Research Data Management integrated in a Research Information System (CRIS)

A case study on archiving Data Sets and writing Data Management Plans, using a CRIS, at Radboud University, The Netherlands

*Ed Simons,* Project Leader CRIS at Radboud University; President of euroCRIS
*Mijke Jetten,* Head of Research Information Services, University Library.
Content

1. Introducing Radboud University.

2. Research Information (management) Systems (CRIS)
   - a bit of history
   - their evolution towards a central position in the research information landscape and a one-stop-shop for researchers.

3. The integration of *Data Archiving* and *Data Management Plan* functionality in the CRIS of Radboud University.

4. Relevancy and added value of the solution.

5. Q&A.
students 20,000+

All fields except Engineering

staff 5,000+

Strongly Research oriented

2019
What is a CRIS?

A CRIS is an information system that holds (meta)data about virtually all aspects of research:

- **Researchers** involved (ID, name, title, affiliation, ...) and their role.
- **Projects** (ID, title, description, key words, start- and enddate, ...)
- **Organisations** (institutes, universities,...) involved and their role
- Funding/funders
- **Input** invested in the research both in time (f.t.e.) and money.
- **Output** from the research (publications, datasets, software, patents, etc...)
- **Equipment and services** used.
- **Cooperations and Partnerships** with other projects, researchers, groups, organisations.
- **Links to other systems** (HRM, financial, external: ORCID, WoS, Scopus, ...)
- **Domain/field of science or subject area** of the research
- **Impact** of the research, both in- and outside of academia (metrics, impact indicators,...).
- **Semantic classifications** of the research on various dimensions (typologies, thesauri ...),
- **Rights and access metadata**: who is authorised or which conditions apply to access information in the CRIS
- Etc...
CRISs: a bit of History

• CRISs first appeared around the end of the 80’s, early 90’s, closely linked to emerging policies of research assessment and control within some European countries (e.g. The Netherlands, Norway, Denmark,…).

• So initially they more or less uniquely had an administrative purpose and were also as such regarded by the research community.

• In the course of time, and especially the last decade, however the image has changed and CRIS nowadays are evolving into multifunctional instruments for a multitude of stakeholders among which research managers and, not the least, the researchers themselves.
CRISs: multifunctional systems for various stakeholders

Researchers
- CV generation, reputation
- collaborations, visibility & profiling, management

Decision Makers
- performance, strategic decisions, priorities, cross-country comparisons

Project Managers
- overview and performance of ongoing activities

Research Organisations
- integration and interoperability, strategic management, profiling

Publishers
- finding reviewers

Enterprises / Professions
- finding information for participation in projects, partnerships, usage of results

Media
- distribution and communication

General Public
- information and education, interest

Teaching Staff
- integration of relevant information into lectures and training

Intermediaries / Brokers
- finding research results of potential market or innovative value

Libraries
- acquisition, dissemination

Funding Organisations
- distribution of programs, evaluation of results, finding reviewers
CRISs: evolving into a central position in the Research Information Landscape

A possible problem: growing availability of - a multitude and diversity of - online applications to register and expose information on research (e.g. LinkedIn, Facebook, Mendeley, Research Gate, ORCiD profile pages, but also: publisher tools, funders applications, etc…) may have some unexpected drawbacks:

• **For institutions/institutes:** loss of control/monitoring of the information on the institution’s research “out there on the internet”. In other words: *loss of accountability*.

• **For researchers:** to be confronted with *a multitude of different interfaces and applications*, resulting in a kind of situation where the researcher e.g.,
  - At 9 o’clock has to fill in the information on her/his research output in the institution’s repository through the repository interface;
  - At 10 o’clock having to fill in the same information in a funder’s system, with a totally different interface as part of a grant application;
  - At 11 o’clock in a research evaluation or reporting system, with again a different look and feel, etc…
CRISs: evolving into a central position in the Research Information Landscape

A solution

• For institutions/institutes: they need an **accountable resource** holding the information on the institution’s research(ers), under control of the institution/institute.

• For researchers: they need a **one-stop shop** application for the registration and management of the information on their research automatically fed by and feeding to relevant external resources and applications.

