



D | C | C

FAIR data: The key role of metadata

Joy Davidson, DCC

Acknowledgement: Content reused from DANS colleagues



What is FAIR data?

Findable

- F1. (meta)data are assigned a globally unique and eternally persistent identifier.
- F2. data are described with rich metadata.
- F3. (meta)data are registered or indexed in a searchable resource.
- F4. metadata specify the data identifier.

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.

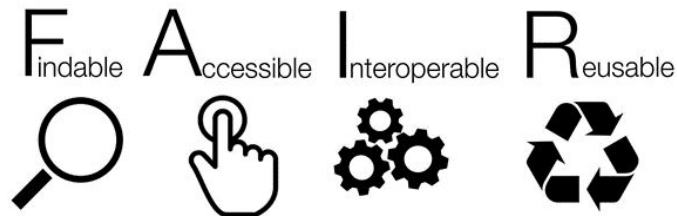
Accessible

- 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.

Reusable

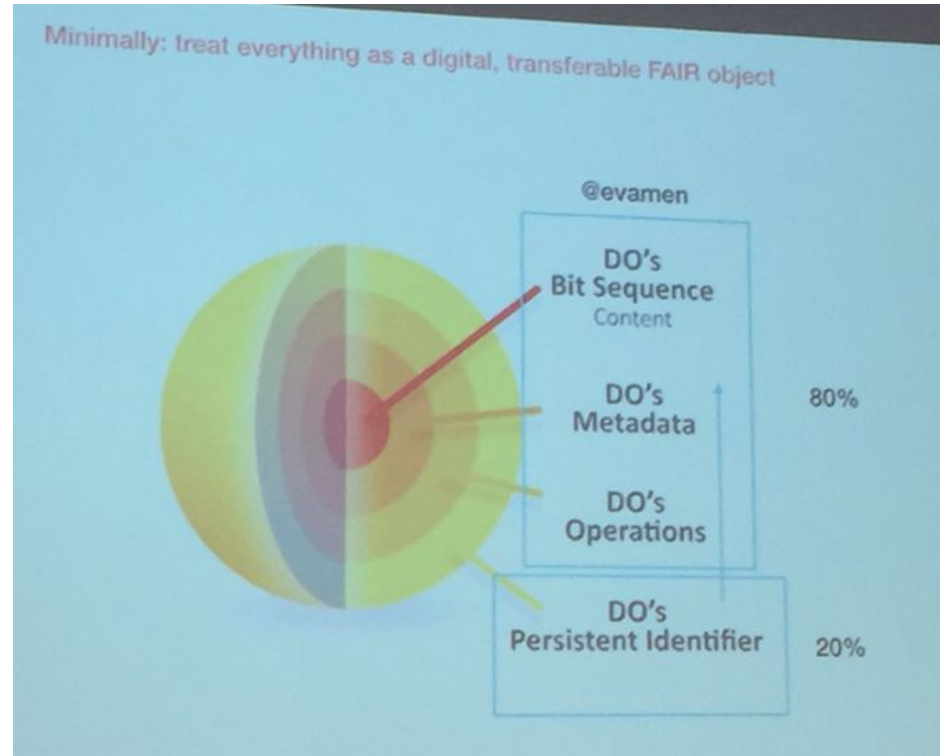
- R1. meta(data) have a plurality of accurate and relevant attributes.
 - R1.1. (meta)data are released with a clear and accessible data usage license.
 - R1.2. (meta)data are associated with their provenance.
 - R1.3. (meta)data meet domain-relevant community standards.

FAIR applies equally to data and metadata!



FAIR Guiding Principles: all about metadata

80% metadata
20% PIDs



Acknowledgement: This slide was created by Dra. Eva Méndez, Universidad Carlos III de Madrid for *Loving DATA... loving 'cool' metadata*. Metadata for FAIR data. <https://wesharedata.org/Events/November>

Your DATA with(out) METADATA

Bad



Better...



