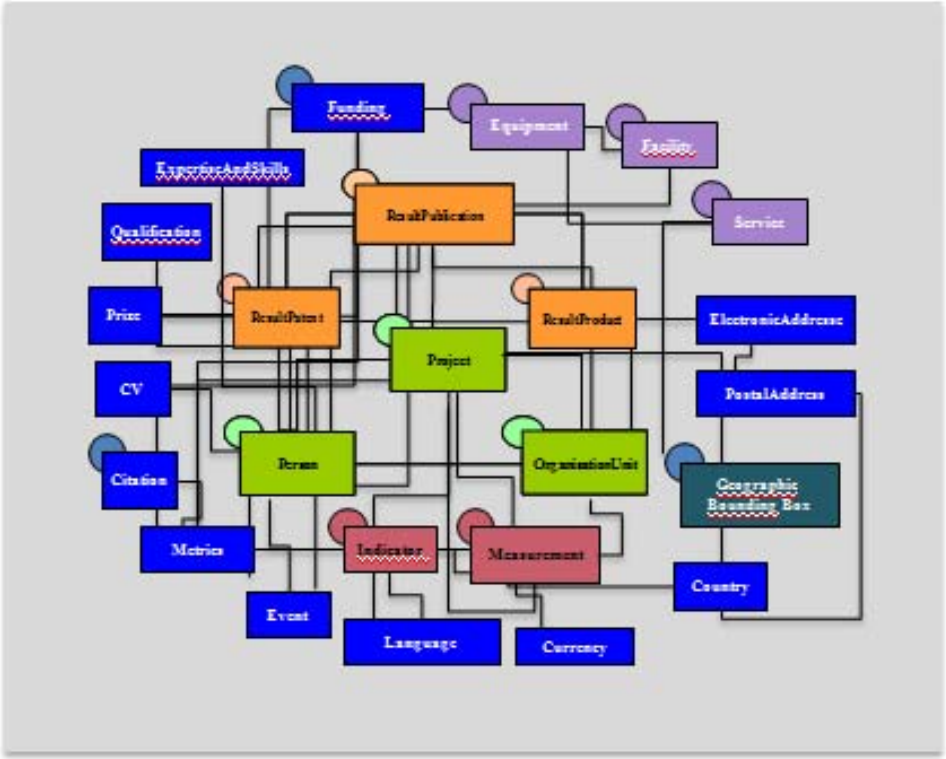
CRIS – Repository Connection

Possibilities and Values



Speaker: Ed Simons

euroCRIS
Current Research Information Systems

Radboud University

Introduction of the Speaker

- International IT-project manager at *Radboud University*, Netherlands.
- Initiator and project leader of *METIS*, the Dutch current research information system (CRIS), currently used by all Dutch universities and the Dutch Royal Academy of Sciences.
- Project leader of *OPUS-College*, an open source Student Information System, currently being implemented in Mozambique, Zambia and Zimbabwe.
- IT-related projects for the International Federation of Catholic Universities (IFCU) and the International Association of University Presidents (IAUP)
- Since January 2013: President of euroCRIS.
  (Board Member since 2008)

e.simons@ru.nl

Structure of the Presentation

- Short introduction of the euroCRIS organisation
- Research metadata and the CERIF data model
- The position of a CRIS in the research information network.
- Interoperability between CRIS and Repositories.
- Some conclusions.

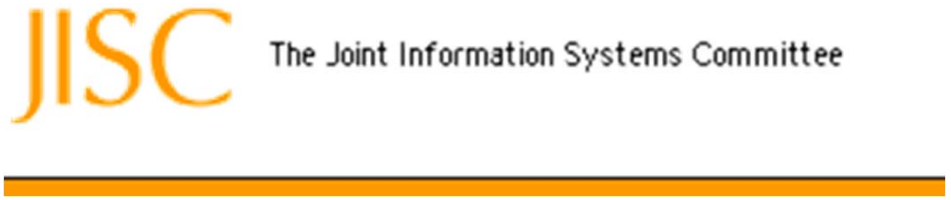
The euroCRIS Organisation

- International network for research information experts, more specifically: developers, managers and users of Research Information Systems (CRIS).
- 177 members: 117 institutions and 60 personal members.
- 43 countries: 32 European and 11 non-European.
- Structure:
  - Board: strategy, policy and management.
  - Task Groups (TG's): *Architecture, Best Practice-DRIS, CERIF, CRIS-IR, Linked Open Data, Projects, Indicators.*
  - Executive members *for Conferences, Strategy and Communications..*
- Main activities:
  - Developing and maintaining the *CERIF data model*.
  - Developing services *(CERIF-compatibility application, Trainings, Mapping/exposure of CERIF to other formats (e.g. LOD)*, etc...)
  - Providing a platform and meeting place for research information system experts:
    - *bi-annual conferences:* ***next one in Rome (May 2014) on Data intensive science.***
    - *members meetings (twice a year),Bonn, May 2013, Porto November 2013.*
    - *yearly seminar (Brussels) with Strategic Partners.*

euroCRIS

Strategic Partners

www.eurocris.org



Some Projects euroCRIS is involved ir

EU-funded:

- ENGAGE: distribution of public governmental information.
- EURORISNET: research infrastructures (Knowledge Repository)
- openAIRE+

Outside of Europe:

Cooperation with CASRAI (Canada) concerning standardization of research information vocabularies.

Contacts with VIVO (US) aimed at future cooperation.

Further:

