



Research Information Management Systems: covering the whole research lifecycle

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Aims of the presentation

1. Provide a snapshot of the Current Research Information System (CRIS) landscape
2. Summarise the various ways CRISs are currently used
3. Introduce new emerging uses and scenarios of CRISs

Snapshot of the current CRIS landscape



CRIS? RIM? IR?

- **Current Research Information Systems (CRIS)**, also known as **Research Information Management Systems (RIMs)** are described in Wikipedia as
 - *databases aimed at collecting, storing and exchanging information on all aspects of the research activity conducted at an institution (or a region or country, sometimes on a specific discipline) or funded by a research funder.*
- One of the first institutional CRISs is the *METIS system* at Radboud University Nijmegen, operating since 1993
- CRISs typically compile metadata on e.g. publications, research data, researchers, research groups, projects
- Meanwhile, **Institutional Repositories (IR)** are used for collecting, preserving and providing open access to e.g. publications (full texts) or data sets
- A joint EUNIS/euroCRIS "[CRIS/IR Survey Report](#)" in 2016 based on 84 responses from 20 countries showed that
 - CRISs and repositories are considered complementary;
 - While IRs are the preferred choice for managing research outputs, CRISs are used to manage the institutional research information as a whole

euroCRIS

- Not-for-profit association founded in 2002
- Brings together experts on research information management and promotes collaboration, knowledge exchange, at institutional, national, and international level
- Supports interoperability of research information through the Common European Research Information Format (CERIF).
- Strategic Partnership with EUNIS



THE INTERNATIONAL ORGANISATION
FOR RESEARCH INFORMATION

Current CRIS landscape

- The euroCRIS Directory of Research Information Systems (DRIS) covers over 1,300 entries of CRIS solutions at an institutional, regional, national, and funder level.
- The majority of the entries recorded in DRIS come from Europe or Australasia.
- Commercial or other off-the-shelf products dominate the field, with only 6% of the entries reported are built in-house.
 - Institutional CRIS solutions are often based on large, international products such as Pure, Esploro, Converis
 - In-house built systems are e.g. nationally developed for all institutions e.g. the Norwegian CRISin, the Italian IRIS, or the Indian IRINS or national CRISs, e.g. Finnish Research.fi, or Flemish FRIS
 - Also a significant presence of open-source software solutions like DSpace-CRIS and VIVO

Browsing by Scope (DRIS)

Showing results 1 to 7 of 7	
Aggregation	5
Departmental	1
Funder	13
Institutional	1293
International	1
National	22
Regional	4
Showing results 1 to 7 of 7	

The various ways CRISs are currently used



Different functions of CRISes



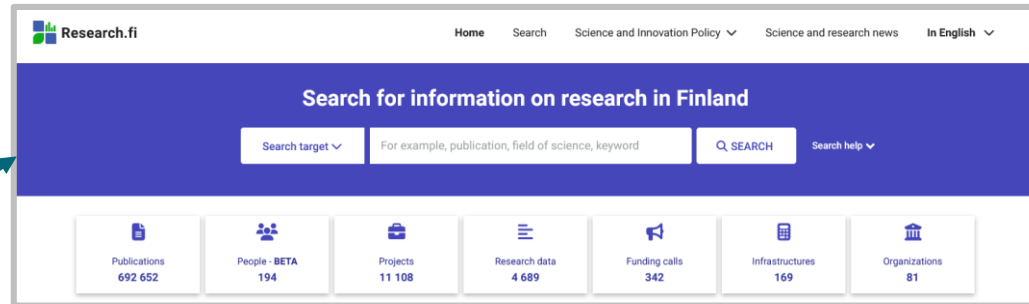
1. **research portal function** to showcase the research activities and provide public access to the research information
2. **data warehouse function** to support the institutional/regional/national evidence-based decision-making processes.
3. **information source function** for other systems and services that need high-quality machine-readable information on research and researchers.

National CRISs

- [A study on publication databases](#) in social sciences and humanities identified 21 national databases in Europe operated either as
 - centralised systems into which data is entered directly by different organisations,
 - data aggregations from institutional CRISs, funders' research information systems, and other local systems.
- Publication output has been used in many countries as a criterion in performance-based funding models
- In the past years, national systems have been developed to cover a wider range of research outputs and activities
- In addition to statistics, monitoring, and funding allocation, they have started to fulfill new uses, such as providing a single access point to information on researchers and research results in the country and acting as a so-called hub that gathers information from several sources and provides it for multiple uses.