Best
(Rich, Structured)

Nutrition Facts*

Amount Per Serving (serving size) = 1/2 cup (120mL) condensed soup

Calories 100	Dietary Fiber 2g
Fat Calories 50	Sugars 1g
Total Fat 6g	Protein 1g
Sat. Fat 1g	Potassium 60mg
Trans Fat 0g	
Polyunsat. Fat 4g	% Daily Values**
Monounsat. Fat 1g	Vitamin A 0%
Cholesterol 5mg	Vitamin C 0%
Sodium 870mg	Calcium 0%
Total Carb. 9g	Iron 0%

* The nutrition information contained in this list of Nutrition Facts is based on our current data. However, because the data may change from time to time, this information may not always be identical to the nutritional label information of products on shelf.

** % Daily Values (DV) are based on a 2,000 calorie diet.

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A key step is to make use of a data repository!




Preferred repositories:

1. Domain specific
2. Institutional (UPCommons, CORA-RDR)
3. Generalist (Zenodo, figshare)

- **Metadata support**
- **DOI to support discovery and access**

Walk through of uploading data to a repository

QUploadCommunitiesjoy.davidson@glasgow.ac.uk▼

✖ Discard changesSavePublish

Edit upload

Instructions: (i) Upload minimum one file or fill-in required fields (marked with a red star).(ii) Press 'Save' to save your upload for editing later. (iii) When ready, press 'Publish' to finalize and make your upload public.

Files	▼	
Filename (2 files)	Size	Checksum ⓘ
FAIR_Policy_and_Practice_Survey_2019_12_10_2019_EN ...	151 kB	md5:2c016770d774101383f148f5f189acd3
FAIRsFAIR Policy and Practice Survey 2019 data for ...	75 kB	md5:d5287c026c2cc3dfe16fe12d6d4d390

Note: File addition, removal or modification are not allowed after an upload has been published. This is because a Digital Object Identifier (DOI) is registered with [DataCite](#) for each upload. If you've made a mistake please contact us.

If you have an updated version of your files, you can create a new record version, with a completely new DOI.

[New version](#)

Communities ⓘrecommended ▼

Specify communities which you wish your upload to appear in. The owner of the community will be notified, and can either accept or reject your request. Please make sure your record complies with the content policy of the communities you add; reported abuse will be followed by account inactivation.

Q

Minimum metadata required

7 mandatory fields:

● Upload type

● Title

● Publication date

● Authors

● Description

● Access rights

● License

The screenshot shows a metadata form with a top navigation bar containing icons for various publication types: Publication, Poster, Presentation, Dataset, Image, Video/Audio, Software, Lesson, Physical object, and Other. The 'required' status is indicated in the top right corner. The form fields are as follows:

- Publication type:** A dropdown menu with 'Journal article' selected.
- Publication date:** A text input field containing '2021-11-03'. Below it, a note states: 'Required. Format: YYYY-MM-DD. In case your upload was already published elsewhere, please use the date of first publication.'
- Title:** A text input field. Below it, a note states: 'Required.'
- Authors:** Two text input fields for 'Family name, given names' and 'Affiliation'. To the right is an ORCID field with the value '0000-0002-1825-0097' and a note: 'Optional.'
- Description:** A rich text editor with a toolbar containing icons for bold, italic, strikethrough, link, unlink, bulleted list, numbered list, indent, outdent, undo, redo, and source.
- Access right:** A radio button selection with options: 'Open Access' (selected), 'Embargoed Access', 'Restricted Access', and 'Closed Access'. Below it, a note states: 'Required. Open access uploads have considerably higher visibility on Zenodo.'
- License:** A text input field containing 'Creative Commons Attribution 4.0 International'. Below it, a note states: 'Required. Selected license applies to all of your files displayed on the top of the form. If you want to upload some of your files under different licenses, please do so in separate uploads. If you cannot find the license you're looking for, include a relevant LICENSE file in your record and choose one of the...'

Benefits to be gained by providing more than the minimum!

Give your data a title and description

Digital Object Identifier 10.5281/zenodo.3550529

Optional. Did your publisher already assign a DOI to your upload? If not, leave the field empty and we will register a new DOI for you. A DOI allows others to easily and unambiguously cite your upload. Please note that it is NOT possible to edit a Zenodo DOI once it has been registered by us, while it is always possible to edit a custom DOI.