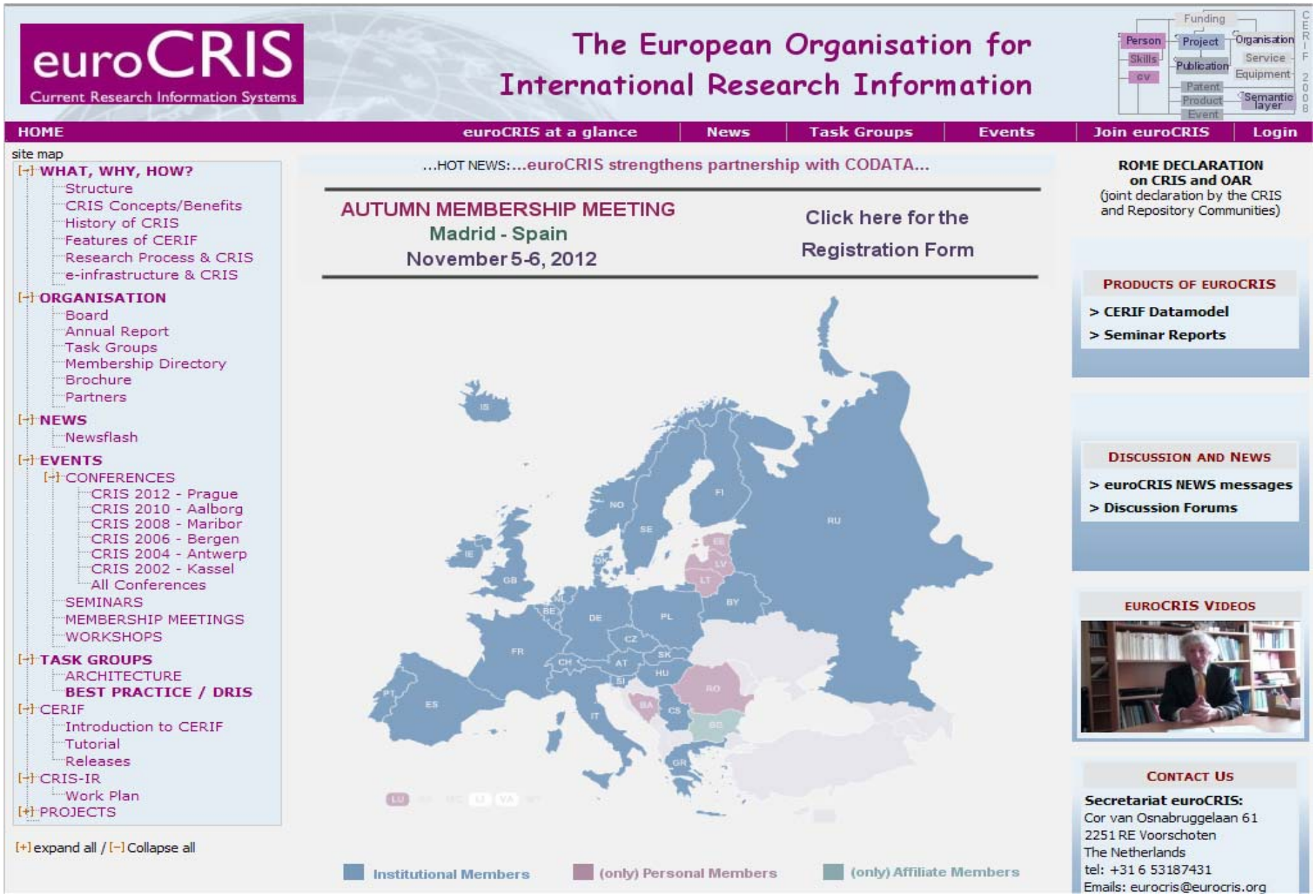
EuroCRIS (board)members are involved in various national projects, e.g. in UK:

- MICE: measuring impact under CERIF
- Snowball metrics: set of metrics for inter-institutional benchmarking

  (in cooperation with Elsevier).

Web Site

www.eurocris.org



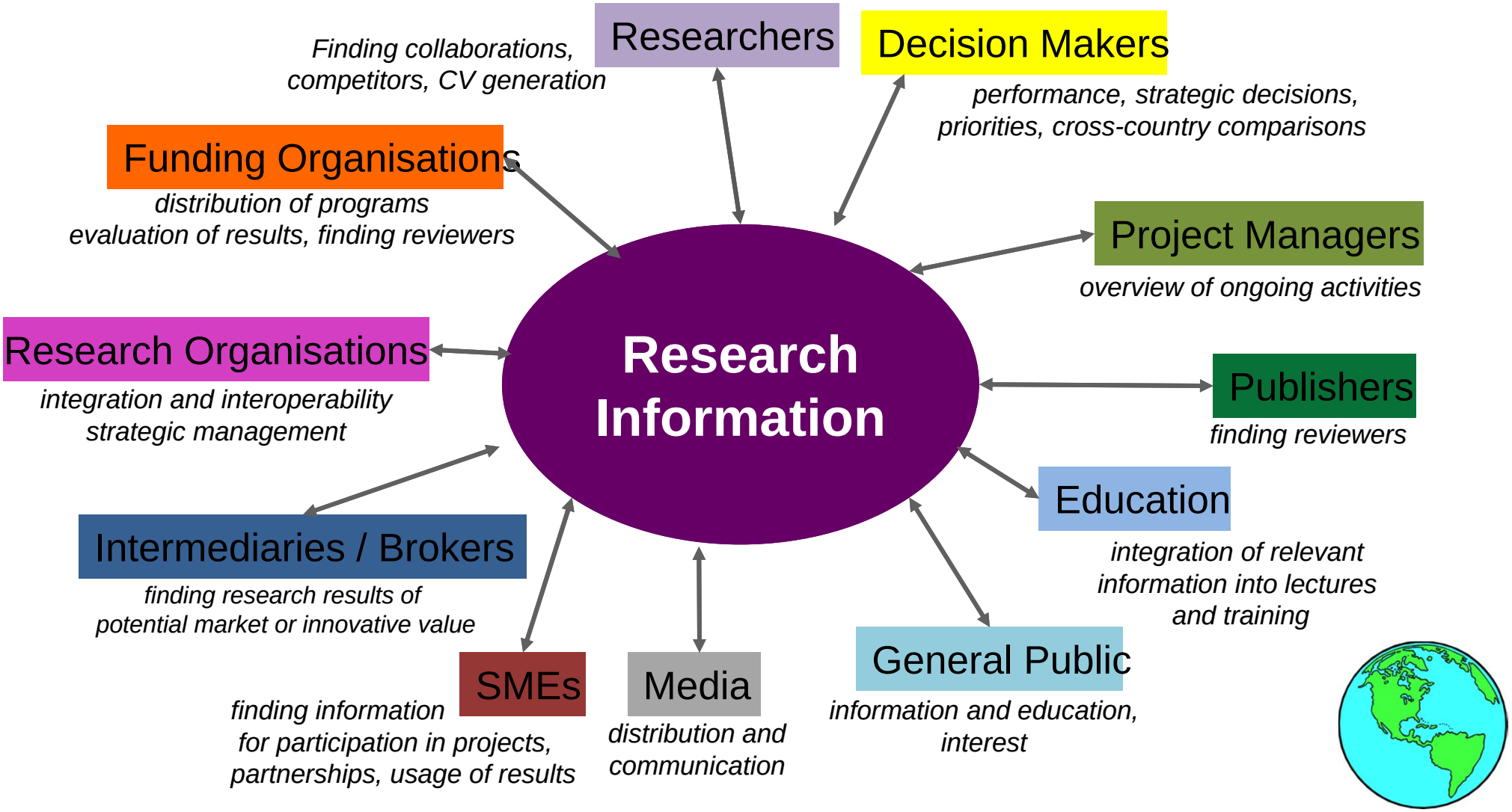
Main goal of euroCRIS in a nutshell

To develop/find/promote solutions for optimal registration, discovery, access and presentation of research information in all its aspects and for all possible stakeholders.

(So, not only publications or results in general of research, but also information on the research activities as such, the organisations involved in the research, the funders and the individual researchers).

EuroCRIS is of the opinion that the relational database technology is an appropriate instrument for this.

Stakeholders: who is in need of Research Information?



