



Open Science im Europäischen Forschungsraum

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Agenda

- Begriffsklärung - Europäischer Forschungsraum
- Von Open Access über Open Data zu Open Science
- Über EOSC
- Ausblick auf Open Science in Horizon Europe
- Open Science in EU-Projekten am Beispiel UNIBI
- FAIRMetrics am Beispiel
- Die UB als Treiber für Open Science ?!.

Was ist der Europäische Forschungsraum?

- Beschluss zu EFR im Jahr 2000 (Lissabon-Strategie)
- Umsetzung des EFR (Vertrag von Lissabon in 12/2009)
 - auf EU- und nationaler Ebene
- gemeinsamer Raum der EU-Mitglieder für Forschung und Innovation
 - Erhöhung der Wettbewerbsfähigkeit der EU
 - Innovation und (ökonomischer) Impact
 - Optimierung europäischer, nationaler, regionaler Forschungsprogramme

Prioritäten im EFR

1. Effektivere nationale Forschungssysteme
2. Länderübergreifende Kooperation und Wettbewerb
(Gemeinsame Forschungsagenden, europäische
Forschungsinfrastrukturen)
3. Offener Arbeitsmarkt für Forscher
4. Gleichstellung der Geschlechter; Gleichstellungsaspekte
5. **Austausch, Zugang, Transfer wissenschaftl.
Erkenntnisse**
6. Internationale Zusammenarbeit

Forschungsrahmenprogramme

- FP-6 (2002 - 2006)
 - Grundsteinlegung für EFR
 - u.a. DRIVER-I Projekt in FP6-IST (Technologien für die Informationsgesellschaft)
- FP-7 (2007 - 2013)
 - Hauptprogramme: Zusammenarbeit, Ideen, Menschen, Kapazitäten
 - u.a. DRIVER-II Projekt in FP7-INFRASTRUCTURES (Programm "Kapazitäten": Forschungsinfrastrukturen)

Von Open Access ...

- Wissenstransfer / Open Access (EFR-Priorität Nr. 5)
- FP7-Forschungsinfrastrukturen, Thema “Repository für wissenschaftliche Information zur Unterstützung des FP7-Forschungsprogramms”
 - Problemfelder: Zugang, Verbreitung, Langzeitarchivierung, Speicherung
 - verschiedene digitale Objekte akademischer und kultureller Natur
 - FP7 Open Access Pilot für Projekte mit SC39
 - Bsp. EU-FP7-OpenAIRE und OpenAIREplus Projekte

Implementierung des OA-Piloten in FP7

- Deposit von peer-reviewed Publikationen in Repos aus ERC und FP7-SC39 Projekten
 - 6-Monatsfrist für OA-Zugang
- Deposit von Primärforschungsdaten
- OpenAIRE-Guidelines für Literaturrepositories
- OpenAIRE-Guidelines für Datenrepositories



European Research Council
Scientific Council

Established by the European Commission

ERC Scientific Council Guidelines for Open Access

17 December 2007

... Über Open Research Data ...



EUROPEAN COMMISSION
Directorate-General for Research & Innovation

- FP8 “Horizon-2020” (2014-2020)
- Open Access Mandat
 - freier Zugang zu Projektergebnissen, sofern sie publiziert werden
 - gilt für Publikationen und Forschungsdaten
 - Verbindlichkeit von Data Management Plänen
- Entwicklung / Anpassung von OA-Policies und Infrastrukturen auf nationaler Ebene
 - Bsp. BMBF-Open Access Strategie

H2020 Programme

Guidelines to the Rules on

Open Access to Scientific Publications
and
Open Access to Research Data
in Horizon 2020