Reserve DOI ✓




Publication date * 2019-11-22

Required. Format: YYYY-MM-DD. In case your upload was already published elsewhere, please use the date of first publication.




Title * FAIRsFAIR Policy and Practice Survey 2019 data for D3.1_D3.2_D6.1

Required.

Authors *

Joy Davidson Digital Curation Centre  0000-0003-3484-7675  


Optional.

Angus Whyte Digital Curation Centre  0000-0002-5198-0833  

Optional.

[+ Add another author](#)

Description *



As part of the EOSC project family the FAIRsFAIR - Fostering Fair Data Practices in Europe - project aims to supply practical solutions for the use of the FAIR data principles throughout the research data life cycle. The FAIRsFAIR project runs from March 2019-February 2022. Landscaping activities have been a core activity during the initial stages of the FAIRsFAIR project and there has been close cooperation with colleagues in Work Package 3 carrying out the FAIR data policy and practice analyses; Work Package 2 on assessing FAIR requirements for interoperability and persistence; Work Package 6 on providing an overview of research communities' needs for competence centres; and Work Package 7 on mapping RDM policies and support as well as FAIR education offerings in European HEIs. In particular, efforts were made to avoid duplication of effort across the three open consultation and survey instruments developed to assess the current landscape and to define a consistent approach to presenting our findings.

Required.

Add ORCIDiDs for authors

Digital Object Identifier

Optional. Did your publisher already assign a DOI to your upload? If not, leave the field empty and we will register a new DOI for you. A DOI allows others to easily and unambiguously cite your upload. Please note that it is NOT possible to edit a Zenodo DOI once it has been registered by us, while it is always possible to edit a custom DOI.

Reserve DOI

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Required. Format: YYYY-MM-DD. In case your upload was already published elsewhere, please use the date of first publication.

Title *

Required.


Authors *

Optional.

Optional.

[+ Add another author](#)

Description *



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https://orcid.org/
0000-0003-3484-7675

Website and social links

Digital Curation Centre

Keywords

data curation; digital curation; resaerch
data management

Is this you? [Sign in to start editing](#)

Printable version

Name
Joy Davidson

Biography

Joy Davidson is Coordinator for the UK's Digital Curation Centre (DCC) - a research infrastructure that specialises in data management planning, curation and Open Science. Joy currently leads work on policies and practices (WP3) for the EC funded FAIRsFAIR project which aims to increase the production and use of FAIR data. She has been involved in reviews for ESFRI roadmap updates and H2020 research infrastructure funding programmes.

[SHOW MORE DETAIL](#)

Activities

Collapse all

Employment (9)

Sort

Digital Curation Centre: Glasgow,

2019-05-10 to present | Coordinator (1
Employment

Works (50 of 108)

Sort

Items per page: 50 1 - 50 of 108

[DCC: https://doi.org/10.5281/zenodo.3550528](#)

Source: OpenAIRE Explore

FAIRsFAIR Policy and Practice Survey 2019 data for D3.1 D3.2 D6.1









2019-11-22 | data-set
DOI: [10.5281/zenodo.3550528](https://doi.org/10.5281/zenodo.3550528)
DOI: [10.5281/zenodo.3550529](https://doi.org/10.5281/zenodo.3550529)

[Show more detail](#)

Source: OpenAIRE Explore

Remember to add other contributors!

Contributors

Contributors	Jessica Parland von Essi	CSC	 0000-0003-4460-3906	Project member	↕	✕
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			Optional.			
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			Optional.			

[+ Add another contributor](#)

References

Journal

Conference

- Project member
- Contact person
- Data collector
- Data curator
- Data manager
- Distributor
- Editor
- Hosting institution
- Other
- Producer
- Project leader
- Project manager
- Project member**
- Registration agency
- Registration authority
- Related person
- Research group
- Researcher
- Rights holder
- Sponsor
- Supervisor

Add funding bodies

Funding recommended ▾

Zenodo is integrated into reporting lines for research funded by the European Commission via [OpenAIRE](#). Specify grants which have funded your research, and we will let your funding agency know!