Aspects of Research Information.

- **Research activity (project)**: title, abstract, duration, academic field, language(s), level (institutional, national, international), etc...
- **Organizations/institutions involved in the research:** (organizing / carrying out t research): name, contact info, role or position in the research, type of organization (university, research institute, network...), etc...
- **People involved:** official name as well as aliases used, affiliatiions to organisations/insitutes, role in the research (researcher, project leader/manager, author, reviewer, …), birth date,, field of expertise, etc...
- **Input - funding:** funding bodies, amount of money invested, types of funding, time investment number of f.t.e.'s, etc.
- **Data(sets)** the research is based on / has produced...
- **Output:** publications, patents, (other) products, (software, media), etc...
- **Equipment/ Services used** in the research (e.g. high-energy magnet, etc...)
- **Rights:** user/authorization rights, distribution rights, IP (copy) rights, etc...
- **Semantics:** e.g. thematic / subject area classification of the research, etc... In general: the metadata that express meaning as distinguished from merely "identifying" metadata.
- **Impact:** e.g. on political decision, public health improvement, cultural enrichment.
- **Metrics:** number of publications, citations, web page hits, etc...

Example of a “Real World” situation

Researcher is working for various institutes/departments in various roles

A researcher “R”, specialised in Aquatic Biology is affiliated to a Research Institute, “O1”, where she has her primary appointment. At the same time for part of her time she works for an International Organization “O2”. In organization O1 she has the formal function “Full Professor”, in Organization O2 she has the title “Senior Researcher”.

From within these affiliations the researchers is working on various projects with different subjects

For O1 she works on 2 research projects (PR1 and PR2) one local and one national, concerning the relation between water flora and the occurrence of some types of amphibians. For the O2 organization she is involved in a project (P3) studying the effect of polution on the extinction of some coral types in Eastern African waters.

The projects also have a different time frame.

The projects P1 and P2 both started in February 2009; P1 has a duration of 3 years and P2 ended in August. 2011. The P3 project started in May 2011 and has a duration of 4 years.

And the researchers has different roles in the various projects.

For the P1 and P2 projects she is, apart from being researcher, also project leader. For the P3 project she is a member researcher.

”.

Example of a “Real World” situation

The projects are funded by different funding sources.
P1 is funded by her university, P2 by her government and P3 by an international organization.

The researchers publishes in 2 different languages and in various journals of different academic level..
As part of her work for P1 and P2 she publishes in both Dutch and English. For P3 she publishes in English. Publications in a diverse range of journals, going from top-ranked scientific journals in her field, over professional journals to publications for the general public.

The researchers also publishes under various names.
Given the various bibliographical standards used by different journals she publishes under different name formats, e.g. A. Jones, Anna Jones, Jones, A.B.C., Jones, A., etc... In 2011 she got married and changed her name in “Peters-Jones”.

What kind of questions could be asked (by the various stakelhoders)?

- Give me an overview of publications by R broken down by:
  - Project
  - Type of publication: scientific, professional, for the general public.
  - Language
- Give me all the publications of R in the period July 2010-June 2011?
- Idem, by funder, type of funding?
- What colleagues is R cooperating with on a local, national and international level?
- List the publications of R in the field of Marine Biology.
- List (also) the publications of the colleagues of R in project P1 and P2..
- What is the scientific impact of R's publications, measured by means of the number of citations to her publications form colleague-scientists?
- What is the impact of R's work on international environmental policy concerning ocean polution?
- How many publications in total resulted from P1 (2 and/or 3)?
- How many women are involved in P3?
- What other projects are currently carried out by institute O1?
- What is the total research budget of institute O1 broken down by type of funder/funding.

Relational Database Technology and the CERIF model.

- EuroCRIS is of the opinion that the Relational Database Technology is the appropriate instrument to succesfully handle the diverse and vast amount of metadata involved with the full picture of Research Information, as mentioned in the previous slides.

- First and most important step, and an absolute condition (*sine qua non*), for this is a well-designed relational (meta)data model and architecture, integrating all these aspects. .

- This is why euroCRIS, from its very start, has highly focused on the development of an optimal research information data model, called CERIF *(Common European Research Information Format).*

- CERIF has known various releases in the last decade and has gradually matured into an all-encompasing metadatamodel and architecture. However, some issues still remain (e.g. the integration of metadata for datasets, and the standardisation of semantical definitions/vocabularies), so the development is still ongoing. The latest release of CERIF is version 1.5. (for more info on the various releases, see the euroCRIS Web site).

..

Strong points of CERIF?

- **Completeness:** the metadata in CERIF cover practially all aspects of research information.

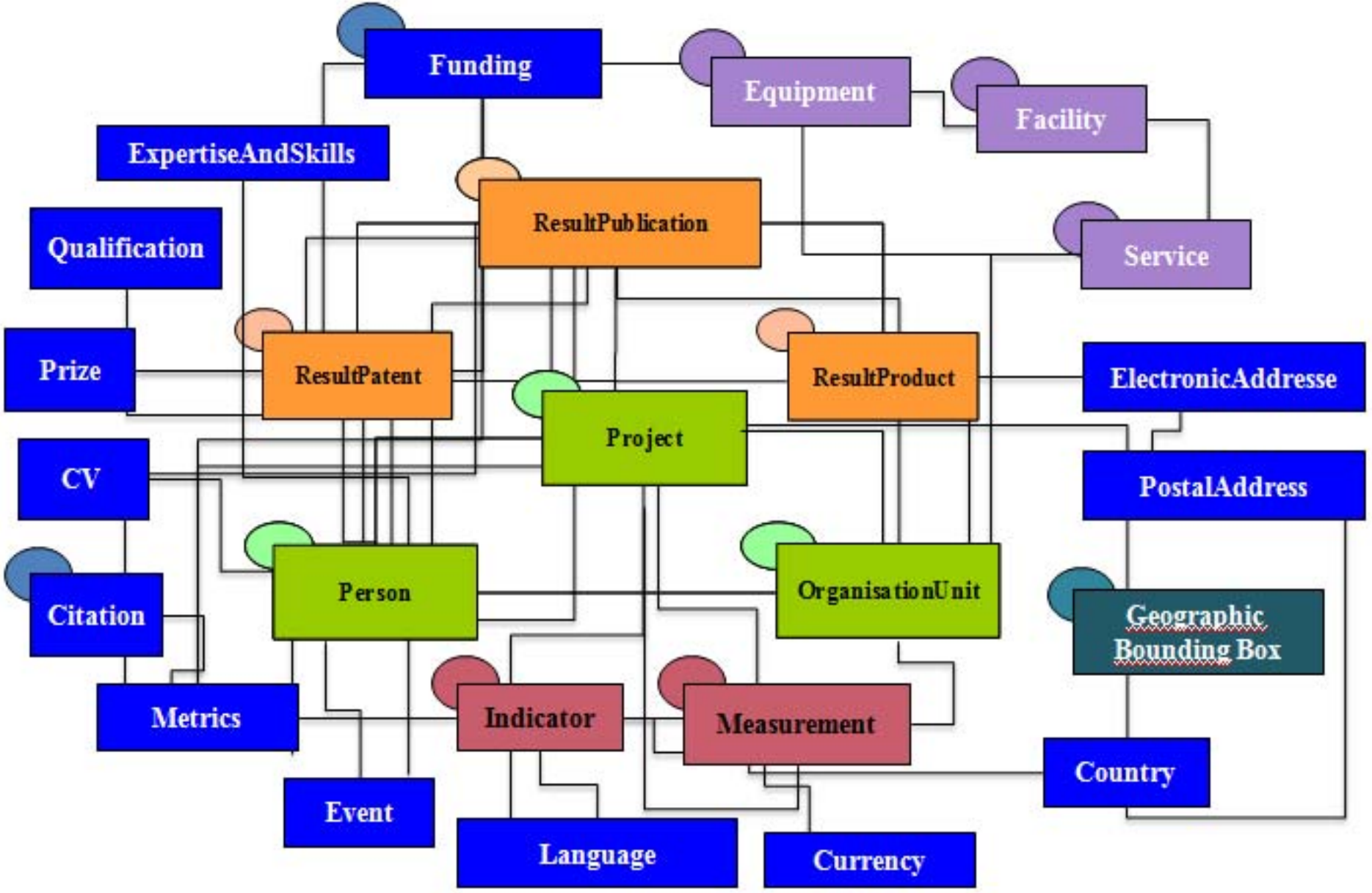
- **Proper normalization, high level of granularity and full use of (possibilities of) the relational model technology:** clear separation of groups of attributes which can repeat against groups of attributes which don't. Repeating attributes get their own table, together with a relational (linking) table to connect to the basic entity table. An example: the author of a publication in CERIF is not an attribute in the publication table, but has its own person table and is linked to the publication by means of the publication_person link table.

