



UNIVERSITÀ
degli STUDI
di CATANIA



DIPARTIMENTO di
FISICA e ASTRONOMIA
“Ettore Majorana”

A standard-based and scalable digital asset management system to “turn on” FAIR compliant digital repositories

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Brokerage Event Towards a FAIR Compliant Commons in the ASREN Region
16th International Conference on Open Repositories – 7 June 2021

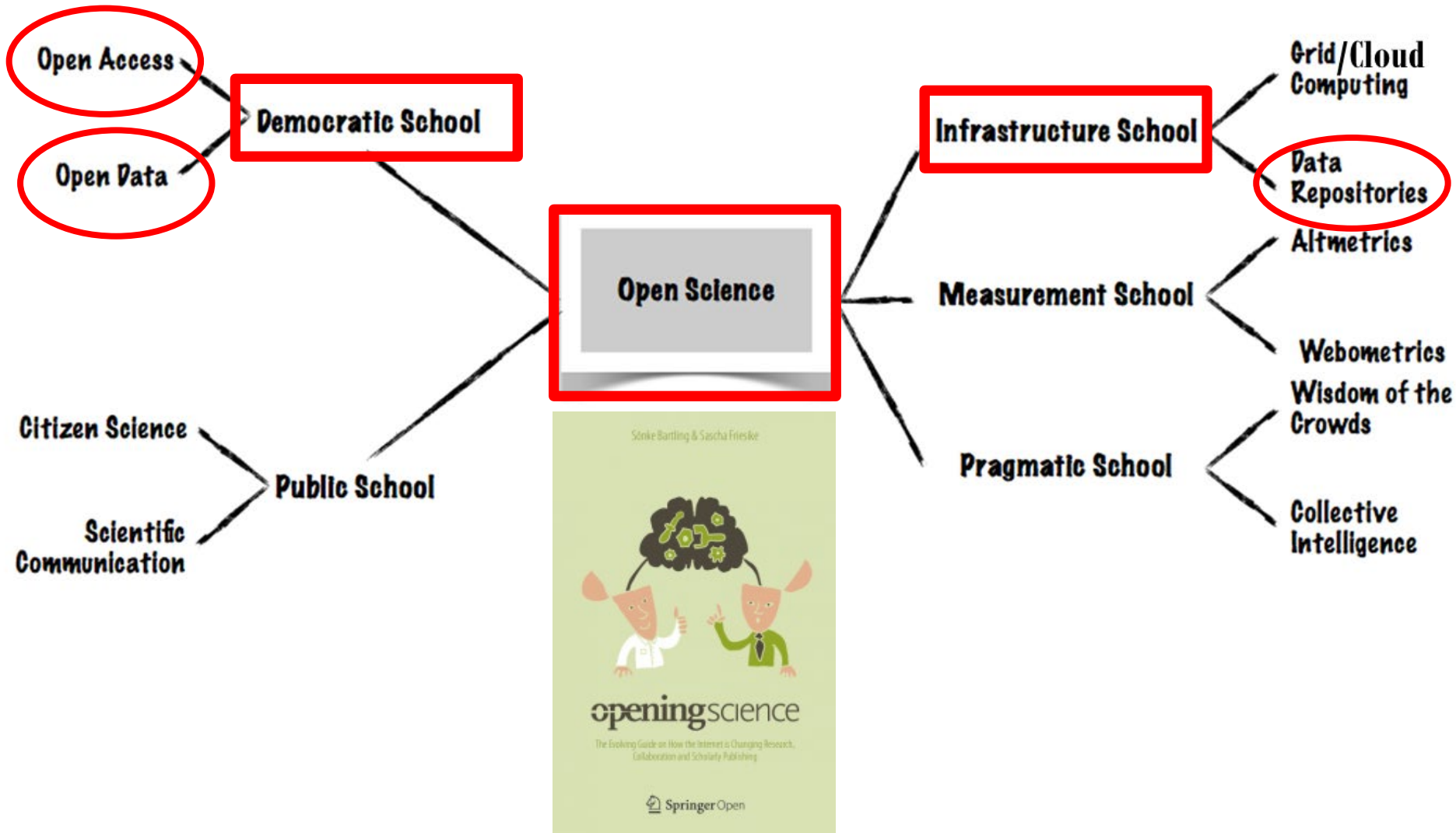


Outline

- Introductory concepts
- The INFN Open Access Repository
 - (based on Invenio and Zenodo)
- Summary and conclusions

