

Harmonisierung von Forschungsinformationssystemen und der europäische Standard CERIF

Referentin: **Brigitte Jörg**

Board Member Strategy External Relations
CERIF Task Group Leader (2005-2012)
euroCRIS

CERIF National Coordinator
UKOLN, University of Bath, UK

Workshop: Standards und
Harmonisierungsansätze für die
Forschungsberichterstattung

21.+22. 01. 2013

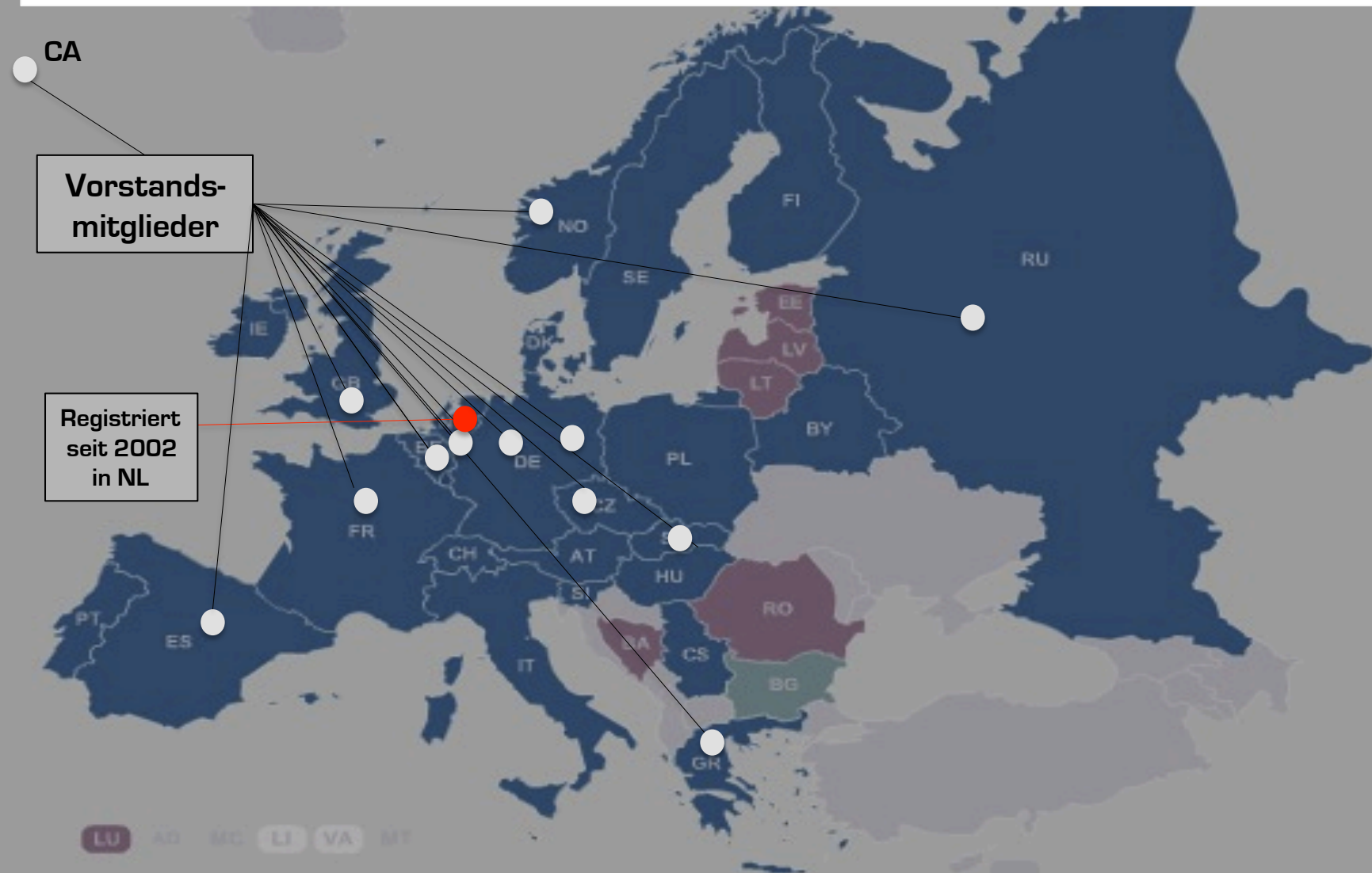
Universität Bielefeld, ZiF, Bielefeld



Vortragsstruktur

- die Initiative euroCRIS
- CERIF in drei Folien
- CERIF / Harmonisierung / Projekte
 - UK
 - Europa
 - International
- Zusammenfassung

eine non-profit Organisation



Vorstandsmitglieder (2010 - 2012)



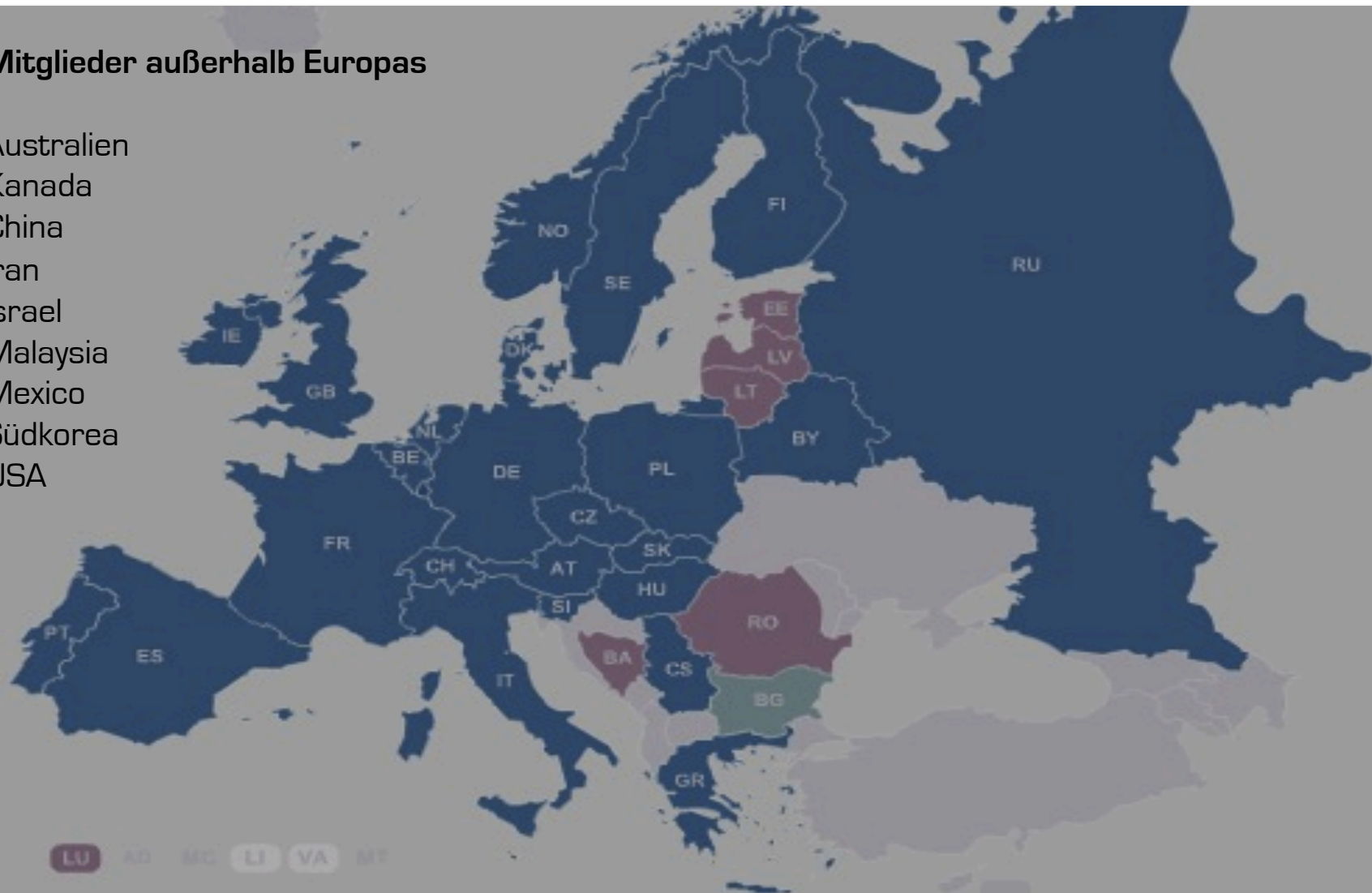
Vorstandsmitglieder (seit 2013)

