

Open Science and the Role of Repositories



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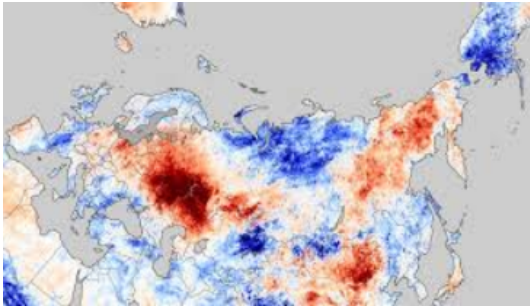
Increase Credibility through Openness

“Open science” refers to an approach to research based on greater access to public **research data**, enabled by **ICT tools and platforms**, and **broader collaboration** in science, including the **participation of non-scientists**, and finally, the use of **alternative copyright tools** for diffusing research results

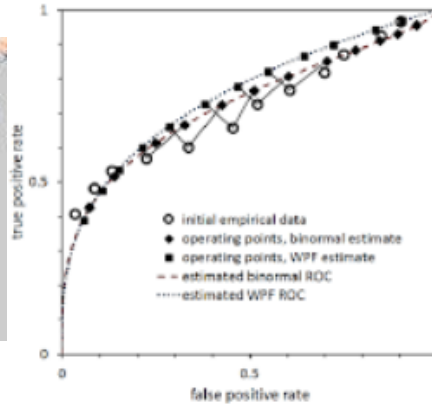
Increasing Importance of Research Data

Research data are the original sources or material that scientists have created or collated to conduct research project

Observations



Survey



Digitized Papers



3D-Objects



Overview

What Universities can do!



<http://www.loommind.com>

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What nations can do!



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What international communities can do!



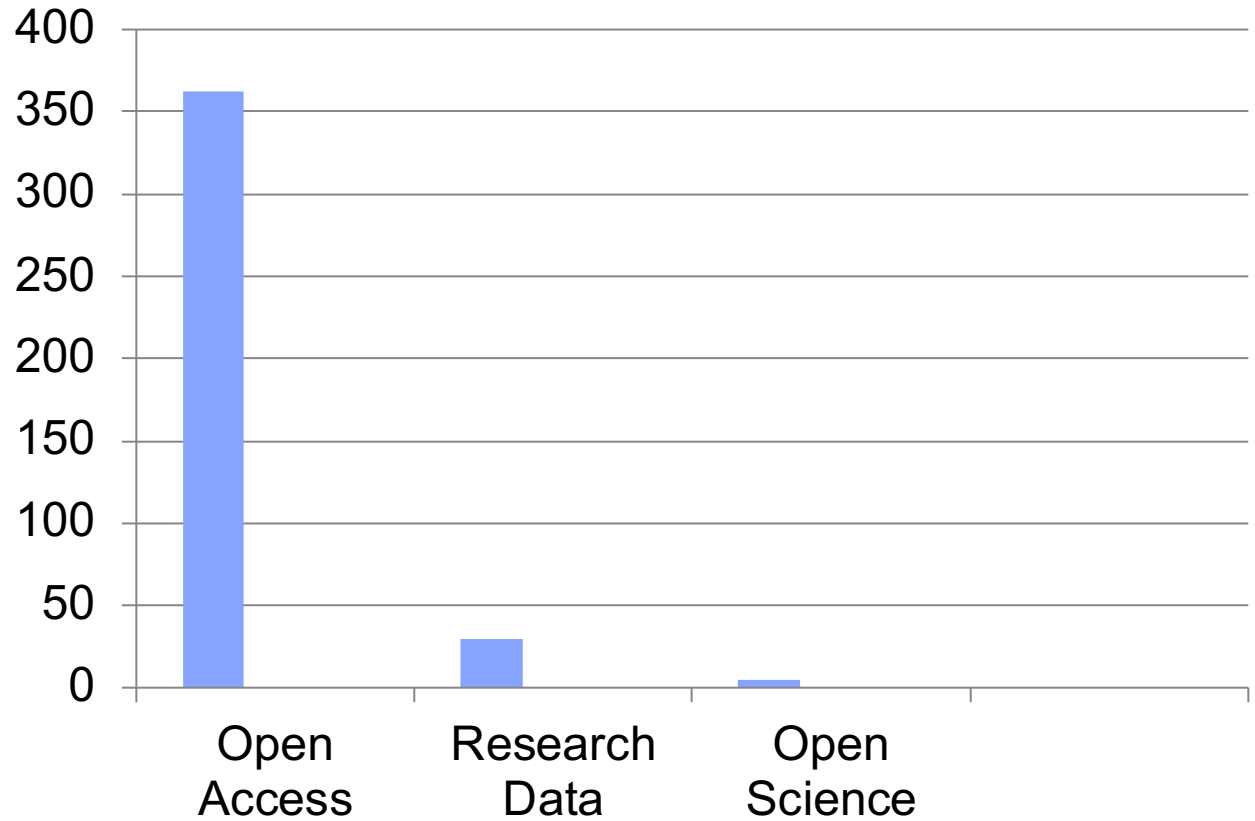
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<http://www.iconsmind.com>