Example of a national CRIS: Research.fi

1. Web portal for information search
www.research.fi



2. Statistics, monitoring & funding allocation
www.vipunen.fi

Publications	2019	2020	2021
University	40 803	41 190	40 330
University of Applied Sciences	8 152	9 437	10 491
Research institute	4 775	5 376	4 227
University Hospital	7 513	7 043	6 929
Grand total	61 243	63 046	61 977

Research.fi –
the Finnish
Research
Information Hub

3. Information
use through API

- HEIs
- Research organizations
- Public and private research funders
- OpenAIRE
- National open science monitoring
- Etc...

Information sources,
e.g.

- HEIs
- Research organizations
- Research funders
- ORCID
- EU Cordis

New emerging uses and scenarios of CRISs



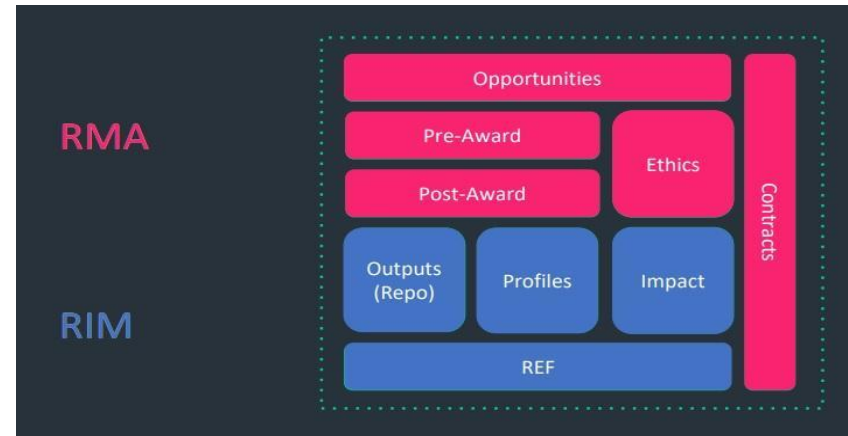
Role of CRISs in a developing research information management landscape



- Harvesting and crawling systems, such as OpenAIRE and Dimensions enable a broad information base and support easy transfer of information from one system to another.
- However, for information management, research evaluation, and monitoring it is critical that
 1. The (meta)data is reliable and standardised
 2. the information is collected in a uniform and precisely defined manner
 3. it is possible to verify the criteria by which the data has been collected and how representative it is.
- For CRISs the metadata and classifications are typically well-curated so that the research information is described in a uniform way and thereby they provide a unique high-quality data source for institutional or national level analysis, statistical reports, and monitoring but also as a source for other harvesting systems.

New uses of CRISs – supporting the whole research project lifecycle

- Project management from the call for project proposals to funder and costing tend to be categorised as part of the Research Management and Administration (RMA)
- RMA & RIM actually provide a continuum along the whole project lifecycle from the project idea to assessment of the project output and impact covering both internal and outwards-oriented information
- This whole project lifecycle support is achieved by means of a collection of modules exchanging research information metadata with each other from very early on.



Responsible research evaluation and the diversity of research output



- Researchers & research groups are evaluated at all stages in their careers
 - E.g. applying for a position, salary negotiations, crediting, or other rewards, when applying for funding, or as part of research assessment exercises of universities
- Special attention is currently being paid how research information management supports **responsible research evaluation**.
- The Agreement on Reforming Research Assessment issued by the Coalition for Advancing Research Assessment (**CoARA**) has been signed by almost 600 European universities, funders, learned societies, and national agencies who are committed to
 - to keep the focus on qualitative evaluation with the support of responsible quantitative indicators,
 - to respect the variety of disciplines, and to avoid inappropriate metrics and rankings.
 - To recognize of the diversity of research output, foe.g. data, software, models, methods, theories, algorithms, protocols, workflows, exhibitions, strategies, policy contributions, underpinning open science practices etc.
- CRIS systems are already playing a part in compiling this information, but will play an even bigger role in this domain in the future.

Towards a European CRIS infrastructure?

- In 2018, **a pilot** of a European publication infrastructure was carried out among 4 European countries in the framework of ENRESSH network
 - The pilot demonstrated that it is possible to aggregate publication information across countries and the integration of national databases.
 - Inconsistent data models were, however, identified as the main challenge and the conclusion was that further development of a European CRIS infrastructure would require automatised restructuring and reclassifying of data in a uniform manner and enriching metadata also from external sources.
- National/regional research portals working group **CRISCROS** launched in December 2022 aims to bring together a large number of national and regional CRIS initiatives across the world to discuss best practices and to foster a culture of mutual collaboration.
- Currently ongoing early feasibility analysis for putting together a CRIS for specific networks of European universities
 - a “network CRIS” may eventually emerge by collecting and aggregating the research information for institutions in the network. T
 - A significant challenge to the way things stand right now, with not all platforms out there having yet implemented the appropriate interoperability standards, but it could mean a big push for exploring the cluster-like opportunities offered by well-implemented system interoperability.



Thank you!

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