

Key messages about open and FAIR data and RDM

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Intended learning outcomes for today

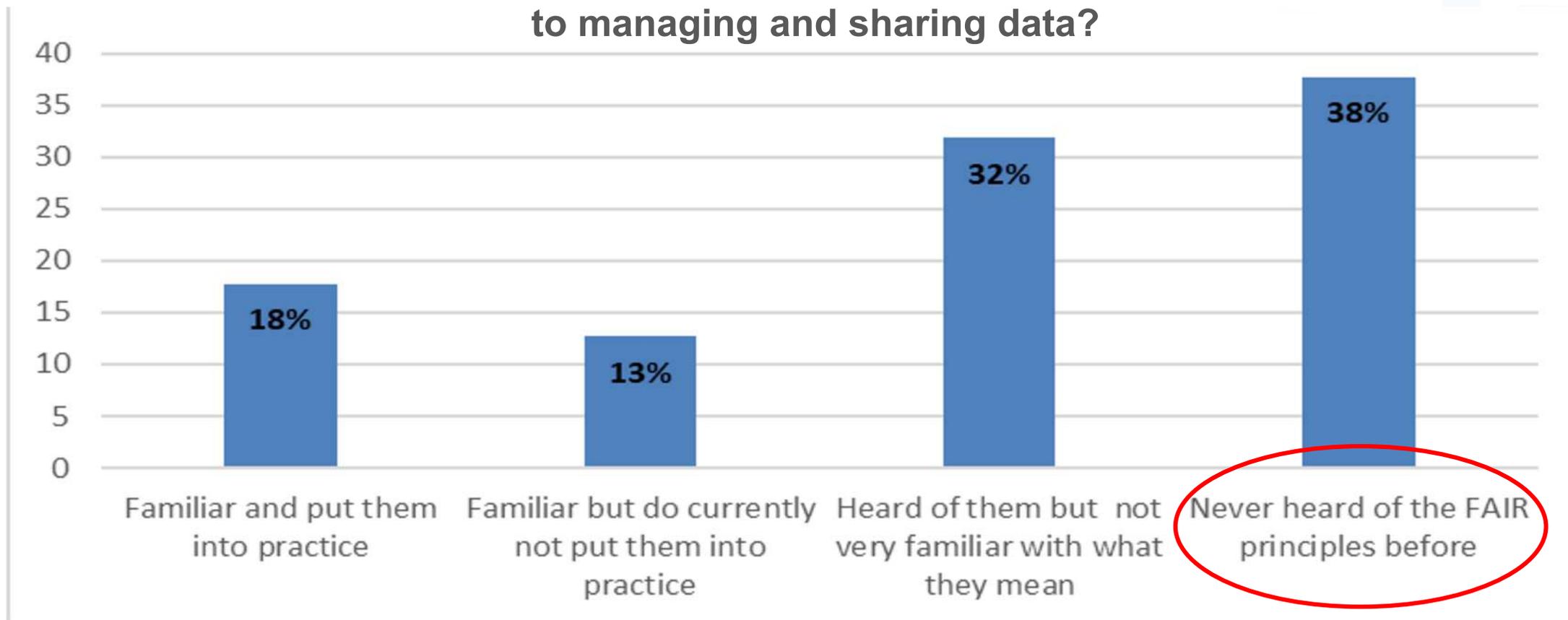
- Aware of the role FAIR data play in the EOSC vision
- Able to explain the difference between Open Data, FAIR Data and RDM
- Aware of key research practices that help to make data FAIR
- Aware of benefits from making data FAIR
- Aware of FAIR-IMPACT project

- Aim is to develop a trusted, virtual, federated environment that cuts across borders and scientific disciplines to **store, share, process and re-use research digital objects following FAIR principles.**
- Will lead new insights and innovations, higher research productivity and improved reproducibility in science.



**EUROPEAN OPEN
SCIENCE CLOUD**

How familiar are you with the FAIR principles in relation to managing and sharing data?