- **President:** Ed Simons
- **Secretary:** Harrie Lalieu (part-time permanent position)
- **Treasurer:** Barbara Ebert
- **Executive for Strategy and External Relations:** Brigitte Joerg
- **Executive for Conferences:** David Baker
- **Executive for Communications:** Anna Clements
- **Task Group Leader CERIF:** Jan Dvorak
- **Task Group Leader Architecture:** Nikos Houssos
- **Task Group Leader Best Practice / DRIS:** Sergey Parinov
- **Task Group Leader Inst. Repositories (CRIS-IR):** Danica Zendulkova
- **Task Group Leader Projects:** Valerie Brasse
- **Task Group Leader Linked Open Data (LOD):** Miguel-Angel Sicilia
- **Task Group Leader Indicators:** Tina Lingjaerde

Mitglieder in Europa und darüberhinaus

Mitglieder außerhalb Europas

Australien
Kanada
China
Iran
Israel
Malaysia
Mexiko
Südkorea
USA



Strategie

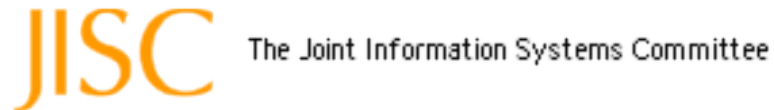
- Promotion CERIF-basierter Forschungsinformationssysteme (CRISs)
 - auf europäischer Ebene
 - auf internationaler Ebene
- Mehrwerte für Mitglieder
- Erweiterung der euroCRIS-Mitgliedschaften
- Pflege und Erweiterung strategischer Partnerschaften
- Zusammenarbeit mit der Open-Access-Repository (OAR) Community
- Vermehrte Teilnahme an EU Projekten zur Demonstration des CRIS Potentials



Common European Research Information Format

- CERIF ist eine EU Empfehlung an Mitgliedsstaaten
<http://cordis.europa.eu/cerif/>
- Die Europäische Kommission (EC) hat euroCRIS autorisiert, CERIF zu pflegen und weiterzuentwickeln, sowie dessen Nutzung weiter zu verbreiten
<http://www.eurocris.org/cerif/cerif-releases/>

Strategische Partnerschaften



← Alliance for Permanent Access →



CRIS und Open Access Repositories

Rome Declaration on CRIS and OAR

[http://www.openaire.eu/en/about-openaire/
publications-presentations/public-project-
documents](http://www.openaire.eu/en/about-openaire/publications-presentations/public-project-documents)

CERIF über kommerziellen Vertreiber

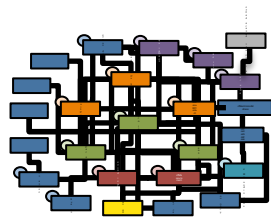
- **atira** (PURE) aufgekauft von Elsevier
 - Dänemark, Nordirland, England, Schottland, Finnland, Deutschland, Schweden, Belgien
- **avedas** (Converis)
 - Schweden, Deutschland, Niederlande, Belgien, Frankreich, Luxembourg, England, Schottland, Portugal, Schweiz, Botswana
- **Symplectic** (Symplectic Elements), England
- **InterWay** (SK CRIS), Slowakei
- **uniCRIS**, Vereinigte Staaten
- **Verleger (Produktmodule mit CERIF XML Import/Export):**
 - **Thomson Reuters** (Research In View)
 - **Elsevier** (SciVal)

Common European Research Information Format

Konzept



Datenmodell

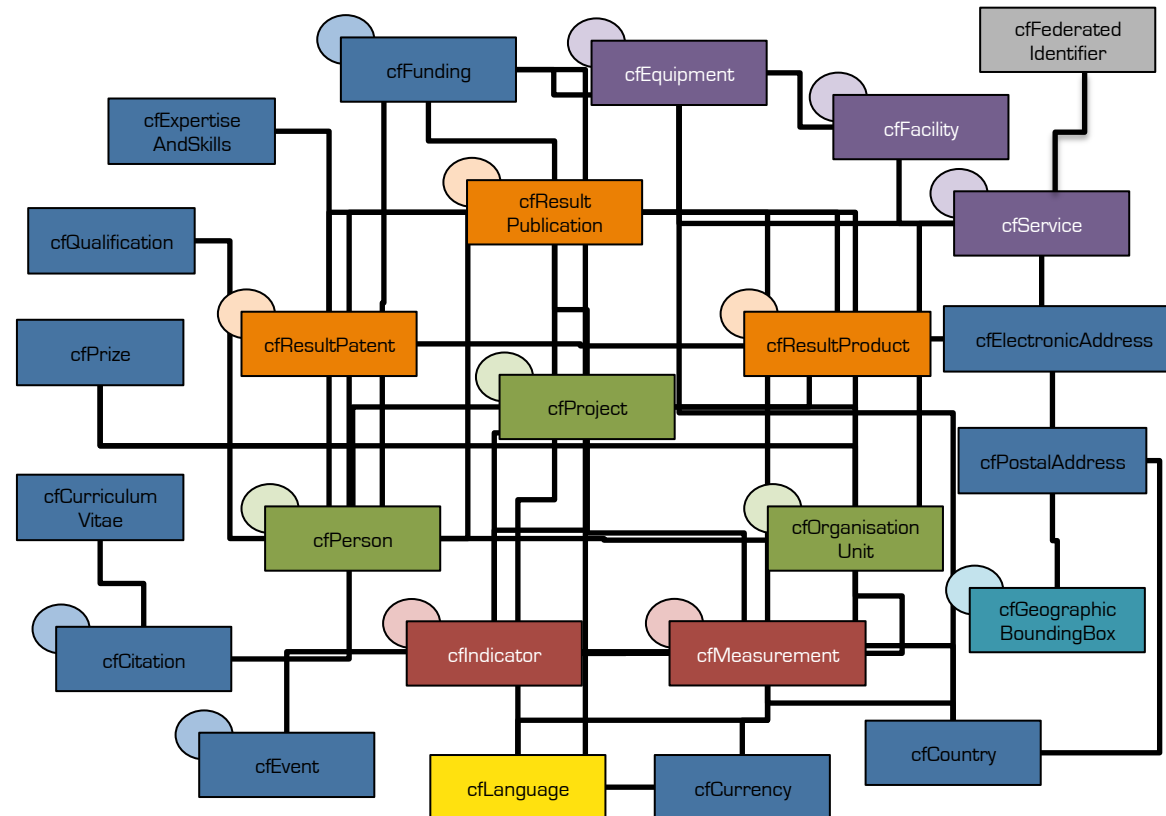
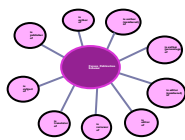


Implementierung

SQL Script

```
CREATE Table Person
CREATE Table Project
CREATE Table OrgUnit
```

Semantik



CERIF – eine zeitliche Einordnung

Similar Ideas
UN/UNESCO
OECD
CODATA

EU
Working Group
on Research
Databases
Workshop

PROJECT

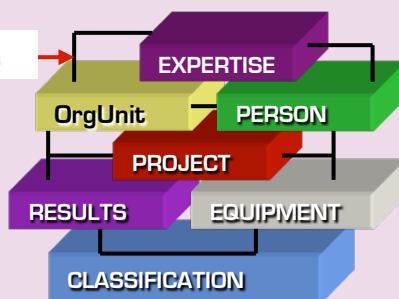
Acronym: ERGO
Participant:
Keith Jeffery, Anne Asser-
son, many more
Organisations:
Rutherford Appleton Uni-
versity of Bergen...

