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

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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+
staff
5,000+
All fields except
Engineering
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…

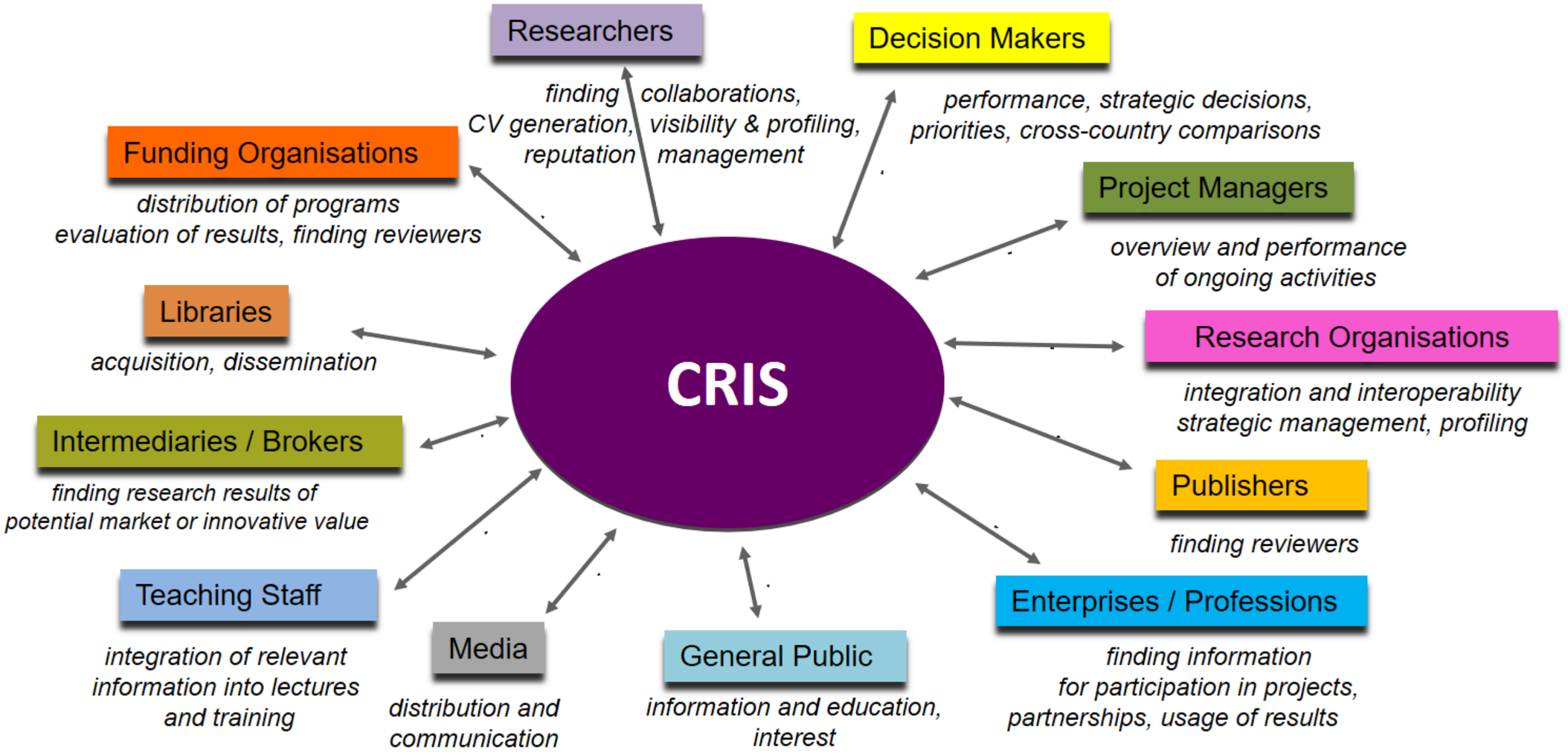
CRISs: a bit of History

- 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



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 accountablility***.

- **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.

Position of CRIS in the Research Information Landscape

INPUT FROM

External Publication / Data Resources

(WoS, Scopus, Google Scholar…)

Researchers

Administrative Resources

(HRM, Finance, Project Man.)