Version 3.2
21 March 2017



Herausforderungen & Annahmen

offener, umfassender Zugang zu wissenschaftlichen Erkenntnissen und Wissen unterstützt Forschende, Innovatoren und die Öffentlichkeit Forschungsdaten aufzufinden, wiederzuverwenden und Forschungsergebnisse zu verifizieren

erhöht Nutzen von
(EU-)Forschungsförderung

im öffentlichen Interesse

ermöglicht Forschung über
verschiedene
Wissenschaftsfelder

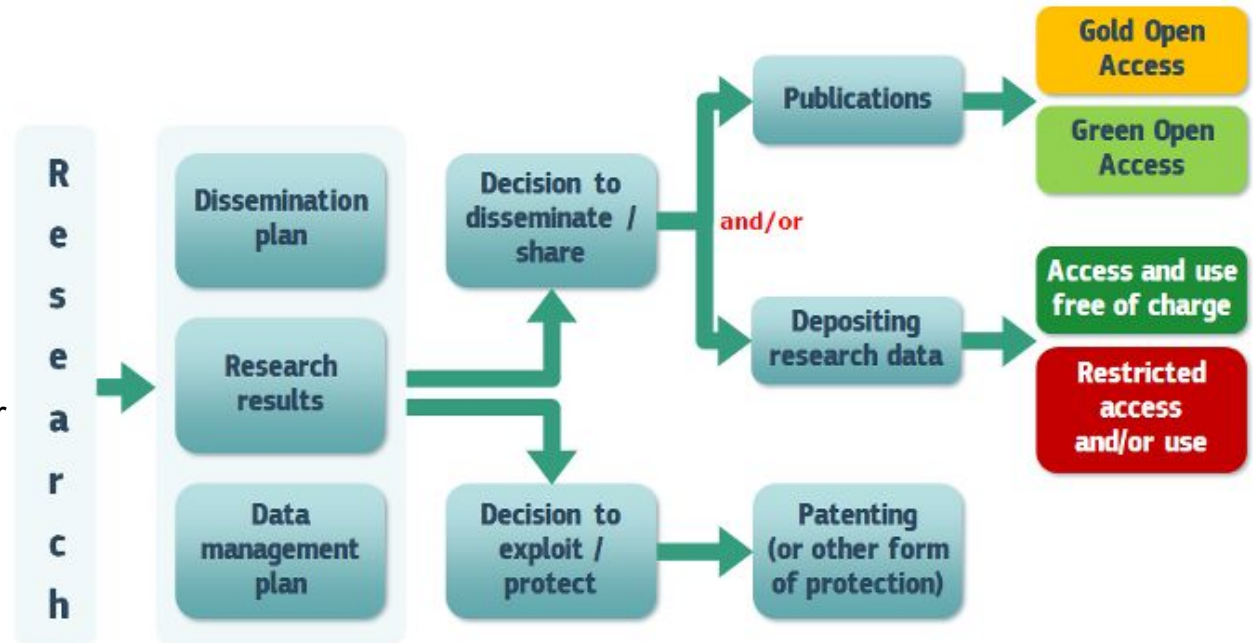
Grundlage für die Lösung
komplexer gesellschaftlicher
Herausforderungen

“Routes to Open Access in Horizon-2020”