Source: own elaboration based on unweighted researchers' survey data, N=11849.

Forthcoming European Research Data Landscape Study 2022. https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/ec-kicked-study-will-provide-full-characterisation-european-research-data-landscape-2021-06-22_en

The **FAIR** data principles



Findable

To identify data for both humans and computers by computerising metadata that facilitate searching for specific datasets.



Accessible

Data is stored properly -for long term- so that it can easily be accessed and/or downloaded with well-defined access conditions. These could be access to the metadata (only) or getting access to the actual data.



Interoperable

The ability to combine different datasets either by humans or by computers. Therefore multiple agreements have to be made with respect to the terminology used to prevent ambiguities of the meanings of these terms.



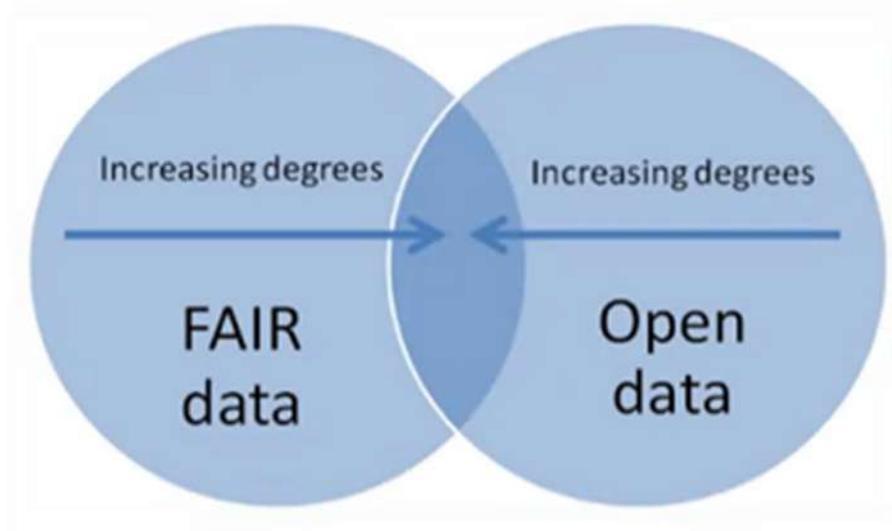
Reusable

Data should be ready to be used for future research and to be further processed using computational methods. This requires adequate information about how the data were obtained and processed (provenance), and an appropriate license.

According to the Open Data Institute (ODI), open data must be licensed to make clear that anyone can use the data in any way they want, including transforming, combining, and sharing it with others, even for commercial purposes.

ODI provides a great introduction to all aspects of Open Data in their Open Data Essentials course.
<http://accelerate.theodi.org/>





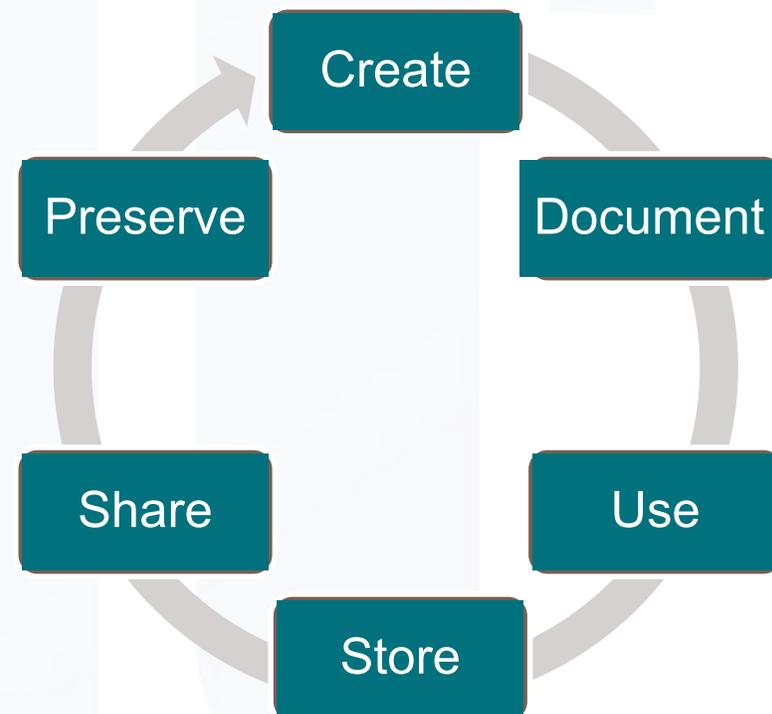
Data can be:

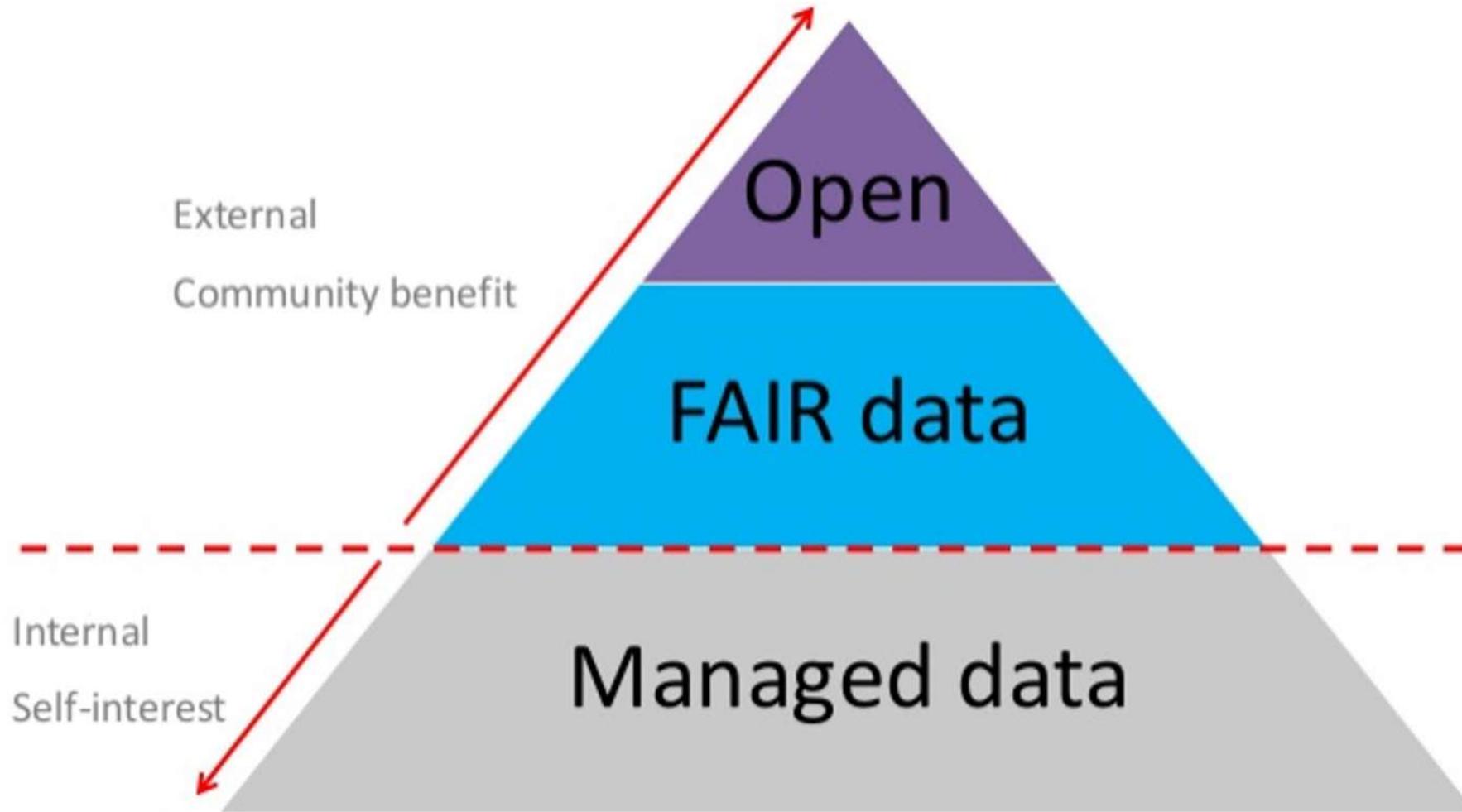
- managed to varying degrees, from unmanaged to well managed
- open to varying degrees, from completely closed to highly open
- FAIR to varying degrees, from low to high FAIRness