„Open“ Policies



Content of Open Science Policies

Positioning for Openness



Content of Open Science Policies

Open Science Tools/Platforms/Repositories



Data Storing
Sharing

OpenDOAR BETA

Directory of Open Access Repositories



Archiving
Copyrights



Scientists



Scientific
Processes

Contributor Roles Taxonomy

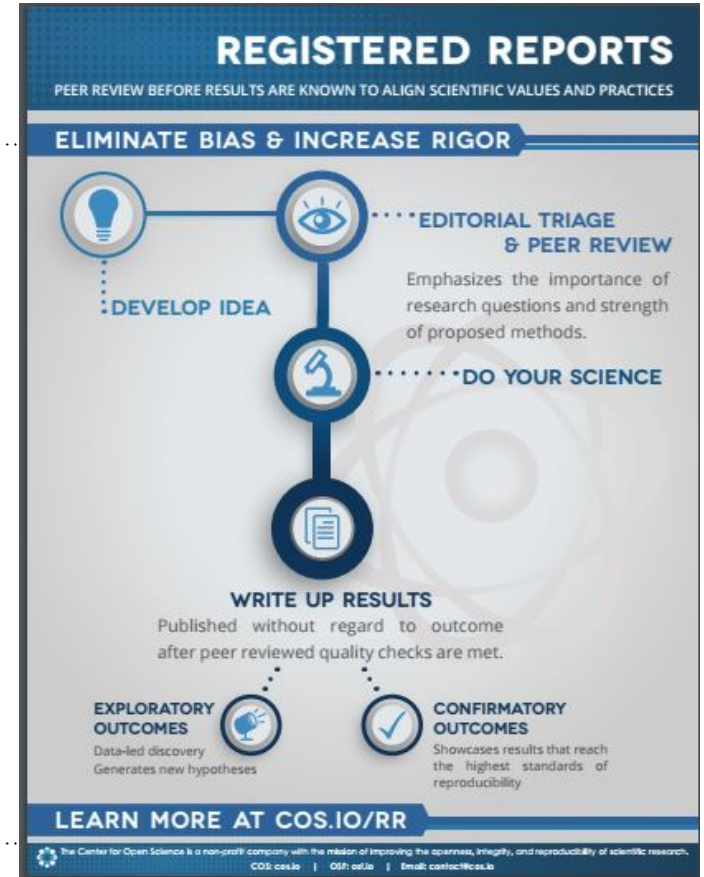


<http://docs.casrai.org/CRediT>

Contributor Role	Resources
Conceptualization	Software
Data Curation	Supervision
Formal Analysis	Validation
Funding Acquisition	Visualization
Investigation	Writing – Original Draft Preparation
Methodology	Writing – Review & Editing
Project Administration	

Registered Reports for Open Science

"Because the study is accepted in advance, the incentives for authors change from producing the most beautiful story to the most accurate one."



Content of Open Science Policies

Openness for Early Career Scientists

What would be a good balance between Open Science and having a career in academia? [...] Being open IMHO is a competitive disadvantage. Can you only afford open science when you are tenured?

Why should I share my hard-won data with my rivals that presumably compete with me for the next post-doc position?

Credit to Felix Schönbrodt, LMU Munic, Talk at Open Science Conference 2018

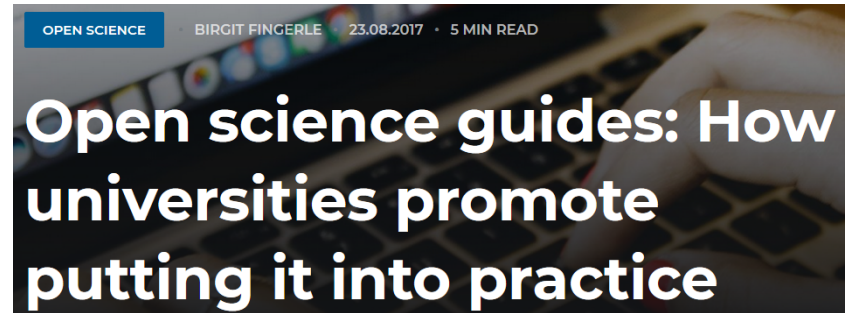
Actual (not desired) relevance in professorship hiring committees	Rank
Number of peer-reviewed publications	1
Fit of research profile to the hiring department	2
Quality of research talk	3
Number of publications	4
Volume of acquired third-party funding	5
Number of first authorships	6
...	...
Quality rating of the three best publications	17
...	...