Bibliographische Metadaten

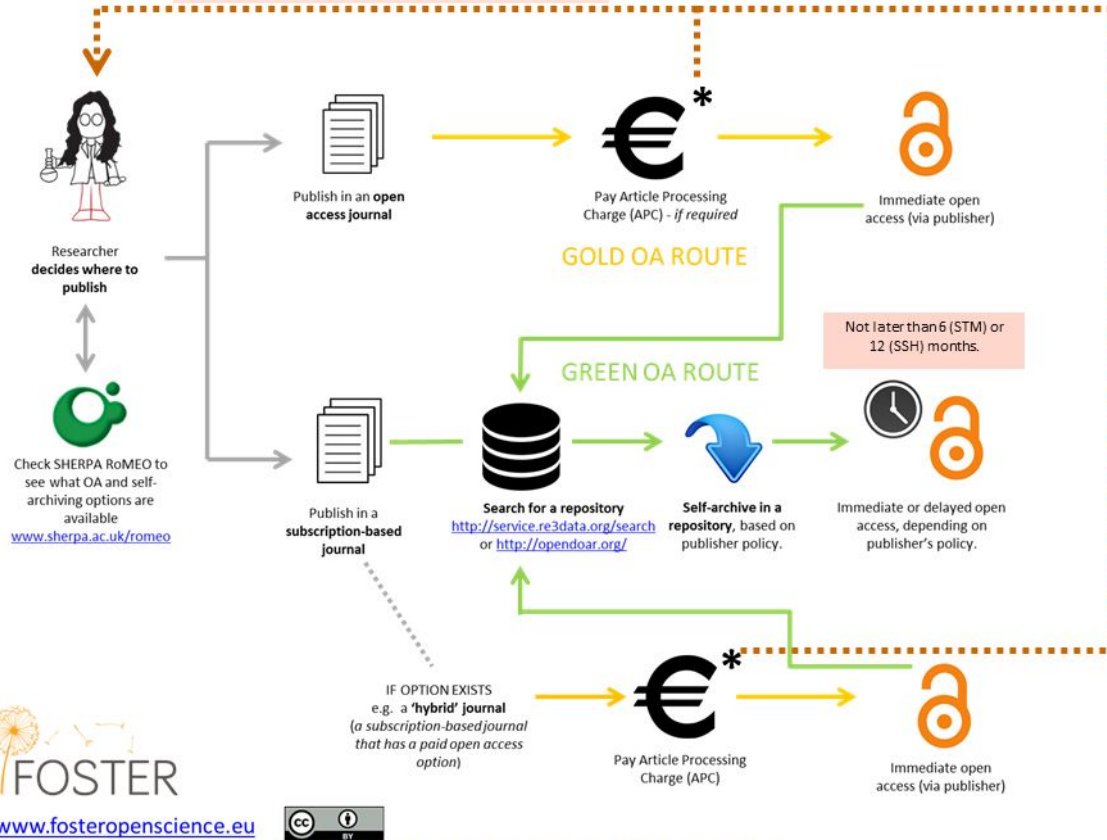
müssen enthalten:

- terms ["European Union (EU)" & "Horizon2020"] ["Euratom" & Euratom research & training programme 2014-2018"]
- name of the action, acronym and grant number
- publication date, the length of the embargo period (if applicable) and
- a persistent identifier



Quelle: European Commission, H2020 Online Manual

Include the estimated total sum in your grant application



adapted from Sarah Jones, „OA-routes.png“, <http://www.dcc.ac.uk/blog/fostering-open-science>

Open Research Data

HOW IT WORKS



Issues with the data

- Public data
- Privacy and Sensitivity
- De-identification
- Mediated (restricted) access

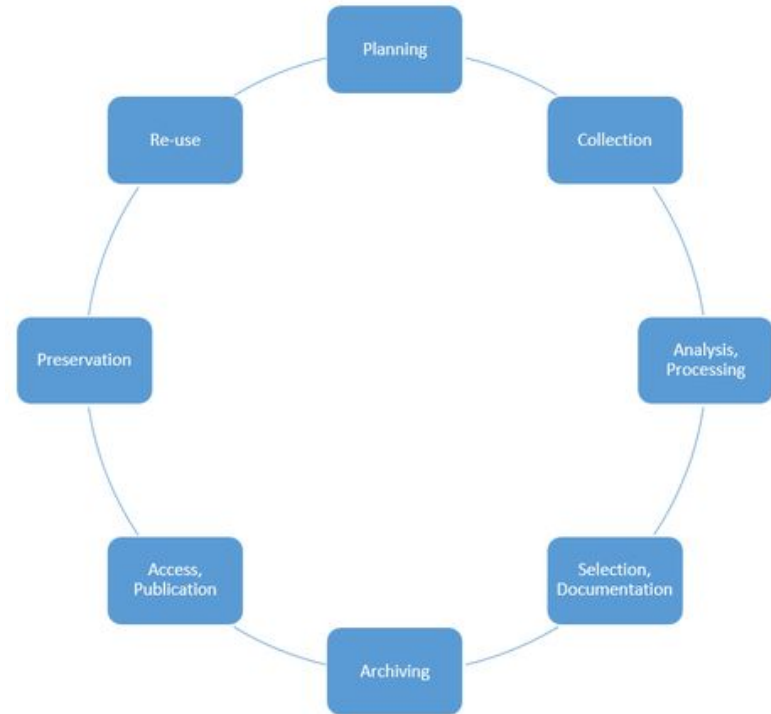


Digital data are fragile and susceptible to loss for a wide variety of reasons

- Natural disaster
- Facilities infrastructure failure
- Storage failure
- Server hardware/software failure
- Application software failure
- Format obsolescence
- Human error
- Malicious attack
- Loss of staffing competencies
- Loss of institutional commitment
- Loss of financial stability
- Changes in user expectations

Research Data Life Cycle

- Data Management Planning
- Creating or collecting data
- Analysing data
- Documenting data
- Storage, backup, archiving
- Selecting what to keep
- Giving access to data and sharing data
- Preserving data
- Re-using data
 - What is needed in order to find, evaluate, understand, and reuse someone's data – and to give them credit?