Grants ×

Optional. OpenAIRE-supported projects only. For other funding acknowledgements, please use the *Additional Notes* field.
(Note: a human Zenodo curator will need to validate your upload - you may experience a delay before it is available in OpenAIRE.)

[+ Add another grant](#)

Related/alternate identifiers recommended ▾

Specify identifiers of related publications and datasets. Supported identifiers include: DOI, Handle, ARK, PURL, ISSN, ISBN, PubMed ID, PubMed Central ID, ADS Bibliographic Code, arXiv, Life Science Identifiers (LSID), EAN-13, ISTC, URNs and URLs.

Related identifiers ⬆ ×

Optional. Resource type of the related identifier.

⬆ ×

Optional. Resource type of the related identifier.

[+ Add another related identifier](#)

Add related identifiers

The image shows a screenshot of the Zenodo upload interface. A red circle highlights a dropdown menu that lists various relationships between the current upload and other identifiers. The menu items are:

- cites this upload
- is cited by this upload
- is supplemented by this upload
- is a supplement to this upload
- is referenced by this upload
- references this upload
- published this upload
- is previous version of this upload
- is new version of this upload
- continues this upload
- is continued by this upload
- describes this upload
- is described by this upload
- has this upload as part
- is part of this upload
- reviews this upload
- is reviewed by this upload
- documents this upload
- is documented by this upload
- is compiled/created by this upload
- is cited by this upload

The background shows the Zenodo upload form with sections for License (Creative Commons Attribution), Funding, Grants (European Commission (EU)), and Related/alternate identifiers. The 'Related identifiers' section contains two entries: '10.5281/zenodo.3558173' and '10.5281/zenodo.3550544'. The dropdown menu is open over the '10.5281/zenodo.3550544' entry.

Leads to a citable output!

zenodo Search Upload Communities joy.davidson@glasgow.ac.uk

November 22, 2019 Dataset Open Access Edit New version

FAIRsFAIR Policy and Practice Survey 2019 data for D3.1_D3.2_D6.1

Joy Davidson; Angus Whyte

Project member(s)

Jessica Parland von Essen; Brian Matthews; Lennart Stoy; Claudia Engelhardt; Vanessa Proudman; Mark Thorley; Birgit Schmidt; Daniel Bangert

As part of the EOSC project family the FAIRsFAIR - Fostering Fair Data Practices in Europe - project aims to supply practical solutions for the use of the FAIR data principles throughout the research data life cycle. The FAIRsFAIR project runs from March 2019-February 2022. Landscaping activities have been a core activity during the initial stages of the FAIRsFAIR project and there has been close cooperation with colleagues in Work Package 3 carrying out the FAIR data policy and practice analyses; Work Package 2 on assessing FAIR requirements for interoperability and persistence; Work Package 6 on providing an overview of research communities' needs for competence centres; and Work Package 7 on mapping RDM policies and support as well as FAIR education offerings in European HEIs. In particular, efforts were made to avoid duplication of effort across the three open consultation and survey instruments developed to assess the current landscape and to define a consistent approach to presenting our findings.

As part of the landscape analysis, FAIRsFAIR ran an open consultation on Policy and Practice which was made available via EU Survey from August 2 - September 27, 2019. The consultation was also made accessible from the FAIRsFAIR website. A total of 106 responses were submitted by research support staff from across Europe and beyond. The open consultation included both open-ended and closed questions which sought to identify the different levels of maturity with regards to FAIR practices among disciplines, the range of policies that influence the way that researchers work, and the sources of support currently available to researchers. In developing the questions, FAIRsFAIR worked collaboratively with several related initiatives including the EOSC 5B projects, the Group of European Data Experts in RDA (GEDE), and the EOSC FAIR Working Group and Landscape Working Group to avoid duplication of effort in our information collection. FAIRsFAIR will continue to cooperate with these and other initiatives over the life of the project. The open consultation targeted members of the research support community to gain insights on their views and experiences in relation to implementing the FAIR principles.