N = 1453 psychology researchers, 66% were members of a professorship hiring committee.

Content of Open Science Policies

Openness and Scientific Performance Indicators

- Appraisal of Open Science Engagement and Research Transparency
 - OA Publications
 - Open Source Software
 - Open Scientific Wikis/Blogs
 - FAIR Research Data Sets
 - ...



<https://www.zbw-mediatalk.eu>

What nations can do!



Open Science Initiatives in Germany

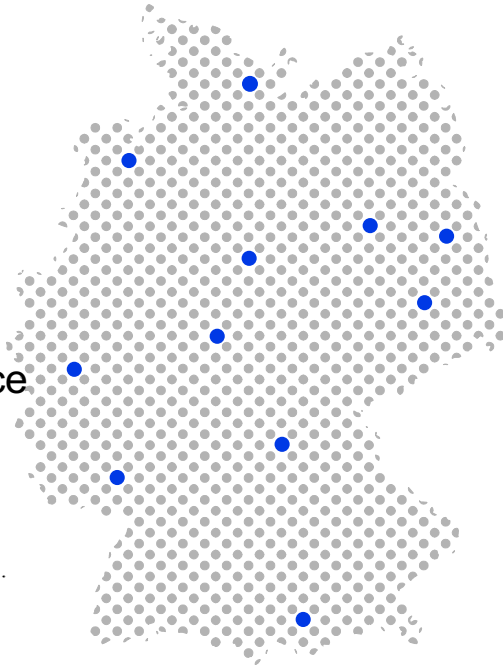
Hessen, Hamburg, Baden-Württemberg, Helmholtz, Leibniz, Fraunhofer,...

FhG Fordatis

LeibnizData

Helmholtz Open Science
HDF

MPG Digital Library



Hamburg Open Science

Hessian Research Data Infrastructure

eScience Baden-Württemberg

Digitale Education in Schools, Universities
Culture in Bavaria

BASE – Bielefeld Academic Search Engine
EconStor
arXiv

Open Science Offers

Legal support for
repository managers &
scientist

Research Information
Systems

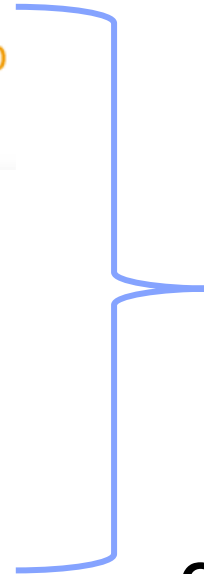
Information Portals
„shop windows“

Digital
Change

Federation of Repositories



What is missing?



**National
Open Science Coordination**

Responsibilities of National Open Science Coordinator



Radar



Harmonising



Cultural Change

What international communities can do!



Principles of EOSC

Bring together data infrastructures

Trusted and Open

Open and seamless services

Across disciplines

Linking data

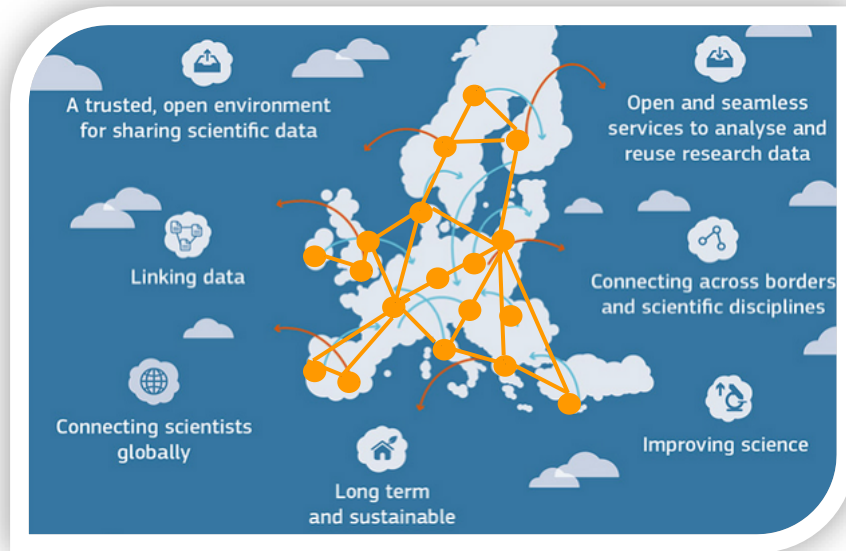
Connecting scientists globally

Long term and sustainable

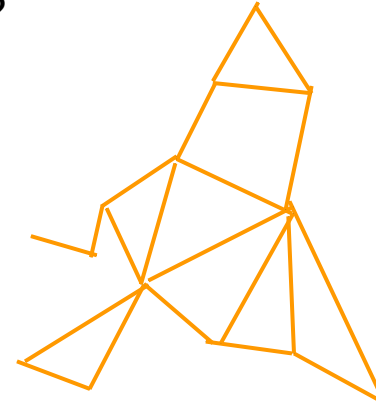
Improving science

EOSC

Vision. Bringing together current and future data infrastructures.