Institute's Secretariat / Univ. Library

Internet

OUTPUT TO

Publication Repositories

Dataset Repositories / Archives

Profiling & Management Applications

((inter)national) Research Portals

Other RIS-systems / formats

ORCID

OpenAIRE

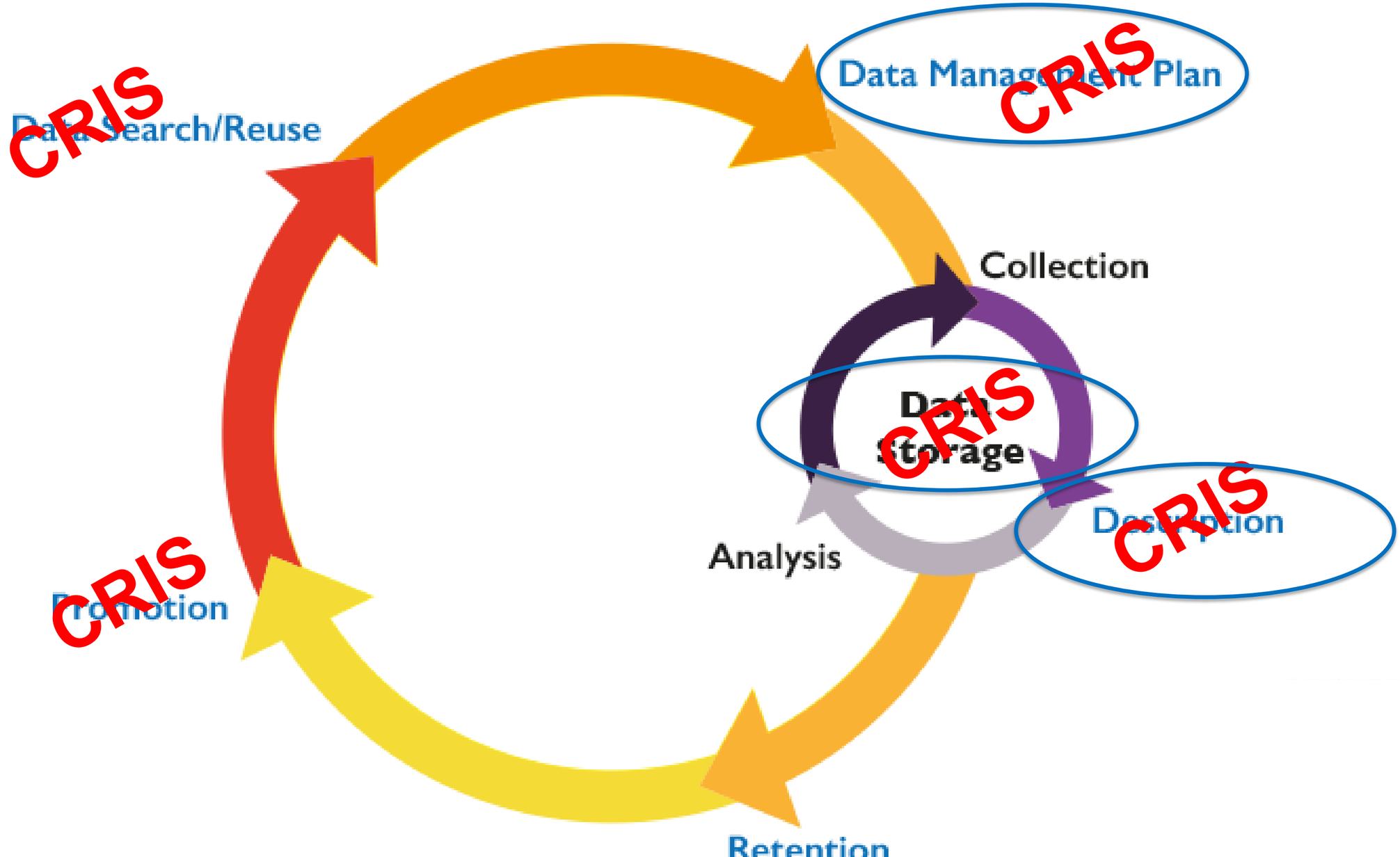
VIVO

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.***

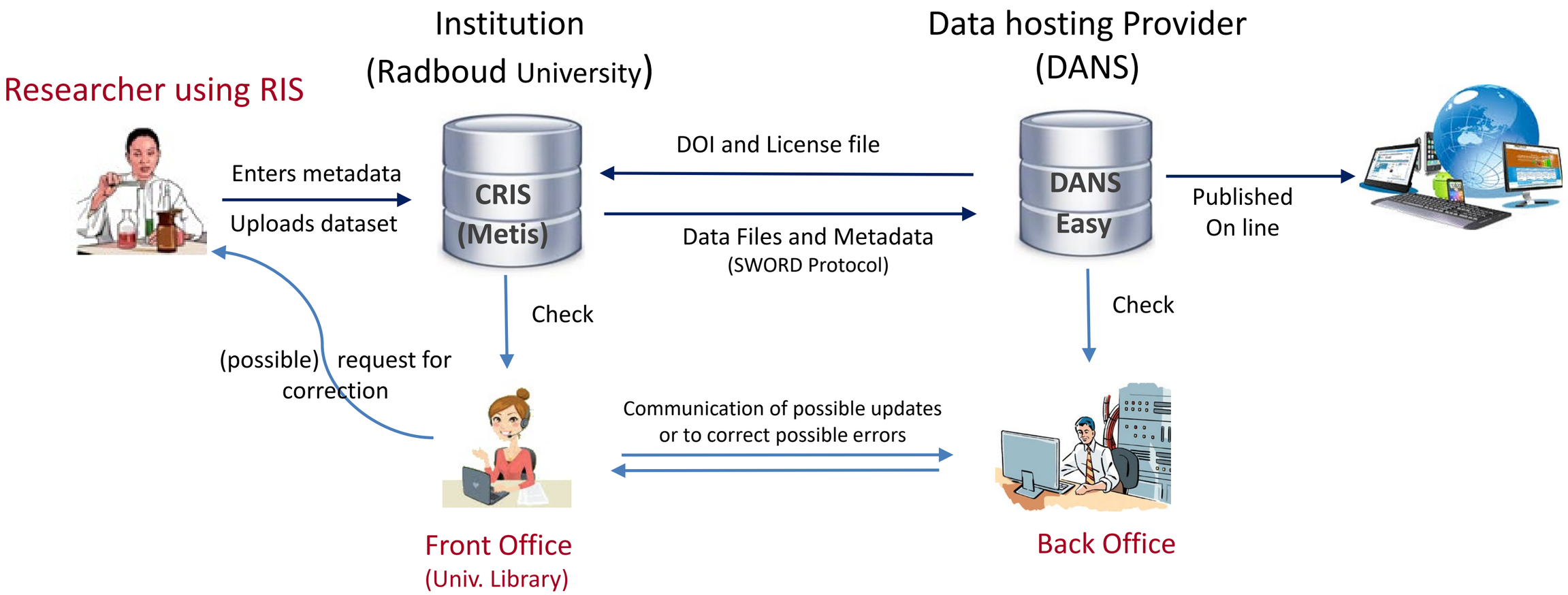
RIS: the one-stop shop interface to the CRIS (Metis)

- ✓‘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).
- ✓Arrchiving of datasets at the national NL datahosting service DANS.
- ✓Linking publications and datasets to one another and to projects.
