



FAIRsFAIR
Fostering Fair Data Practices in Europe



Assessing a moving target: Measuring FAIRness



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Outline: two tools



How FAIR are existing data objects?



How can you make new data more FAIR?

FAIR metrics and assessment



European Commission Expert Group on FAIR Data, 2018. <https://doi.org/10.2777/1524>

FAIR metrics and assessment





FAIR

Data Object Assessment Metrics



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¹While FAIR principles may apply to any digital objects, we are concerned with the subset of digital objects: research data that are collected, measured, or created for purposes of scientific analysis.

- ✓ FsF-F1-01D - Data is assigned a globally unique identifier
- ✓ FsF-F1-02D - Data is assigned a persistent identifier
- ✓ FsF-F2-01M - Metadata includes descriptive core elements (creator, title, data identifier, publisher, publication date, summary and keywords) to support data findability
- ✓ FsF-F3-01M - Metadata includes the identifier of the data it describes
- ✓ FsF-F4-01M - Metadata is offered in such a way that it can be retrieved by machines
- ✓ FsF-A1-01M - Metadata contains access level and access conditions of the data
- ✓ FsF-A2-01M - Metadata remains available, even if the data is no longer available
- ✓ FsF-I1-01M - Metadata is represented using a formal knowledge representation language
- ✓ FsF-I1-02M - Metadata uses semantic resources
- ✓ FsF-I3-01M - Metadata includes links between the data and its related entities
- ✓ FsF-R1-01MD - Metadata specifies the content of the data
- ✓ FsF-R1.1-01M - Metadata includes license information under which data can be reused
- ✓ FsF-R1.2-01M - Metadata includes provenance information about data creation or generation
- ✓ FsF-R1.3-01M - Metadata follows a standard recommended by the target research community of the data
- ✓ FsF-R1.3-02D - Data is available in a file format recommended by the target research community

Please [login & comment below](#) citing in the subject line the Metric Identifier No. you are referring to - e.g. "FsF-R1.3-01M"



RESEARCH DATA ALLIANCE

Building on prior global
indicators & initiatives

Refine and revise metrics
through iterations (v0.4)

<https://fairsfair.eu/fairsfair-data-object-assessment-metrics-request-comments>

FAIRsFAIR Data Object Assessment Metrics:

<https://doi.org/10.5281/zenodo.4081213>

Repositories

Existing web standards and
external registries and
resources



<https://www.fairsfair.eu/f-uji-automated-fair-data-assessment-tool>

Practical tests implemented
against metrics

Programmatic
assessment for
published
datasets

Machine-actionable assessment tool

F-UJI API OAuth
Request example
A Service for Evaluating Research Data Objects based on FAIR/FAIR.Metrics
This work was supported by the FAIR/FAIR project (H2020-INFRAEOSC-0118-2020 Grant Agreement 801558).
Contact the developer
MIT License
Find out more about F-UJI

Server
https://api.fuji.net Authorize

FAIR object FAIRness assessment of a data object
POST /eval/ask

FAIR metric FAIR/FAIR assessment metrics
GET /metrics Return all metrics and their definitions

Response body

```


{
  "metric_identifier": "FsF-F1-02D",
  "metric_name": "Persistent identifier",
  "output": {
    "pid": "https://doi.org/10.1594/PANGAEA.902845",
    "pid_scheme": "doi",
    "resolvable_status": true,
    "resolved_url": "https://doi.pangaea.de/10.1594/PANGAEA.902845"
  }
}

```

<https://github.com/pangaea-data-publisher/fuji>

Pilot under development

Graphical user interface / www.f-uji.net


F-UJI | Automated FAIR Data Assessment Tool

Disclaimer: The test results shown here are based on preliminary data and code which still is under development. F-UJI is rapidly evolving and not yet available in a productive environment.