- Networking of DBs
- Exchange of Records
- EC Recommendation to Member States

CERIF 91

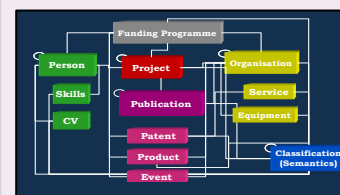
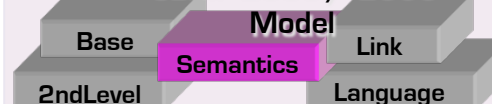
CERIF 2000 Model

Roles



- Data Model
- Multilinguality
- Controlled Vocabulary
- Roles / Types
- User-driven
- EC Recommendation to Member States

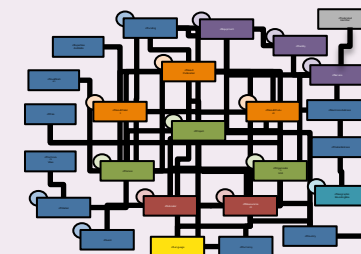
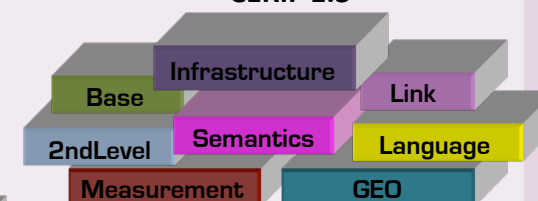
CERIF 2006 / 2008 Model



- Data Model
- Model Normalization
 - Robust/Consistent Structure
 - Extensible Structure
 - Semantic Layer
- XML Exchange Specification
- Elaboration on Publication
- CERIF Core Semantics (2008 1.2)

CERIF 1.4 (XML)

CERIF 1.3



- Data Model
- Infrastructure
 - Facility, Equipment, Service
- Measurement & Indicator
 - Entities and Link Tables
- Geographic Bounding Box
- CERIF 1.3 Vocabulary
 - UUIDs
 - Terms
 - Schemes

+ Linked Data

+ CERIF Ontology

F O R M A L S E M A N T I C S

CERIF eine zeitliche Einordnung

The CERIF Evolution

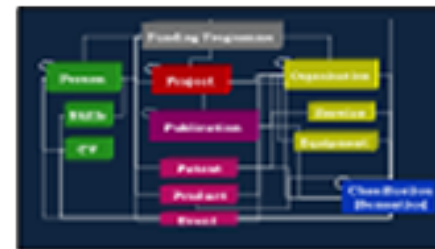
www.euroCRIS.org



Similar Ideas
UN/UNESCO
OECD
CODATA

Project

Number: _____
Title: _____
StartDate: _____
Enddate: _____
Participants: _____
Organization: _____



EU Working Group
Research Databases Workshop

1987

1991

2000

2002

2004

2006

2008

CERIF1.5

Ergebnis der Bestandsaufnahme (11/2011)

- heterogene Funktionen, Initiativen und Systeme
 - sich wiederholende Prozesse
 - gewünschte Wiederverwendung von Information
 - ähnliche Motive, Ziele und Strategien



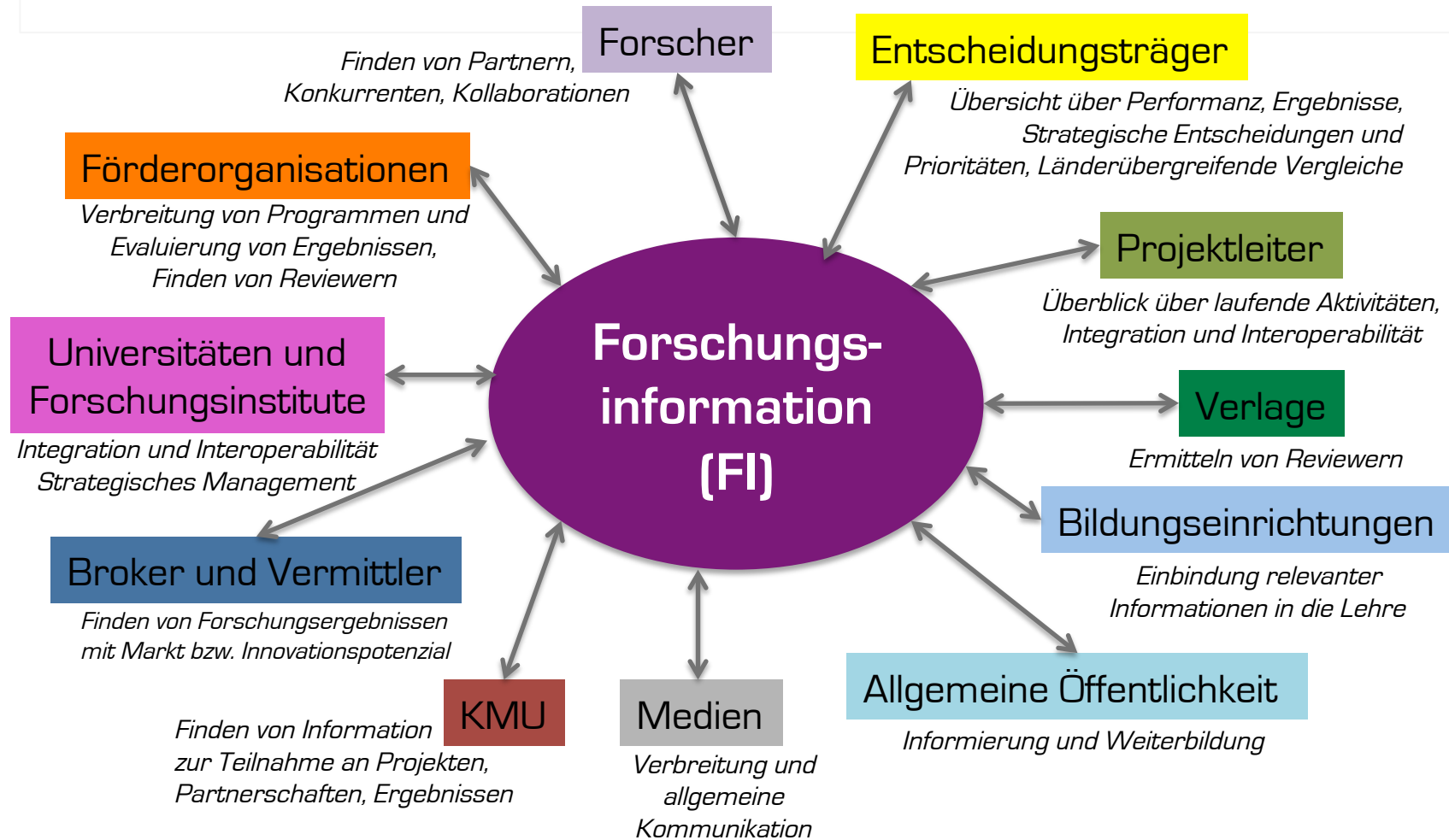
Eine qualitative Messung von Forschungsaktivitäten und –ergebnissen auf institutioneller, nationaler, europäischer oder internationaler Ebene benötigt