A CRIS (Current Research Information System) meets both conditions / requirements.
1. Radboud University.
2. CRISs: a bit of history.
3. CRISs: evolving towards a central position in the research information landscape and a one-stop-shop for researchers.
4. The integration of Data Archiving and Data Management Plan functionality in the CRIS of Radboud University.
5. Q&A.
CRISs growing into tools for researchers

CRISs are in the process of undergoing a shift in their role and function: from administrative and reporting systems in the past to tools for the researchers themselves, closely connected to the research process.

One of the drivers for this is the growing attention and need for optimal and FAIR Research Data Management and Archiving, as this includes an optimal registration of metadata about the research data, and this is where CRISs come in and directly relate to and integrate with the research practice itself.
Possible role of CRISs in the Research Data Lifecycle
Implementation at Radboud University: integration of Research Data Management-functionality in METIS, the CRIS of the University.
RDM- and CRIS-policy at Radboud University

Executive board: “As the CRIS (Metis) has been the primary source for research information for years, let’s adjust it to registering and archiving datasets as well”.

RDM policy:

✓ 2013: archiving data (anywhere) and registering data in the CRIS is mandatory.
✓ 2017: all data belonging to publications has to be FAIR in 2020
✓ 2017: adding a Data Management Plan module to the CRIS.

To achieve this a “one-stop-shop” researcher-interface to the CRIS has been developed, called “Research Information Services”: RIS.
RIS: the one-stop shop interface to the CRIS (Metis)

✓ ‘Register once use many times’ principle
✓ Researcher profiling/CV-generating function (Researcher profile pages)
✓ Automatic import of information to Metis (from Web of Science, HRM-system, NL national funder system (in progress))
✓ Automatic export of information from Metis to: Radboud Repository, Radboud Researcher Profiling pages, National Research Portal NARCIS, National Funder (NWO), OpenAIRE (international database).
✓ Archiving of datasets at the national NL datahosting service DANS.
✓ Linking publications and datasets to one another and to projects.
✓ Including a Data Management Plan (DMP) (writing)-tool.
Possible role of CRISs in the Research Data Lifecycle
1. Data archiving via RIS

<table>
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<th>Role</th>
<th>Tasks</th>
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<tr>
<td>Researcher</td>
<td>• Finishes research and decides to make the data publically available</td>
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<tr>
<td></td>
<td>• Visits the RIS interface, enters the metadata and uploads the data files</td>
</tr>
<tr>
<td></td>
<td>• Deposits the dataset in the local intermediary storage facility at RU.</td>
</tr>
<tr>
<td>RIS service desk</td>
<td>• Reviews the metadata</td>
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<td></td>
<td>• Takes care of data curation (manuals &amp; support)</td>
</tr>
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<td></td>
<td>• Sends feedback to the researcher to optimize the dataset</td>
</tr>
<tr>
<td></td>
<td>• Deposits updated and approved dataset to the DANS EASY archive</td>
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<tr>
<td>DANS EASY archive</td>
<td>• Makes the dataset publically available</td>
</tr>
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<td>• Provides a DOI and License File.</td>
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Data archiving via RIS: Front office back office model

Institution (Radboud University)

- Enrolls metadata
- Uploads dataset

Data hosting Provider (DANS)

- DOI and License file
- Data Files and Metadata (SWORD Protocol)
- Published Online

Back Office

Front Office (Univ. Library)

Check

Communication of possible updates or to correct possible errors
Data archiving: the RIS interface

2019

Article - Letter To The Editor


Data Management Plan


2018

Doctoral Thesis (Supervisor/co-supervisor)

Requests for access to dataset

Type

- **result category**: dataset
- **status**: public

Researchers

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<td>M.</td>
<td></td>
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</tr>
<tr>
<td>Hermans</td>
<td>C.A.M.</td>
<td></td>
<td>prof. dr.</td>
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<td>C.J.A.</td>
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This data set is part of the following publication: Jetten, M. (2018). Knowledge of interaction styles and dimensions of interpretation in interreligious adult education. An empirical study of the effects of a hermeneutic-communicative curriculum (Interreligious Studies). Münster: LIT Verlag. This book reports on an evaluation study of a curriculum on interreligious dialogue among Christian and Muslims adults in the Netherlands. It was organized as a PhD-project between 2007 and 2013 at the Faculty of Philosophy, Theology and Religious Studies of Radboud University, financed by Stichting Nieuwegen.