- ✓Including a Data Management Pan (DMP) (writing)-tool.

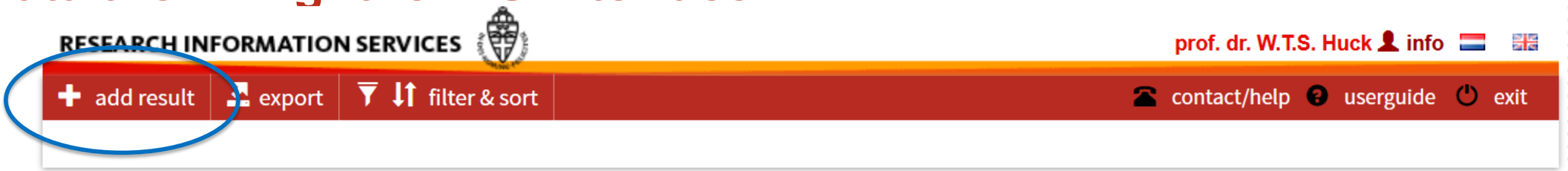
1. Data archiving via RIS

Researcher	• Finishes research and decides to make the data publically available • Visits the RIS interface, enters the metadata and uploads the data files • Deposits the dataset in the local intermediary storage facility at RU.
RIS service desk	• Reviews the metadata • Takes care of data curation (manuals & support) • Sends feedback to the researcher to optimize the dataset • Deposits updated and approved dataset to the DANS EASY archive
DANS EASY archive	• Makes the dataset publically available • Provides a DOI and License File.