The open consultation questions were grouped under five broad themes:

- 1) Practice
- 2) Policy
- 3) Dissemination

280 views 242 downloads See more details...

Indexed in OpenAIRE

Publication date: November 22, 2019
DOI: 10.5281/zenodo.3550529
Keyword(s): FAIRsFAIR, FAIR Policy, FAIR Practice, FAIR competencies, FAIR skills, Repositories

Share: Preview Download Download

Cite as: Joy Davidson, & Angus Whyte. (2019). FAIRsFAIR Policy and Practice Survey 2019 data for D3.1_D3.2_D6.1 (1.0) [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.3550529>

Export: BibTeX, CSL, DataCite, Dublin Core, DCAT, JSON, JSON-LD, GeoJSON, MARCXML, Mendelay

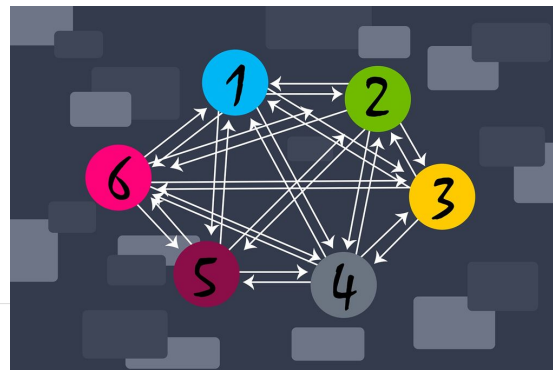
No citations.

Metadata makes even closed data findable!

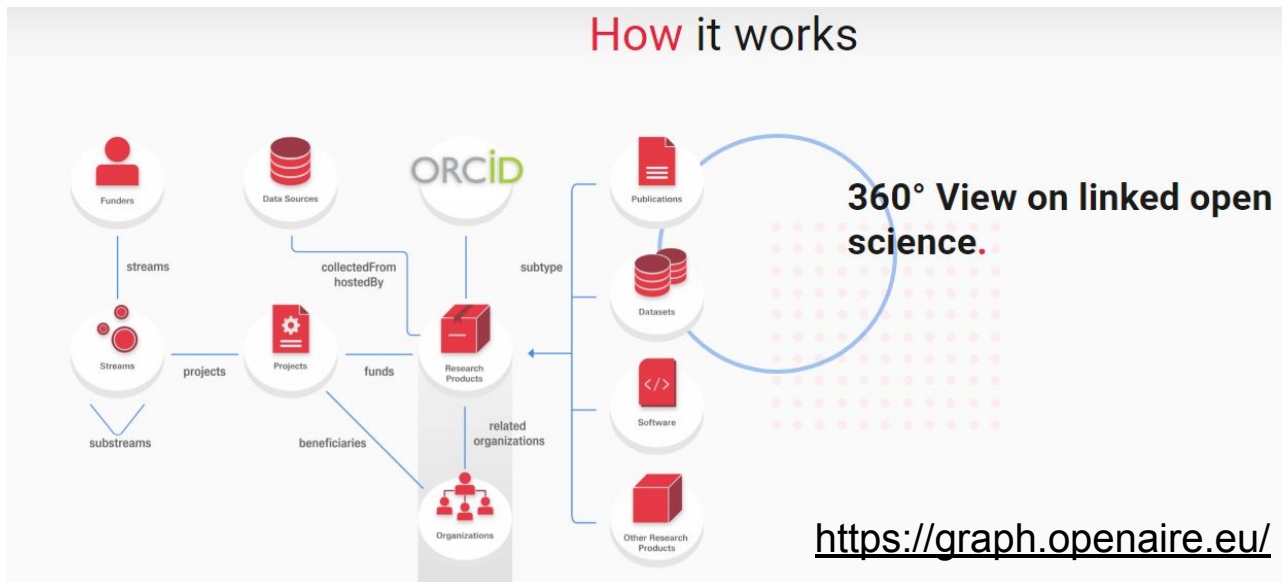
Even if your data is too sensitive to share, a good metadata description means others can find out about it and request legitimate access.



Extra metadata leads to more links!



