



# 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.

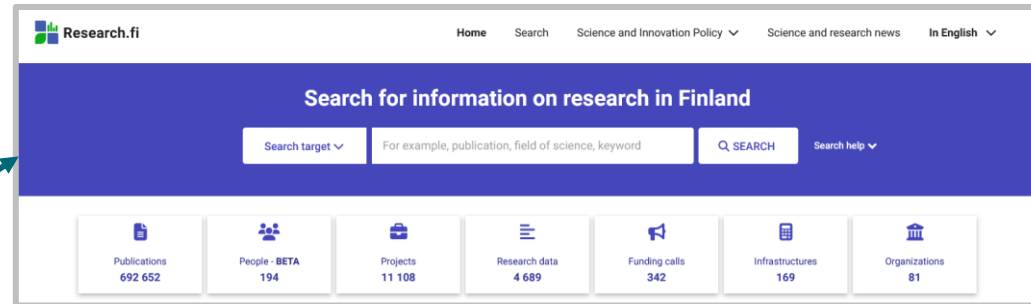


# National CRISs

- [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](http://www.research.fi)



2. Statistics, monitoring & funding allocation  
[www.vipunen.fi](http://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         |
| <b>Grand total</b>             | <b>61 243</b> | <b>63 046</b> | <b>61 977</b> |

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



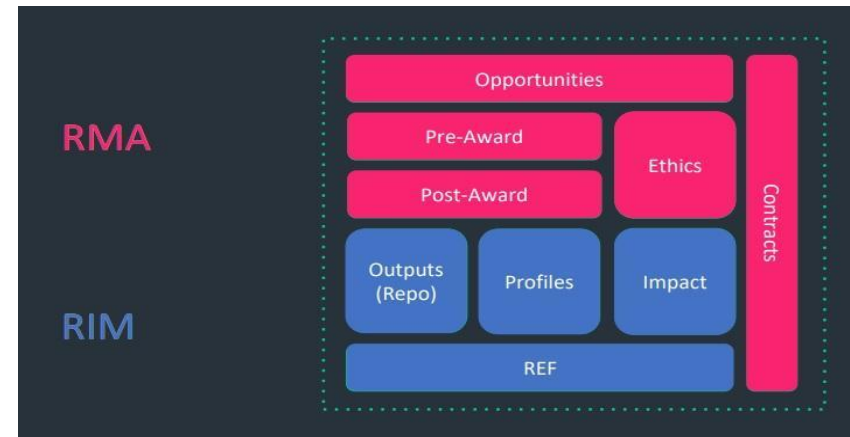
# Role of CRISs in a developing research information management landscape



- 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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