Data archiving via RIS: Front office back office model



Data archiving: the RIS interface



Result overview **page:** « 1 2 3 4 5 6 7 » **307 results**

2019

Article - Letter To The Editor

Zheng, L., Zhao, H., Han, Y., Qian, H., Vukovic, L., Mecinovic, J., Kral, P. & Huck, W.T.S. (2019). Catalytic transport of molecular cargo using diffusive binding along a polymer track. *Nature Chemistry, 11* (4), 359-366. doi: 10.1038/s41557-018-0204-7

Bao, M., Xie, J., Katoele, N., Hu, X., Wang, B., Piruska, A. & Huck, W.T.S. (2019). Cellular Volume and Matrix Stiffness Direct Stem Cell Behavior in a 3D Microniche. *Acs Applied Materials & Interfaces., 11* (2), 1754-1759. doi: 10.1021/acsami.8b19396

Gerlach, J.P., Buggenum, J.A.G. van, Tanis, S.E.J., Hogeweg, M., Heuts, B., Muraro, M.J., . . . Rivello, F., Huck, W.T.S., . . . Stunnenberg, H.G. & Mulder, K.W. (2019). Combined quantification of intracellular (phospho-)proteins and transcriptomics from fixed single cells. *Scientific Reports, 9*:1469. doi: 10.1038/s41598-018-37977-7

Data Management Plan

Huck, W.T.S. (2019). *Grant application to H2020.* [data management plan].

2018

Doctoral Thesis (Supervisor/co-supervisor)

Bao, M. (2018, October 8). *Engineering microenvironments to control stem cell fate from 2D to 3D.* Radboud University (127 pag.) (S.l.: s.n.) Supervisor(s): prof. dr. W.T.S. Huck.

Rakszewska, A.A. (2018, January 30). *One drop at a time. Expanding the toolbox of droplet microfluidics for single-cell analysis.* Radboud University (134

▸ Requests for access to dataset

▾ Type

result category * dataset ○ register and deposit ○ register only

status * public ☑ personal key publication

▾ Researchers

	name *	initials *	prefix	title	
1	Jetten	M.		dr.	
2	Hermans	C.A.M.		prof. dr.	
3	Sterkens	C.J.A.		dr.	

Metadata

title information

title	Knowledge of interaction styles and dimensions of interpretation in interreligious adult education
subtitle	

repository information

archive	DANS EASY
licence file	download licence file
year of archiving	2016
date available	28 6 2016 (dd mm yyyy)
rightsholder	Radboud University
DOI	10.17026/dans-x5c-eup9
handle	2066/159252
URL	
handle institutional repository	http://hdl.handle.net/2066/159252

content information

description

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

audiences

Theology and religious studies

Educational theory

Communication sciences

languages

English; Dutch

temporal coverage

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

subject period (?)

spatial coverage

area (?) 21 curriculum locations in the Netherlands

coordinates (?)  geolocation box latitude longitude (SW)

latitude longitude (NE)

area (?)

coordinates (?)  geolocation box latitude longitude (SW)

latitude longitude (NE)

Related results

Add results...

Jetten, M. (2011). Samen op weg naar verdieping. Christenen en moslims in dialoog. *Handelingen. Tijdschrift voor Praktische Theologie en Religiewetenschap, 38* (1), 14-20.

Jetten, M. (2018, april 18). *Knowledge of interaction styles and dimensions of interpretation in interreligious adult education. An empirical study of the effects of a hermeneutic-communicative curriculum.* Radboud University (IX, 210 pag.) (Münster: LIT Verlag) Prom./coprom.: prof. dr. C.A.M. Hermans & dr. C.J.A. Sterkens.