Open Science Schools of Thought


www.openingscience.org



FAIR principles

(www.go-fair.org/fair-principles/)

Findable:



F1. (Meta)data are assigned a globally unique and persistent identifier

F2. Data are described with rich metadata (defined by R1)

F3. Metadata clearly and explicitly include the identifier of the data they describe

F4. (Meta)data are registered or indexed in a searchable resource

Accessible:

A1. (Meta)data are retrievable by their identifier using a standardised communications protocol

A1.1 The protocol is open, free, and universally implementable

A1.2 The protocol allows for an authentication and authorisation procedure, where necessary

A2. Metadata are accessible, even when the data are no longer available

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

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

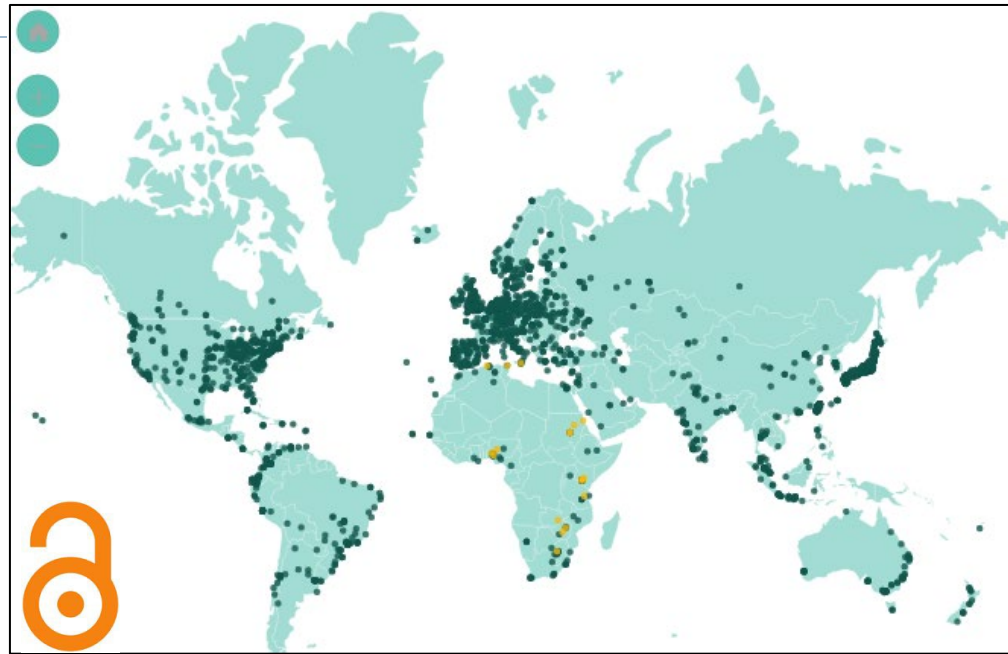
R1.3. (Meta)data meet domain-relevant community standards

Some of the most common DAMS's

DAMS	Home page	License
CKAN	http://ckan.org/	Free
CONTENTdm	http://www.oclc.org/contentdm.en.html	Commercial
Digibib		
Digital Commons	http://digitalcommons.bepress.com/	Commercial (hosted service)
DigiTool	http://www.exlibrisgroup.com/category/DigiToolOverview	Commercial
DiVA-Portal	http://www.diva-portal.org	Free (hosted service)
dLibra	http://dingo.psnc.pl/dlibra/	Commercial
Drupal	https://www.drupal.org/	Free
DSpace	http://www.dspace.org/	Free
Earmas	http://www.earmas.net/	Free
EPrints	http://www.eprints.org/software/	Free
EQUELLA Repository	http://www.equella.com/	Commercial
ETD-db	http://scholar.lib.vt.edu/ETD-db/index.shtml	Free
Fedora	http://www.fedora-commons.org/	Free
Fez	http://apsr.anu.edu.au/currentprojects/fez06.htm	Free
Greenstone	http://www.greenstone.org/	Free
HAL	https://hal.archives-ouvertes.fr/	Free (hosted service)
Invenio	http://invenio-software.org/	Free
Islandora/Fedora	http://islandora.ca/	Free
intraLibrary	http://www.intrallect.com/solutions/managing_content/	Free
MyCoRe	http://www.mycore.de/	Free
Open Repository	http://www.openrepository.com/	Commercial (hosted service)
OPUS	http://www.kobv.de/entwicklung/software/opus-4/	Free
PURE	https://www.st-andrews.ac.uk/staff/research/pure/	Free (hosted service)
SciELO	http://scielo.org/php/index.php	Free (hosted service)
VITAL	https://www.iii.com/products/vital	Commercial
WEKO	http://weko.wou.edu.my	Free
XooNips	http://xoops.org/modules/repository/	Free