How it works



OpenAIRE Research Graph



EXPLORE PROVIDE CONNECT MONITOR DEVELOP

SEARCH DEPOSIT LINK CONTENT PROVIDERS SIGN IN

Project . 2019 - 2022 . On going

FAIRsFAIR

Fostering FAIR Data Practices in Europe

OPEN ACCESS MANDATE FOR PUBLICATIONS AND RESEARCH DATA EUROPEAN COMMISSION

Funder: **European Commission** Project code: 831558 Call for proposal: H2020-INFRAEO5C-2018-4

Funded under: H2020 | CSA Overall Budget: 9,998,850 EUR Funder Contribution: 9,998,850 EUR

Status: On going

Start Date End Date
01 Mar 2019 28 Feb 2022

Detailed project information (CORDIS) →



LINK THIS PROJECT TO...

DEPOSIT YOUR RESEARCH

SHARE RESULTS

DOWNLOAD REPORT

Publisher: Zenodo

Project: EC | FAIRsFAIR (831558)

As part of the EOSC project family the FAIRsFAIR - Fostering Fair Data Practices in Europe - project aims to supply practical solutions for the throughout the research data life cycle. The FAIRsFAIR project runs from March 2019-February 2...

SUMMARY	PUBLICATIONS 182	RESEARCH DATA 11	SR 4
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Research Data . 2019

FAIRsFAIR Policy and Practice Survey 2019 data for D3.1_D3.2_D6.1

OPEN ACCESS

Authors: Davidson, Joy; Whyte, Angus;

Persistent Identifiers

DOI: 10.5281/zenodo.3550529 , 10.5281/zenodo.3550528

Publisher: Zenodo

Project: EC | FAIRsFAIR (831558)

As part of the EOSC project family the FAIRsFAIR - Fostering Fair Data Practices in Europe - project aims to supply practical solutions for the throughout the research data life cycle. The FAIRsFAIR project runs from March 2019-February 2...



For more on FAIR, check out the FAIR-Aware tool

- For researchers and data stewards
- An online tool to raise awareness and educate on data FAIRness
- 10 simple questions with practical tips to improve data FAIRness before deposit

<https://fairaware.dans.knaw.nl/>







Helpful tips presented with each question



FAIR questions



FINDABLE

- 
1. Are you aware that a dataset should be assigned a globally unique persistent and resolvable identifier when deposited with a data repository? 
 2. Are you aware that when you deposit a dataset with a data repository you will need to provide some details (known as discoverability) in order to make the data findable, understandable and accessible to others? 
 3. Are you aware that the repository providing access to your data should make the metadata describing your datasets available in a machine-readable format as well as human-readable? 

ACCESSIBLE

1. Are you aware that a dataset should be assigned a globally unique persistent and resolvable identifier when deposited with a data repository?

Selected datasets should be assigned a globally unique, persistent and resolvable identifier (PID) so they can be located unambiguously by humans or machines on the web. Persistent identifiers are maintained and governed so that they remain stable and direct the users to the same relevant object consistently over time. Examples of PIDs include Digital Object Identifier (DOI), the Handle System, identifiers.org, w3id.org and Archival Resource Key (ARK).

Identifiers are normally assigned by data repositories (or other service providers) when data and/or metadata are made available through their services. Repositories ensure that the identifier continues to point to the same data or metadata, according to the specified access terms and conditions. For example, you can search for data repositories providing DOIs on registries such as Re3data  or FAIRsharing (see related databases) .

It is worth noting here that not all data you produce during your research will need a PID. In general, those that underpin published findings or have longer term value are worth assigning a PID. If in doubt about which data should be allocated a PID, speak to your local research data management support team.

[Want to know more?](#)

Close

<https://fairaware.dans.knaw.nl/>

Summing up

- To improve the FAIRness of your data, upload it to a discipline-specific repository whenever possible
- Provide at least the basic metadata required to get a citable way to share your data – even for those data that can't be openly shared
- There are benefits to be gained from spending a bit more time to add additional metadata and make links
- FAIR data leads to better research, greater visibility of your work, more citations and greater collaboration opportunities!

Thank you!