Research Data Object (URL/PID):

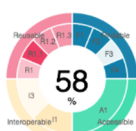
OAI-PMH:
 run test





☐ Enable caching? ⓘ ☒ Use DataCite? ⓘ

Assessment Results:
Evaluated Resource:

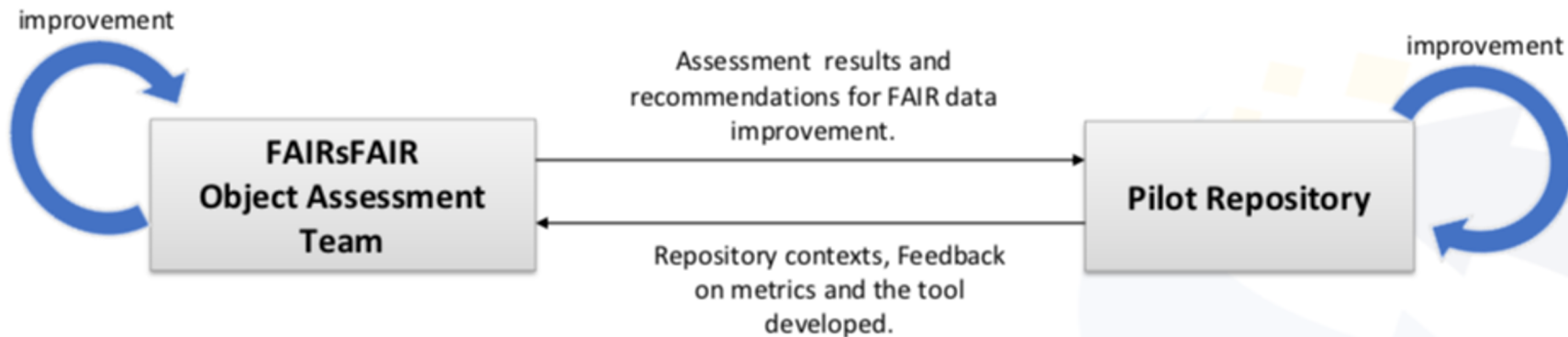
Data Discovery and Reuse Practices in Research	
Resource PID/URL:	https://doi.org/10.17026/dans-xsw-kkeq
Metric Version:	metrics_v0.4
Metric Specification:	https://doi.org/10.5281/zenodo.4081213
Software version:	v1.0.3

Summary:



Findable: 6 of 7	
Accessible: 2 of 3	
Interoperable: 1 of 4	
Reusable: 5 of 10	

Continuous process: iteration and improvement

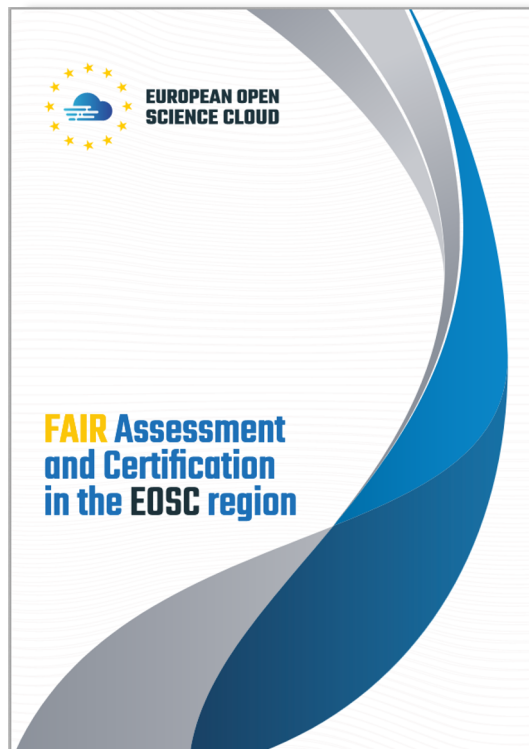


Alignment of FAIR data assessment initiatives

Avoid
duplicate efforts



Disciplinary practices



<https://www.fairsfair.eu/news/fair-assessment-and-certification-eosc-region-report-available>



Find synergies



Are we assessing a moving target?