- **Semantic layer:** ccommodating all semantic information (classifications, typings, controlled vocabularies, ontologies, etc...) in a separate *semantic layer* consisting for each classification or vocabulary in a class scheme definition (e.g. "Publication roles") and the class terms for that scheme (e.g. "Author", "Editor", "Publisher", etc...).

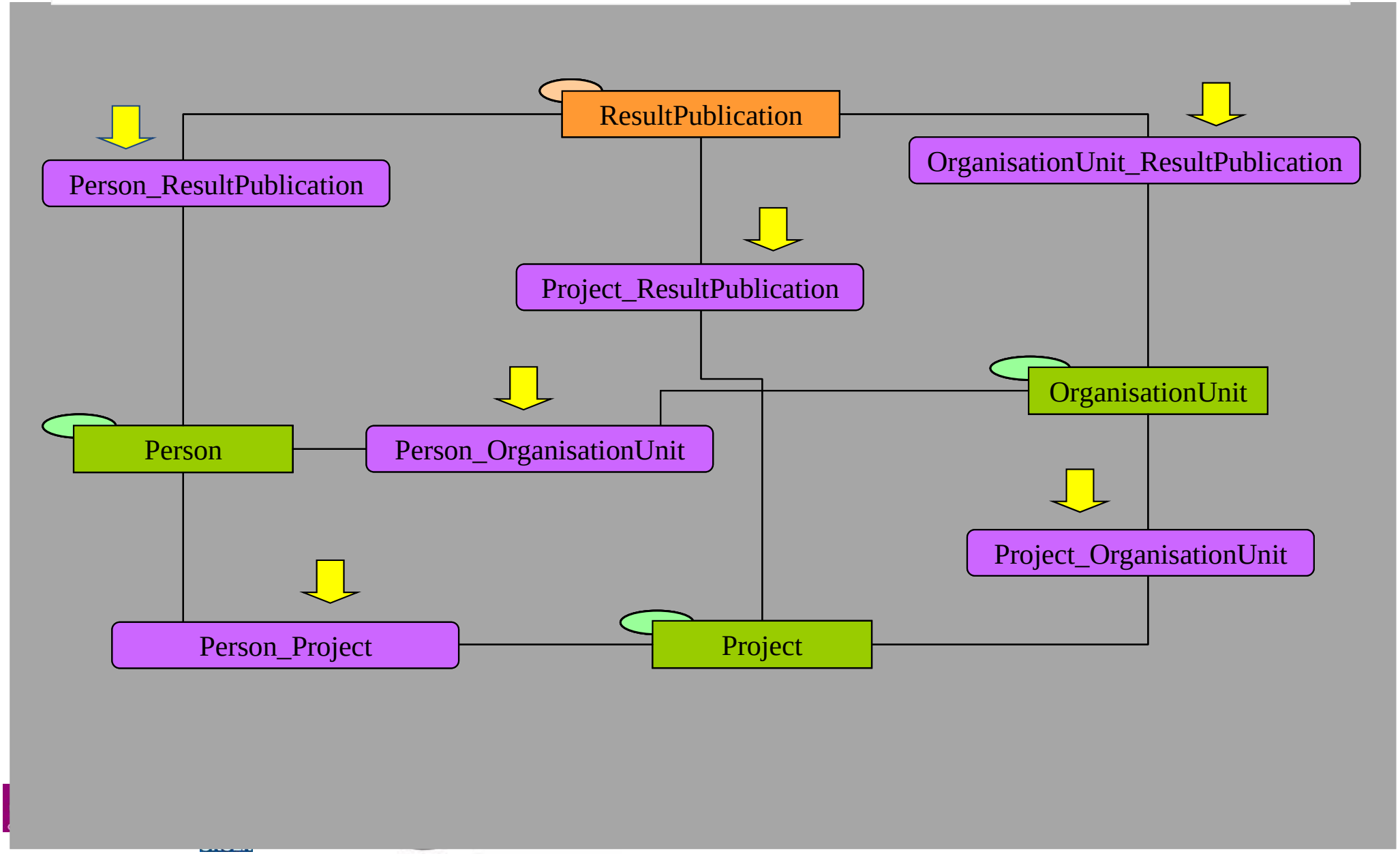
- **Timeliness of entities and relations between entities:** ensured by means of a start- and end-date attributes.