[Higman, R., Bangert, D., & Jones, S. \(2019\)](#)

Slide adapted from Daniel Bangert's Introductory slides for the ['Developing Research Data Support Services - webinar'](#)

- What data will be created (format, types, volume...)
- Standards and methodologies to be used (incl. metadata)
- How ethics and Intellectual Property will be addressed
- Data management plans for sharing and access
- Strategy for long-term preservation of selected data





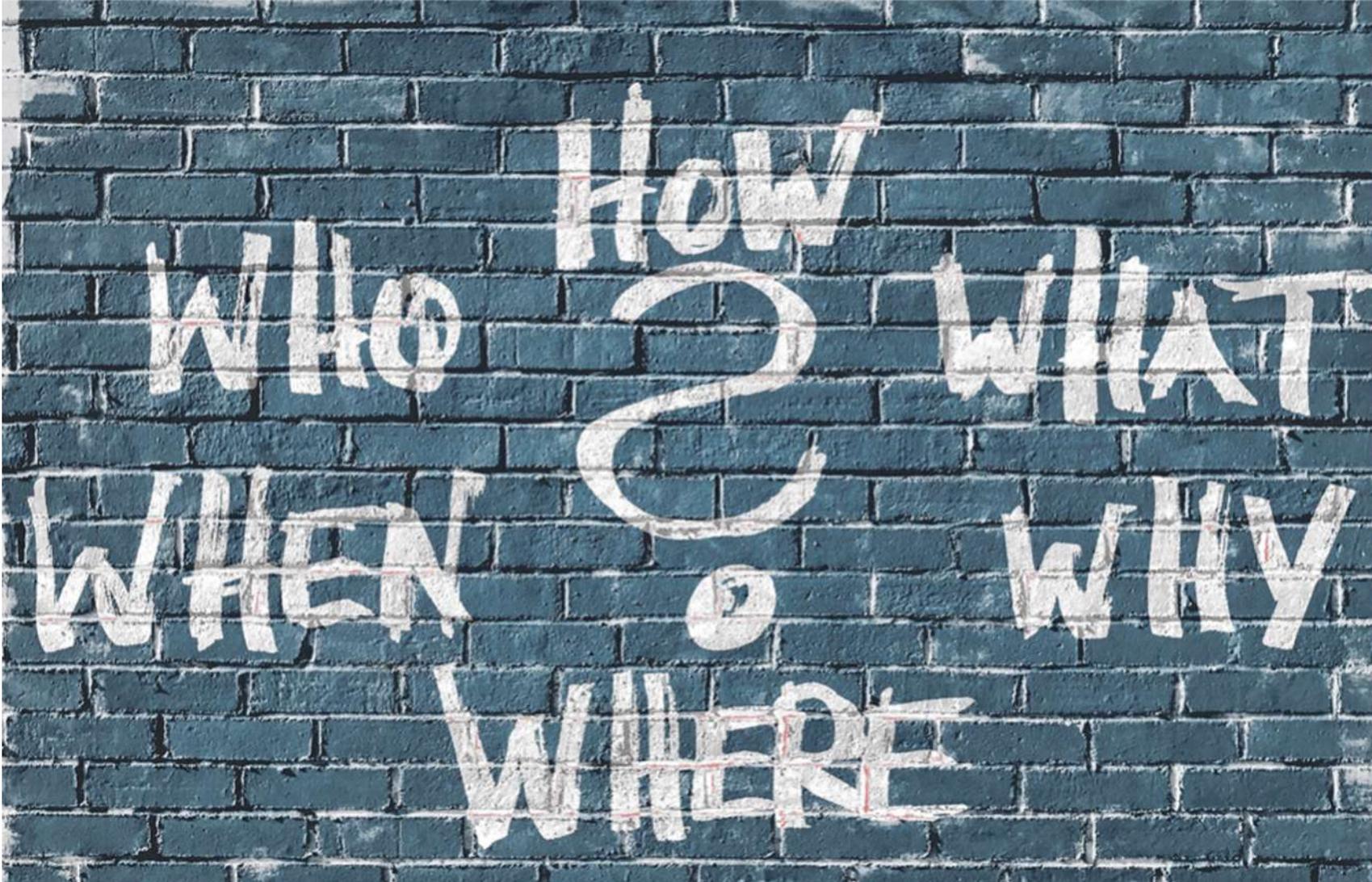


Preferred repositories:

1. Domain specific
2. Institutional
3. Generalist (Zenodo, figshare)



Look for suitable options in re3data.org



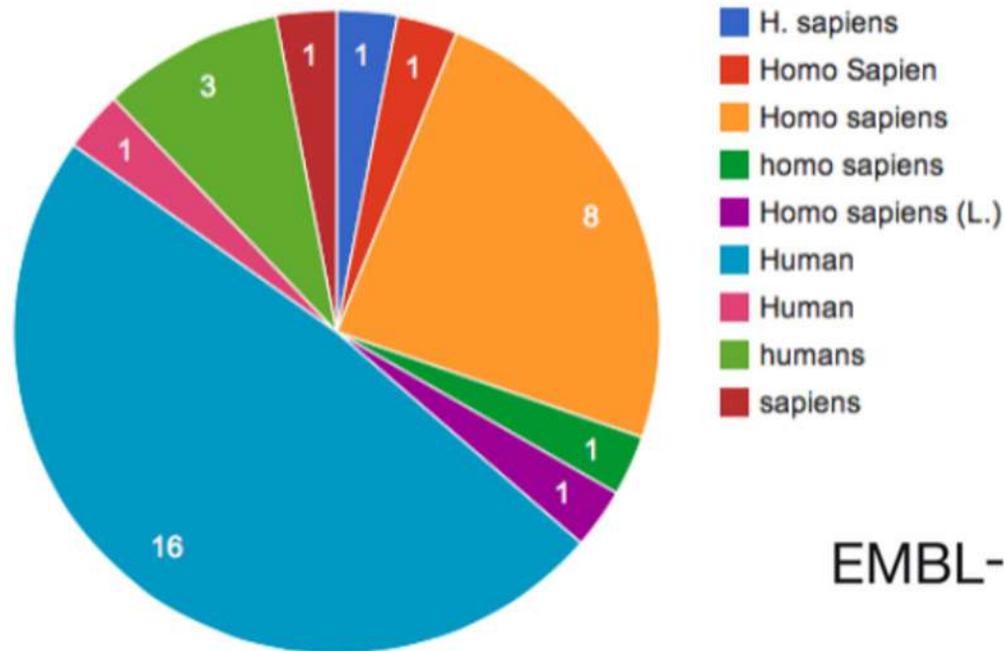
- Use existing standards
- Descriptions for both humans and machines