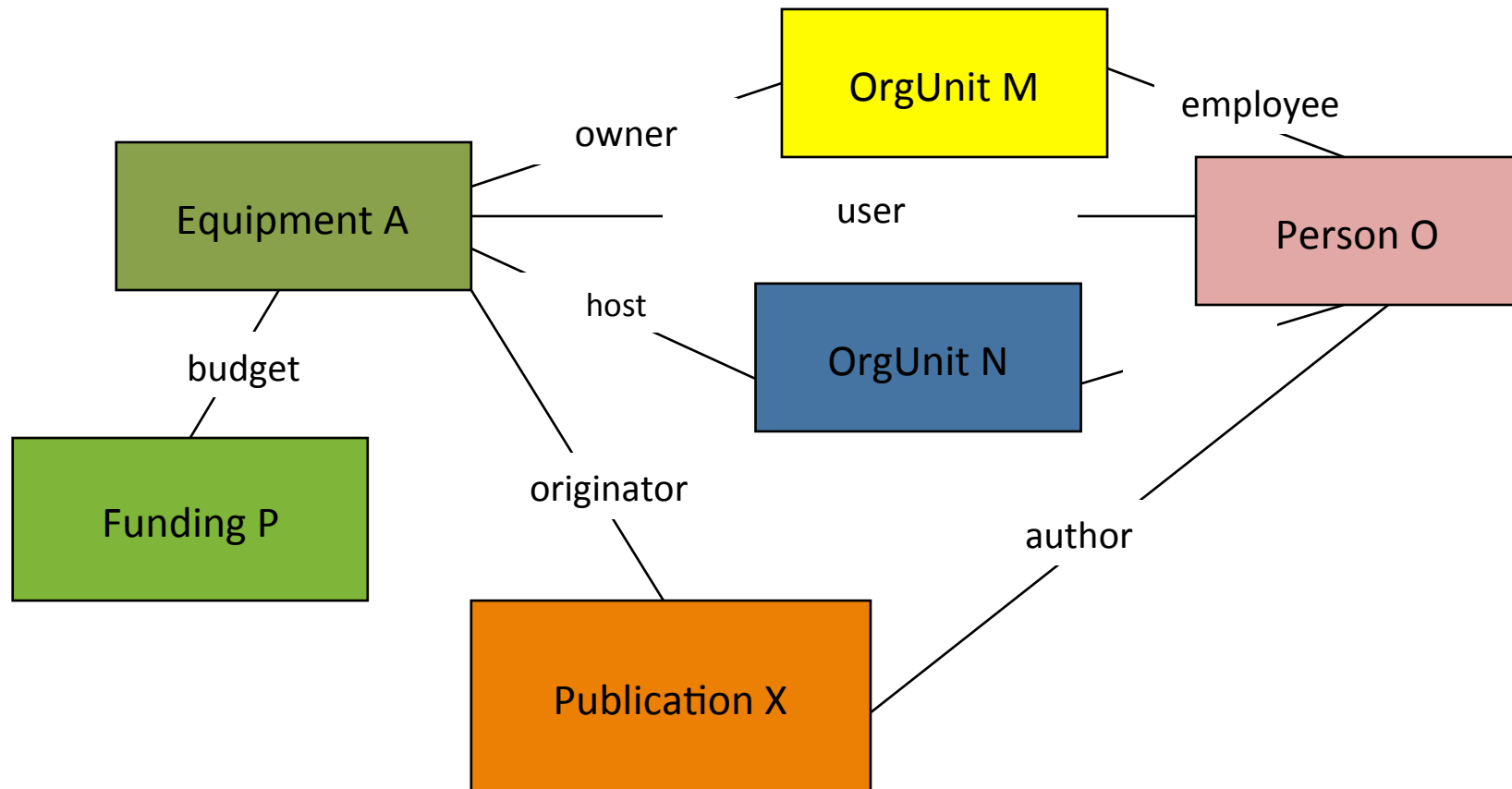
Standardisierung



Nutzer / Bedarf



Nutzungsszenarien

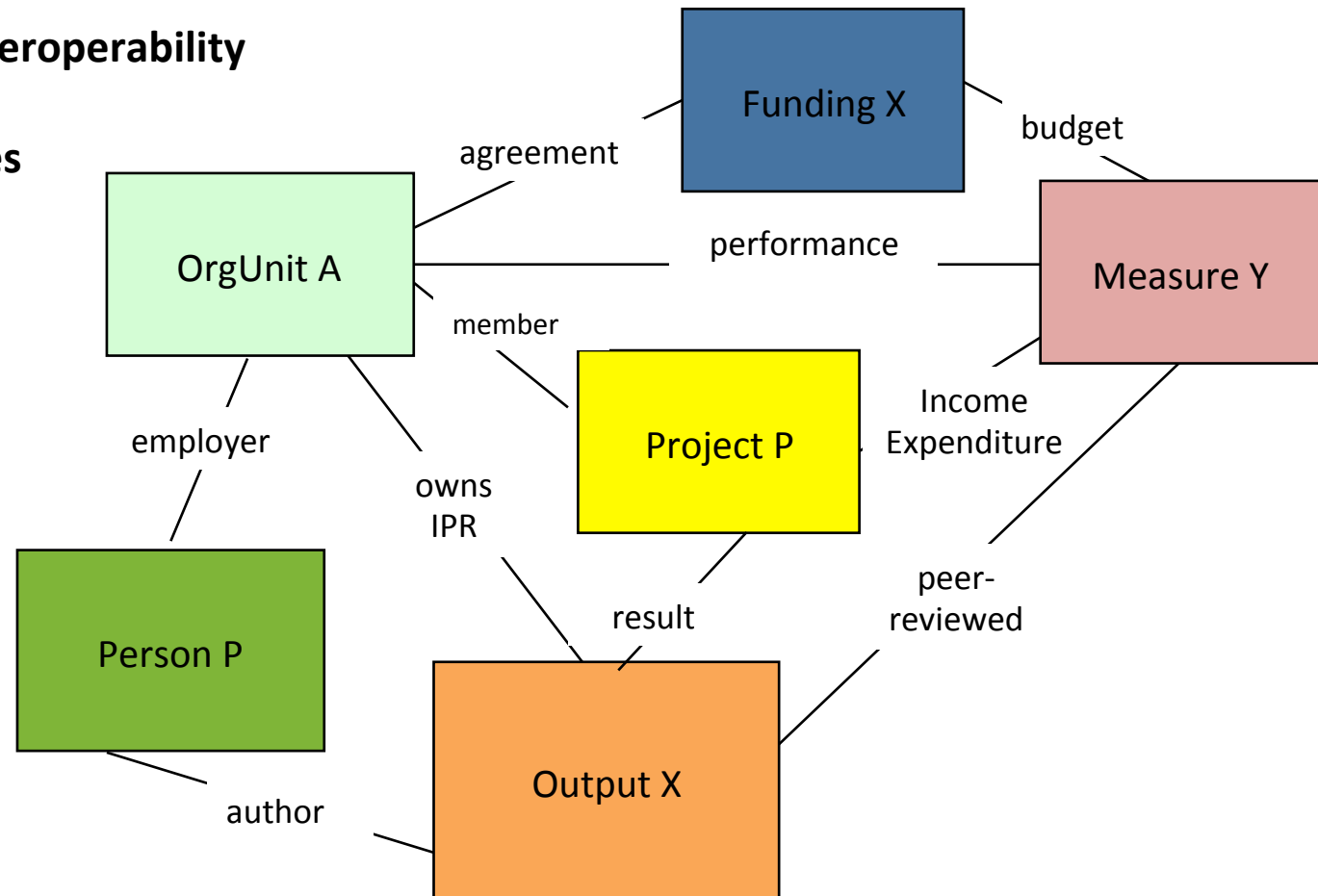


Nutzungsszenario RMAS

Research Management and Administration System

Enabling System Interoperability

- Human Resources
- Projects
- Outputs
- Finance
- Students

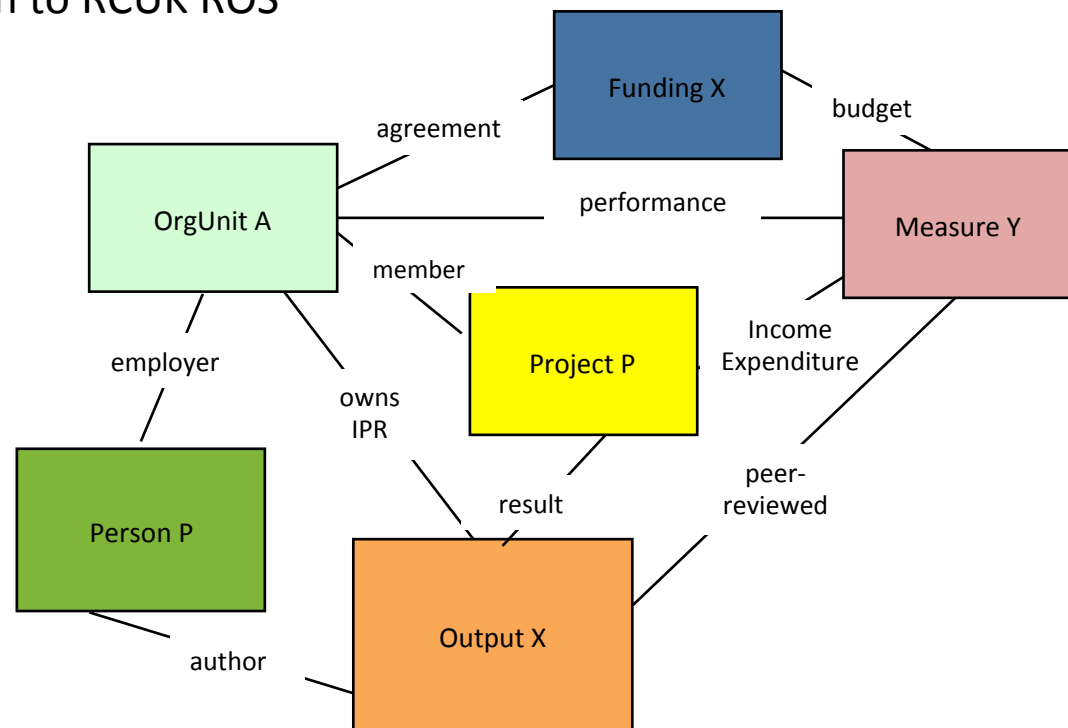


Nutzungsszenario CiA

(1) exchanging data between partner institutions e.g. when an researcher moves to a new Institution

