Croatian National CRIS
Advances and Challenges

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The Scientific and Technological Foresight Project

• Led by Ministry of Science and Education, with Srce as a partner
• Approx. 2M €, 85% funded by EU

• Three main components:
  • Legal adjustments regarding the data about research in Croatia
  • Development and implementation of CroRIS
  • Scientific and technological mapping and foresight exercise
Work on CroRIS

- Planning
- Development
- Data cleansing and migration
- Integrations
- Promotion
- Education
- Maintenance and further development
Our Vision of CroRIS

CroRIS will

• ensure comprehensive and accurate data about all elements of the research system in Croatia
• be the decision-making ground when it comes to research, on all levels
• enable and promote open science
• efficiently support business processes on all levels (MSE, institutions, researchers, ...)
• be open and interoperate with other systems (national and international)
• integrate existing information and incorporate them into unique and sustainable information system
• enable the connection between research and the real sector
Development Challenges
Croatian Research Information Landscape Before CroRIS
System and Data Migration challenges

- Data model migration
- Vocabularies migration
- Cleansing the data
- Taking care of active integrations to other systems during migration (API migration)
CERIF Model

- CERIF – Common European Research Information Format
- Why CERIF?
  - standards based: SQL + XML
  - in comparison to more abstract/rich generic semantic frameworks it was simple
  - designed from ground up as a relational data model - our area of expertise
  - extremely flexible: capable of modeling and meta-modeling just about any high-level concept using its semantic layer
  - support for vocabulary formalization: key enabling point for EU-wide (potentially global) CRIS systems standardization and interoperability
CERIF Challenges

- Temporal aspect
  - Temporal support in relational databases is defined in the SQL:2011 standard, but current RDBMSs are yet to implement it in this regard
  - We kept some of the temporal information on some entities, disregarded the rest

- Too complex for everyday developer use
  - Since information consist of data which is stored in many relations, we ended wrapping CRUD operations in database views or stored procedures

- Over-/under-semantical
  - We removed some part of the semantic layer which was used only to confirm the existence of the entity
  - Some classifications needed extra attributes, so those schemas became separate vocabularies

- Too strict in some parts of the model (mandatory attributes etc.)

- We also extended it with a number of attributes and tables needed for our use

Implementation into community
Data Entry

- Data import from other systems – trusted and pre-verified
- Manual data entry by community
  - Approx 30-40k users
  - Each entry should be verified
User roles in CroRIS

Superadmins (system admins)

Module admins

Global user support

< Global

Institutional >

Management

CroRIS Coordinator

Data editors

End-users

Researchers

Librarians...
CroRIS Coordinator

- Administrates institutional editors
- Can be an editor as well
- Is appointed by the head of an institution
- Is administered by system administrator and central helpdesk

- CroRIS Coordinator should be well acquainted with research activities and data (e.g., vice dean for research or science)
CroRIS - institutional data editors

• Specialized for a specific module:
  • CROSBI (publications)
  • Projects
  • Institutions
  • Researchers and staff
  • Equipment and services
  • ...

• In charge of editing the data related to their institution
• Helping the end-users and verifying their entries (data curation / verification)
• Supporting institutional end-users
CroRIS and Open Science

• Most of the data will be publicly available (research institutions, researchers, projects, publications, patents, facilities, equipment, services, ...)

• CroRIS will:
  • enable the visibility and transparency of the research projects and results
  • link together the already publicly available data (publications and research data) with projects, researchers etc.
  • actively promote open science by “pushing” the idea of publishing full texts, research methods and data bound to projects, publications and patents to project leaders, publication authors etc.

• We will implement the connection to OpenAIRE

• The data will be available to third parties via generic programming interface as well
Croatian Open Science Cloud (HR-OOZ) Initiative

HR-OOZ National Open Science Cloud

Key aspects:
- Open Science and FAIR data
- Alliance of existing and planned infrastructures
- Collaboration between different disciplines and countries

CroRIS will also serve as a NOSC Service catalogue!
Thank you

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