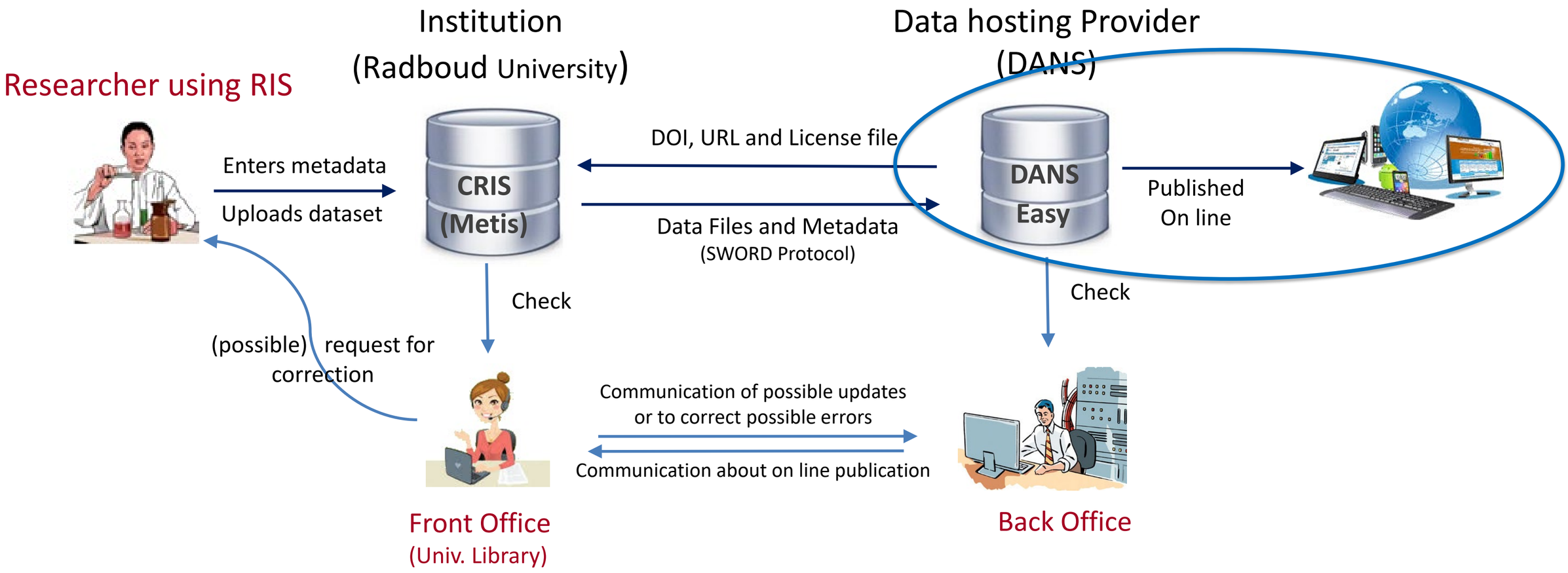
Jetten, M. & Sterkens, C.J.A. (2015). Hermeneutic dimensions in interreligious learning among Christian and Muslim adults in the Netherlands. In C.J.A. Sterkens & P.A.D.M. Vermeer (Eds.), *Religion, migration and conflict* (Nijmegen Studies in Development and Cultural Change, 51) (pp. 169-197). Zürich: Lit Verlag

Dataset files

Manage data files...

filename	size	access level	action
2016_jetten_knowledge of interaction styles_begeleidende brief.pdf	37.7 Kb	open access	
2016_jetten_knowledge of interaction styles_begeleidingsbladen.pdf	188 Kb	open access	
2016_jetten_knowledge of interaction styles_curriculum.pdf	139 Kb	open access	
2016_jetten_knowledge of interaction styles_cursusmap.pdf	4.08 MB	open access	
2016_jetten_knowledge of interaction styles_educator data syntax.sps	0.8 Kb	open access	

Data archiving via RIS



KNOWLEDGE OF INTERACTION STYLES AND DIMENSIONS OF INTERPRETATION IN INTERRELIGIOUS ADULT EDUCATION

Overview Description Data files (16)

Persistent identifier	DOI: 10.17026/dans-x5c-eup9 URN: urn:nbn:nl:ui:13-jd46-lj
Title	Knowledge of interaction styles and dimensions of interpretation in interreligious adult education An empirical study of the effects of a hermeneutic-communicative curriculum
Creator	Jetten, dr. M. (RU Radboud Universiteit) DAI: info:eu-repo/dai/nl/304900109 Hermans, prof. dr. C.A.M. (RU Radboud Universiteit) DAI: info:eu-repo/dai/nl/30437539X Sterkens, dr. C.J.A. (RU Radboud Universiteit) DAI: info:eu-repo/dai/nl/182934160
Date created (ISO 8601)	2016
Description	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. Radboud University. 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

Data Archiving and Networked Services DANS

EASY

EASY offers sustainable archiving of research data and access to thousands of datasets.