The primary aim of this research is to explain the contribution of a curriculum to knowledge of interaction styles and hermeneutic distinctions that are used to express and interpret the views on religious phenomena of adherents from different religious traditions.

**keywords**
- interreligious learning; adult education; Christian-Muslim dialogue; Christians; Muslims; curriculum evaluation study with pre-test and post-test; interaction styles; dimensions of interpreting religion; hermeneutic-communicative learning

**MeSH**
- Humanities
- Theology and religious studies

**audiences**
- Educational theory
- Communication sciences

**languages**
- English; Dutch
**temporal coverage**

- **collection period**
  - from 30 9 2009
  - to 20 4 2010 (dd mm yyyy)

- **subject period**
  - blank

**spatial coverage**

- **area**
  - 21 curriculum locations in the Netherlands

- **coordinates**
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  - longitude
  - (SW)
  - latitude
  - longitude
  - (NE)

- **area**
  - blank

- **coordinates**
  - geolocation box
  - latitude
  - longitude
  - (SW)
  - latitude
  - longitude
  - (NE)


Data archiving via RIS

**Researcher using RIS**

- Enters metadata
- Uploads dataset

**Institution (Radboud University)**

- CRIS (Metis)
- Check

**Data hosting Provider (DANS)**

- DANS Easy
- Published Online
- Check

- DOI, URL and License file
- Data Files and Metadata (SWORD Protocol)

**Front Office (Univ. Library)**

- Communication of possible updates or to correct possible errors
- Communication about online publication

**Back Office**

- (possible) request for correction
KNOWLEDGE OF INTERACTION STYLES AND DIMENSIONS OF INTERPRETATION IN INTERRELIGIOUS ADULT EDUCATION

DOI: 10.17026/dans-x5c-eup9
URN: urn:nbn:nl:ui:13-ij46-1j

Knowledge of interaction styles and dimensions of interpretation in interreligious adult education
An empirical study of the effects of a hermeneutic-communicative curriculum
2016

This data set is part of the following publication:

This book reports on an evaluation study of a curriculum on interreligious dialogue among Christian and Muslims adults in the Netherlands. It was organized as a PhD-project between 2007 and 2013 at the Faculty of Philosophy, Theology and Religious Studies of Radboud University, financed by Stichting Nieuwezeg.
KNOWLEDGE OF INTERACTION STYLES AND DIMENSIONS OF INTERPRETATION IN INTERRELIGIOUS ADULT EDUCATION

Published 2018-05-02 09:56

RU Radboud University

Dataset Contents / original / data

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Possible role of CRISs in the Research Data Lifecycle
2. Writing Data Management Plans using the RIS interface

Result overview
page: 1 2 3 4 5 6 7

2019

Article - Letter To The Editor


Data Management Plan

2018

Doctoral Thesis (Supervisor/co-supervisor)

Type

- **result category**: data management plan
- **status**: work in progress

Authors

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<td>Volman</td>
<td>S.M.</td>
<td></td>
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<tr>
<td>Veraart</td>
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The goal of Aquafarm is to combine biological wastewater treatment by a cascade of plants and macrofauna with the production of high value products.
### Create new version

Choose one of the available formats below

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[Create new version]
1. FAIR data archiving the RIS interface.

Title: dmp
Version name: DMP Aquafarm 2.0
Version name: v1 DMP Aquafarm

01 - Research Project
02 - Organisational context
03 - Data Management Roles (feedback)
04 - Costs (feedback)
05 - Collection process
06 - Overview of research data
07 - Informed consent
08 - Ethics committee
09 - Privacy in the collection phase
10 - Security in the collection phase (feedback)
11 - Storing during research (feedback)
12 - Privacy in the processing/analysing phase
13 - Structuring and documenting your data (feedback)
14 - Sharing data during research
15 - Long-term storage (feedback)
16 - Metadata and documentation
17 - Giving access to data
RIS: DMP-tool in action. Researcher filled fields with feedback from support unit

10 - Security in the collection phase (feedback)

10.1 How will you deal with security issues that concern the collection of data?

Laptop will be encrypted, to prevent unauthorized access in the case the laptop is stolen.