Data Management in Horizon 2020

- Grant beneficiaries to engage in research data sharing
 - by default, participants may opt-out but requires justification
 - Annotated model grant agreement, clause 29.3
(http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h2020-amga_en.pdf)
- Training should prepare early-stage researchers for increased research collaborations and information-sharing
 - by new digital technologies (collaborative tools, OA to publications and research data, citizen science, ...)
- A Data Management Plan
 - to be created after 6 months and regular updated
 - what data will be generated in the project
 - whether & how it will be exploited, made accessible for verification & re-use
 - how it will be curated and preserved

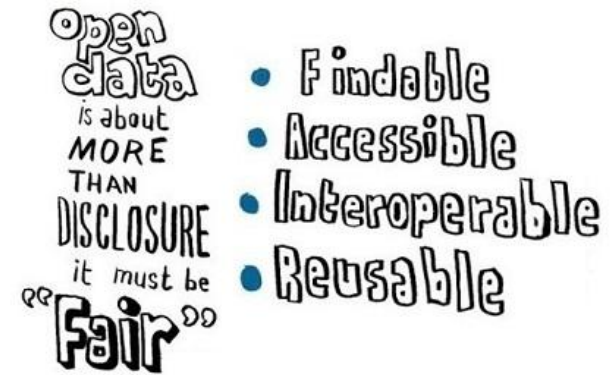
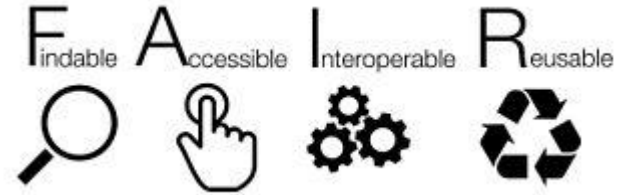
Horizon 2020 FAIR DMP Template

1. Data Summary
2. FAIR data
 - a. Making data findable, incl. provisions for metadata
 - b. Making data openly accessible
 - c. Making data interoperable
 - d. Increase data re-use (through clarifying licenses)
3. Allocation of resources
4. Data security
5. Ethical aspects
6. Other issues

Tools like <https://dmponline.dcc.ac.uk/> help to create a DMP

FAIR Data Principles

- the term FAIR was launched at a Lorentz workshop in 2014
- Resulting FAIR principles published in 2016.
- initiated by FORCE11 ensuring sustainable RDM,
<https://www.force11.org/fairprinciples>
- 15 principles on formal publishing of Research Data
- targets scientists, researchers, institutions running research infrastructures
- latest infos:
<https://www.go-fair.org/fair-principles/>



<http://www.nature.com/sdata/> nature publishing group 

Overview of the FAIR Guiding Principles

Box 2 | The FAIR Guiding Principles

To be Findable:

- F1. (meta)data are assigned a globally unique and persistent identifier
- F2. data are described with rich metadata (defined by R1 below)
- F3. metadata clearly and explicitly include the identifier of the data it describes
- F4. (meta)data are registered or indexed in a searchable resource

To be Accessible:

- A1. (meta)data are retrievable by their identifier using a standardized communications protocol
 - A1.1 the protocol is open, free, and universally implementable
 - A1.2 the protocol allows for an authentication and authorization procedure, where necessary
- A2. metadata are accessible, even when the data are no longer available

To be Interoperable:

- I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.
- I2. (meta)data use vocabularies that follow FAIR principles
- I3. (meta)data include qualified references to other (meta)data

To be Reusable:

- R1. meta(data) are richly described with a plurality of accurate and relevant attributes
 - R1.1. (meta)data are released with a clear and accessible data usage license
 - R1.2. (meta)data are associated with detailed provenance
 - R1.3. (meta)data meet domain-relevant community standards