(2) uploading grant-level information to RCUK ROS

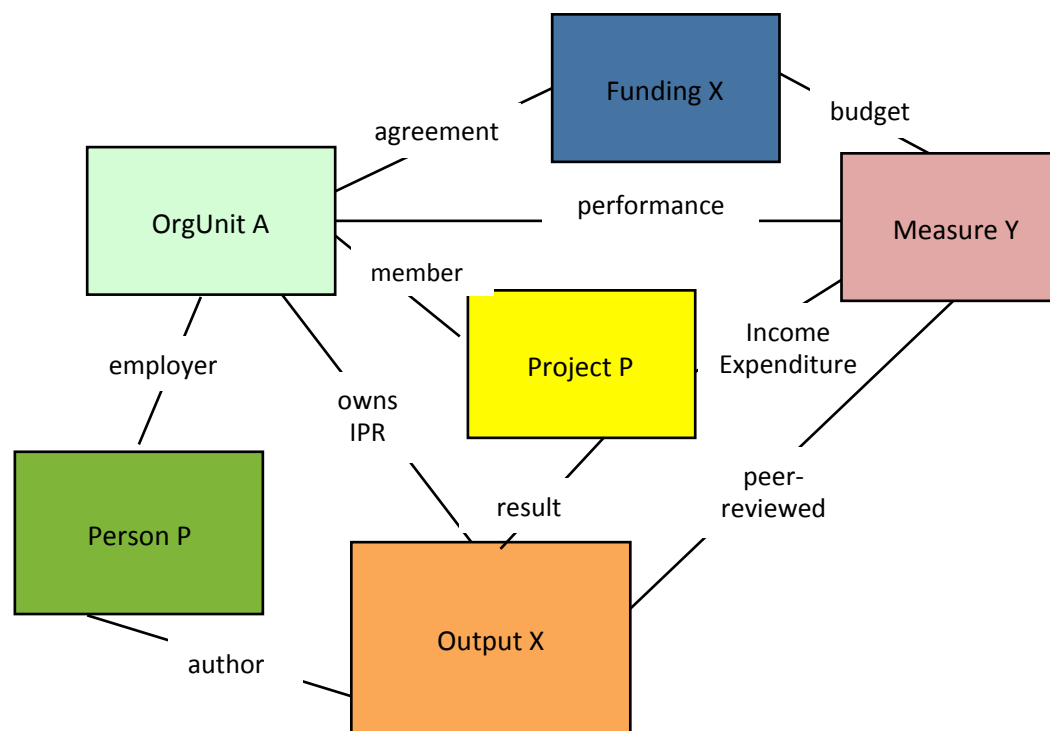
- Person
- Publication
- Project
- Funding
- Organisation



Nutzungsszenario GtR

Give the public better access to information on research funded by the Research Councils.

- Funding
- Project
- Person
- Organisation
- Outputs
- Outcomes

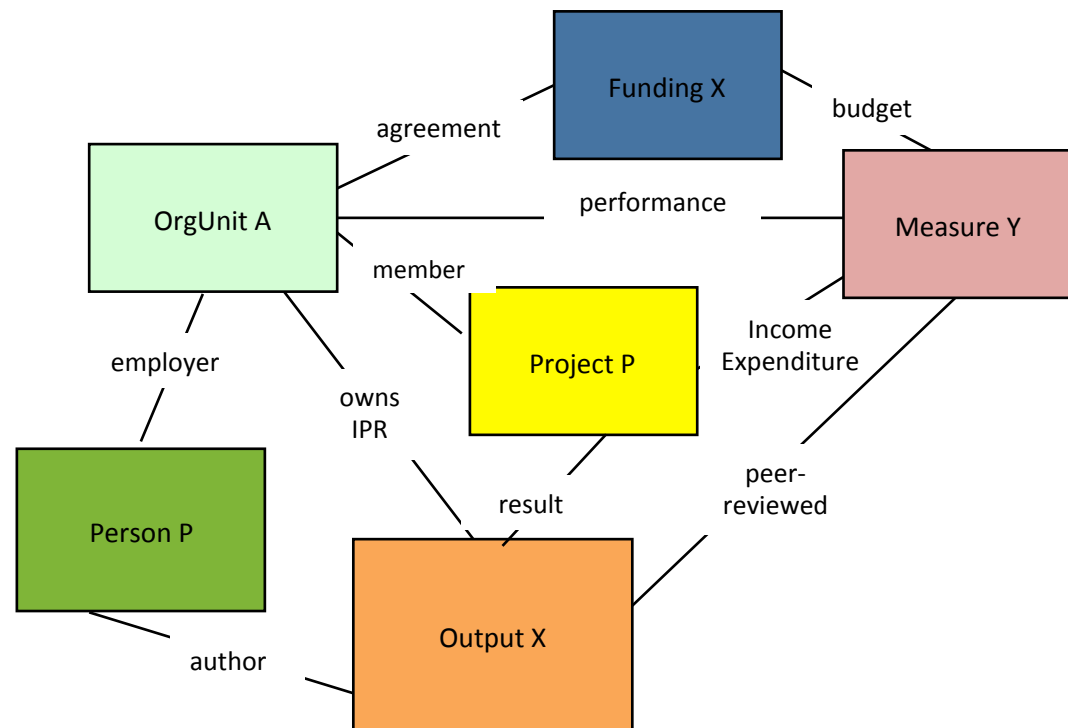


Nutzungsszenario REF

Research Excellence Framework

The Research Excellence Framework (REF) is the new system for assessing the quality of research in UK higher education institutions (HEIs). It will replace the Research Assessment Exercise (RAE) and will be completed in 2014.

- Organisation
- Person
- Funding
- Outputs
- Outcomes
- Classifications



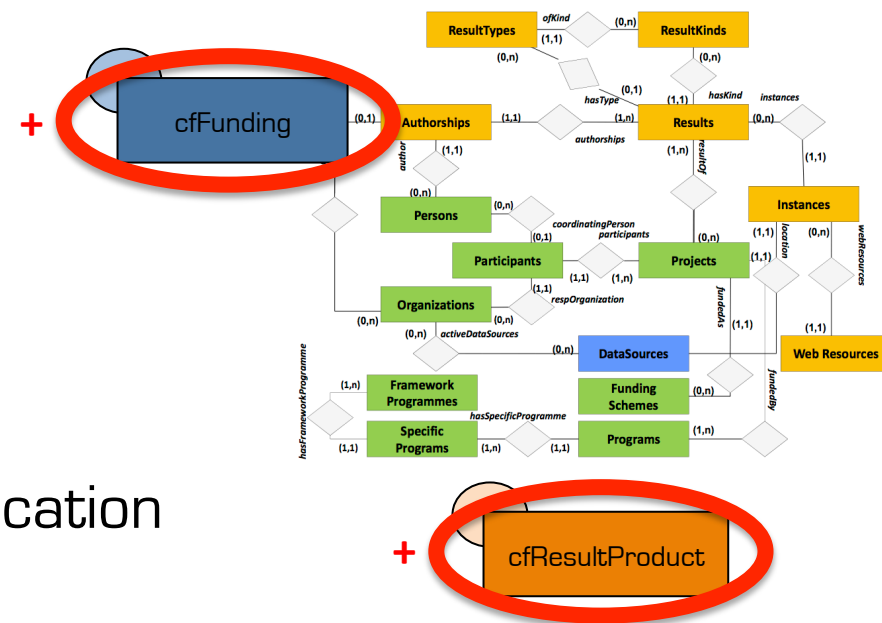
Nutzungsszenario OpenAIRE

EC Open Access Pilot project (FP7)

- CERIF Erweiterung für
 - Förderung (cfFunding)
 - Daten (cfResultProduct)

„The Data Model of the
OpenAIRE Scientific Communication
e-Infrastructure“

Manghi et al. @ MTSR 2012 Cadiz, Spain

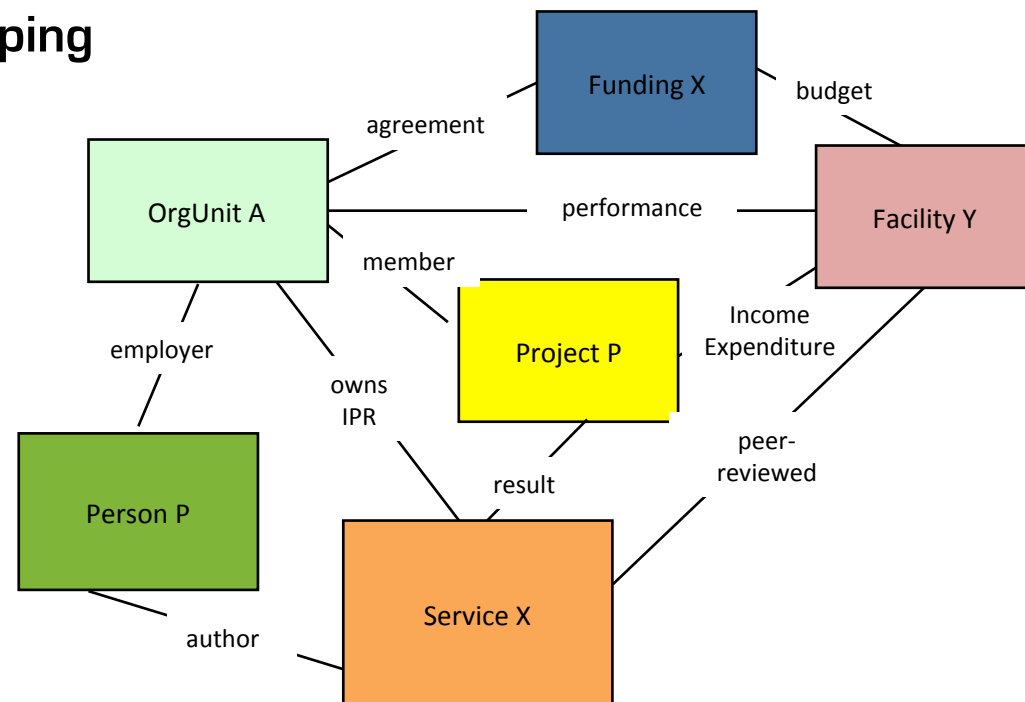


Nutzungsszenario EuroRISNet+

European Network of National Contact Points for Research Infrastructures moving forward.

