Croatian National CRIS - Advances and Challenges

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Abstract

The initial phase of development and implementation of a national CRIS in Croatia is in its last year. In this talk, we will address the work that took place up to the present day as well as challenges that the project team dealt with, both from organizational and informational perspective. A special emphasis will be given to the adaption and extension of CERIF model. In conclusion, we will provide a plan for the future development and our vision of the national research information landscape.

Keywords: national CRIS, CERIF adaptation, information system

1. CroRIS Overview

As a part of the Scientific and Technological Foresight project (STF), led by the Croatian Ministry of science and education, University Computing Centre (Srce), with the help of the Centre for scientific information of the Ruđer Bošković Institute, is creating a national, Croatian research information system, abbreviated as CroRIS[1]. CroRIS is designed as a CERIF-based national research information system which will integrate a large amount of data regarding research in Croatia, including data about researchers, institutions, projects, publications, products, patents, equipment, services etc. [1, 2, 3]. Although a CERIF-based CRIS system before CroRIS has not been implemented in Croatia on national (or institutional) level, some parts of the research information infrastructure already exist and they are interconnected to a certain level [4]. CroRIS will integrate a number of those existing systems and software solutions, namely The Official Registry of Research Institutions, The Official Registry of Researchers, Croatian Scientific Bibliography (CROSBI)[2], Database of Project Activities in Science and Higher Education in Croatia (POIROT)[3] and Database of scientific equipment (Šestar)[4], while interoperability with other national and international systems will be developed.

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[1]https://www.srce.unizg.hr/en/croris
[2]https://www.bib.irb.hr
[3]https://pdb.irb.hr
[4]https://sestar.irb.hr/en/

A large part of data contained within the CroRIS will be publicly available, while any changes and data editing will be made by authorized users. These users will have a number of roles within the system, from researchers and institutional data administrators to institution management and employees of key national bodies. A CroRIS coordinator role is also planned on an institutional level - their function will be to maintain the operation of CroRIS in their home institutions and to be a link between their institution and institutional CroRIS administrators on one side, and the central system administrators on the other. All users will access the system using the Authentication and Authorization Infrastructure of science and higher education in Croatia (AAI@EduHr)[5].

CroRIS will be interoperable with other Croatian information systems such as DABAR[6], Hrčak[7], Mozvag[8] and ISVU[9], as well as with international systems and databases such as Web of Science, Scopus, OpenAIRE infrastructure, ORCID etc. It will be also built in such a way that other national and international data and software systems will be able to connect to CroRIS using a universal application programming interface (API), which is also being created.

2. Adapting and Extending CERIF

CERIF model has been used as a baseline data model for CroRIS [1, 5]. This model has many advantages such as:

- being open source, managed by euroCRIS

- standards based: SQL + XML

- designed from ground up as a relational data model

- extremely flexible: capable of modeling and meta-modeling just about any high-level concept using its semantic layer

- strong support for vocabulary formalization.

Adapting CERIF as data model for CroRIS so far has proven to be challenging at least. Firstly, a number of extensions have been made in order to accommodate the needs of national bodies, such as Ministry of Science and Education. Also, there were numerous challenges related to the CERIF rich temporal and semantic features, which led to difficulties in implementing it in a non-temporal relational database. Some changes were also made to make

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[5]https://www.aaiedu.hr/en

[6]https://www.srce.unizg.hr/en/digital-repositories/dabar

[7]https://www.srce.unizg.hr/en/digital-repositories/hrcak

[8]https://www.srce.unizg.hr/en/mozvag

[9]https://www.srce.unizg.hr/en/isvu

CERIF more practical to use on a database and application level. Our current challenges with CERIF implementation and its customization for our specific needs are already summarized and published in a conference paper [6], but other challenges are also expected, especially with the implementation of the publication module (CROSBI) and its bibliometric layer.

3. Future Plans

Our future work focuses on finishing the initial phase of the CroRIS development, during which CroRIS should reimplement the official registers of the Ministry (institutions and researchers), modules about projects (POIROT), equipment (Šestar), pulications, journals and patents (CROSBI) and migrate data from those information systems into CroRIS, as well as to develop the new modules for services, products and events. During this period, we will continue to adapt and extend CERIF for the needs of CroRIS, while keeping the focus on maintaining the most important ideas and concepts of CERIF.

In this period of implementation of CroRIS, a crucial part of our efforts will also be focused to establish the organizational and editorial structure of the CroRIS community, train all the editors/administrators, as well as provide support to users making the transition to a new and broader system for them as painless as possible. After this phase, the focus should remain on further extension and adaptation of CroRIS according to the needs of the research community.

Lastly, we envision CroRIS to be a central part of the Croatian research information landscape. It will be the place-to-go not only for researchers, policymakers, but also for students and businesses as well. CroRIS's role in open science should be substantial because it will increase the transparency of research activities in Croatia by enabling access to all data about relevant actors and entities in research as well as their activities (except personal ones) both via web applications and APIs, as well as providing links to full-texts of publications and research data available in open access.

Further on, CroRIS will strive to gather as much as possible bibliometric data about research results and teaching activities of Croatian researchers, and in this way provide a technical solution for supporting the process of researcher advancements. Covering the most relevant data about researchers and their activities, CroRIS will enable them to hold a current CV in the system as well.

CroRIS will also focus on services provided by and for researchers, both either based on the available research equipment or intellectual ones. This way, CroRIS will serve as a service catalog for various initiatives, including the National Open-Science Cloud (NOSC).

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