What does bringing together mean?



Commonalities and Differences between EOSC and COAR - NGR



Characteristics of Next Generation Repositories vs. EOSC Principles

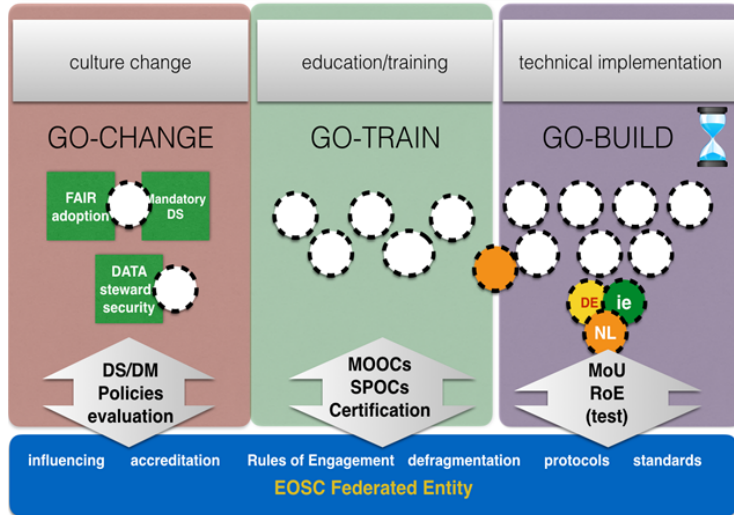
- is **resource-centric**, making resources the focus of its services and infrastructure
- is a **networked** repository. Cross-repository connections are established ...
- is **machine-friendly**, enabling the development of a wider range of global repository services

Bring together data infrastructures

Across disciplines

Open and seamless services

Differences



- COAR NGR has a strong focus on technologies, standards and protocols supporting behaviour, e.g.
 - Resource Transfer
 - Exposing Activities
 - ...
- EOSC is not only a vision for a technical system

Do EOSC and COAR know each other ?



- Bring together data infras
 - **resource-centric**
- Across disciplines
 - **networked**
- Open & seamless services
 - **machine-friendly**



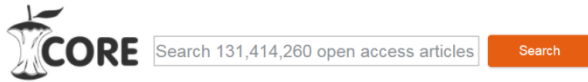
0 mentions of COAR-NGR
1 mention of „open access“

0 mentions of EOSC
1 mention of „research data“

Recommendation to EOSC

Learn from COAR

OA research papers



Aggregating the world's open access research papers



Durchsuchen Sie 17.447.877 Dokumente aus 383 deutschen Quellen

Research Data



Search Your Data

eg. IPCC



Popular Tags

Archaeology

Recommendations to COAR

Align with EOSC

Enable Next Generation Repositories to become
part of the EOSC

GoFAIR as implementation of the EOSC

<https://www.go-fair.org/>



The global Internet of FAIR Data and Services provides a common environment for data-driven research and innovation around the world.

Compliance of Next Generation Repositories with Fair Data Principles



findable

accessible

interoperable

reusable



networked

resource-centric

active

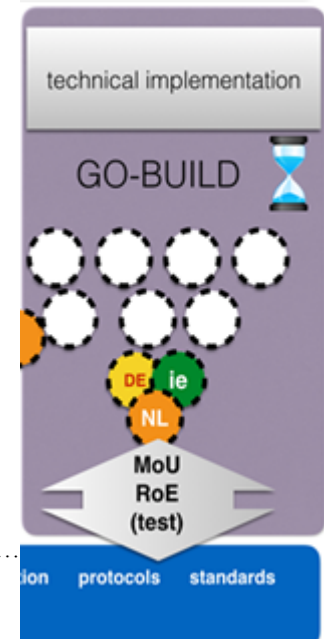
machine-friendly

COAR as GoFAIR Implementation Network

GoFAIR to be implemented in a very light, internationally operational coordinated networks structure

GoFAIR Implementation Networks will deliver the implementation needs in their domains

- provide a component or service in the IFDS
- complies with the Rules of Engagement



Contact GoFAIR Support Office: office@go-fair.org

What is in it for you?



IMPLEMENTATION NETWORKS

Implementing the Internet of FAIR Data & Services



TECHNOLOGY

Building the technical infrastructure



TRAINING

Training FAIR data stewards



CERTIFICATION

Certification criteria for GO FAIR compliance

Conclusion

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