CERIF 2 EuroRISNet+ Mapping

- Facility
- Service
- Project
- Funding
- Organisation
- Event
- Person

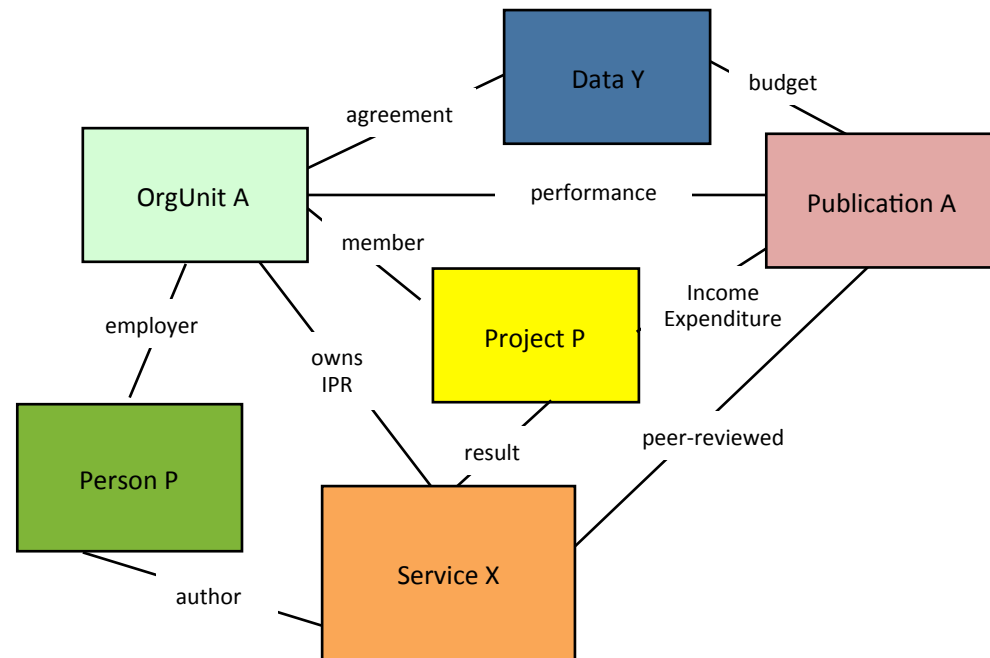


Nutzungsszenario ENGAGE

An Infrastructure for Open, Linked Governmental Data Provision towards Research Communities and Citizens.

Multi-layer architecture as presented at CRIS 2012: „A multi-level metadata approach for a Public Sector Information data infrastructure“

[Nikos et al. 2012]



CERIF LOD

CERIF LOD task group @ euroCRIS

- Leader: Miguel-Angel Sicilia
- Set up in: March 2012

- (1) euroCRIS hosted extended ontologies, mappings
- (2) Middle Ware / transformations / exchange / interfaces / exposure
- (3) CERIF Relational DB Model

For more information: **Miguel-Angel Sicilia**

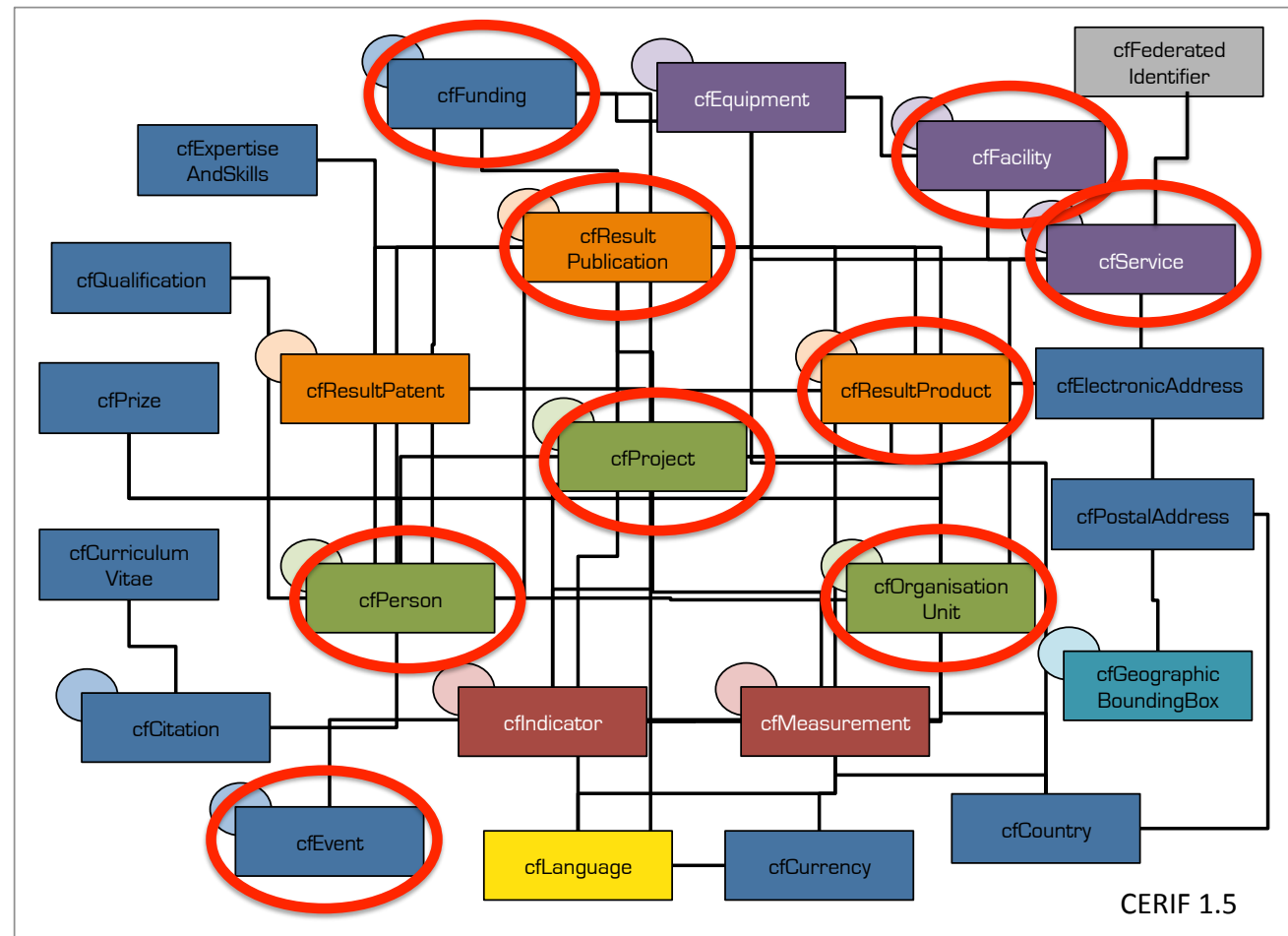
Inline with the multi-layer architecture as presented at CRIS 2012: „A multi-level metadata approach for a Public Sector Information data infrastructure“ [Nikos et al. 2012]

Szenarien-Übersicht

- **UK:** CIA, GtR, RMAS, RMAS-EE, IRIOS-2, UKRISS, C4D, REDIC, DESCRIBE, UniQuip, ... REF
- **Europa:** OpenAIREplus, ENGAGE, EuroRISNet+
- **International:** Strategic Partnerships with CASRAI, VIVO, CODATA, Lattes, ...
- **Emerging (changing) Market:** (atira), Elsevier, avedass, symplectic, Thomson Reuters
- **Emerging (changing) Technologies:** SQL, XML, RDF