- **Multilinguality** of all text fileds: by means of a language code attribute

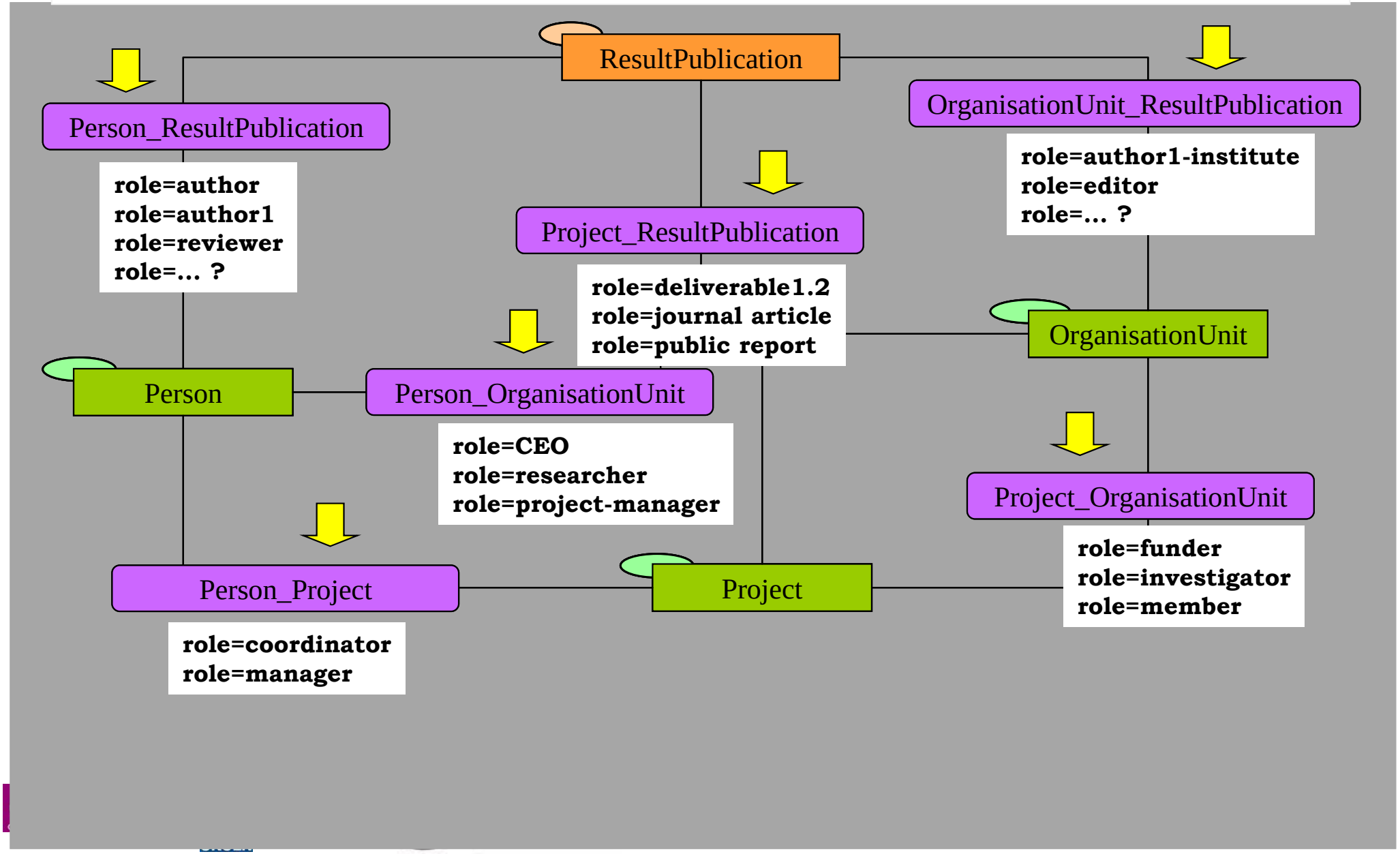
CERIF 1.4 Model



Some CERIF Link Entities



Some CERIF Link Entities



CERIF Link Entities: Database Table View

	VeId	Type
	cfResPublId	char(128)
	cfClassId	char(128)
	cfClassSchemeId	char(128)
	cfStartDate	datetime
	cfEndDate	datetime
	cfFraction	double

cfResPubl_Class
For expressing
Classification of Publication
(e.g. the scientific field or subject area it belongs to)

	VeId	Type
	cfPersId	char(128)
	cfOrgUnitId	char(128)
	cfClassId	char(128)
	cfClassSchemeId	char(128)
	cfStartDate	datetime
	cfEndDate	datetime
	cfFraction	double

cfPers_OrgUnit
For expressing
Role of a Person in an Organization

CERIF 1.5 XML Interchange Format

```
<cfProj>
        <cfProjId>internal-project-identifier</cfProjId>
        <cfAcro>ACRO</cfAcro>
        <cfURI>http://www.project-url.ac.uk/acro.html</cfURI>
        <cfTitle cfLangCode="en-GB" cfTrans="o">The Title of the Project</cfTitle>
        <cfAbstr cfLangCode="o" cfTrans="o">This is the activity description of the project</cfAbstr>
        <cfProj_Class>
                <cfClassId>casrai-activity-type-uuid</cfClassId>
                <cfClassSchemeId>casrai-activity-types-scheme-uuid</cfClassSchemeId>
                <cfStartDate>2004-03-27T00:00:00</cfStartDate>
                <cfEndDate>2007-03-27T00:00:00</cfEndDate>
        </cfProj_Class>
        <cfProj_Class>
                <cfClassId>casrai-activity-temporal-classification-type-uuid</cfClassId>
                <cfClassSchemeId>casrai-temporal-classification-type-scheme-uuid</cfClassSchemeId>
                <cfStartDate>2004-03-27T00:00:00</cfStartDate>
                <cfEndDate>2007-03-27T00:00:00</cfEndDate>
        </cfProj_Class>
</cfProj>
```

CERIF and CRIS

CERIF is meant to be the base for a CRIS:

Current **R**esearch **I**nformation **S**ystem

A (relational database) system that holds the previously mentioned metadata.

Currently 200+ CRIS in Europe at universities/institutes, of which the majority is supplied by commercial vendors, some in-house developments.

CRIS and CERIF-compatibility

- Virtually all CRIS-developers nowadays aim at full CERIF-compatibility, but specifics of local situations may cause slight divergence from the “pure” CERIF-model.
- Also the fact that some CRIS already existed for some time before CERIF reached maturity may still cause some differences.
- Major CRIS systems implemented in Europe these days:
  - Converis (Sweden, Germany, Netherlands...)
  - Pure (Denmark, UK, Germany, …)
  - Simplectic (UK, US, …)
  - METIS (Netherlands) (non-commercial)