Open vs. FAIR Data

- all research data should be FAIR, but FAIR data ≠ open data
- Open should be the default for data created with public funds or strong demonstrable public interest
- Exceptions:
 - legitimate commercial interest
 - privacy
 - public interest
 - safety, security
- data can be shared under restrictions & still be FAIR
- FAIR data makes sure that they can be found, understood and reused
- Open data is subset of all data shared
- FAIR implementation is community-specific

How to Publish Research Data

- Find a proper research data repository
 - either institutional or thematic
 - does it support persistent identifiers ?
 - is it trustworthy and certified ?
 - use the <https://re3data.org> registry to look up
 - or use <https://zenodo.org>
- Select what data you need and want to retain
 - data underlying publications !
 - what can't be created (e.g. interview data) ?
 - what is potentially useful to others ?
 - what has scientific, cultural or historical value ?
- Document your data, always!
- License the data to permit widest reuse possible
- Specify data embargo if needed

re3data.org
REGISTRY OF RESEARCH DATA REPOSITORIES

zenodo

Concerns about Data Sharing

Concern	Solution
inappropriate use due to misunderstanding of research purpose or parameters	?
security and confidentiality of sensitive data	?
lack of acknowledgement / credit	?
loss of data insight and competitive advantage when vying for research funding	?

Concerns about Data Sharing

Concern	Solution
inappropriate use due to misunderstanding of research purpose or parameters	provide rich Abstract, Purpose, Use Constraints and Supplemental Information where needed
security and confidentiality of sensitive data	<ul style="list-style-type: none">• the metadata does NOT contain the data• Use Constraints specify who may access the data and how
lack of acknowledgement / credit	specify a required data citation within the Use Constraints and the license
loss of data insight and competitive advantage when vying for research funding	create second, public version with generalised Data Processing Description

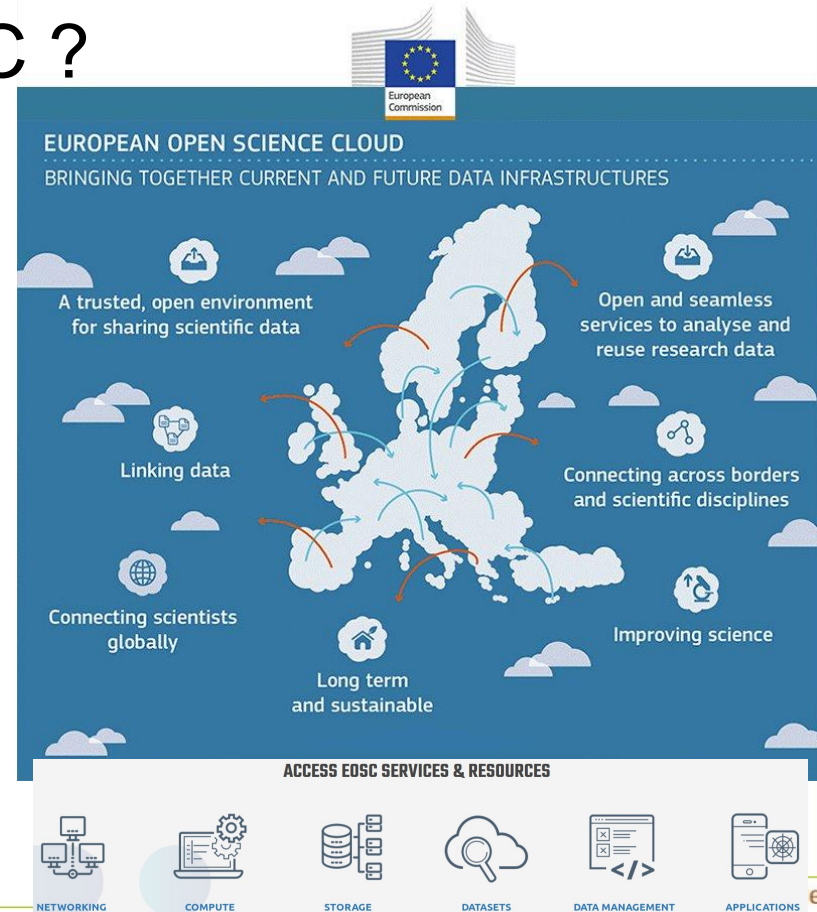
... Zu Open Science

- Hintergrund: Einrichtung von Expertengruppen durch die EC zur Unterstützung politischer Entscheidungsfindung
- Beispiel: Open Science Policy Platform
 - 8 priorisierte Zielsetzungen mit Open Science
 - Rewards and Incentives
 - **Research Indicators and Next-Generation Metrics**
 - Future of Scholarly Communication
 - **European Open Science Cloud**
 - **FAIR Data**
 - Research Integrity
 - Skills and Education
 - Citizen Science



Was bedeutet EOSC ?