Harmonisierung

- Objekt
- Entitäten
- Kontrolliertes Vokabular
- Transformations-Architektur (Mappings)
- Technologien (SQL, XML, RDF)



Harmonisierung

- 
- Objekt
 - Entitäten
 - Kontrolliertes Vokabular
 - Transformations-Architektur (Mappings)
 - Technologien (SQL, XML, RDF)

Human Resource: cfPers; cfPers_Class; cfPers_EAddr; cfPers_PAddr; cfPers_Event; cfPers_OrgUnit; cfPers_Pers; cfPers_ResPubl; cfPers_Srv; cfPers_Proj

Finance: cfFund; cfFund_Class; cfProj_Fund; cfProj_Meas

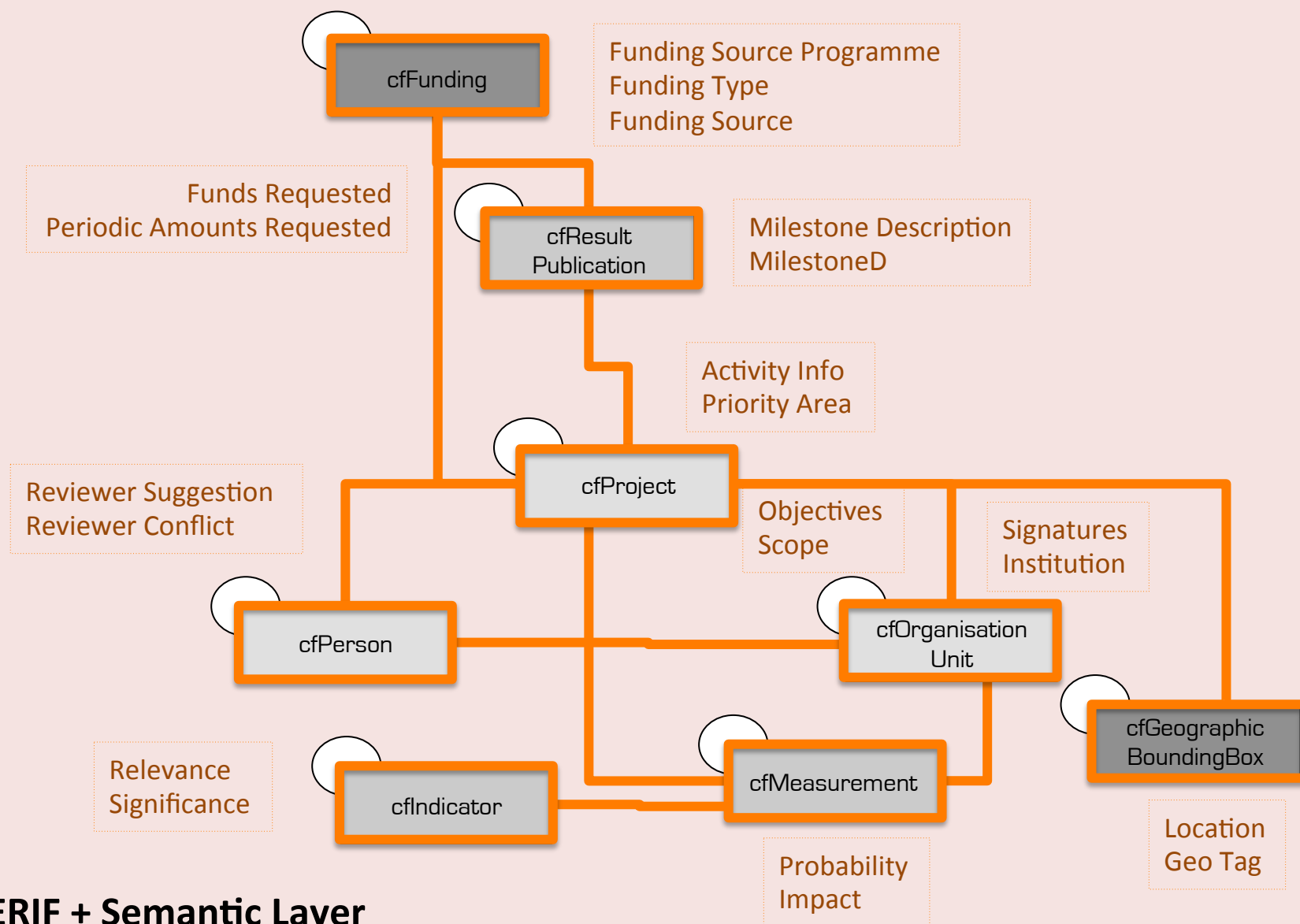
Project: cfProj; cfProj_Class; cfProj_Pers; cfProj_OrgUnit; cfProj_Fund; cfProj_ResPubl; cfProj_ResProd; cfProj_Meas; cfOrgUnit; cfOrgUnit_Class; cfOrgUnit_PAddr;

Output: cfResPubl; cfResProd; cfResPat; cfResPubl_Class; cfResProd_Class; cfResPat_Class; cfResPubl_Pers; cfResProd_Pers; cfResPat_Pers; cfResPubl_ResPubl; cfResPubl_ResPat; cfResPubl_ResPat; cfResProd_ResProd; cfResPat_ResPat; cfResPubl_Fund; cfResProd_Fund; cfResPat_Fund; cfEvent; cfEvent_Fund; cfEvent_Pers

Student: cfPers_Class; cfPers_Pers; cfPers_Srv

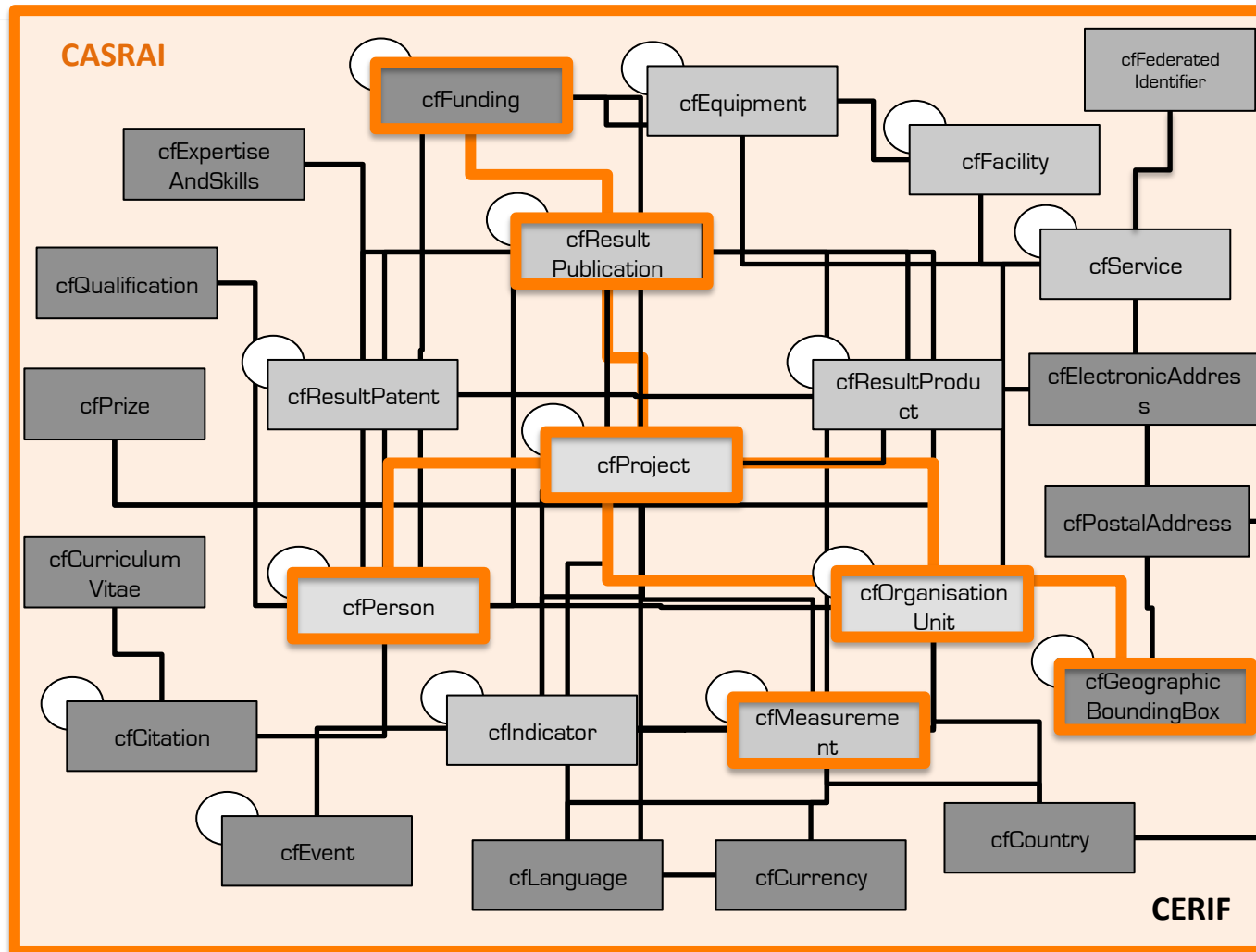
Vokabular: Forscher, Manager, Artikel, Buch, Daten,