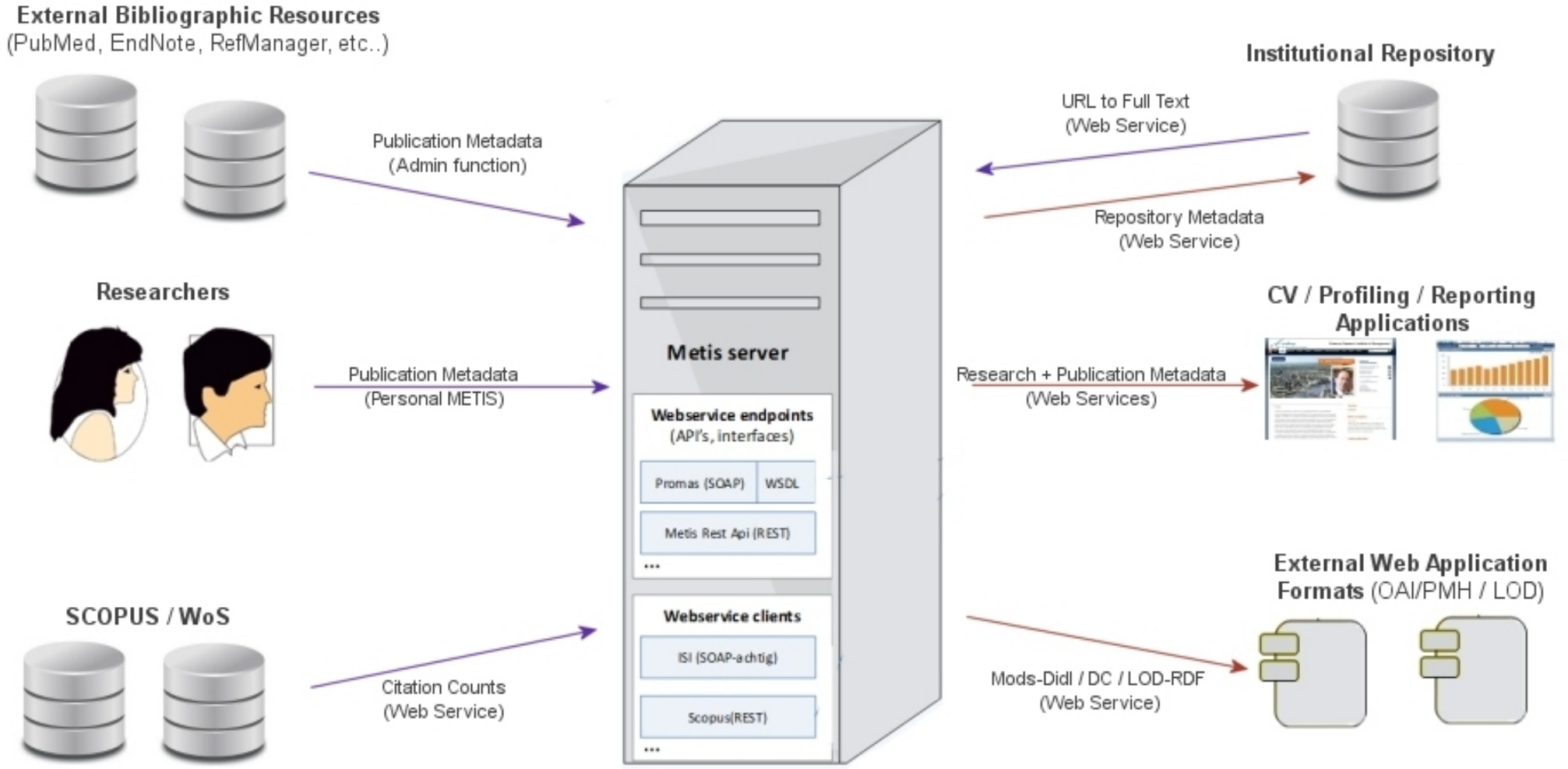
Position of CRIS in the Research Information Network

- The broad scope of CRIS when it comes to research information metadata (covering all aspects).
- The fine granularity of the CRIS data structure.

Make CRIS a suitable candidate for the "spider in the web" position in the Research Information domain.

- The first-mentioned aspect means that CRIS deal with all kinds of data also registered or needed in/by other resources, so this supposes a connection or interoperability of the CRIS with these other resources (for reasons of sound/efficient data registration – no double input etc..).
- The second aspect means that CRIS can be looked upon as a kind of fine grained "*lego boxes*", able to supply or expose virtually any data format needed by other applications that exist in the research information domain.

Position of CRIS in the Research Information Network



Full Professor

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T: +31 10 4082538
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Programme:
Organisation

ERIM Membership:
Fellow ERIM (since 2003)

Profile

Publications (161)

Key publications (4)

Hirst, G., van Knippenberg, D. & Zhou, J. (2009). A cross-level perspective on employee creativity: Goal orientation, team learning behavior, and individual creativity. *Academy of Management Journal, 52*(2), 280-293.

van Knippenberg, D. & Schippers, M.C. (2007). Work group diversity. *Annual Review of Psychology, 58*, 515-541.

van Knippenberg, D., de Dreu, C.K.W. & Homan, A. C. (2004). Work group diversity and group performance: An integrative model and research agenda. *Journal of Applied Psychology, 89*(6), 1008-1022.

van Knippenberg, D. & Hogg, M.A. (2003). A social identity model of leadership effectiveness in organizations. *Research in Organizational Behavior, 25*, 243-295.

Articles (113)

Books (5)

Book contributions (43)

Recognitions (20)

Centres

Leadership

Latest publication

Kollée, J.A.J.M., Giessner, S.R. & van Knippenberg, D. (2013). Leader evaluations after performance feedback: The role of follower mood. *The Leadership Quarterly, 24* (1), 203-214.

Latest news

PhD Defence: Morality in Interactions: On the Display of Moral Behavior by Leaders and Employees

In her PhD thesis entitled Morality in Interactions: On the Display of Moral Behavior by Leaders and Employees, Suzanne van Gils analyses the interplay between employees and their organisational environment.