- eine zuverlässige, virtuelle Umgebung zum Speichern, Teilen und Wiederverwenden von Forschungsinformation
 - für 1,7M Wissenschaftler und 70M Fachleute aus Wissenschaft und Technologie
- Launch am 23.11.2018, Wien



Aktionslinien gemäß der EOSC Implementation Roadmap

Architecture

Architecture of the federated infrastructures as the solution to the current fragmentation in research data infrastructures which are insufficiently interoperable.

Data

FAIR data management and tools. A common data language to ensure data stewardship across borders/disciplines based on FAIR principles.

Services

Available services from a user perspective. A rich environment offering a wide range of services covering the needs of the users.

Access & Interface

Mechanisms/interfaces for accessing EOSC. A simple way to deal with open data obligations, or to access research data across different disciplines.

Rules

Rules of participation for different EOSC actors. An opportunity to comply with existing legal and technical frameworks and increase legal certainty & trust.

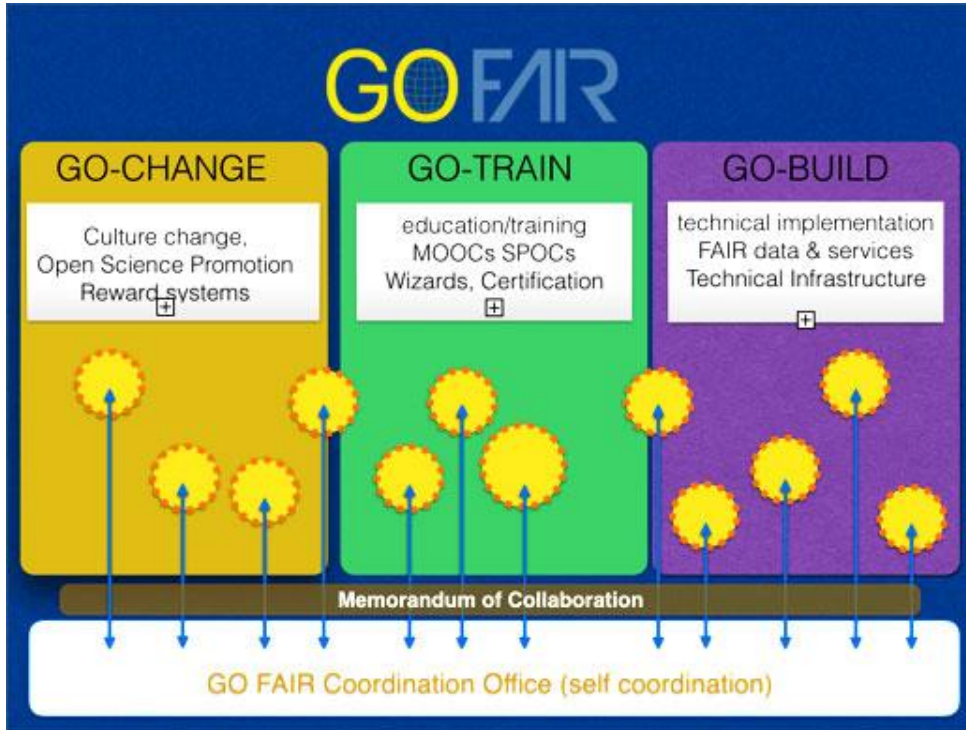
Governance

Governance of the EOSC, aiming at ensuring EU leadership in data-driven science but requiring new governance frameworks.