RDA Metadata
Standards
Directory

<http://rd-alliance.github.io/metadata-directory/>

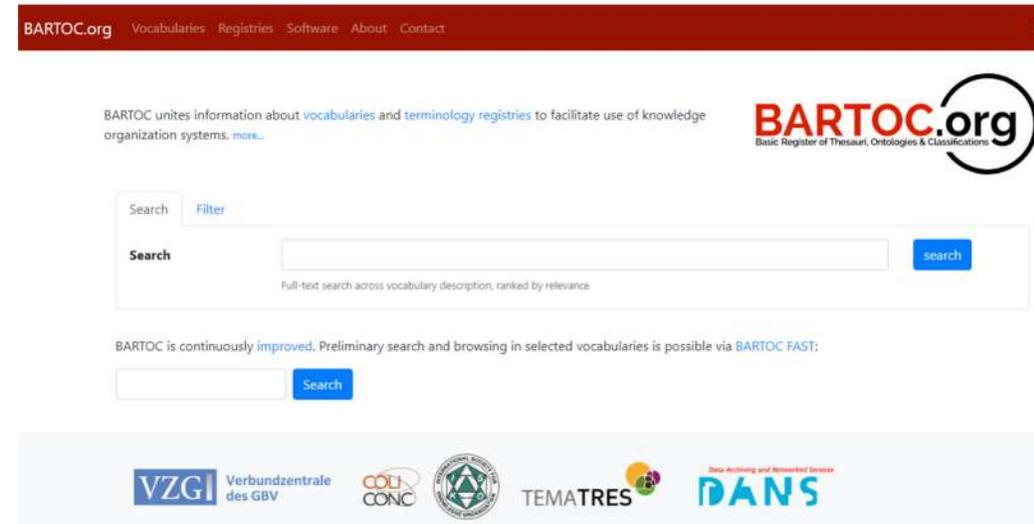
Make controlled vocabularies and ontologies

"MTBLS1: A metabolomic study of urinary changes in type 2 diabetes in....."



Example courtesy of Ken Haug, European Bioinformatics Institute (EMBL-EBI)

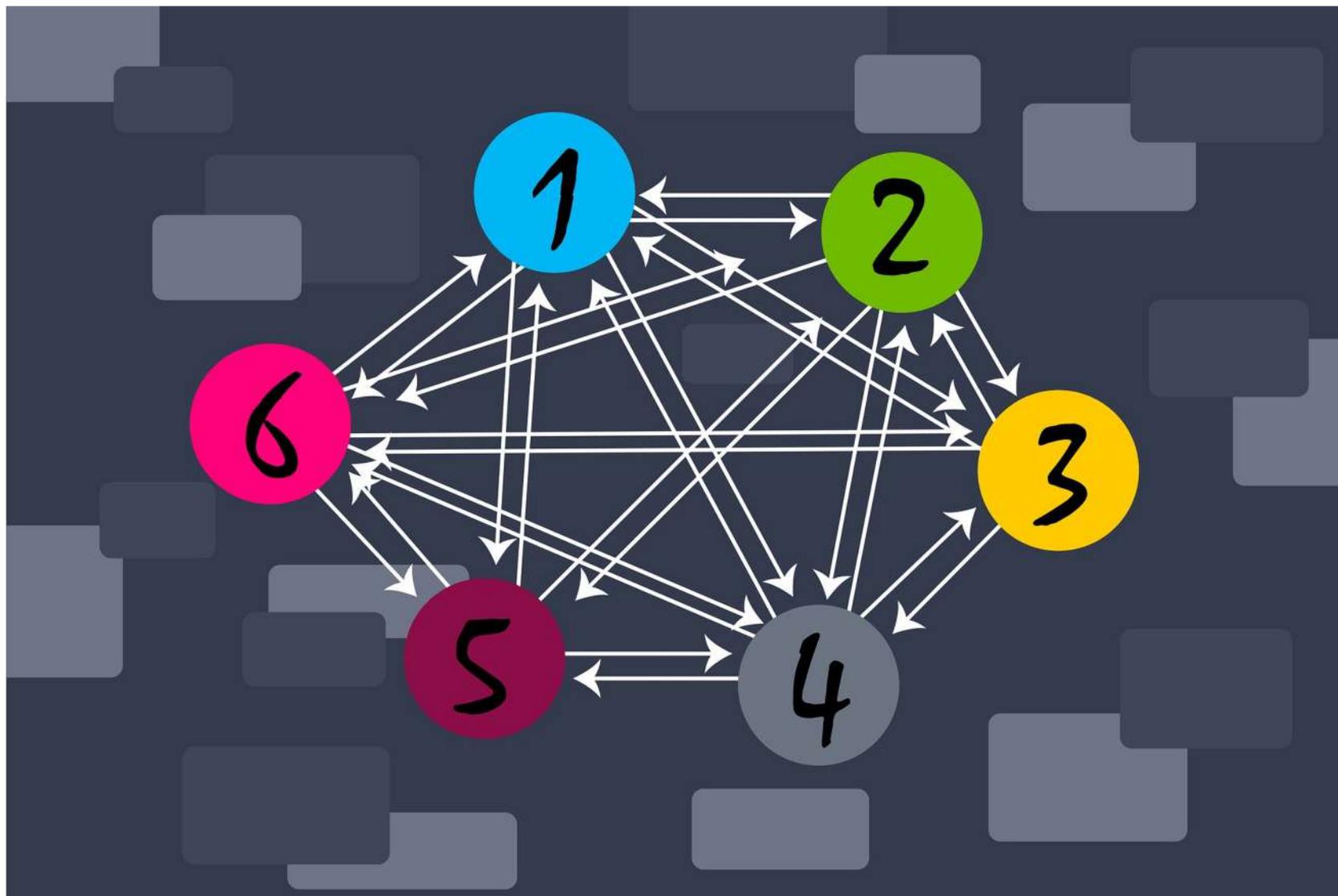
Basic Register of Thesauri, Ontologies & Classifications (BARTOC)



