.uns.ac.rs/record.jsf?recordId=93783&source=DARTEurope&language=en
Language	sr (latin script)

Figure 4 The DARTEurope record

Figure 5 shows the PHD UNS record page of the previously shown PhD dissertation. Basic metadata about the PhD dissertation are shown including author, publication language and title, as well as list of connected journal papers stored in CRIS UNS database which published the main results of the PhD research. The list should contain at least one paper journal which is published in the journal belonging to the JCR list according to the new Serbian rulebook for PhD studies.

Figure 5 The PHD UNS record page

5. Conclusion

Although English has become global language in economical, scientific and cultural World largely dominated by Anglo-American countries, it is certainly not the native language for the majority of scientists and there is a science beyond science published in English. More than 90% of PhD dissertations of the republic of Serbia have been written in national language (Serbian). Authors of scientific publications usually want to attract interest to their work to enhance their reputation both nationally and internationally. Serbian PhD dissertations are usually catalogued in two languages: Serbian and English. This improves discoverability of Serbian PhD dissertations. However, non-Serbian researcher can't read PhD dissertations written in Serbian. The Serbian Ministry of Science prescribed a rule that each dissertation before defend has to be verified by publishing its main results in at least one paper published in a journal belonging to the Web of Science JCR list. In this way, results published in Serbian language in a PhD dissertation are also visible to science World community through Journal papers published in English. This paper described an approach how connection between those journal papers and PhD dissertations can be established using an ETD repository and CRIS system. The approach has been implemented at the University of Novi Sad PHD UNS repository and CRIS UNS system.

Further development of the system should include the implementation of the same approach for establishing connection between data sets and PhD dissertations. Data sets can be catalogued in the CRIS UNS database using the CERIF cfResultProduct entity [13; 14]. Connection between catalogued data sets and PhD dissertations can be established using the described approach in this paper. Although the Serbian Ministry of Science hasn't prescribed a rule that data sets used in PhD dissertations have to be published, establishing connection between data sets and PhD dissertations in the same manner as it is described in this paper should move us forward to Open Science.

Literature

[1]   Fox, E.A. (2001). Overview of a guide for electronic theses and dissertations, *Digital Libraries and Virtual Workplaces: Important Initiatives for Latin America in the Information Age, Washington,* Retrieved from http://eprints.cs.vt.edu/archive/00000624/01/OASndltd14refs.pdf

[2]   Copeland, S. (2008) Electronic Theses and Dissertations: Promoting 'Hidden' Research, *Policy Futures in Education*, *6* (*1*), pp. 87-96

[3]   Gooden, A.M. (2001). Citation analysis of chemistry doctoral dissertations: An Ohio State University case study. *Issues in Science and Technology Librarianship*, *32*, pp.1-16.

[4]   Meneghini, R., and Packer, A. L. (2007). Is there science beyond English? *EMBO reports*, *8*(2), pp. 112-116

[5]   Packer AL, Biojone MR, Antonio I, Takenaka RM, Garcia AP, da Silva AC, Murasaki RT, Mylek C, Reis OC, Delbucio HCRF (1998) SciELO: uma metodologia para publicação eletrônica. *Ciência Informação*, 27, pp. 109–121

[6]   Meneghini R (2003) SciELO project and the visibility of 'peripheral' scientific literature. *Química Nova,* 26, pp. 155–156

[7]   Surla, D., Ivanovic, D., and Konjovic, Z. (2013). Development of the software system CRIS UNS. In *Intelligent Systems and Informatics (SISY), 2013 IEEE 11th International Symposium on* (pp. 111-116). IEEE

[8]   Ivanovic, L., Ivanovic, D. and Surla, D. (2012). Integration of a Research Management System and an OAI-PMH Compatible ETDs Repository at the University of Novi Sad, Republic of Serbia, *Library Resources and Technical Services*, 56 (2), pp. 104-112

[9]   Ivanovic, L., Ivanovic, D., Surla, D., and Konjovic, Z. (2013). User interface of web application for searching PhD dissertations of the University of Novi Sad. In Intelligent Systems and Informatics (SISY), 2013 IEEE 11th International Symposium on (pp. 117-122). IEEE

[10]   Ivanović, D., Surla, D. and Konjović, Z. (2011). CERIF compatible data model based on MARC 21 format. *The Electronic Library*, 29 (1), pp. 52-70. DOI=10.1108/02640471111111433

[11]   Ivanovic, L., Ivanovic, D. and Surla, D. (2012). A data model of theses and dissertations compatible with CERIF, Dublin Core and EDT-MS. *Online Information Review*, 36 (4), pp. 568-586, DOI 10.1108/14684521211254068

[12]   Ivanović, D., Surla, D. and Racković, M. (2012). Journal evaluation based on bibliometric indicators and the CERIF data model. *Computer Science and Information Systems*, 9(2), pp. 791-811, DOI 10.2298/CSIS110801009I

[13]   Brander, S., Clements, A., McCutcheon, V., Cranner, P., Henderson, R. and Ginty, K. (2014). CERIF for datasets (C4D). In *Theory and Practice of Digital Libraries--TPDL 2013 Selected Workshops*, pp. 113-126. Springer International Publishing.

[14]   C4D project, https://cerif4datasets.wordpress.com/

Biographies and acknowledgements

Lidija Ivanović has worked at the Chair of Informatics and Media, Faculty of Education, Sombor, University of Novi Sad on the position of assistant professor since 2014. Mrs. Ivanović received her Master degree in 2007 and Ph.D. degree in 2014 in Computer Science at the University of Novi Sad, Faculty of Technical Sciences. She published more than 15 scientific papers. Her Ph.D. dissertation is a result of DOSIRD UNS project, and the first version of the PHD UNS digital library is result of that dissertation.

Dragan Ivanović has worked at the Department of Computing and Control Engineering, University of Novi Sad, Faculty of Technical Sciences on the position of associate professor since 2015. Mr. Ivanović received his Master degree in 2006 and Ph. D. degree in 2010 in Computer Science from the University of Novi Sad, Faculty of Technical Sciences. He teaching seminars on the subjects Digital documents management on master studies and Selected Topics of Digital Archives on PhD studies at the Computer Science Department – these courses include topics related to: library standards, digital repositories (including OA policies and OA repositories), information retrieval, etc. He participated in more than 10 national and international scientific projects and published more than 30 scientific papers.