Quelle:

<http://eoscportal.trust-it-services.com/about/eosc>

Globale Open GOFAIR Initiative



- Global Open FAIR Implementation Networks
- ‘bottom up’ initiative set-up in 2017 in the Netherlands, Germany and France
- proposal for practical implementation of the European Open Science Cloud (EOSC)

Open Science in “Horizon Europe” (FP9)

- FP9 “Horizon Europe” (2021-2027)
 - Volumen 100 Mrd. EUR

Open Science

- exzellente Wissenschaft
- Stärkung der Open Science Politik

Globale Herausforderungen & Industrielle Wettbewerbsfähigkeit

5 thematische Cluster zu industrie- und gesellschaftspolitischen Zielen

Open Innovation

EU führend machen in marktschaffenden Innovationen

“beyond open access (publications and data) to embrace & incentivise OS as modus operandi for research and science”

Registrierung / Meldung einer Publikation

Progress in the Implementation of the OpenAIRE Guidelines for CRIS Managers

Speichern Abbrechen Zurückstellen

Details

Publikationstyp: Zeitschriftenaufsatz

DOI: 10.1016/j.procs.2017.03.042

Autor *

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Vorname: Dimitris	Nachname: Karaiskos	<input type="radio"/> extern <input type="radio"/> UniB1	+ -

Einrichtung: Universitätsbibliothek

Projekt: Open Access Infrastructure for Research in Europe 2020

Forschungsgruppe: Beginnen Sie zu tippen, oder nutzen Sie (Pfeil runter) um eine Forschungsgruppe auszuwählen.

Titel *: Progress in the Implementation of the OpenAIRE Guidelines for CRIS Managers

Alternativer Titel: z.B. Handbook of eBook Publishing

Zeitschriftentitel *: Procedia Computer Science

Verlag: Elsevier BV

Erscheinungsjahr *: 2017 Veröffentlicht vor/nach Beschäftigung an der UniBi

Band / Ausgabe / Seite(n): Band 106, Ausgabe z.B. 5, Seite(n) 104-111

ISSN / ISBN: ISSN 1877-0509

Peer Review Populärwissenschaftliche Veröffentlichung Peer Review

Externe Volltext URL

<http://www.sciencedirect.com/science/article/pii/S1877050917303101/pdf?md5=03a771ec790e73> Open Access

(OAI) Export in Metadaten

Dublin Core Metadata (oai_dc)

Title	Progress in the Implementation of the OpenAIRE Guidelines for CRIS Managers
Author or Creator	de Castro, Pablo
Author or Creator	Schirrwagen, Jochen
Author or Creator	Karaiskos, Dimitris
Author or Creator	Dvořák, Jan
Author or Creator	Bollini, Andrea
Author or Creator	Bonis, Vasilis
Author or Creator	Gasparis, Nikon
Author or Creator	Tsoukala, Victoria
Author or Creator	Manghi, Paolo
Author or Creator	Príncipe, Pedro
Description	This contribution provides an update on the implementation of the OpenAIRE Guidelines for CRIS Managers based on CERIF-XML, which aim to allow Current Research Information Systems (CRIS) to be harvested by the OpenAIRE content aggregator. Besides describing the technical challenges posed by this step forward in system interoperability, the text provides an insight on the CRIS landscape and how different systems could gradually become OpenAIRE-compliant. The contribution is a follow-up to previous presentations on the progress with the drafting of these guidelines that were delivered at past CRIS conferences.
Publisher	Elsevier BV
Date	2017
Resource Type	info:eu-repo/semantics/article
Resource Type	doc-type:article
Resource Type	text
Resource Identifier	https://pub.uni-bielefeld.de/record/2909408
Source	de Castro P, Schirrwagen J, Karaiskos D, et al. Progress in the Implementation of the OpenAIRE Guidelines for CRIS Managers. Procedia Computer Science. 2017;106:104-111.
Language	eng
Relation	info:eu-repo/semantics/altIdentifier/doi/10.1016/j.procs.2017.03.042
Relation	info:eu-repo/semantics/altIdentifier/issn/1877-0509
Relation	info:eu-repo/grantAgreement/EC/H2020/643410
Rights Management	info:eu-repo/semantics/openAccess

Open Science in EU-Projekten am Beispiel der Universität Bielefeld

OpenAIRE | EXPLORE

SEARCH SHARE

Advanced Search for Publications

Search for: Hosting Content Provider Publications at Bielefeld University X

and Funder European Commission (EC) X

276 publications, page 1 of 28

1 2 3 4 5 > ↓ (CSV)