The screenshot shows the BARTOC.org website. At the top, there is a navigation bar with links for 'Vocabularies', 'Registries', 'Software', 'About', and 'Contact'. Below the navigation bar, a search box is visible with a 'Filter' button and a 'search' button. The text below the search box reads: 'BARTOC unites information about vocabularies and terminology registries to facilitate use of knowledge organization systems. more...'. Below this, there is a section titled 'BARTOC is continuously improved. Preliminary search and browsing in selected vocabularies is possible via BARTOC FAST:' with another search box and a 'Search' button. At the bottom of the page, there are logos for partner organizations: VZG (Verbundzentrale des GBV), COLIN CONIC, TEMATRES, and DANS (Data Archiving and Networked Services).

<https://bartoc.org/>

Use identifiers such as ORCIDs and DOIs to link related outputs



- Supports research integrity
- Enables validation of results
- More citations
- Increased impact - even for negative results

- Easier outputs reporting
- Easier to collaborate

- Leads to real world benefits!



Artist's impression of COVID-19 open access data sharing. Credit: Spencer Phillips

Open data sharing accelerates COVID-19 research

19 Oct 2020 - 15:51

Summary

- Open access increases the visibility of research data and information, giving scientists the ability to build upon and react to existing research quickly
- EMBL-EBI launched the European COVID-19 Data Platform to enable rapid access to datasets and results pertaining to the SARS-CoV-2 outbreak
- Open access data sharing has greatly accelerated COVID-19 research and helps further our understanding of the biology, transmission, and spread of the SARS-CoV-2 virus

<https://www.ebi.ac.uk/about/news/announcements/open-data-sharing-accelerates-covid-19-research>



EU funded project

Coordination and Support Action



10 million euro

36 months, starting 1 June 2022



28 partners and affiliate entities

From 10 EU member states and the UK

- Open calls for support in March 2023
- FAIR Implementation Framework
- Pillar workpackages focusing on persistent identifiers, semantics and metadata, metrics and certification and interoperability



The EOSC vision depends on access to and reusability of FAIR data. FAIR-IMPACT will **support the implementation** of FAIR-enabling practices across scientific communities and research outputs at a European, national, and institutional level.

<https://fair-impact.eu/>

Thanks!

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@fairimpact_eu /company/fair-impact-eu-project

**Please go to [menti.com](https://www.menti.com)
and enter code
6427 5224**