Course

Advanced Topics in Organizational Behavior

Course details and application

Interoperability CRIS-Repositories

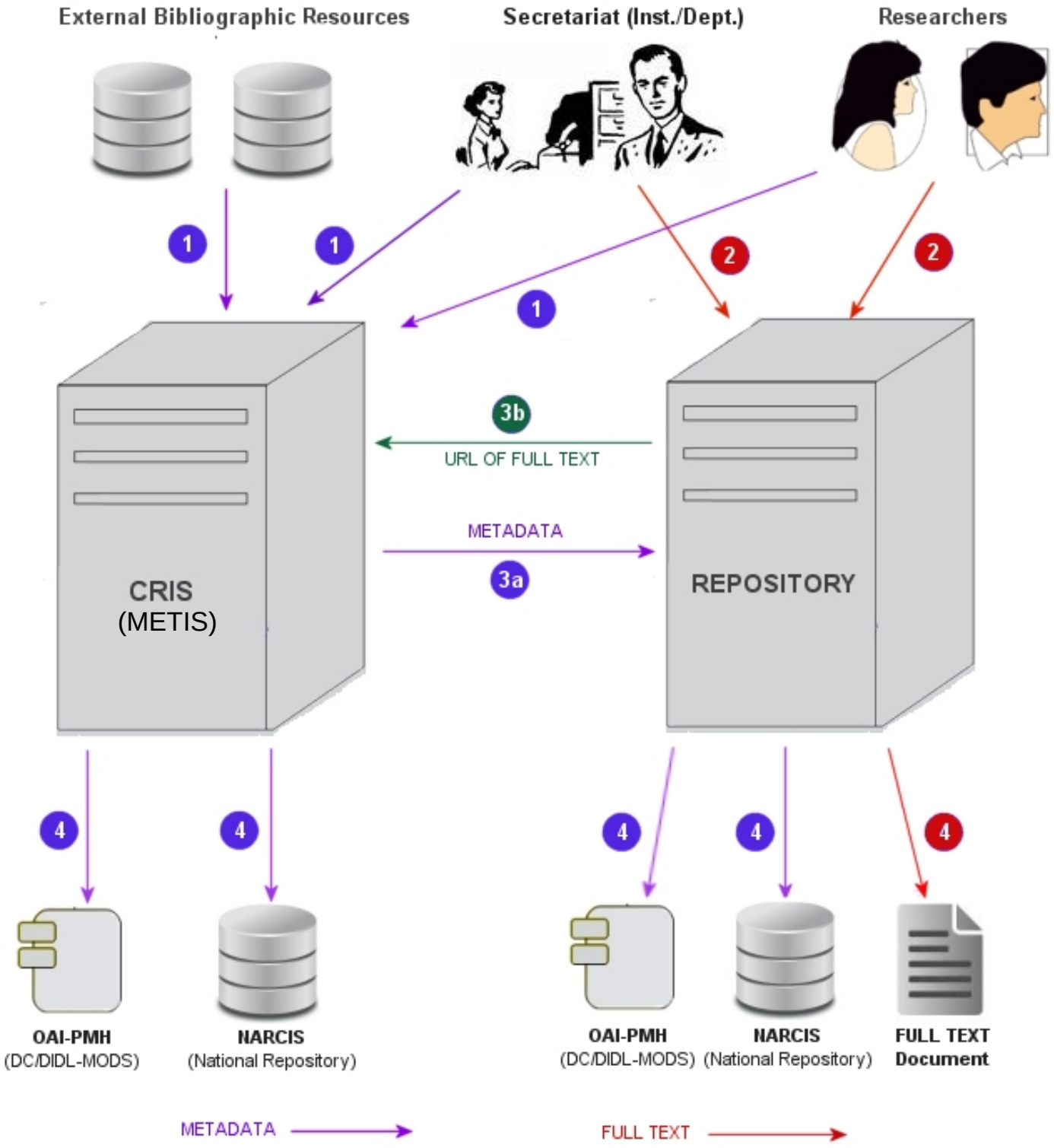
Some preliminariy remarks:

CRIS and Repositories origniated from and within different sectors in the research information domain: the research administration (offices) on the one hand (CRIS) and institutional libraries on the other (Repositories).

This in a lot if not most cases meant: different cultures in looking upon/dealing with research information as well as separate units dealing with CRIS and Repositories, which hardly communicated with each other, let alone worked together.

So both initiatives developed independently from one another and it took a while to “find each other”. However: there is a growing trend of integration/interoperability, and awareness of each other added value, reflected a.o.t. In the fact that more and more the CRIS and Repository functionaries (functional management) are integrated into one unit (mostly the library).

This trend of growing interest for (coopeation with) each other is also showing on the international level (cfr. the joint meetings of euroCRIS and the Repository community in Rome, of which resulted the “Rome declaration”).