Search... SEARCH

> Search help

> Advanced search > Browse

KNOWLEDGE OF INTERACTION STYLES AND DIMENSIONS OF INTERPRETATION IN INTERRELIGIOUS ADULT EDUCATION

Status Published 2018-05-02 09:56 Reuse

Depositor RU Radboud University

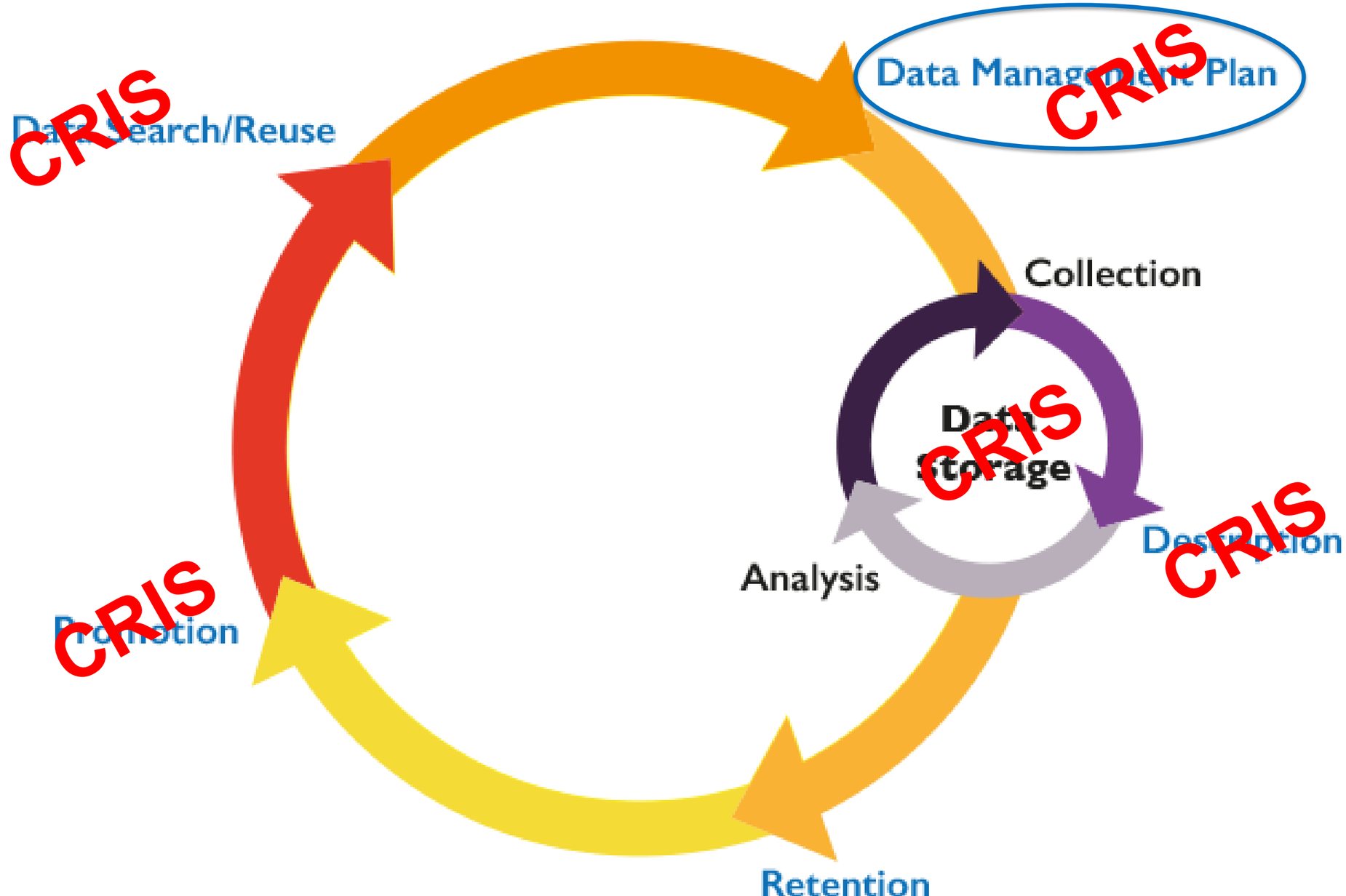
Download View details

Dataset Contents / original / data

- Dataset Contents
  - original
    - data

Name	Size	Visible to	Accessible to
2016_jetten_knowledge of interaction styles_begeleidende brief.pdf	38619	Anonymous	Known
2016_jetten_knowledge of interaction styles_begeleidingsbladen.pdf	192096	Anonymous	Known
2016_jetten_knowledge of interaction styles_curriculum.pdf	142298	Anonymous	Known
2016_jetten_knowledge of interaction styles_cursusmap.pdf	4277701	Anonymous	Known
2016_jetten_knowledge of interaction styles_educator data syntax.sps	782	Anonymous	Known
2016_jetten_knowledge of interaction styles_educator data.por	51030	Anonymous	Known
2016_jetten_knowledge of interaction styles_educator data.sav	144385	Anonymous	Known

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 » **307 results**

2019

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Type

result category: data management plan

status: work in progress

Authors

	name	initials	prefix	title
1	Volman	S.M.		
2	Veraart	Annelies J.		
3				

Description

title: DMP Aquafarm 2.0

grant provider: Radboud University

year: 2019

summary: The goal of Aquafarm is to combine biological wastewater treatment by a cascade of plants and macrofauna with the production of high value products

Related results

Add results & researchers...

Research

Add research...

Data management plan

data management plan tool

overview D

Create new version

Choose one of the available formats below

Filter

name	version	valid from	valid through	date created
H2020 format	2018	09-05-2018		09-05-2018
RU Format	2018	01-01-2018		03-04-2018
ZonMw format	2018-06	09-05-2018		09-05-2018
NWO format	2018	09-05-2018		09-05-2018

Cancel

version

v1 Grant

Action:

Create new

Title dmp DMP Aquafarm 2.0
Version name v1 DMP Aquafarm

Save Feedback actions

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

Title dmp DMP Aquafarm 2.0
Version name v1 DMP Aquafarm

Save Feedback actions