CASRAI Activity Profile

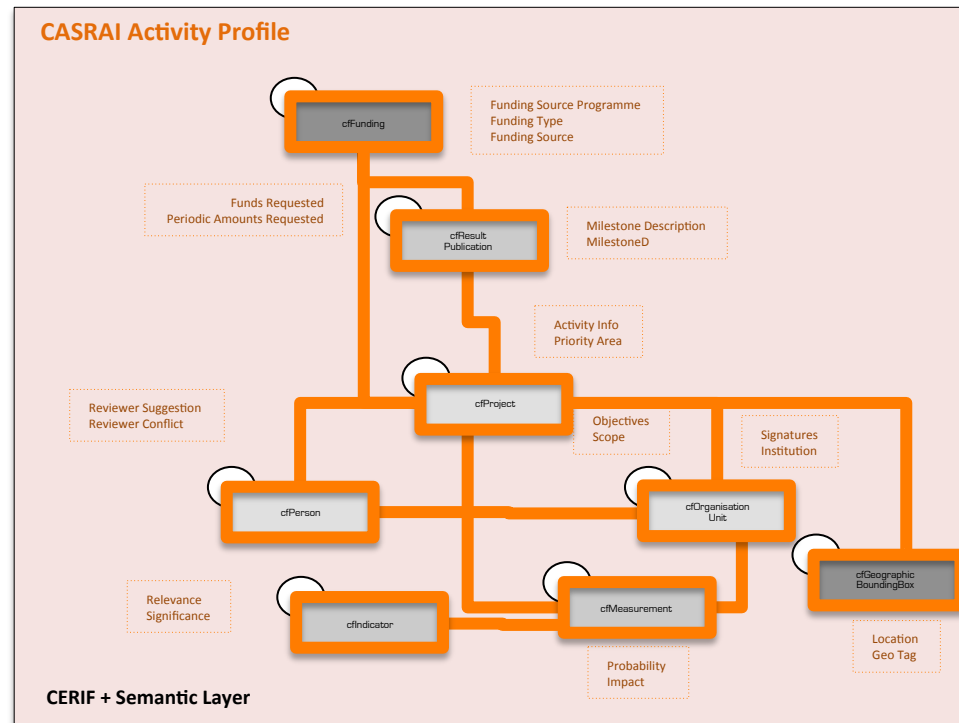


CERIF + Semantic Layer

Harmonisierung



Harmonisierung



Two Peas in a Pod (CASRAI and CERIF)

Thorsten Höllrigl,
avedas, DE

Brigitte Jörg,
UKOLN, University Bath, UK

David Baker
CASRAI; CA

<http://www.cerifsupport.org/2012/12/17/cerif-casrai-profiling/>

Harmonisierung

VIVO - CERIF Mapping

SQL / XML -> RDF

Miguel-Angel Sicilia,
University of Alcala, ES

Brian J Lowe
VIVO, Cornell University, US

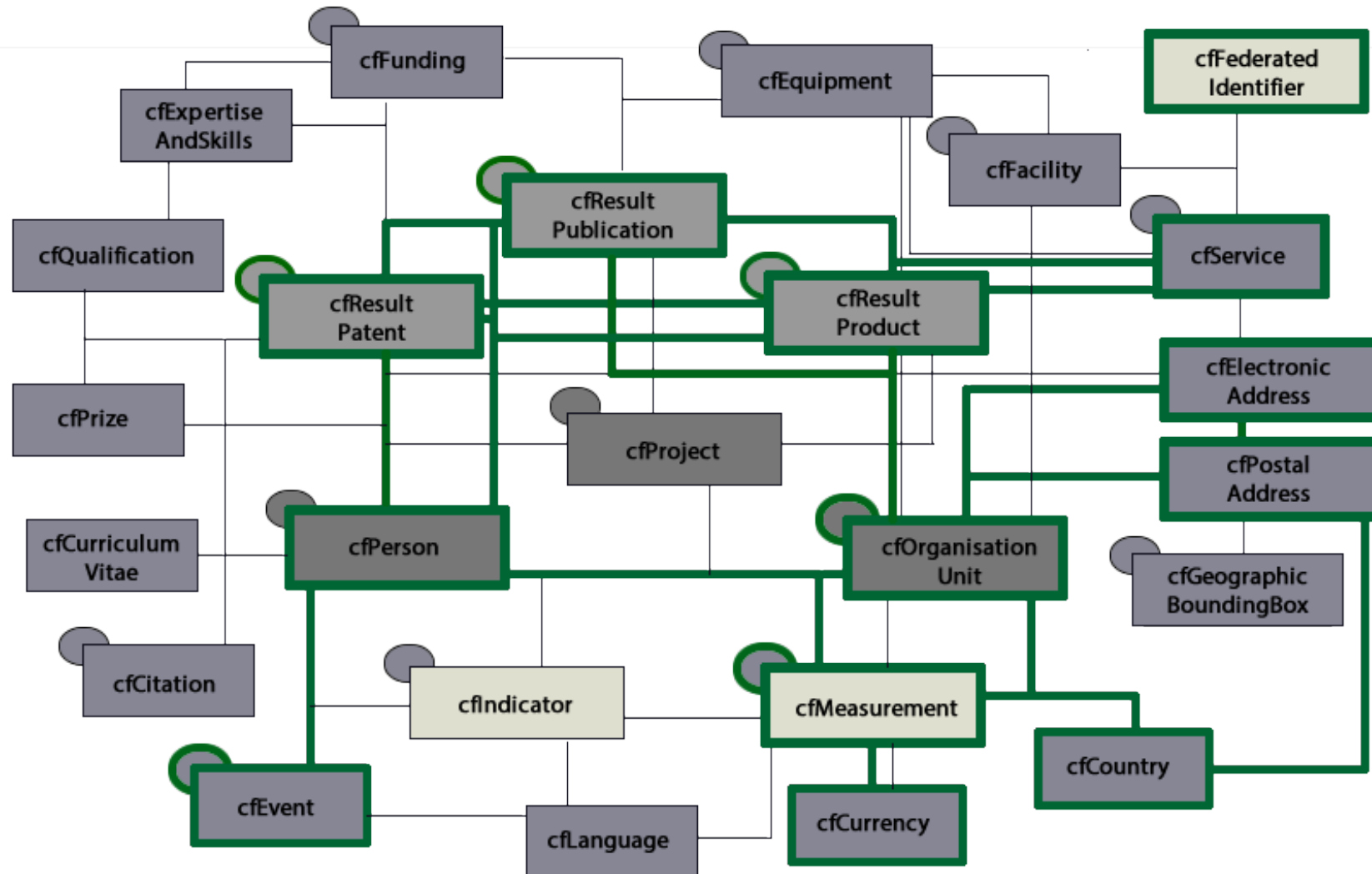
Brigitte Jörg
UKOLN, University of Bath

Nikos Houssos
EKT, GR

Keith Jeffery
STFC, UK

Anne Asserson
UiB, NO

Harmonisierung



Harmonisierung



Harmonisierung

Nutzerszenarien



Wiedernutzbare Objekte

Formalisierung

Zugang

Strukturierte Metadaten
Kontextuelle Metadaten





(new) Web Blog

<http://www.cerifsupport.org/>



Weiterführende Informationen



www.euroCRIS.org

DRIS

Directory for Research Information Systems

<http://www.eurocris.org/DRIS/>

Termine

CERIF Taskgroup Treffen
February 4.+5., 2013
Universität Minho, Portugal

euroCRIS Mitgliedertreffen
DFG, Bonn
May 13.+14., 2013
<http://www.euroCRIS.org/>

Kontakt

Brigitte Jörg

euroCRIS, Board Member Strategy and External Relations

CSP Project - National Co-ordinator

UKOLN, University of Bath

<http://isc.ukoln.ac.uk/work/csp>

<http://www.cerifsupport.org/>

b.joerg@ukoln.ac.uk