External Bibliographic Resources
Secretariat (Inst./Dept.)
Researchers
1
1
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3b
URL OF FULL TEXT
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(METIS)
REPOSITORY
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NARCIS
(National Repository)
OAI-PMH
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METADATA
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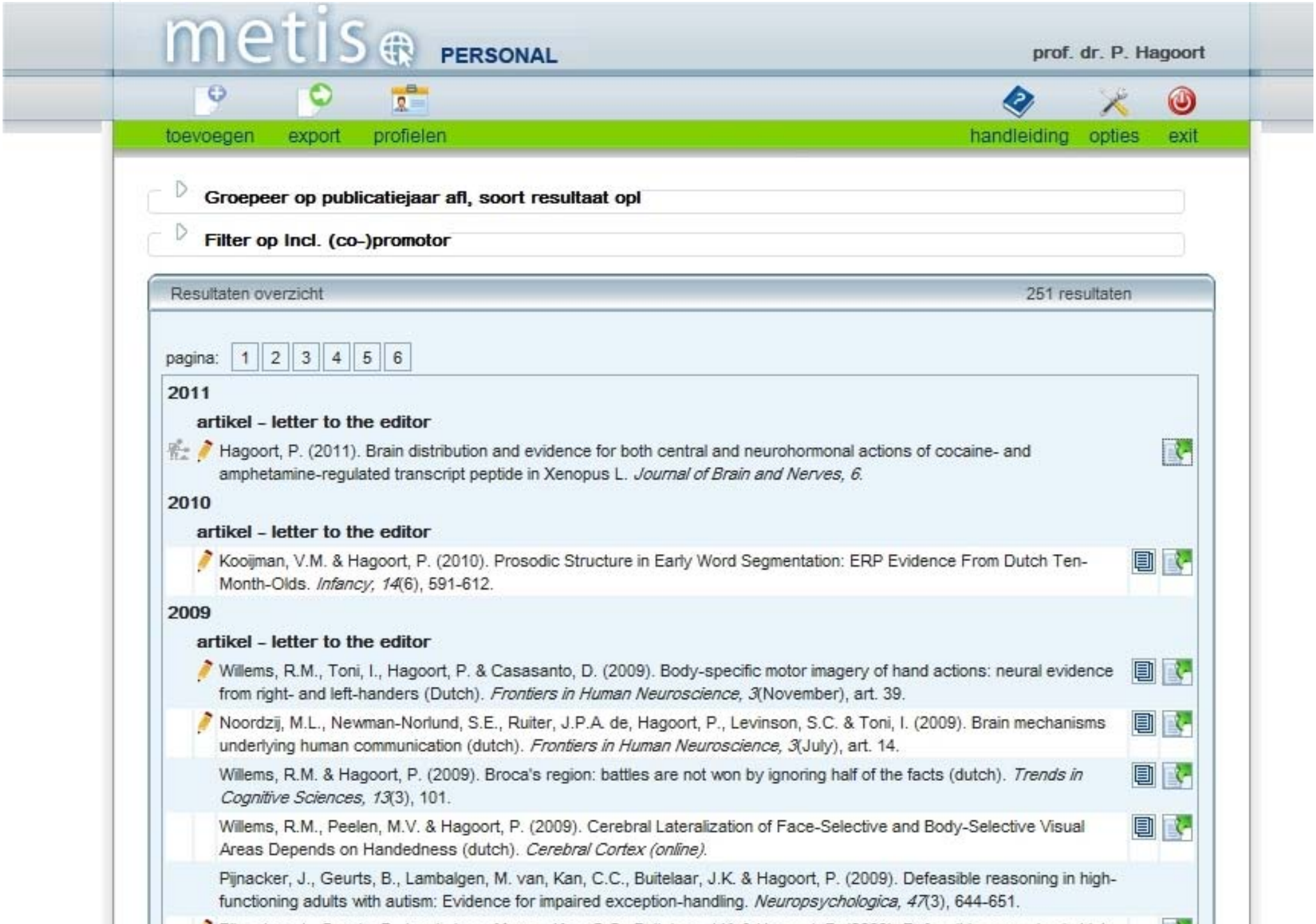
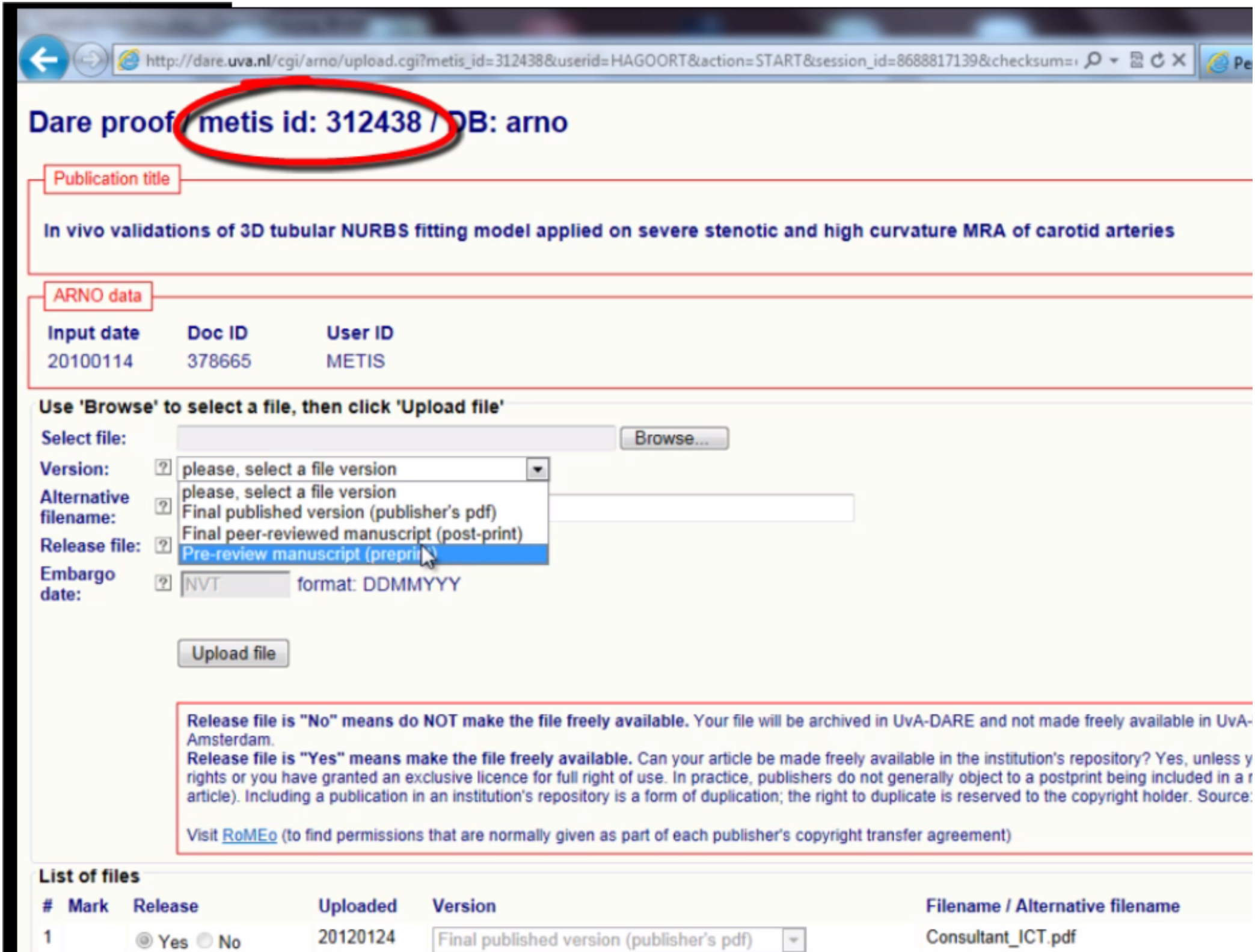
euroCRIS

From the Researcher's Point of View

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Dare proof / metis id: 312438 / DB: arno
Publication title
In vivo validations of 3D tubular NURBS fitting model applied on severe stenotic and high curvature MRA of carotid arteries
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Use 'Browse' to select a file, then click 'Upload file'
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List of files
Mark Release Uploaded Version Filename / Alternative filename
1 Yes No 20120124 Final published version (publisher's pdf) Consultant_ICT.pdf

Interoperability

The previous slides concerned the integration or interoperability of CRIS and Repositories on the input or registration side and on the local (insitution) level.

When it comes to interoperability on the (inter)national level: CERIF-XML would be an obvious candidate to harvest / exchange data from the CRIS systems.

But we should also focus on other types of interoperability:

Interoperability concerning (the devlelopment of) services for various stakeholders.

Interoperability on an organizational level: how to optimally work together as CRIS- and Repository communities, both on a local and international level.

So interoperability is not all or only about technology and perhaps this last point is even more important one.

Some Conclusions

CERIF-CRIS systems have an extensive set of metadata concerning various aspects of research Information that could bring interesting added value to repositories and their services.

CERIF is suited to (internationally) be the standard metadatamodel in the research information domain

There is a growing trend towards integrating/linking CRIS and repositories where CRIS seems to become the leading system for the registration of research metadata.

Technically speaking there are no big problems (any more) concerning the interoperability / Integration of CRIS and Repositories when it comes to the input / registration of reseach information.

Big challenges ahead are not so much of a technical nature, but rather concern working together in jointly defining a vision, policies and strategies, and work out concrete solutions/services based on these strategies and policies.

One of the platforms to start this jonint work could be the Task Group CRIS-IR of euroCRIS, which is led by Danica Zendulkova..

Some Conclusions

Concrete issues could be:

Inventory of good/best practices and use cases of integration CRIS/Repository units/communities on local, national and international level.

Inventory of good/best practices use cases of joint/combined services.

Working out new, innovative service concepts and solutions in the field of research information.

….

.

Some Conclusions

In the broader picture also other players in the field of research information should be involved..

– VIVO (LOD/Semantic Web)
– CASRAI
– Research Data Alliance
...

After all: we all (should) work for the same good: to make research information (so our researchers and their research) optimally:

– Visible
– Discoverable
– Accessible

Thank you for your attention.

You are kindly invited to join eurOCRIS and the CRIS-IR Task Group

Next euroCRIS Membership meetings:

Bonn, DFG, 13-14 May 2013

PORTO, University of Porto, November 2013.