- FAIRness is a moving target
- A FAIR assessment is a snapshot in time
- Automated FAIR assessment needs human mediation

“Numbers need a narrative.”



FAIR | Aware

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

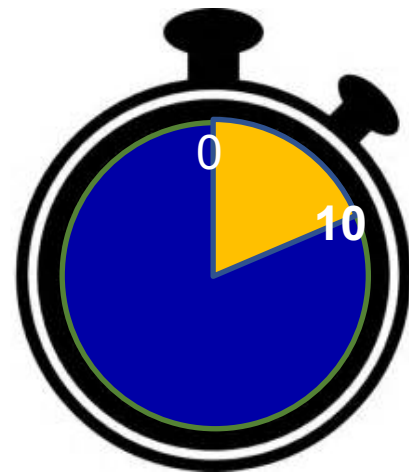


The screenshot shows a form titled 'FAIR questions' with a large 'FAIR' on the left. The form is divided into four sections: FINDABLE, ACCESSIBLE, INTEROPERABLE, and REUSABLE. Each section contains two questions with 'Yes' and 'No' radio button options.

FAIR questions	
FINDABLE	
Are you aware that a dataset should be assigned a globally unique and persistent identifier when deposited with a data repository? (1)	<input type="radio"/> Yes <input type="radio"/> No
Are you aware that when you deposit a dataset with a repository, you will need to provide some details (known as discovery metadata) in order to make the data findable, understandable and reusable to others? (2)	<input type="radio"/> Yes <input type="radio"/> No
Are you aware that the repository providing access to your dataset should make the metadata describing your datasets available in a format readable by machines as well as humans? (3)	<input type="radio"/> Yes <input type="radio"/> No
ACCESSIBLE	
Are you aware that access to your dataset may need to be controlled and that metadata should include license information under which the data can be reused? (4)	<input type="radio"/> Yes <input type="radio"/> No
Are you aware that metadata should remain available over time, even if the data is no longer accessible? (5)	<input type="radio"/> Yes <input type="radio"/> No
INTEROPERABLE	
Are you aware that the metadata describing your datasets should use controlled vocabularies? (6)	<input type="radio"/> Yes <input type="radio"/> No
REUSABLE	
Are you aware that provenance information about the collection and/or generation of data should be included in the metadata? (7)	<input type="radio"/> Yes <input type="radio"/> No
Are you aware that metadata describing your data should follow the specifications of a community-endorsed standard? (8)	<input type="radio"/> Yes <input type="radio"/> No
Are you aware that data should be deposited preferably in a file format that is open - to support reuse - and supported by the repository for long-term preservation? (9)	<input type="radio"/> Yes <input type="radio"/> No
Are you aware that maintaining your dataset FAIR over time requires professional data curation and preservation? (10)	<input type="radio"/> Yes <input type="radio"/> No

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

Hands-on with FAIR | Aware



1. Think of a dataset:
 - a. Either a dataset you know,
 - b. or one of these:
 - i. <https://bit.ly/CycloneData>
 - ii. <https://bit.ly/BirdsData>
2. Go to <https://fairaware.dans.knaw.nl/> and check the FAIRness of the dataset.
 - If you use i-ii, replace “Are you aware that...” with “Do you think that the data creator was aware that...”

Fun fact: i. won a Dutch Data Award and ii. won an incentive Dutch Data Award, see <https://bit.ly/DutchDataAward>

Thank you for listening!

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www.fairsfair.eu



[@FAIRsFAIR_eu](https://twitter.com/FAIRsFAIR_eu)



www.linkedin.com/company/fairsfair/



www.youtube.com/channel/UCE4wSBnNIBfu6SqlBaIMfNg



Join the FAIRsFAIR Week 2021!



<https://fairsfair.eu/events/fairsfair-week-2021>

Join us on Tuesday 13th April in the public workshop, or in other events.

[@FAIRsFAIR_eu](https://twitter.com/FAIRsFAIR_eu)