Navigation in the Fingertip

Conference object English CLOSED

Moscatelli, Alessandro; Naceri, Abdeldjalil; Ernst, Marc O.; (2013)

Project: EC | THE (248587)

On the mechanical, cognitive and sociable facets of human compliance and their robotic counterparts

Article English CLOSED

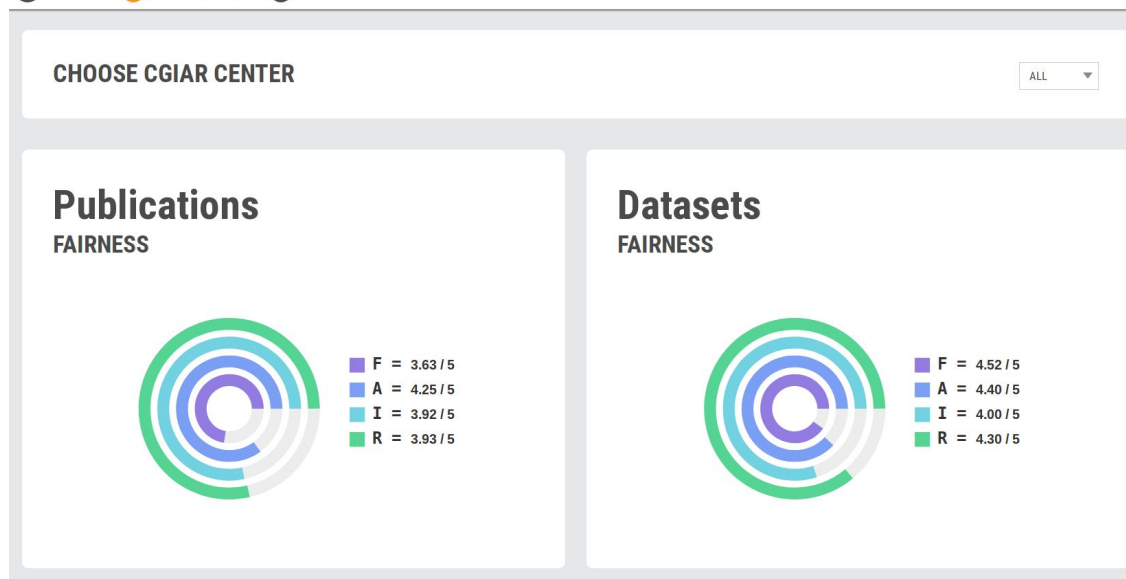
Billard, Aude; (2016)

- beteiligt an
 - 55 Projekten in FP7
 - bisher 32 Projekten in Horizon2020
- 276 Publikationen aus PUB zugeordnet zu EU-Projekten
- Open Science Training durch UB im Projekt ExSIDE

FAIRMetrics

am Beispiel des [GARDIAN - Global Agricultural Research Data Innovation & Acceleration Network](#)

Openness Fair Compliance Fair Metrics



Die UB als Treiber für Open Science ?!.

- Open Access Publikationsplattformen
- finanzielle Unterstützung des Open Access Publizierens
 - konsortial, APCs, ...
- Forschungsdatenmanagement
- Open Science Training
- Beratung und Bereitstellung kollaborative Werkzeuge für die Zusammenarbeit wissenschaftlicher Teams
- Unterstützung offener Metriken
 - Bereitstellung / Nachnutzung offener Zitationskorpora
 - Transparente Darstellung von Nutzungsstatistiken

Quellen

- [über den EFR](#)
- [ERC-Guidelines for Open Access, 2007](#)
- [Guidelines to the Rules on Open Access to Scientific Publications and Open Access to Research Data in Horizon 2020](#)
- [The European Commission, Expert Groups, and the Policy Process](#)
- [Open Science Informationsseite der EC](#)
- Ayris, P., & Ignat, T. (2018). Defining the role of libraries in the Open Science landscape: a reflection on current European practice. *Open Information Science*, 2(1), 1-22. : <https://doi.org/10.1515/opis-2018-00>

Vielen Dank für Ihre
Aufmerksamkeit -
Zeit für Fragen und
Diskussion