Surfdrive will be used for storing data in a cloud, as it is considered adequate for storing confidential or competition-sensitive information.

last change made by Volman, S.M. on 24-05-2019 09:29:53

11 - Storing during research (feedback)

11.1 Indicate the storage location of all data types you mentioned in question 6.

Data will be stored on a personal RU laptop that is encrypted, and also on Surfdrive. Surfdrive will be connected to local maps on laptop, so that automatic copies are made daily. Laptop will also be used for work in the field (offline) and Surfdrive will be used for sharing with the supervisors and selective sharing of data with partner at Wageningen University.

If you store your data on a personal RU laptop (which is totally fine!) then please use the network drive (u-drive or file folder). These folders are automatically backed-up.
RIS: DMP-tool in action. Researcher filled fields with feedback from support unit

15 - Long-term storage (feedback)

15.1 Please indicate whether you will store your data for the long term, concerning scientific integrity and/or reuse of the data. If not, explain why.

The data will be stored for the long term for possible re-use by future scientists working on the Aquafarm project. As the data is owned by the waterboards, the data cannot be openly available unless consent is given by the waterboards (steering committee?).

last change made by Volman, S.M. on 27-05-2019 14:30:55

15.2 Please indicate where you will store your data long term and what the minimum and maximum retention period will be.

For long term storage of data (= at least 10 years) a backed-up server managed by FNWI’s C&CZ will be used. Data will be stored as soon as data collection starts.

Just a small typo: fot = for  
Stuurgroep = steering committee.

This is contrary to the answer you give in the previous question. DANS-EASY is used to make your data publically available. You are right: the data should be stored for a minimum of 10 years because of scientific integrity. Your institute recommends the following:

To ensure data integrity and prevent data loss, all research data, metadata, final analysis scripts and info about software and operating system should be stored on a backed-up server managed by FNWI’s C&CZ as soon as data collection starts and until at least 10 years after publication*

Please have a look at your policy: https://www.radboudnet.nl/fnwi/categoriepagina/informatie/rdm-policy-iwwr
RIS: DMP-tool. Further (near future) developments.

Fine-tuning the DMP-tool to the needs of individual institutes and disciplines as each institute or discipline may have a specific RDM policy.

**Instead of** using regular (non-discipline specific) templates/formats with standard *Questions* & free text field *Answers*

**Moving to**
Including the specific/detailed, discipline or institute-specific RDM policies that researchers have to meet. This means in practice a.o.t. that some of the fields or paragraphs may partly be pre-given answers, partly multiple choice and partly free-text answers.

**Benefits**
- Making sure the answers to DMP questions optimally comply to the policy of the various institutes/disciplines
- Reduce the effort researchers have to put into DMPs (*e.g. instead of writing text, simply click pre-given boxes*).
The crucial importance of an optimal support organization: the RIS Service Desk at the University Library.
Some conclusions: The relevance or added value of the RIS-solution

The integration of research Data Archiving and Data Management Plan functionality in RIS, making the CRIS a “one-stop shop” for their research information management brings the following benefits or, added value to the researchers:

• Significant reduction of the number of different applications to use for their research administration and information management. RIS at least replaces 4 to 5 different interfaces otherwise to be used by the researchers (funder interface, OA repository interface, CV/profiling interface, research data archiving interface, data management plan interface,…) all with a different look and feel and probably also different terminology/definitions/semantics used.

• Having to enter the information only once, which may result in substantial time savings.

• Optimal and flexible promotion of themselves and their research.

• Promoting the integration, and the acceptance, of research administration and information tasks as a “natural part” of the research practice.
Some conclusions: The relevance or added value of the solution

Last but not least and more general, the integration of research data management functionality in a CRIS can:

**Substantially contribute to the promotion of FAIR and Open Science**

- The interlinked information objects in a CRIS *(Researchers, Institutes, Projects, Publications, …)* provide a multitude of parameters to find research datasets. And furthermore the metadata on the datasets themselves, stored in a CRIS, supply information on their accessibility and their relevancy for re-use.

- Taken all this into account leads to the conclusion that *an appropriate use or integration of CRISs* *(e.g. in research data infrastructures such as the European Open Science Cloud (EOSC)) could really take Open Science to the next level.*
Thank you for your attention.

Questions?