Others, more business or social oriented, are listed at www.capterra.com/digital-asset-management-software/

Geomap of open repositories



www.sci-gaia.eu/knowledge-base



- **Africa and the Middle East show a gap w.r.t. the rest of the world**
- **Very few FAIR-compliant repositories in the region**

The INFN Open Access Repository

(<https://openaccessrepository.it>)

The screenshot shows the INFN Open Access Repository website. The top navigation bar includes the INFN OAR logo, a search bar, and links for Upload and Communities. The main content area features 'Latest entries' with two items: 'osct/zenodo: INFN OAR First release' (March 27, 2019) and 'Performance Analyses of EGEE-like Grids in Asia and Latin America' (March 10, 2010). A sidebar on the right provides a 'glance' at the repository, listing key features: Research Shared, Findable/Citeable/Discoverable, Communities, Funding, and Flexible licensing.

- Intended to be a single-entry point for manual/automated deposit of research outputs and all sort of digital assets (images, drawings, videos, other multimedia, etc.)
- Fully standard-compliant and certified

The screenshot shows the 'Registration Record' for the Open Access Repository in OpenDOAR. The record includes the following details:

element name	element value
Base URL	http://www.openaccessrepository.it/oa2d
Repository Name	Open Access Repository
Protocol Version	2.0
Email	librarian@openaccessrepository.it
Registration Date	2014-05-06T10:47:29Z
Date Last Validated	Tue May 6 10:47:29 2014
OAI Repository ID	www.openaccessrepository.it

Below the table, there is a note: 'If you are the maintainer of this repository, you may want to update the information recorded to match new information exposed via the Identify response by running the validation/registration process as OpenDOAR'. A link to the 'OpenDOAR Development Blog' is also present.

The screenshot shows the 'EXPLORE' search results page. The search criteria are 'Institutional Repository' and 'OpenAIRE 3.0 (QA, funding)'. The results show 1,439 items with funding information. A red box highlights the 'OAI-PMH: <http://www.openaccessrepository.it/oa2d>' link. Below this, there is a list of content providers with their respective counts:

Content Provider	Count
Publications	7,005
Research Data	0
Software	0
Other Research Products	2,157
Organizations	1
Statistics	
Metrics	

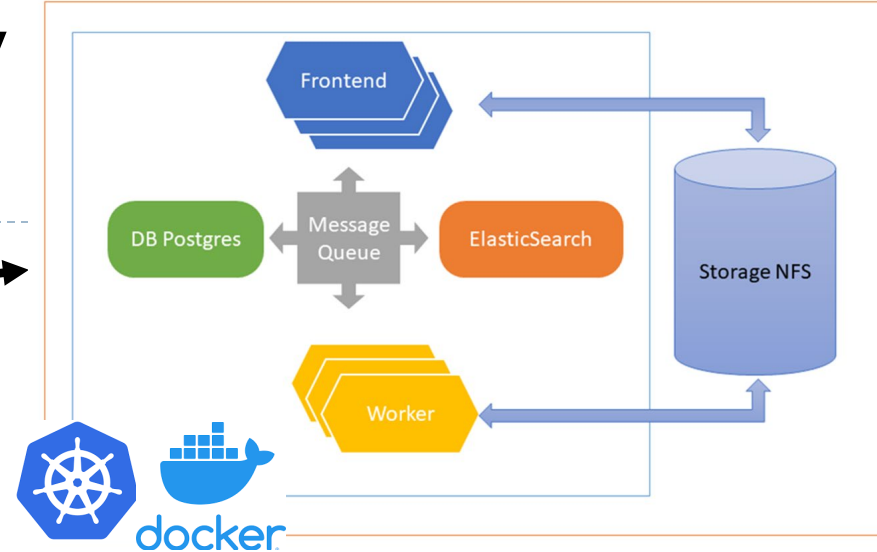
On the right side, there is a 'Metrics' section showing: 562 views in OpenAIRE, 0 views in local repository, and 0 downloads in local repository.