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 acces 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**

remarks co-authors | feedback | feedback (draft)

Very good!

last feedback given by **helpdesk UBN** 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.

remarks co-authors | feedback | feedback (draft)

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**

remarks co-authors | feedback | feedback (draft)

Just a small typo: fot = for

Stuurgroep = steering committee.

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

remarks co-authors | feedback | feedback (draft)

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 mutlitple 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.

Radboud University

Research Information Services

Search

HOME MANUALS SUPPORT

Register your publication

You can use the RIS interface to register your publication.

Link your publications and datasets and make them visible in the Radboud Repository and on your personal profile page.

- **Step-by-step: registering a publication**

Upload your full text

You can use the RIS interface to upload the full text of your publication to the Radboud Repository.

Your publication will be easy to find through the usual search engines like Google (Scholar).

- **Step-by-step: uploading full text to a publication**

Dataset archiving and registration

Use RIS to make a dataset available via the certified DANS EASY archive.

Choose 'register only' If you've archived a dataset elsewhere.

- **Step-by-step: registering and archiving a dataset**
- **Step-by-step: registering a dataset**

DMP tool

You can make a good start on managing your data by writing a data management plan.

Radboud University has developed a tool for writing such a plan, included in the RIS interface.

- **Step-by-step: writing a DMP**
- **DMP user manual**

Policy

- **RDM policy**
- **RIS guidelines**

RDM support

- **Manage your research data with our help**

Open science

Open Access

- **About open access and open science**

Log in to RIS

Use your RU credentials (u/z-number and password) to log in:

SURFCONEXT

RIS performs optimally in Edge or Chrome, the browsers supported by

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 multitutde 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?