► Based on **INVENIO** and **zenodo**

The INFN Open Access Repository

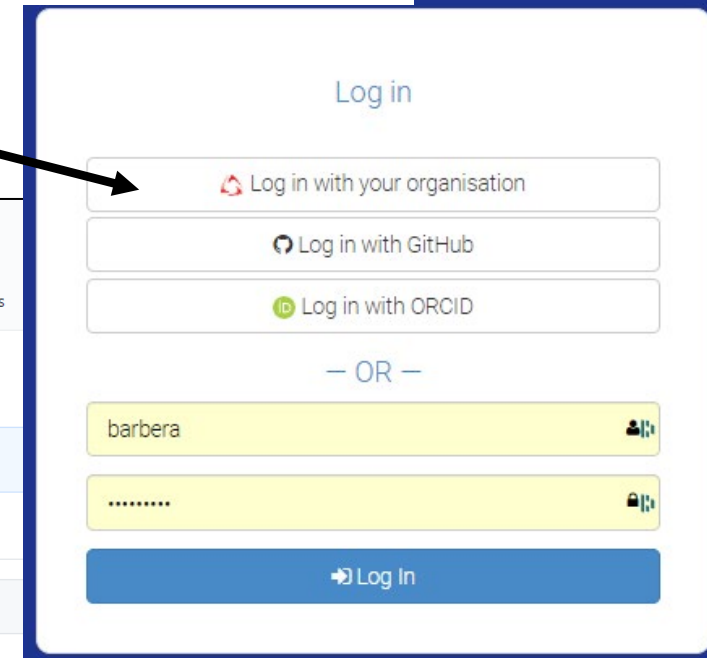
(<https://openaccessrepository.it>)

- ▶ Specific functionalities added:
 - ▶ «Container»ized
 - ▶ SAML-based AuthN
 - ▶ (It is an SP of eduGAIN and also supports «homeless» users)
 - ▶ Fully parameterisable configuration and customisation



- ▶ **Compliant with FAIR principles**
 - ▶ Through the use of [DataCite](#) DOIs
- ▶ **Compliant with [Plan S](#) requirements**

```
1 apiVersion: v1
2 kind: ConfigMap
3 metadata:
4   name: zenodo-config
5 data:
6   invenio.cfg: |
7     from invenio_github.config import GITHUB_REMOTE_APP
8     #Global configurations
9     APP_ALLOWED_HOSTS = ["your.open.access.repository.domain"]
```



One of the key advantages of Open Science is science reusability

Scholarly publication and data infrastructures should comply

<https://doi.org/10.15161/oar.it/23509>

November 23, 2020 Technical note Open Access

Synthetic procedure to replicate the INFN Open Access Repository (based on Invenio v3 and Zenodo)

Fargetta, Marco; Rotondo, Riccardo; Barbera, Roberto

This document contains a synthetic procedure to replicate the INFN Open Access Repository

643 views 367 downloads [See more details...](#)

Publication date: November 23, 2020
DOI: [10.15161/oar.it/73283](https://doi.org/10.15161/oar.it/73283)
Keyword(s): [info](#) [openaccessrepository](#) [invenio](#) [zenodo](#)
Related identifiers:
References: [10.15161/oar.it/21260](https://doi.org/10.15161/oar.it/21260)
Communities: [INFN](#)
License (for files): [Creative Commons Attribution 4.0](#)

Versions

Version	DOI	Date
Version 4	10.15161/oar.it/73283	Nov 23, 2020
Version 3	10.15161/oar.it/73194	Oct 15, 2020
Version 2	10.15161/oar.it/73191	Oct 14, 2020
Version 1	10.15161/oar.it/23510	Sep 9, 2019



Summary and conclusions

- FAIR-principles compliant open repositories are key enablers of Open Science and can improve visibility of researches and researchers in Africa and the Middle East
- The INFN Open Access Repository based on Invenio and Zenodo is “reusable” and easily deployable wherever needed
 - Experiences in Ethiopia and Somalia are very positive (see next presentations) and have triggered interest in Côte d’Ivoire and Palestine
- Opportunities for collaborations will be outlined in the rest of this session as well as in the brokerage session
- In the hands-on tutorial you will be able to access and use one of the production instances

Thank you!